Colorado Aerotropolis Visioning Study

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Summary Report
for the
Colorado Aerotropolis Visioning Study

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Appendix

Amendment to 1988 Annexation and Intergovernmental Agreements on a New Airport - June 2015

Attachments (under separate cover)

Attachment A: Colorado Aerotropolis Visioning Study Outreach Working Paper

Attachment B: Examples of Aerotropolis Cities and Aerotropolises Worldwide Memo

Attachment C: Infrastructure Development for the Colorado Aerotropolis Study Area Working Paper

Attachment D: Assessment of Growth Projections for the Colorado Aerotropolis Study Area Working Paper

Attachment E: Colorado Aerotropolis Economic and Financial Analysis Working Paper

Attachment F: Governance Options for the Colorado Aerotropolis Working Paper

Colorado Aerotropolis Visioning Study Summary Report

1.0 Definition of an Aerotropolis

An Aerotropolis is an urban plan in which the layout, infrastructure, and economy are centered on an airport.

2.0 Background

2.1 Denver International Airport Development

The City and County of Denver completed a New Airport Master Plan Study in 1986 that identified the need for a new airport. Because the new airport was to be located in Adams County, Denver and Adams County executed an Intergovernmental Agreement (IGA) and an Annexation Agreement in 1988. The purpose for the IGA was to agree that a new airport should replace Stapleton and economic benefits would be realized by Adams County and Denver, to set noise requirements, and to define land use in and around the airport property. The annexation agreement was for 53 square miles of Adams County land to Denver to build a world-class airport with expansion possibilities. Adams County voters approved the annexation.

The IGA allowed Denver to proceed with the planning and construction of Denver International Airport (DIA), which opened in 1995.

2.2 2015 IGA Amendment

Twenty years later, only a relatively small amount of development has arisen near the airport. Elected officials in both Denver and Adams County realize the need to spur development on and off airport. The original IGA allowed only aviation-related development on the airport property. This led to an amendment to the 1988 IGA, which was approved by Denver and Adams County voters in November 2015. Among other things, the amendment (included in the Appendix) allows Denver and Adams County to create a 1,500-net-leasable-acre on-airport pilot program with expanded commercial development possibilities. Adams County and the municipalities within and Denver will share (50-50) tax revenues generated from new commercial uses, while DIA will retain all lease revenue from new commercial businesses. Further, the amendment states Denver and Adams County communities will create a regional entity to jointly promote and market development opportunities, and assist in coordination of land use and infrastructure planning efforts.

2.3 Colorado Aerotropolis Visioning Study

The Colorado Aerotropolis Visioning Study, funded by a Federal Highway Administration grant, along with additional funds from DIA, collaboratively engaged local jurisdictions to determine the infrastructure requirements that could enhance economic development surrounding DIA. The Visioning Study was conducted independently from the political process that led to the voter approval of the IGA Amendment in 2015. The Colorado Department of Transportation (CDOT) administered the study as a neutral, objective party facilitating the identification of the benefits and impacts of a proactively planned Aerotropolis infrastructure surrounding the airport. An infrastructure framework for transportation, water, wastewater, power, and drainage is critical to fostering and supporting economic development surrounding DIA.

2.3.1 Horizon Year

It is recognized that the full development of a Colorado Aerotropolis would take many decades, perhaps to 2075 or beyond. The year 2040 (25 years from now) was used for planning and analysis because of the availability of planning data, and it is anticipated that initial steps for the Colorado Aerotropolis development could take place in the next 10 to 15 years

2.3.2 Objectives

CDOT had the following objectives for the study:

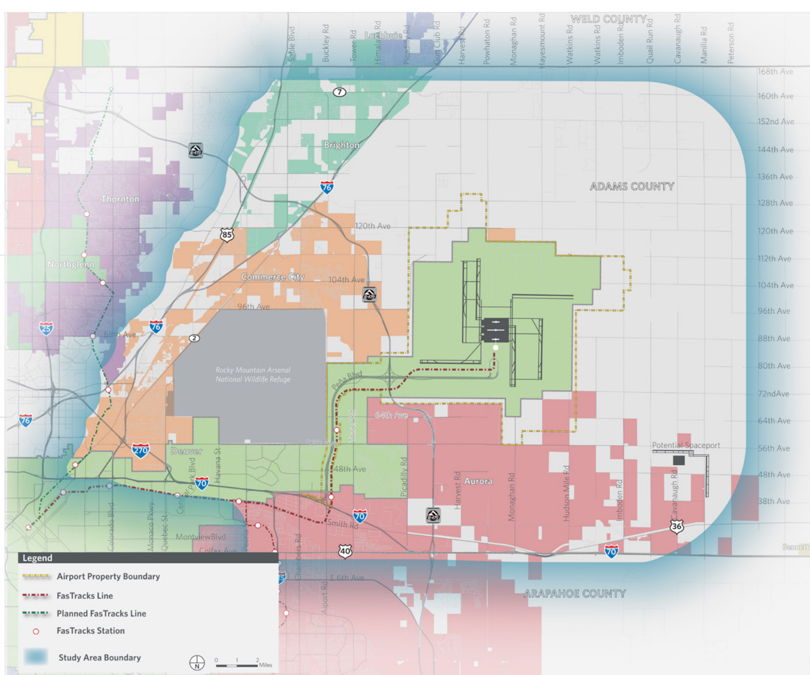
- Agree on a collaborative vision for a Colorado Aerotropolis.
- Learn about the aerotropolis concept.
- Identify commonalities of the local plans.
- Quantify the potential for economic growth—with or without a Colorado Aerotropolis.
- Identify a framework of possibilities for collaboration on infrastructure investments.
- Outline regional governance options to implement investments in transportation, water, wastewater, drainage, power, and communications systems.

This report documents how the study has met the objectives.

3.0 Study Area

The Colorado Aerotropolis study area boundaries shown in Figure 1 defined an area of influence that impacts or will be impacted by the current and future economic conditions both on and off airport.

Figure 1 Study Area for the Colorado Aerotropolis Visioning Study



Source: Aerotropolis Study Team.

3.1 Concentrated Development Area

For planning purposes, the study area was divided into Districts. These are illustrated in Figure 2. Given the disparity in the projected development among the study area Districts, the study team decided to focus the analysis on the South, Peña and West Districts to the south and west of DIA. This “Concentrated Development Area” is shown in Figure 3.

Figure 2 Study Area Planning Districts

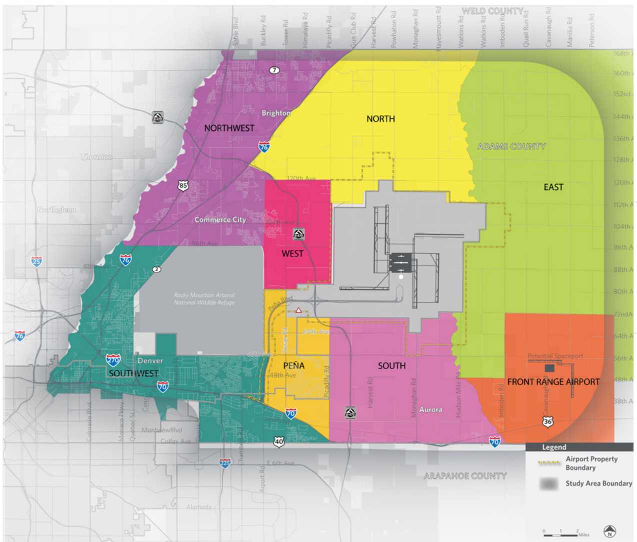
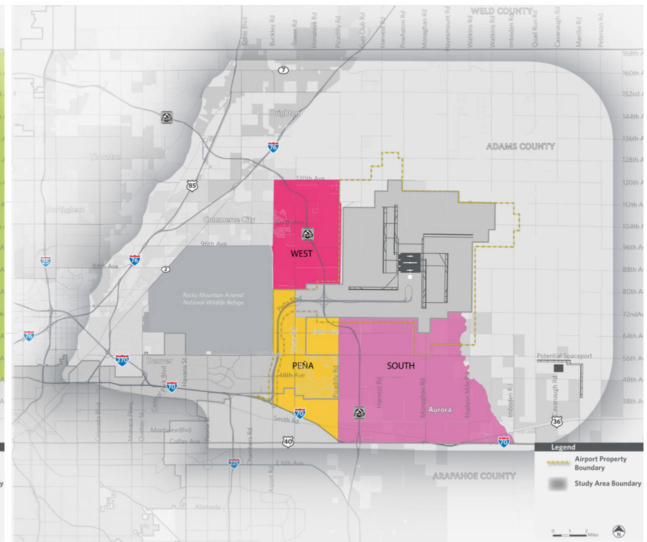


Figure 3 South and West Concentrated Development Area



Source: Aerotropolis Study Team.

4.0 Engagement/Collaboration

Recognizing the need to collaborate to create economic opportunities, CDOT brought key stakeholders together to create the vision and framework for implementing development in the area. CDOT created a forum for the primary stakeholder jurisdictions and other stakeholders to identify collaborative, catalytic actions to spur growth and change, and used this opportunity to be proactive in transportation network development in a targeted metropolitan Denver growth area.

Regular meetings were open to all interested parties and captured ideas through discussion and facilitated exercises.

Adams County, City of Aurora, City of Brighton, City of Commerce City, City and County of Denver, as well as DIA, were the primary stakeholders in the Visioning Study.

Any study success is due largely to the engagement process that CDOT conducted and the willingness of the jurisdictions to participate and collaborate. Several infrastructure, transportation, and economic development agencies were also engaged. This comprehensive outreach created an atmosphere of cooperation and excitement about the potential of a Colorado Aerotropolis.

The *Colorado Aerotropolis Visioning Study Outreach* working paper (Attachment A) (Aerotropolis Study Team 2016) has the agendas, presentations, and meeting notes for the meetings held over the course of the study. The study team held 37 meetings and talked to more than 124 individuals about the Colorado Aerotropolis concept.

4.1 Committee Structure

4.1.1 Steering Committee

The Steering Committee was made up of senior-level staff from the area agencies. The Steering Committee membership list is included in Attachment A, *Colorado Aerotropolis Visioning Study Outreach* working paper.

The Steering Committee provided senior advisory input on the corridor vision, alternatives, and improvement phasing priorities at these key project milestones:

- Project Introduction and Concept Development
- Assessment of Initial Scenarios
- Review of Refined Scenarios and Screening
- Draft Framework Observations and Recommended Actions

Colorado Aerotropolis Vision

At the onset of the study, the representatives from the primary stakeholders jointly developed a vision for a Colorado Aerotropolis:

A sustainable, efficient, well-connected, and globally recognized Colorado Aerotropolis that capitalizes on the economic opportunity surrounding the Denver International Airport through collaborative planning, development, and marketing.

4.1.2 Study Review Committee

The Study Review Committee members were technical staff from the primary stakeholders, study area local and state government agencies, and other regional partners. These included public works departments, planning departments, economic development departments and corporations, and other agencies. The membership list is included in Attachment A.

The Study Review Committee met approximately every four weeks to review study team progress and to provide technical input and feedback to the study team, a total of ten times. The members of the Study Review Committee served as the primary point of contact for their respective organizations and were responsible for keeping their constituent groups and elected officials on the Steering Committee updated on the study information and progress.

4.2 Coordination Meetings

4.2.1 Primary Stakeholders One-on-One Meetings

In addition to the Steering Committee and Study Review Committee meetings, the study team met individually with the primary stakeholders. All of the jurisdictions attended an initial coordination meeting. One-on-one meetings were held with each of them over the course of the study to discuss their specific plans and issues. Separate meetings were held to gain input on governance options for a potential regional entity. In addition, a coordination meeting with the jurisdictions' Public Information Officers addressed how the agencies might work together to promote a Colorado Aerotropolis in the future. These jurisdictions were:

- Adams County
- City of Aurora
- City of Brighton
- City of Commerce City
- City and County of Denver
- Denver International Airport

4.2.2 Other Agency Coordination Meetings

The study team met with additional infrastructure and economic development agencies to inform them about the study, gather input about their plans, and discuss their specific needs and issues. These included:

- Aurora Water
- CDOT Aeronautics
- Colorado Office of Economic Development and International Trade (OEDIT)
- Denver Regional Council of Governments (DRCOG)
- Denver Water
- E-470 Public Highway Authority
- Front Range Airport
- Central 70 Study Team
- Metro Denver Economic Development Corp. (Metro Denver EDC)
- Metro Wastewater Reclamation District
- Peña Boulevard Study Team
- Regional Transportation District (RTD)
- South Adams County Water and Sanitation District
- Urban Drainage and Flood Control District

5.0 Understanding the Concept

There are upwards of 80 aerotropolis cities and aerotropolises either operational or developing across the globe (Kasarda 2013). Dr. John D. Kasarda and Greg Lindsay authored *Aerotropolis: The Way We'll Live Next* (Kasarda 2011), which describes the aerotropolis phenomenon and how cities are responding to the global market by developing a structured city with the airport at its center. A successful aerotropolis better serves workers, suppliers, executives, and goods to respond to the ubiquity of jet travel, overnight shipping, and global business networks. Kasarda contends that the places with the fastest ground access to jobs and industry near airports win a greater share of global economic activity that is driven by air travel.

5.1 Global Peer Aerotropolises

A Colorado Aerotropolis at DIA would have to compete with these existing and planned aerotropolises to attract businesses and development. However, the airport has numerous resources and advantages to support businesses that would locate near an Aerotropolis—current and future runway capacity, vast acreage of developable land on and off airport property, access to multiple highways and rail lines, and a central location within the North American continent. These factors indicate Colorado has great potential for a vibrant aerotropolis.

The aerotropolises worldwide are in various stages of development with varying degrees of success. The brief overviews of some peer aerotropolises included below give insight into the possibilities and challenges associated with bringing the Colorado Aerotropolis concept to reality. Further information is available in the study memo, *Examples of Aerotropolis Cities and Aerotropolises Worldwide* (Attachment B) (Aerotropolis Study Team 2016).

Amsterdam Schiphol Airport/Amsterdam District Zuidas, The Netherlands. The airport developed around the international transport of flowers and is operated by the Schiphol Group—a public-private partnership. Development has occurred both on- and off airport property. The 670-acre aerotropolis city, Amsterdam District Zuidas, has office space, restaurants, residential units, a university, a medical center; and the Netherlands' largest convention center located just six minutes from the airport.

Amsterdam Schiphol Airport/Amsterdam District Zuidas, The Netherlands

Chicago O'Hare International Airport, Illinois. A new planned airport was stalled because of lack of collaboration and consensus on its location. Instead, the existing airport is being expanded, and opportunities for new development around the airport are limited.

Dallas/Fort Worth Airport, Texas. This is considered one of the most successful aerotropolises largely because of the vision and collaboration of public and private entities and their ability to attract a wide range of businesses. For instance, four Fortune 500 world headquarters (and eight of the Fortune 1,000 world headquarters) have located just east of the airport. Recent developments include a 15.3-acre lease for the world's largest Infiniti automobile dealership with rail connection to Dallas via DART; and the first phase of the airport's first mixed-use development, Southgate Plaza, which will include restaurants, a hotel, and the airport's new headquarters building.

Dallas/Fort Worth Airport, Texas

Detroit International Airport, Michigan. There are plans for an aerotropolis concept on 600,000 acres of land between Detroit and Ann Arbor. Lack of collaboration has delayed getting the idea off the ground.

Incheon International Airport/Songdo International Business District, Seoul, Korea. The airport was proactively planned and implemented to capitalize on the market in China and to compete with Hong Kong. The global business hub Songdo opened in 2009 as a Free Economic Zone, meaning tax benefits are provided by the Korean government for foreign firms and foreigners, as well as a simpler regulatory regime. It has office and convention space, hotels, residential and retail developments, schools, health care facilities, recreation spaces (100-acre Central Park and pocket parks and canal system), and high-tech industry tenants.

Incheon International Airport/Songdo International Business District, Seoul, Korea

Memphis International Airport, Tennessee. Aerotropolis development occurred quickly after FedEx chose Memphis as its headquarters. Its cargo super-hub employs roughly 30,000 people in the Memphis area, and the airport generates approximately 166,000 jobs. Today, the city is taking a more proactive role in fostering a diversity of development. City leaders are encouraging biotech and biosciences distribution and climate-controlled distribution operations to spur additional growth.

Philadelphia International Airport, Pennsylvania. Despite limited available land, city officials have recently developed aggressive plans for a concentrated development area around the airport that would include offices, restaurants, retail stores, and more.

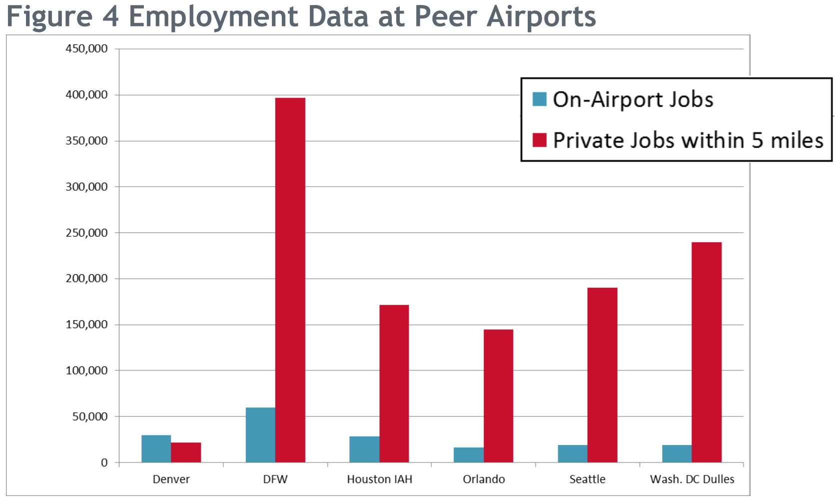
5.1.1 DIA Compared to Peer Airports (Employment Data)

Several U.S. airports were examined to illustrate how an airport can attract commercial development and jobs and become the center of a strong economic ecosystem. In general, airports similar to DIA have attracted from 6 to 13 jobs off-airport property (within five miles) for every 1 job on airport property (including non-aviation related jobs located away from the terminal and all aviation jobs at and around the terminal) (Kasarda 2012).

Figure 4 compares on-airport and off-airport jobs at DIA to five airports that have similarities to DIA. These airports are not in close proximity to their respective central business districts and were built in areas with relative scarcity of development at the time of construction, just like DIA.

The DIA area lags far behind these similar airports in proximate private job growth. Today, there are still

Figure 4 Employment Data at Peer Airports



Source: Kasarda 2012.

thousands of acres of undeveloped land surrounding DIA that represent one of the most unrealized economic opportunities in the U.S. and the world.

5.2 Jeff Fegan and Dallas/Fort Worth Airport Aerotropolis

An aerotropolis is as varied as the conditions that shape it. The stories about how they are conceived and grow offered lessons learned for a Colorado Aerotropolis vision. CDOT invited former Dallas/Fort Worth (DFW) Airport CEO, Jeff Fegan, as an aerotropolis expert to share insights.

Jeff Fegan, who was instrumental in setting the framework for the successful DFW aerotropolis, presented his experience to more than 80 individuals from agencies in the Denver metropolitan area.

Highlights of Jeff's presentation included:

- DFW opened in 1972 and encompasses 30 square miles, is part of four cities, and is managed jointly by Dallas and Fort Worth.
- DFW's commercial development focuses on air-related warehouse and distribution activities but has flexibility to attract others, like medical devices and sports merchandise. DFW hosts three hotels, golf, corporate headquarters and four auto dealerships.
- A consolidated car rental operation began what turned out to be DFW's permanent revenue-sharing arrangement with the four host cities.
- A cooperative planning task force, led by DFW's vice president of commercial development, coordinates leads and prevents developers from playing one city off against another.
- Early DFW development was episodic until surrounding growth occurred. Jeff credited the North Central Texas Council of Governments for leading the development of the surrounding highway transportation infrastructure network that feeds the airport from all four directions.
- Today, DFW employs more than 55,000 on airport and has generated almost 400,000 other jobs within a 5-mile radius.

- Lessons learned:
  - Success takes a vision and long-term commitment.
  - Success requires communication and cooperation, which eventually leads to trust.
  - Must have a very strong understanding of the marketplace – existing and new opportunities.
  - Take risks, have patience, build trust.
  - Important to understand development needs. Infrastructure must be in place.

6.0 Scenario Analysis

6.1 Goal of Analysis

The goal of the high-level analysis was to compare two hypothetical scenarios to examine the conceptual economic and fiscal benefits of developing an aerotropolis compared to the allowing development to occur at the currently projected level. The two scenarios were identified as Business as Usual and Aerotropolis.

6.2 Scenario Definitions

6.2.1 Business as Usual Scenario

This scenario represents a continuation of past trends reflecting development patterns near the airport. It is a hypothetical case to contrast with an IGA-enabled Aerotropolis Scenario. It is based on the following:

- Reflects the future socioeconomic forecast dataset in the DRCOG *2040 Fiscally constrained Regional Transportation Plan* (DRCOG 2040 RTP) (DRCOG 2015).(DRCOG is a regional planning organization where local governments collaborate to set guidelines and allocate funding of transportation investments, as documented in the RTP.)
- Assumes the state and federally funded projects as identified in the *DRCOG 2040 RTP*.
- No amended Intergovernmental Agreement (IGA); therefore, no new on-airport nodes or accesses.

6.2.2 Aerotropolis Scenario

The Aerotropolis Scenario represents a higher level of regional coordination and marketing relative to infrastructure and development surrounding DIA. It was largely compiled from information derived from master plans from each of the primary stakeholders, as described in detail in the *Infrastructure Development for the Colorado Aerotropolis Study Area* working paper (Attachment C) (Aerotropolis Study Team 2016), and data on peer airport developments across the globe. The Aerotropolis Scenario has the following assumptions:

- 2040 Horizon Year. Only 25 years into the future, 2040 was used because of availability of data for that horizon year. It is recognized that a Colorado Aerotropolis would develop over several decades – for another 50 years and beyond.
- An executed IGA Amendment – additional on-airport development, shared revenues, and new accesses onto the DIA property.
- New regional governance mechanism for the Aerotropolis.

- The Aerotropolis attracts additional development from the region, the state, North America, and the globe.
- Assumes the advancement of locally funded transportation projects, as identified in the *DRCOG 2040 RTP*, and some additional roadway improvements.

The analysis for the Aerotropolis Scenario explored different approaches for estimating a range of reasonable projections of employment activity under an Aerotropolis Scenario.

6.3 Growth Potential

The fundamental tenet is that, by opening up additional land for development and creating favorable market conditions through infrastructure investment, an Aerotropolis Scenario would induce additional growth above and beyond the trend portrayed by Business as Usual Scenario. Conceptual estimates of growth potential were prepared for each of the hypothetical scenarios, based on available information at the time of this study. More detail about the assumptions and process used to develop the estimates is included in the *Assessment of Growth Projections for the Colorado Aerotropolis Study Area* working paper (Attachment D) (Aerotropolis Study Team 2016). It is recognized that assumptions and numbers will change when more detailed studies are conducted.

6.3.1 Business as Usual Scenario Growth Projection

In developing the assumptions and methodology for estimating benefits, the analysis used the DRCOG 2040 population and employment projections under the Business as Usual Scenario defined in Section 6.2.1. The Business as Usual Scenario assumes there is no coordinated investment in land use planning or additional infrastructure for an Aerotropolis Scenario. The Business as Usual Scenario would see incremental employment gains of about 6,000 jobs within the Concentrated Development Area, with correspondingly modest levels of real estate development that would be more dispersed.

DRCOG's population and employment projections for the entire Aerotropolis study area and the Concentrated Development Area within the study area are compared in Table 1.

Table 1 DRCOG Population and Employment Projections – Study Area and Concentrated Development Area

Area	Population 2015	Population 2040	Employment 2015	Employment 2040
Study Area (Total)	197,100	319,700	145,500	227,700
Concentrated Development Area (43,030 acres) % of Region's Total	28,900	48,700	11,200 0.6%	17,200 0.7%

Source: DRCOG 2040 RTP.

6.3.2 Aerotropolis Scenario Growth Projection

The study team used the process outlined in the following sections to determine the potential growth under an Aerotropolis Scenario. More detail about the assumptions and process used to develop the estimates is included in the *Assessment of Growth Projections for the Colorado Aerotropolis Study Area* working paper (Attachment D) (Aerotropolis Study Team 2016).

6.3.2.1 Amount of Employment Growth

To develop the conceptual amount of potential employment in 2040 under an Aerotropolis scenario, the study team used a series of conservative assumptions. Presuming typical commercial densities for a mix of uses, the 1,500 net leasable acres of on-airport property allowed as an initial development level in the IGA Amendment could have a maximum build-out number of approximately 37,000 employees.

If 50 percent of build-out is reached by 2040, the number of Aerotropolis-related on-airport employees in 2040 could be about 18,500. In general, under a proactively planned Aerotropolis, it is expected that more employment would occur off airport than on airport. Based on data from peer airports presented in Section 5.1.1, a conservative assumption of a 3:1 ratio results in approximately 55,500 new Aerotropolis-related off-airport employees in 2040. The total of new on and off airport jobs associated with the Aerotropolis Scenario is conceptualized at about 74,000.

Therefore, in the Concentrated Development Area, there would be approximately 80,000 jobs, comprised of 18,500 on-airport and 6,000 Business as Usual Scenario growth plus 55,500 new for a total of 61,500 off-airport jobs in 2040. Together with terminal on-airport jobs (air-operations-related), the number of future jobs in the vicinity of the airport could total 143,000 in 2040.

These numbers represent a higher level of employment activity than the current DRCOG 2040 projections. In fact, this is the central premise under investigation by the study: A proactively planned Colorado Aerotropolis is of economic benefit to the region, over and above the normal growth levels projected for the Denver metropolitan area under current trends. It is possible that some of the additional growth would be diverted from elsewhere in the region. However, much of the growth would represent a net gain in economic and fiscal benefits for the Denver metropolitan area because DIA offers the unique commercial opportunities for specialized industry sectors that locate near an airport.

Table 2 tabulates the employment growth projections for the Business as Usual and Aerotropolis Scenarios. The Aerotropolis Scenario employment projections reflect a conservative level of activity given available capacity, rather than a demand market analysis, to make a hypothetical comparison to the Business as Usual Scenario.

Table 2 Aerotropolis Employment Projections

Area	Category	2015 Existing	2040 Business as Usual Scenario		2040 Aerotropolis Scenario		
			Growth	Total	*Growth from Aerotropolis*	*Total Growth (includes Business as Usual)*	Total
On-Airport	Terminal Related	35,000	*17,000*	52,000	*0*	*17,000*	52,000
	Aerotropolis Related	0	*0*	0	*18,500*	*18,500*	18,500
	Subtotal	35,000	*17,000*	52,000	*18,500*	*35,500*	70,500
Off-Airport (Concentrated	Terminal Related	n/a	n/a	n/a	n/a	n/a	n/a

Table 2 Aerotropolis Employment Projections

Area	Category	2015 Existing	2040 Business as Usual Scenario		2040 Aerotropolis Scenario		
			Growth	Total	*Growth from Aerotropolis*	*Total Growth (includes Business as Usual)*	Total
Devt. Area)	Aerotropolis Related	11,000	*6,000*	17,000	*55,500*	*61,500*	72,500
	Subtotal	11,000	*6,000*	17,000	*55,500*	*61,500*	72,500
On- and Off-Airport	Aerotropolis Related Subtotal	11,000	*6,000*	17,000	*74,000*	*80,000*	91,000
	Total	**46,000**	***23,000***	**69,000**	***74,000***	***97,000***	**143,000**

Sources: Aerotropolis Study Team, DRCOG, DIA.

6.3.2.2 Allocation of Employment Growth Projections

Under an Aerotropolis Scenario, it is expected that Aerotropolis-related employment would occur mostly within the Concentrated Development Area adjacent to DIA over the 25 years (2015-2040). The development growth would occur in concentrated employment nodes where similar industries and businesses cluster together. The concentration of growth would create an “agglomeration” effect, whereby the proximity of similar industries and businesses to one another increases labor productivity and attracts a highly qualified talent pool.

For purposes of illustrating the potential in land development due to a proactively planned Aerotropolis, the study team performed an unofficial allocation of the employment growth of each of the scenarios. The following Guiding Principles were used to perform this allocation of off-airport jobs:

- Access to Super-Regional Multimodal Transportation Facilities
- Contiguous to Active Developments
- Gravitational Pull of Larger Development(s)
- Connectivity to DIA
- Consideration of Geographic Diversity
- Input from Stakeholders

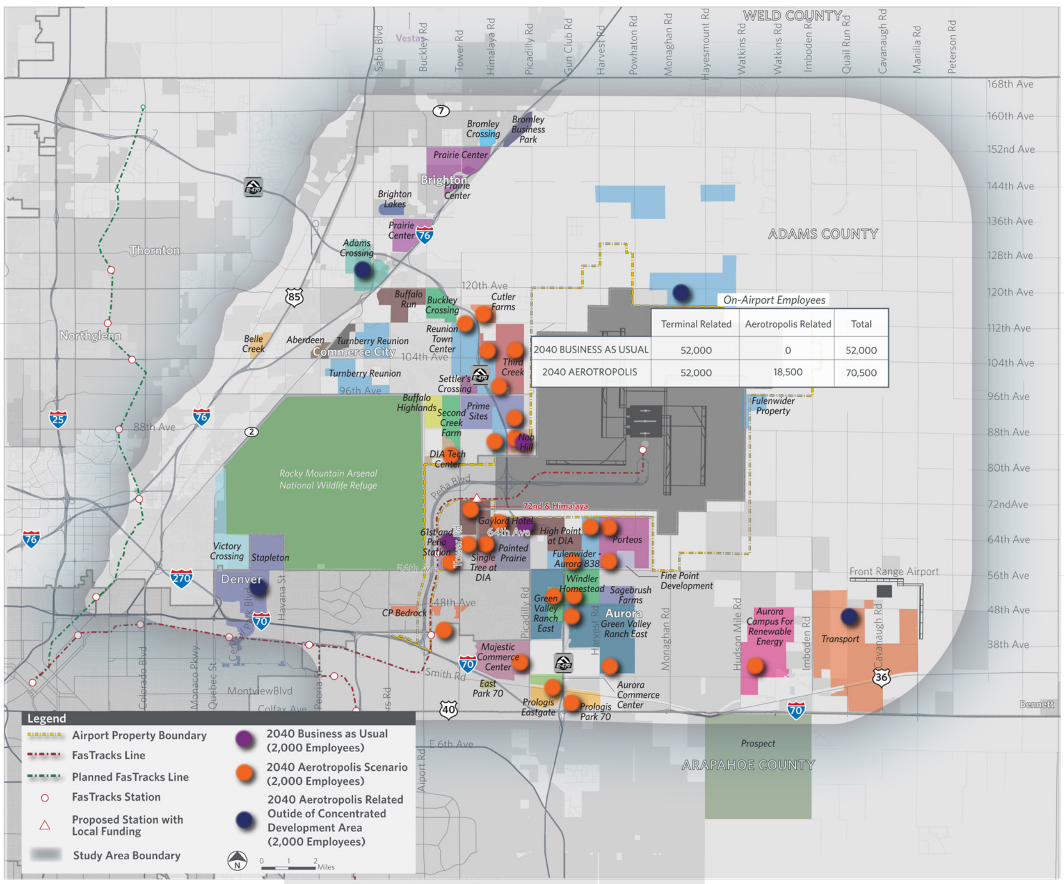
Figure 5 illustrates the current active developments within the Aerotropolis study area and the anticipated distribution of the off-airport jobs.

6.3.2.3 Square Footage of New Development

Collectively, over the 25-year period (2015-2040), the employment nodes in the Concentrated Development Area envisioned under an Aerotropolis Scenario are anticipated to attract jobs in a variety of industry sectors supporting (and supported by) operations at DIA. A “low” to “high” range of development square footage (SF) estimate was developed. Both assume the same amount of jobs growth, but a different distribution of those jobs among various employment sectors and associated levels of demand for office, retail, and industrial space.

The mix of jobs associated with the Low SF scenario closely resembles the density of existing Denver Technological Center (DTC), with a higher concentration of employment growth in sectors that demand office space. The High SF scenario closely resembles the mix of off-airport jobs inventoried around Los Angeles International Airport (LAX), which leverages the proximity to major trade corridors (interstate highways and the Ports of Los Angeles and Long Beach) and its high volume of international flights to attract a high percentage of space-intensive industrial and service jobs.

Figure 5 Allocation of Employment Growth – Aerotropolis Scenario



Source: Aerotropolis Study Team.

Based on the total number of employees and typical densities associated with the different business sectors, the Aerotropolis Scenario could result in 21 (Low) to 35 (High) million square feet of commercial development. The actual development potential of an Aerotropolis Scenario would likely fall somewhere between the Low SF and High SF scenarios.

A summary of the commercial square footage growth potential of an Aerotropolis Scenario compared to the Business as Usual Scenario is shown in Table 3. Further information about the square footage estimates is included in the *Colorado Aerotropolis Economic and Financial Analysis* working paper (Attachment E) (Aerotropolis Study Team 2016).

Table 3 Commercial Square Footage Projections

	Business as Usual	Aerotropolis (Includes BAU)	
		Low SF	**High SF**
Commercial Development (sq ft)	2,718,000	20,874,350	34,728,000
Industrial	**1,581,000**	**4,337,500**	**17,823,000**
Retail	**766,000**	**4,015,600**	**9,217,000**
Office	**371,000**	**12,521,250**	**7,688,000**

Source: Aerotropolis Study Team.

6.3.2.4 Associated Housing Development

With new employment comes new housing. Although this study is primarily focused on the economic benefit of attracting new business to the area, housing needs would be associated with the employment growth. Based on the employment growth projections in Section 0, an estimated 210,000 additional residents and 75,000 housing units would be needed near the Aerotropolis study area. Further information about these estimates is included in the *Colorado Aerotropolis Economic and Financial Analysis* working paper (Attachment E) (Aerotropolis Study Team 2016).

6.4 Aerotropolis Scenario Infrastructure Needs

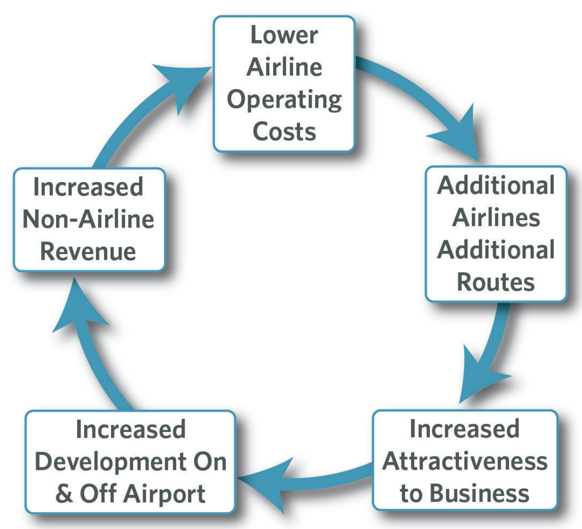
Efficient infrastructure surrounding an airport is key to fostering and supporting economic development. In addition to access to national and global markets via the airport, potential developers are attracted by ample “on the ground” supporting infrastructure. For purposes of this study, this means sufficient utilities (water, wastewater, drainage, power, communications systems) and transportation capacity. A complete description of the infrastructure elements described in this Section 6.4 is included in the *Infrastructure Development for the Colorado Aerotropolis Study Area* working paper (Attachment C) (Aerotropolis Study Team 2016).

6.4.1 Self-Sustaining Cycle of Development

A significant finding of this study is the importance of on-airport commercial development to DIA’s ability to compete globally. A self-sustaining Cycle of Development is feasible, in which catalytic infrastructure actions can spur greater economic development and growth, as depicted in Figure 6. Maintaining and stimulating this Cycle of Development is extremely important.

When commercial developers invest in on-airport and off-airport property, the airport collects non-airline revenue. This allows

Figure 6 Cycle of Development



Source: Aerotropolis Study Team.

airports to lower operating costs for airlines, which in turn attracts additional airlines and additional airline routes. This increases the attractiveness of the airport for further commercial development, which adds to non-airline revenue for the airport and continues the cycle. Increased development also means further investments in infrastructure on and near the airport. Investment in infrastructure is, therefore, one of the catalysts that can be driven by the local municipalities surrounding an airport.

This Cycle of Development illustrates how an airport can grow to compete globally and contribute to the regional economy once initial investments in infrastructure are made.

6.4.2 Utilities

The joint use of the transportation rights-of-way with utilities would require that utilities be implemented at the time transportation improvements are made. While a transportation facility can be built in phases over time, wet and dry utilities are usually built to meet their ultimate requirements so that future disruption of the roadway is unnecessary to increase the size of the utility corridor.

6.4.2.1 Water Supply

Each of the major water providers in the study area have different primary sources of water supply.

- Aurora Water has a combination of surface water and a reuse system (Prairie Waters) that is sufficient to provide water to the area north of I-70.
- Denver Water has long-term water supplies from surface water storage and trans-mountain diversion based on more than 100 years of programs and agreements.
- South Adams County Water and Sanitation District (SACWSD) primarily serves the areas of Commerce City and Brighton west and north of DIA. SACWSD uses ground water for the bulk of the water distribution in the cities.

Although the water supply plans have been developed and would provide adequate water for the study area to support future development, there are several areas where more efficient development of the overall network could be achieved with a comprehensive partnership among the jurisdictions. Substantial savings could be realized by the jurisdictions as well as by the adjacent development projects.

The areas of efficiency could include:

- Balancing of supply to limit or eliminate pumping to any portion of the study area.
- Sharing of trunk and subtrunk facilities to limit or eliminate duplicative installations.
- Development of a comprehensive reuse plan to tie the area together. The water reuse could be grey water for irrigation purposes; or if tertiary treatment facilities are developed, the water could be mixed to add to the water supply.

To achieve these efficiencies, a comprehensive master plan with an integrated approach similar to Aurora's would be needed.

6.4.2.2 Wastewater

The Denver metropolitan area is served by the Metro Wastewater Reclamation District (Metro). Metro is comprised of 52 entities, which include the Cities of Aurora, Brighton, Commerce City, and Denver. Unincorporated Adams County is not a part of the district. Any areas that want to link to the Metro system must be approved by the Metro members and provide a buy-in payment.

One of the major facilities under consideration in Metro's study is a possible large interceptor to run from the southeast to the northwest portion of the Aerotropolis study area. This interceptor would be large enough to collect flows from each of the jurisdictions and deliver the flows by gravity to the new Northern Treatment Plant.

One of the key outcomes from the Metro study will be a staging/phasing program based on an agreed-upon development pattern for the area. The Aerotropolis planning process can be used as one mechanism to start the discussions necessary to reach agreement on the pattern and pace of development, which would then support Metro and its Board in developing a master plan for service to the Aerotropolis study area.

6.4.2.3 Power Utilities

Power utilities consist of electricity and natural gas. Electrical service providers in the Aerotropolis study area are Xcel Energy and United Power. Xcel Energy provides service to Denver, Aurora, parts of Commerce City, and parts of unincorporated Adams County in the southern portion of the study area. United Power serves Commerce City, Brighton, and the northern areas of unincorporated Adams County in the study area.

Power utilities are privately owned, and costs for installation are paid for by the utility owners. Coordination between the jurisdiction and the utilities at the time of roadway design and construction is required to integrate the lines.

6.4.2.4 Communications Systems

Technology is constantly evolving, and an effective communications network is needed to serve development investments. Fast, reliable broadband, as well as traditional connectivity in the form of telephone, cable, and fiberoptics, is needed. However, a collaborative regional effort would benefit each jurisdiction and the Aerotropolis study area as a whole. Some jurisdictions are planning substantial upgrades to various parts of their communications networks, but a coordinated plan is not yet in development.

While developers in the area would ultimately be responsible for the final connections to homes and businesses, the jurisdictions should consider laying the trunk groundwork to support an integrated communications system.

6.4.2.5 Drainage Systems

The predominant ground elevation pattern in the study area is downward sloping to the Platte River from southeast to northwest. There are substantial barriers to that pattern, including the DIA property and the Rocky Mountain Arsenal National Wildlife Refuge. However, there are several natural watercourses that carry runoff to the Platte River.

The Urban Drainage and Flood Control District (UDFCD) is a regional agency with a mission to protect people and property. It coordinates improvements to the regional drainageways and assists jurisdictions to implement the improvements. It has an established Northeast Quadrant subgroup that addresses drainage issues in the Aerotropolis study area. Each of the watersheds has been studied at various stages of detail, depending on the stage of development within the watershed. IGAs between jurisdictions are typically in place to establish flow levels across jurisdictional boundaries.

Proactive planning to preserve the floodplain, wetland, and riparian areas of drainageways would help sustain ecological resources. In contrast to channelization, floodplains store and convey floodwaters, thereby reducing flood damage and erosion. Floodplains enhance biodiversity, providing breeding and feeding grounds for fish and a wide variety of wildlife. The quality of life can be enhanced when drainageways are developed as multiuse recreational corridors. These features would add substantially to the overall attractiveness of the Aerotropolis area for future development. *The Emerald Strands, A Cooperative Park, Open Space, and Trail Plan for the Area Surrounding the new Denver International Airport for the area around DIA* (Adams County et. al. 1990) identifies these features for the area around DIA.

Regional detention facilities typically require proportionally less total land area and are more cost-effective to construct and maintain compared to facilities located on several sites. Because of the complexities associated with how they function within an entire watershed, regional detention facilities must be developed in the context of a formal master planning process.

The drainage infrastructure may be more complex than other areas of the metropolitan region. The watersheds traverse multiple jurisdictions through the study area. Preservation of floodplains and regional detention facilities would provide long-term benefits to the region. There is an opportunity for long-term efficiency, resiliency, and quality of life to be gained by regional collaboration regarding drainage needs.

6.4.3 Transportation Network

Transportation needs were projected for the Business as Usual Scenario and the Aerotropolis Scenario. It was assumed that the utilities described above would be constructed with the transportation improvements within the transportation rights-of-way.

6.4.3.1 Local and Regional Plans

A review of local and regional plans indicate that the Aerotropolis study area warrants substantial investments in transportation infrastructure. Common themes in the transportation plans include:

Roadway

- Increase north-south capacity through the area between DIA and the Rocky Mountain Arsenal National Wildlife Refuge corridors, including:
    - Peña Boulevard
    - E-470
    - Tower Road
    - Picadilly Road
    - Plus at least one more arterial for additional capacity

- Provide additional connections into the airport properties. These would consist of connections for access through Jackson Gap, and connections of future on-airport land uses to adjacent sites in adjoining cities.
- East-west capacity improvements to:
    - 48th Avenue
    - 56th Avenue
    - 64th Avenue
    - 72nd Avenue
    - 88th Avenue
    - 96th Avenue
    - 104th Avenue
    - 120th Avenue
- Connection to the metropolitan region controlled-access highway system with interchange construction and improvements along both E-470 and I-70.

Transit

- Capitalize on the RTD commuter rail University of Colorado A Line.
- Consider additional transit capacity in the following forms:
    - Bus rapid transit or other regional bus service on major corridors.
    - Right-of-way preservation and eventual construction on the northeast area transit corridor.
    - Right-of-way preservation and eventual construction on the E-470 transit corridor – potential for high speed rail.

Pedestrian and Bicycle

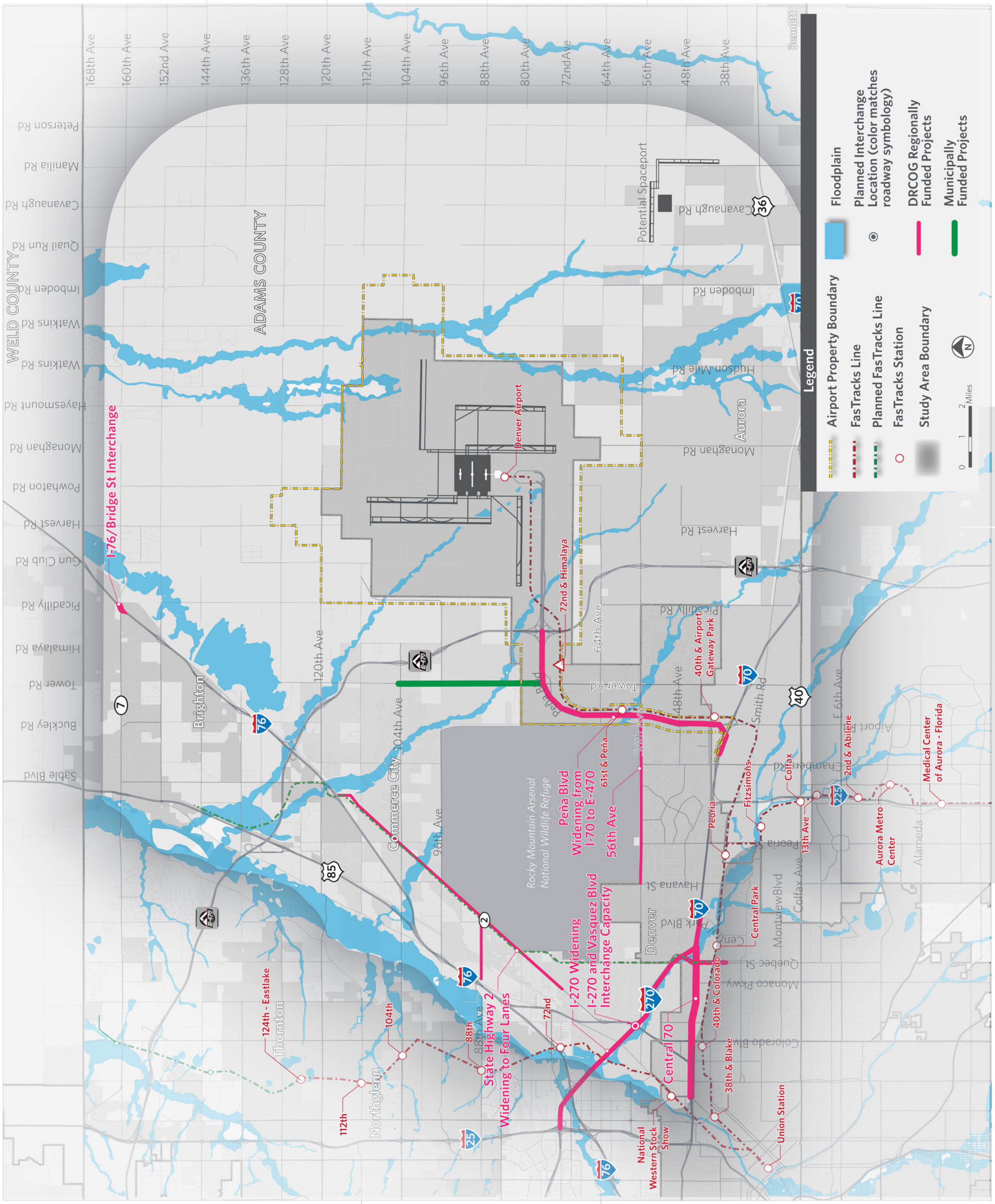
- Build out a regional trail system.
- Build multimodal streets complete with high-quality sidewalks, bike lanes, cycle tracks and other treatments, as appropriate.
- Focus on providing high-quality access to transit.

6.4.3.2 Business as Usual Scenario

The Business as Usual Scenario assumes that the municipalities would build their own projects as currently planned by 2040—in other words, only those transportation projects identified as federally or state-funded in the *DRCOG 2040 RTP*. In general, federal and state dollars have been identified and will be programmed for these regionally funded projects. Municipalities also will build projects with their own funds, such as a dedicated sales tax. In general, local funding of transportation projects in the *DRCOG 2040 RTP* is partially dependent on build-out of the area and associated revenue streams from developers.

The Business as Usual Scenario transportation network is assumed to be made up of the regionally funded projects (Figure 7). The infrastructure cost of this scenario would be approximately $366 million (excluding the $1.2 billion Central 70 project).

Figure 7 DRCOG 2040 RTP Regionally Funded Projects (Business as Usual Network)



Source: DRCOG 2040 RTP.

6.4.3.3 Aerotropolis Scenario

As part of the visioning study, a long-term Aerotropolis transportation system was conceptualized. For analysis purposes, a near-term 2040 network was also conceived for comparison to the Business as Usual Scenario.

Aerotropolis Long-term Vision Transportation Network (2075 or Beyond)

The long-term vision for a fully developed Aerotropolis may have a horizon timespan of several decades, perhaps to 2075 or beyond. The long-term future transportation network serving a fully developed Aerotropolis would be a full hierarchical grid system of facilities surrounding the 53-square-mile DIA property, as seen in other global aerotropolises. One of the higher-order facilities might be a multimodal loop that would encircle the airport within the Aerotropolis area. The need for this type of facility and its characteristics would need further definition and study. The future Aerotropolis transportation grid would likely include Vehicle to Infrastructure (V2I) communication-enabled technology, as well as other unknown future technologies.

Aerotropolis Near-term 2040 Transportation Network

Based on input from study participants, principles were established to identify priorities for near-term projects that would make up the Aerotropolis Near-term 2040 Transportation Network. The principles are listed without order of importance:

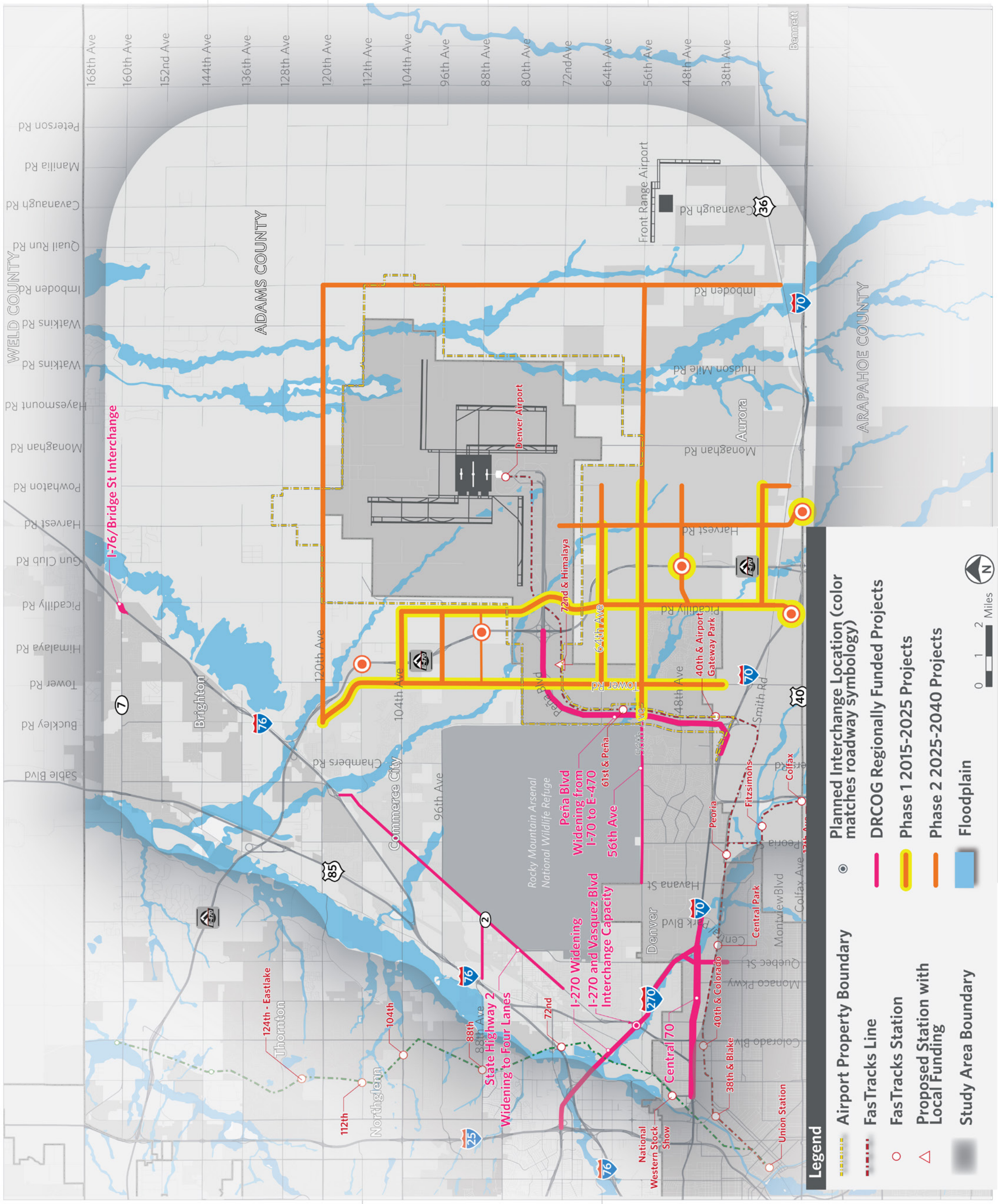
- Contiguous to Active Developments
- Reflect Current Local Plans
- Incremental to Previous Investments
- Achieve Early Attainable Projects
- Prioritization through Regional Collaboration
- Support the Long-term Vision

Following these guiding principles, with a focus on the priority issues for each jurisdiction, the study team developed a conceptual Aerotropolis Near-term 2040 Transportation Network. The network (shown in Figure 8) is largely made up of projects included in the local transportation plans and the *DRCOG 2040 RTP*.

The improvement projects are a combination of new roads and/or widening projects that would be built in two phases to complete the Aerotropolis Near-term Transportation 2040 Network —Phase 1 early-action projects (2015 to 2025) and Phase 2 projects (2025 to 2040).

It is recognized that the conceptual network recommendations may change over time as additional local transportation studies are conducted.

Figure 8 Aerotropolis Near-term 2040 Transportation Network



Source: Aerotropolis Study Team.

Aerotropolis Near-term 2040 Transportation Network Costs

The Aerotropolis Near-term 2040 Transportation Network represents a significant investment in infrastructure. The conceptual planning-level cost estimates for the 2040 projects were obtained from the *DRCOG 2040 RTP*. They are all-inclusive costs for implementing each project through completion, including costs of right-of-way, planning, construction, and utilities.

For the 25-year period leading to 2040, the total cost of the Aerotropolis Near-term 2040 Transportation Network is on the order of magnitude of $750 to $800 million (2015 dollars).

The Phase 1 (2015-2030) projects subtotal about $400 million. Phase 2 (2030-2040) subtotal $350 to $400 million. Table 4 shows the cost in 2015 dollars by project.

Table 4 2040 Transportation Network Improvements

Roadway	Project Location	Improvement Type	Phase 1 and Phase 2 Conceptual Cost ($M) 2015$	Phase 1 Conceptual Cost ($M) 2015$
26th Ave.	Picadilly Rd. to Powhaton Rd.	Widen to 4 lanes	$20	$20
48th Ave.	Picadilly Rd. to Powhaton Rd.	New 6 Lanes	$41	
56th Ave.	Peña Blvd. to Powhaton	Widen to 6 Lanes	$74	$74
56th Ave.	Powhaton to Imboden	Widen to 4 Lanes	$60	
64th Ave.	Tower Rd. to Powhaton	Construct/Widen to 4/6 Lanes	$37	$37
88th Ave.	Tower Rd. to Picadilly Rd.	Widen to 6 Lanes	$15	
96th Ave.	Tower Rd. to Picadilly Rd.	Widen to 6 Lanes	$15	
104th Ave.	Tower Rd. to Picadilly Rd.	New 2 Lanes	$12	$12
120th Ave.	Tower Rd. to Imboden Rd.	Widen to 4 lanes	$60	
Harvest Mile Rd.	I-70 to 72nd Ave.	Construct/Widen to 4 Lanes	$79	
Imboden Rd.	US 36 to 120th Ave.	Widen to 4 lanes	$72	
Powhaton Rd.	I-70 to 26th Ave.	Widen to 4 lanes	$10	
Picadilly Rd.	Smith Rd. to 96th Ave.	Construct/Widen to 6 Lanes	$90	$90
Tower Rd.	38th/40th Ave. to 120th Ave.	Construct/Widen to 6 Lanes	$80	$80
E-470	48th Ave.	Add New Interchange	$27	$27
E-470	88th Ave.	Add New Interchange	$18	
I-70	Harvest Mile Rd.	Add New Interchange	$40	$40
I-70	Picadilly Rd.	Add New Interchange	$28	$28
		Total	**$748**	**$408**

Note: 2015 dollars.
Source: DRCOG 2040 RTP.

6.5 Economic Comparison

6.5.1 Economic Benefits

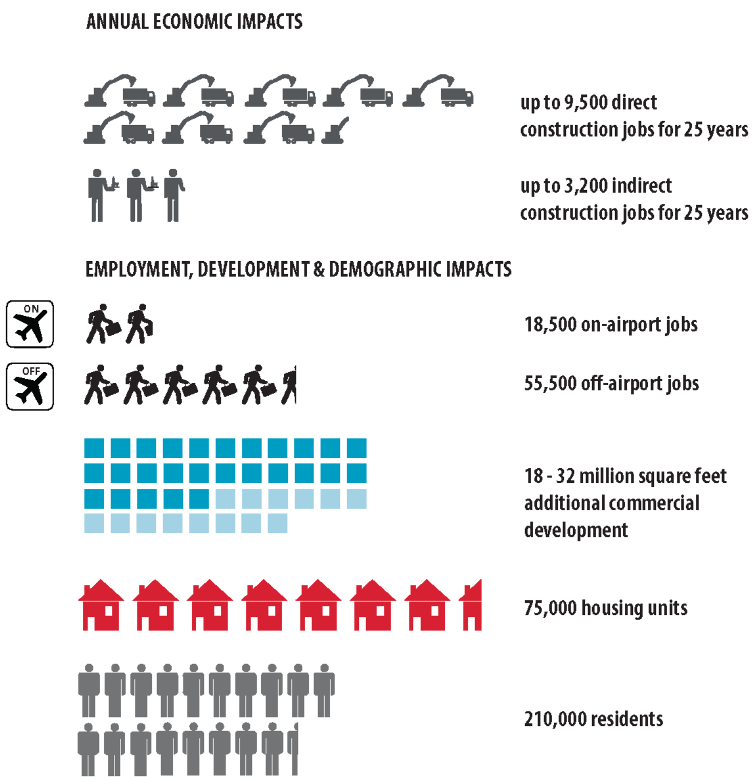
Without investment in the additional infrastructure needed to open up land adjacent to the airport for commercial development, the Business as Usual Scenario would not benefit from the economic potential of neighboring DIA.

Compared to the Business as Usual Scenario, an Aerotropolis Scenario is estimated to create an additional 74,000 jobs, drive demand for 18 to 32 million square feet of additional commercial development, and require the construction of just over 75,000 new housing units to achieve a balanced, sustainable pattern of regional growth.

The economic growth potential of an Aerotropolis Scenario is illustrated in Figure 9. It is recognized that numbers and assumptions will change as more detailed studies are conducted.

There are other significant qualitative economic benefits to be reaped from an Aerotropolis Scenario. The concentration of growth into dense employment nodes would create an “agglomeration” effect, whereby the proximity of similar industries and businesses to one another increases labor productivity and attracts a highly qualified talent pool. These benefits, while not quantified in this analysis, should be taken into consideration in understanding the growth potential and advantages of an Aerotropolis Scenario.

Figure 9. Summary of Aerotropolis Scenario Growth Potential Above Business as Usual



Source: Aerotropolis Study Team

6.5.2 Public Tax Revenue

The public tax revenue streams that would be generated under the Aerotropolis Scenario compared to the Business as Usual Scenario are summarized in Table 5. Increased residential and commercial property taxes associated with new Aerotropolis-related real estate development, increased sales taxes associated with additional household and business spending, and additional residential development impact fees are estimated to yield an additional $600 to $630 million over the 25-year period (2015-2040) compared to the Business as Usual Scenario.

More detail about the assumptions and process used to develop the estimates is included in the *Colorado Aerotropolis Economic and Financial Analysis* working paper (Attachment E) (Aerotropolis Study Team 2016). It is recognized that assumptions and numbers will change when more detailed studies and analysis are conducted.

Table 5 Business as Usual Scenario and Aerotropolis Scenario Revenue Streams (2015-2040)

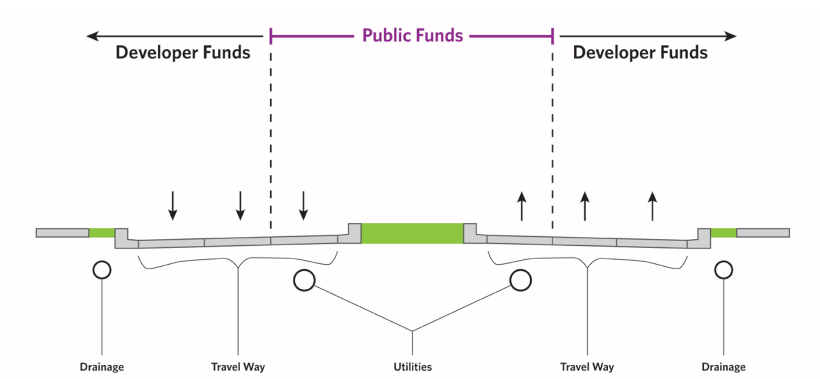
Revenue Stream	Business as Usual Scenario ($M)	Aerotropolis Scenario ($M)		Difference ($M)
		Low SF	High SF	
Commercial Property Tax	$19.0	$130.4	$158.6	
Residential Property Tax	$37.2	$295.1	$295.1	
Development Impact Fees	$30.3	$193.9	$193.9	
Sales Taxes	$18.1	$86.6	$86.6	
Total	**$104.6**	**$706.0**	**$734.1**	**$601.4 - $629.5**

Source: Aerotropolis Study Team.

6.5.2.1 Pay-as-you-Go Funding

The initial costs of the proposed roadway improvements would be lower than the $750 to $800 million estimate because the roadway cross-section would be built in phases over time. Figure 10 shows a typical pay-as-you-go method for establishing a roadway cross-section in an undeveloped area. As revenue is generated by new development, jobs attracted to the study area would lead to increased revenues for infrastructure development. Typically, right-of-way would be identified and reserved for the full cross-section. Depending on funding capabilities, local jurisdictions could initially construct a portion of the road, including the utility infrastructure. Additional lanes would be added as demand increases and development occurs. Private developers would typically contribute to construction costs for these regional arterials, which would provide access to their land.

Figure 10 Pay-As-You-Go Roadway Funding



Source: Aerotropolis Study Team.

6.5.3 Fiscal Analysis of an Aerotropolis Scenario

For the 25-year period (2015-2040), the conceptual costs of the investment in an Aerotropolis Near-term 2040 Transportation Network are on the order of magnitude of $750 to $800 million. This represents about 71 linear miles of new roadways and/or multimodal transportation facilities that would be built in two phases, as shown in Table 4. The costs are all-inclusive costs for right-of-way, planning, construction, and utilities.

The public tax revenues that could be generated from commercial and residential property taxes, development impact fees, and sales taxes under an Aerotropolis Scenario could range between $705 and $735 million over the 25 years, as shown in Table 5. The revenue estimates reflect the types of revenue sources and assessment levels that can be expected for the types of development projected for the study area.

The fiscal analysis demonstrates that the potential revenues realized from an Aerotropolis Scenario are in line with the investment costs needed to support the development. The revenue estimates likely skew conservative because the study team used revenue sources controlled by local cities and agencies. The addition of commercial development impact fees, not assumed in this conceptual analysis, would raise additional revenue. Additional expected “downstream” revenue sources, such as passenger facility charges, were not included in the estimates because they wouldn’t necessarily be available for infrastructure investment. A new regional entity would address the revenue and investment streams for the Colorado Aerotropolis area, as described in Section 7.0.

Further information on the fiscal analysis is contained in the *Colorado Aerotropolis Economic and Financial Analysis* working paper (Attachment E) (Aerotropolis Study Team 2016).

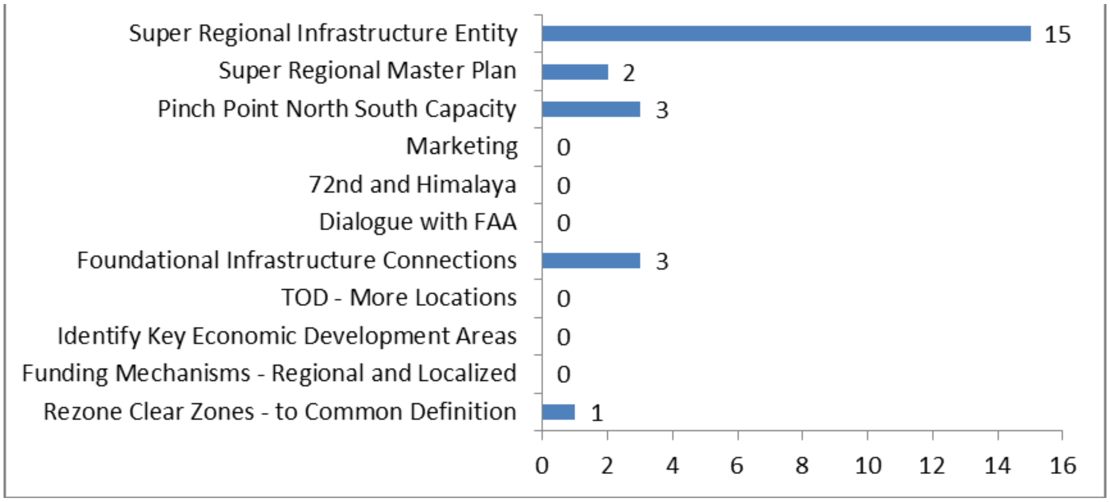
7.0 Establishment of a Governance Structure

7.1 Support for a Regional Governance Structure

One of the objectives of the Visioning Study was to explore, as a neutral party, outline regional governance options to implement investments in transportation, water, wastewater, drainage, power, and communications systems. The *Governance Options for the Colorado Aerotropolis* working paper (Attachment F) (Aerotropolis Study Team 2016) contains a complete record of the study team’s initial exploration regarding potential options.

The study’s Study Review Committee developed a critical interest in the potential establishment of a governance structure for infrastructure development in the Aerotropolis study area. Asked first to identify priority issues for development of an Aerotropolis, committee members, then informally voted and collectively indicated the importance of a practical and workable governance structure for the Aerotropolis (Figure 11). However, it is recognized that elected officials at each of the jurisdictions may have different visions and expectations.

Figure 11 Highest Priority Actions Based on Poll



Source: Study Review Committee poll at meeting on June 18, 2015.

7.2 Governance Panel

In response to the study participants' agreement that a regional governance structure should be one of the priorities, CDOT convened a panel of local leaders who had been involved in collaborative efforts in the Denver metropolitan area to develop infrastructure and market real estate development, and who were knowledgeable about the types of governance mechanisms available to strategically provide infrastructure. Their insight revealed that there are keys to success and obstacles to avoid in terms of governance and collaboration, as follows:

- Be all-inclusive with both public and private stakeholders – get everybody at the table.
- Do not overlook traditional funding sources.
- Create the grand vision, but start with project that are of a manageable size – small successes will be the proof of concept and will provide a foundation of trust.
- Recall the statement of Governor Hickenlooper – "Collaboration is the new Competition."

Panelists were Peter Kinney, Metro Mayors Caucus; Tom Clark, Metro Denver EDC; Ed Icenogle, Partner at Icenogle, Seaver, Pogue Law Firm; and Don Hunt, Former Executive Director CDOT.

7.3 Southeast Public Improvement Metropolitan District

Southeast Public Improvement Metropolitan District (SPIMD) offers a compelling case study for infrastructure development in the Denver Tech Center. SPIMD partners with local governments by contributing funding for transportation and economic development. Pat Mulhern, District Manager, provided an overview of the history of SPIMD and its success in supporting investments in infrastructure.

Pat Mulhern, District Manager, provided an overview of the history of SPIMD.

- The SPIMD organization is a Title 32 Special District for commercial development; it overlays 15 metro districts.
- SPIMD benefited from some large-scale developers that cross community boundaries. These developers originally saw the need to cooperate on building larger infrastructure.
- The keys to a vibrant business community are to develop and maintain safe and expedient transportation access and minimize congestion.
- The large scale of a potential aerotropolis development would require developers to partner with the local governments to promote regional transportation planning and development.

7.4 IGA Amendment Overview

This interest in a governance structure was further reinforced by the Denver and Adams County voters approving an IGA Amendment in November 2015 related to how the two jurisdictions will coordinate on DIA property. The ballot measure passed overwhelmingly in both counties, each by more than 70 percent in favor. The full IGA is included in the Appendix.

The IGA Amendment will create a 1,500-net-leasable-acre pilot program for commercial developments on airport property. The 1,500 net leasable acres are located “within the fence” at several nodes along Peña Boulevard and the DIA property boundary where there would be new access roads. The counties will evenly share (50-50) tax revenues generated from the new commercial uses.

Further, the IGA Amendment stipulates that Denver and Adams County will form a regional entity to jointly market opportunities. The Amendment’s description of the purposes of this new regional entity is, in total: “…to promote and market development opportunities on and around DIA and assist in coordinating land use and infrastructure planning efforts by the respective jurisdictions on and around DIA.” The IGA Amendment also denies the new regional entity any powers to regulate or otherwise control land use or development within any jurisdiction.

7.5 Governance Options

Against this background, the study team as a neutral third-party investigated potential options for a regional governance structure or entity. Individual meetings were held with representatives from the primary stakeholders participating in the Visioning Study—Adams County, the City of Aurora, the City of Brighton, the City of Commerce City, and the City and County of Denver. The purpose of the meetings was to solicit informal input regarding governance options, structures, and functions for a regional entity.

7.5.1 Anticipated Decision Points in Arriving at a New Entity

A review of the discussion responses yields a conclusion that the following terms and arrangements need to be negotiated and agreed upon after completion of the Visioning Study:

- Shall the entity be constrained to the functions listed in the 2015 Amendment, to wit: promotion and marketing of development opportunities and coordination assistance in land use and infrastructure planning? The 2015 Amendment can be narrowly or broadly construed, and the jurisdictions can by agreement expand the functions not listed, if desired.
- If the entity is to engage in funding, should it have direct taxes and/or fees, or should it rely upon primary stakeholder jurisdictions to remit taxes and/or fees over to the entity?
- Should the entity engage only in planning and coordination of infrastructure or also provide funding, design/construction, and/or operation?
- What area should the entity serve initially, mid-term, and ultimately?
- What infrastructure should the entity address: Transportation, water, sewer, drainage, other?
- Should the entity bond to accelerate projects and/or serve as a lending fund or revolving loan bank?
- Should the entity’s decisional control be in its governing body or reside with the primary stakeholders’ governing bodies? Should there be a mixed approach, depending on subject matter?
- Should the entity try to bring the private sector and other public entities into its decisional process or seek to involve them in advisory committee(s) and the like?
- Should marketing and branding be within the scope of the entity or accomplished through a separate entity or coalition with expertise? Should the entity help fund marketing and branding?
- Should the entity’s governing body be elected officials or staff or others chosen for subject matter interest and expertise?

7.5.2 Recommended Process for Developing a New Entity

To advance the establishment of a new regional entity, the study team identified the following tasks:

- Discuss and negotiate, insofar as possible, areas of consensus and likely agreement.
- Consider use of a neutral facilitator and draftsperson.

- Seek agreement on the major issues:
    - Scope of entity activity.
    - Whether a funding entity.
    - If a funding entity, direct or through primary stakeholders.
    - Consider wisdom of phasing and scaling activity of entity.
- Match major determinations to existing types of entities or collection of entities or consider customized entity through legislation or IGA.
- Work through refinement of lesser issues.

7.5.3 Likely Entity Candidates and Why or Why Not Likely of Use

Table 6 summarizes the likely entities that could be further considered for the regional governance type. More detailed descriptions of these options are included in the *Governance Options for the Colorado Aerotropolis* working paper (Attachment F) (Aerotropolis Study Team 2016).

Table 6 Types of Entity Candidates and Likelihood of Use

Candidate	Comment	Likelihood of Use
Regional Transportation Authority	Limited to transportation, requires organizational vote of people of member counties, municipalities	Unlikely
Title 32 Metropolitan District	Not well-suited to have governing body populated by counties, municipalities	Unlikely
Non-profit Corporation	May qualify for some federal grants, but not a public entity	Unlikely
Association of Existing and Future Metropolitan Districts	Developer and resident control; not stakeholder governments	Unlikely
Intergovernmental Agreement Entity	Can be imbued with powers common to local government stakeholders, although probably not some fundamental government powers, like taxes, exempt bonds, eminent domain; would include a regional transportation commission or a regional planning commission	Likely
Regional Planning Commission	If entity is to be limited to planning, established pursuant to Section 30-28-105, C.R.S.	Likely
New Legislative Entity	Can be customized, but requires action of General Assembly and Governor	Likely
Combination of Entities	Cobble together contribution and involvement of different types of public entities through a functional IGA, with or without creating a new entity	Likely
Other Potential Entities	Research required	n/a

8.0 Recommended Framework

A proactively planned Colorado Aerotropolis would bring a multitude of economic and financial benefits to the Denver metropolitan region by spurring robust employment growth and market demand for new development. However, enactment of a Colorado Aerotropolis faces many challenges. There are significant infrastructure needs in the area surrounding the DIA property that impede development activity. The five different government jurisdictions surrounding DIA each have local plans that have many commonalities for growth and development. A regional collaborative implementation framework could accelerate catalytic infrastructure projects that benefit the entire region.

The study team's recommended framework includes:

- Visions and objectives for a Colorado Aerotropolis.
- Near-term actions.
- Long-range goals for implementation.

8.1 Vision and Objectives

The Vision for the Colorado Aerotropolis was collaboratively developed by the study participants:

A sustainable, efficient, well-connected, and globally recognized Colorado Aerotropolis that capitalizes on the economic opportunity surrounding the Denver International Airport through collaborative planning, development, and marketing.

Based on the study findings, there are three primary objectives to achieve the vision:

- Establish and operate a sustainable regional entity to focus on area-wide economic development for the study area.
- Cooperatively develop the required infrastructure systems to enable the rational development of adjacent properties in a cost-balanced manner.
- Establish the Colorado Aerotropolis "global brand" and project that message on a consistent basis to all current and potential participants and targets of economic opportunity.

8.2 Near-term Actions (2016 – 2020)

The near-term actions to establish a Colorado Aerotropolis include the following.

- **Establish a Regional Entity.** Conduct a facilitated process to negotiate the decision points to define the initial organization structure for the regional entity. The process should include the following considerations:
  - Identify sustainable funding for the entity.
  - Incorporate actions to maintain and reinforce the principle that all jurisdictions should benefit from the economic activities in the Aerotropolis area.
  - Define a cooperative working role with Metro Denver EDC and the various economic development corporations within the Aerotropolis study area.
  - Define a meaningful role for major land developers and property owners in the Aerotropolis area.
- **Conduct Further Collaborative Planning Studies.**
  - Detailed assessment of infrastructure requirements:

        - Actively engage with the responsible agencies to plan and program required infrastructure:
            - Transportation – CDOT, DRCOG, RTD, E-470
            - Water – Denver Water, Aurora Water, SACWSD
            - Wastewater – Metro, SACWSD
            - Drainage – UDFCD
            - Power Utilities – Xcel Energy, United Power
            - Communications Systems– Century Link, Comcast, Charter
        - Address phasing/timing relative to regional trunk and subtrunk infrastructure components in transportation, water, wastewater, power, communications, and drainage/open space.
        - Develop costs and funding/financing plans with input from agencies, developers, and land owners.
    - Detailed economic studies with actual land use plans, addressing these issues:
        - Understanding of and potential integration of each community's plans with adjacent plans.
        - Protection of existing agreements and regulations, such as noise contour definition, drainage requirements, open space coordination, and environmental restrictions (for example, migratory bird limitations around DIA).
- **Develop a Branding Program** to globally brand the Colorado Aerotropolis; and coordinate the branding program with the Metro Denver EDC.
- **Prepare a Long-range Master Plan** that describes the actions needed to achieve the Long-range Goals.

8.3 Long-range Goals (2020 – 2040)

Once the near-term actions have established the Colorado Aerotropolis as a known entity, these long-range goals, as part of a Long-range Master Plan, would solidify its role in the global marketplace.

- Become recognized around the world as one of the top 10 aerotropolis regions commensurate with the status of DIA as one of the busiest airports in the world.
- Achieve development levels of 74,000 employees and 210,000 new residents in the area around DIA by 2040.
- Reinforce the economic return to the airport to help lower the costs of airline operations at DIA.
- Incorporate sustainability into Aerotropolis developments.
- Implement the actions identified in the Long-range Master Plan to guide development and build out the Colorado Aerotropolis area by 2075.

9.0 References

Adams County, Aurora, Brighton, Commerce City, and Denver. 1990. The Emerald Strands, A Cooperative Park, Open Space, and Trail Plan for the Area Surrounding the new Denver International Airport.

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Appendix:
Amendment to 1988 Annexation and Intergovernmental Agreements on a New Airport - June 2015

AMENDMENT TO 1988 ANNEXATION AND INTERGOVERNMENTAL AGREEMENTS ON A NEW AIRPORT

Final Term Sheet
June 3, 2015

I. Approval process and timing

A. An Amendatory IGA reflecting the terms set forth herein will be approved by the governing bodies of Denver and Adams County, with the current municipal members of the Airport Coordinating Committee (the "ACC") also approving the Amendatory IGA as third-party beneficiaries, no later than *July 1, 2015*. The current municipal members of the ACC are: Aurora, Commerce City, Brighton, Thornton and Federal Heights. The Amendatory Agreement will, in one document, modify or supplement certain provisions of both the "Intergovernmental Agreement on Annexation" and the "Intergovernmental Agreement on a New Airport" dated April 21, 1988 (herein collectively referred to as the "1988 Agreements.")

B. The Amendatory IGA will be referred to the voters of both Denver County and Adams County at the *November 3, 2015* state coordinated election. In the event the voters in either or both counties disapprove the agreement on that date, the Amendatory IGA may be re-submitted at the *November 8, 2016* state general election for voter approval in the county or counties where the measure was previously defeated.

C. The ballot questions submitted to the voters in Adams County and Denver County will be compatible, with the voters in each county being asked to approve the Amendatory IGA. The ballot question in Denver County will additionally include language binding the city to a "multiple fiscal year financial obligation" to share tax revenue as described below.

D. Upon approval by the voters in both Denver County and Adams County, the Amendatory IGA will become effective on the January 1 following the approval in both counties.

II. Preservation of the existing 1988 Agreements

Except as specifically set forth below, all the terms and conditions of the 1988 Agreements (including by way of example but not limitation, the noise provisions, restrictions on residential development, the hotel formula, restrictions on land use in relation to the Scenic Buffer, and provisions related to access roads) will remain in full force and effect. Denver will retain the authority to develop Accessory Uses and natural resources located anywhere on the New Airport Site to the extent allowed by the 1988 Agreements and all other rights it has those agreements.

III. Amendments regarding land use restrictions

The 1988 Agreements will be amended as follows:

A. Fifteen-hundred acres located on the New Airport Site or in the Transportation Corridor north of 72nd Ave. will be released in perpetuity from the land use restrictions contained in the 1988 Agreement. Denver will exercise sole discretion to determine when and where to utilize the fifteen-hundred acres and create Development Parcels at DIA, subject only to the following restrictions: (1) residential development will be prohibited on this acreage; (2) businesses that would potentially compete with current and future business and institutional land uses at the Anschutz Medical Campus and the Fitzsimmons Life Science District in Aurora will be prohibited on this acreage; (3) to the extent any hotels are located on this acreage, the limitation on number of hotel rooms in the 1988 IGA will continue to apply.

B. Adams County on behalf of the ACC may negotiate and agree with Denver at any time to release additional acreage from the land use restrictions contained in the 1988 Agreements and allow for the creation of additional Development Parcels, either: (1) on a site-specific or project-specific basis; or (2) by releasing an additional amount of acreage.

C. Restrictions on land use in the Clear Zones as set forth in the 1988 Agreements will be released entirely. Land use in the Clear Zones will remain subject to federal regulations on use and development. The parties will cooperate to modify zoning and other land use laws as necessary to allow development within the Clear Zones. Taxes derived from commercial development in the Clear Zones in Adams County will be retained entirely by the applicable governing Adams County jurisdiction(s).

D. Denver will promptly notify the ACC jurisdictions of any proposed leasing and concessions activity at DIA (outside of the terminal complex area) when and to the extent such information has been made available to the general public. For example, Denver will provide notice when a request for proposals is published in regard to new leases and concessions, and when a specific lease or concession is submitted to the Denver City Council for approval.

E. Adams County will sign the Amendatory IGA as a party. Aurora and Commerce City will remain third-party beneficiaries to the applicable provisions of the 1988 Agreements. Aurora and Commerce City will be third-party beneficiaries to the Amendatory IGA. The remaining ACC municipal members will be third party beneficiaries to the revenue sharing obligations. .

F. Consistent with the 1988 Agreements, only those ACC municipalities with contiguity to the New Airport site (currently Aurora and Commerce City) will be treated as a third-party beneficiaries in regard to the land use provisions of the Amendatory IGA.

IV. Financial terms in consideration for release of land use restrictions

A. Upon the effective date of the Amendatory IGA, Denver will transmit to Adams County a one-time cash payment of $10 million, for distribution as determined by the ACC. No additional cash payment will be required for the discretionary release of additional acreage for Development Parcels as provided in III (B) of this Term Sheet.

B. Beginning on the effective date and continuing in perpetuity, Denver will share with the ACC jurisdictions fifty percent (50%) of all Denver tax revenue derived from either the development or use of the Development Parcels, with the following exceptions: (1) revenue derived from any Denver tax or tax rate which, as of the effective date of the Amendatory Agreement, was obligated by voter-approval, bond covenant, or any other form of contract to be spent for a particular purpose, for as long as such revenues remain so obligated; (2) revenue derived from any voter-approved new, increased or extended Denver tax adopted after the effective date of the Amendatory Agreement and obligated for a particular purpose; or (3) revenue derived from Denver's debt service mill levies. If Denver ever allows a tax-exempt entity to develop or use any Development Parcel and negotiates a payment in lieu of taxes with such an entity, Denver will share with the ACC jurisdictions fifty percent (50%) of any such payment in lieu of taxes.

C. The Amendatory IGA will contain procedures for documenting Denver's draws upon the 1500-acre "bank" for the establishment of Development Parcels; for documenting and remitting tax revenue generation and sharing from the Development Parcels on no less than an annual basis; and for audit rights that may be exercised by the ACC jurisdictions in regard to the tax revenue sharing.

D. Denver tax revenue shared with Adams County will be distributed as determined by the ACC. Any arrangement the ACC jurisdictions may negotiate among themselves for allocation of the Denver shared tax revenue will be reflected in a separate agreement between the ACC members and will not be a component of the Amendatory IGA. All current municipal members of the ACC will be treated as third-party beneficiaries in regard to the tax revenue sharing provisions of the Amendatory IGA.

E. To the extent Denver offers tax incentives to commercial developers and tenants to induce businesses to locate or remain upon a_Development Parcel, tax revenues that Denver is obligated to share with Adams County will *not* be utilized for such incentives, *unless* Adams County on behalf of the ACC agrees. Denver will not approve any form of tax increment financing resulting in a reduction in the amount of tax revenue from the Development Parcels that Denver is obligated to share with Adams County, unless Adams County on behalf of the ACC agrees.

F. Denver will reserve the right to modify, decrease or eliminate Denver taxes that are subject to sharing under the Amendatory Agreement; however, Denver will not, without the consent of Adams County on behalf of the ACC, take or approve any action that would have the effect of reducing or eliminating any shared Denver tax or tax rate specifically imposed in or on the Development Parcels.

V. Regional planning and marketing entity

The Amendatory IGA will provide that, via a separate agreement to be negotiated between the parties, Denver and the ACC jurisdictions will form a new regional entity to promote and market development opportunities on and around DIA and assist in coordinating land use and infrastructure planning efforts by the respective jurisdictions on and around DIA. However, the entity will have no authority to regulate or otherwise control land use or development within any of the jurisdictions. The entity will be governed by a board consisting of equal representation by Denver appointees and ACC appointees.

VI. Miscellaneous contract terms

A. The parties will agree to mutually defend the Amendatory IGA in the event of a challenge by any party who is not a third-party beneficiary to the Amendatory IGA.

B. The parties' rights and remedies under the 1988 Agreements will remain in place outside of the Development Parcels for disputes that arise in the future about whether development falls within the range of land uses allowed upon the New Airport Site under the original 1988 Agreements. In the event of an alleged breach by Denver of the land use restrictions contained in the 1988 Agreements, as modified by the Amendatory IGA, the ACC party_will provide written notice to Denver and the parties will attempt to resolve the dispute informally. Prior to either party filing suit over such a dispute, the parties will enter into formal_non-binding mediation in an attempt to resolve the dispute. In the event the parties proceed to litigation and achieve a final judgment, the prevailing party will be awarded its attorney's fees and costs incurred in the litigation, and a prevailing ACC party will be awarded any withheld tax revenue sharing plus interest at the statutory rate. If Denver decides, prior to final judgment in any such litigation, to render the case moot by locating the disputed land use in a Development Parcel, the ACC party will be awarded one-half of its attorney's fees and costs incurred to date in the case.

C. The Amendatory IGA will also function as a settlement agreement in which Adams County, Aurora, Brighton, Commerce City, Federal Heights, and Thornton will waive any claims they may have against Denver regarding an alleged breach, or anticipatory breach, of the land use provisions in the 1988 Agreements based on the following: (1) any use or development of the New Airport Site, completed or in process (as demonstrated by the issuance of certificate of occupancy or building permit), that occurred prior to the date upon which Adams County referred the Amendatory IGA to a vote of the people; or (2) Denver's land use planning or marketing activities for the New Airport Site that occurred prior to the date upon which Adams County referred the Amendatory IGA to a vote of the people, but such planning or marketing efforts do not meet the requirements of waiver (1) unless a building permit or certificate of occupancy has been issued prior to the date upon which Adams County referred the Amendatory IGA to a vote of the people. This waiver will not be construed as changing in any manner the land use provisions of the 1988 Agreements to the extent those provisions will continue to govern the use of the New Airport Site in the future, nor will the waiver prevent the parties from enforcing those provisions in regard to any use or development of the New Airport Site established after the date upon which Adams County referred the Amendatory IGA to a vote of the people or from enforcing the 1988 Agreements in the future.

D. At any time under the Amendatory Agreement, Denver may decide to locate a land use which Denver considers to be an Accessory Use in a Development Parcel. No such decision on Denver's part will be considered a waiver or admission by Denver that the land use in question or any similar land use may not qualify as an Accessory Use in the future.

This Term Sheet shall not be considered a binding contract, but is intended solely to serve as the basis for drafting the Amendatory IGA. Each party and third-party beneficiary agrees to submit to their respective governing bodies the Amendatory Agreement for approval by the governing body as a whole (either as a primary party or a third-party beneficiary), subject to ultimate approval by the voters before the Amendatory IGA will be executed or go into effect.

Attachment A:
Colorado Aerotropolis Visioning Study Outreach Working Paper
(under separate cover)

Attachment B:
Examples of Aerotropolis Cities and Aerotropolises Worldwide
Memo
(under separate cover)

Attachment C:
Infrastructure Development for the Colorado Aerotropolis Study Area
Working Paper
(under separate cover)

Attachment D:
Assessment of Growth Projections for the Colorado Aerotropolis Study Area
Working Paper
(under separate cover)

Attachment E:
Colorado Aerotropolis Economic and Financial Analysis
Working Paper
(under separate cover)

Attachment F:
Governance Options for the Colorado Aerotropolis
Working Paper
(under separate cover)