

## 6. Implementation

This chapter discusses the implementation plan for the recommended Airport improvements. The Implementation Plan, as described here, documents the factors and characteristics to be monitored and evaluated in order to determine the timing and need for specific improvements to be initiated. The list of projects that make up the ADP is presented along with the recommended timing of near-term projects.

The chapter is subdivided into the following sections:

- **Factors which determine timing and need for implementation** – discusses general criteria upon which decisions for implementation should be based
- **Development projects** – includes project descriptions and overall phasing of the ADP under various demand scenarios
- **Other outside factors that should be monitored** – discusses other projects and initiatives that may impact timing and need for improvements, or which might require modifications to the projects as envisioned in the Master Plan

### 6.1 Factors Affecting Timing and Need for Implementation

Implementation of the ADP should be based on demand and the need to provide additional capacity or to replace facilities that are at the end of their useful life. Ideally, the projects should be implemented in adequate time to serve the needs of growing demand, but not so early that facilities are underutilized and revenues have not materialized sufficiently to pay for the improvements. The exception to this for St. Cloud is land acquisition, which is recognized as being needed now, to provide protection for future Airport growth.

The ability to time implementation correctly requires an understanding of the factors that trigger the need for various projects, ongoing monitoring of activity data, and an understanding of the length of time it takes to complete projects under the Airport's and City's organizational structure. While it is anticipated that facilities recommended as part of this Master Plan will be built to accommodate growth in activity, it must be recognized that, depending on the rate of growth actually experienced at the Airport, the need to replace or modernize obsolete facilities may also arise.

#### 6.1.1 Volume and Character of Growth

Both volume and character of activity determine how development should occur. For instance, although activity levels under PAL 2 and PAL 3 are comparable, the character of activity is different. The charter activity under PAL 2 would put a greater strain on existing terminal and parking facilities due to the large number of peak hour passengers that would need to be served for each charter flight. Activity under PAL 3 consists entirely of regional carriers creating increased activity throughout the day with smaller peak hour demand than PAL 2. The terminal and parking requirements under PAL 2 would be somewhat different than those under PAL 3. Similarly, low cost carrier operations under SL 4 would require much more terminal, parking, aircraft apron and roadway than the other planning activity levels. Building for SL 4 demand when activity levels only show the need for PAL 2 would result in underutilized facilities and unnecessary capital, financing, operating and maintenance costs.

It is essential that overall activity be monitored, including careful documentation of commercial and charter passengers and operations. The mix of training and commercial traffic should be monitored and any potential conflicts, delays or safety issues documented. This would support future analyses of the anticipated need to segregate training traffic from other activity through development of training Runway 13R-31L.

### **6.1.2 Relocation and Replacement of Displaced Facilities**

The need to relocate existing facilities to make way for other development must be considered and phased correctly. Expansion of airfield, terminal area, and support facilities is expected to have minimal impact on existing facilities; however, the displacement of two facilities has been identified. This section includes a discussion of the relocation and replacement of these two potentially displaced facilities: the ARFF station and a T-hangar.

The Runway Visibility Zone (RVZ), defined by imaginary line connections between visibility points of intersecting runways, is an area designed to provide an unobstructed line of sight between critical points of intersecting runways. Within the RVZ, terrain should be graded and permanent objects should be designed or sited to provide a clear line of sight between runways. With the extension of Runway 5-23, and associated relocation of the runway's visibility points used to define the RVZ, the ARFF building would cause a line of sight obstruction between the extended Runway 5-23 and the existing or an extended Runway 13-31. Section 6.2.2, *Second Hub/Charter Development Projects*, provides further discussion on the timing of the extension of Runway 5-23. At the time that Runway 5-23 is extended, the ARFF station must be relocated.<sup>1</sup> Relocation to the South GA Development area should be considered.

One of two options to accommodate FBO auto parking include the construction of auto parking in the area currently occupied by Hangar 2, one of the oldest T-hangars on the Airport. This hangar is owned by the Aviation Department. If this option is selected, and the tenants of Hangar 2 could not be relocated to other existing facilities, a new T-hangar would need to be constructed to accommodate the displaced Hangar 2 tenants. A likely location for this would be to an area to the north of Hangar 7 and to the west of Hangar 11 in the area identified for T-hangar expansion. Alternately, it could be located in the South GA Development Area.

### **6.1.3 Replacement and Reconstruction of Facilities**

Two facilities would require replacement or reconstruction over the 20-year planning period: Runway 5-23 and the terminal building.

The pavement condition of Runway 5-23 suggests that rehabilitation of the runway would be necessary in the near term. The ADP includes extension and widening of Runway 5-23 to allow the runway to accommodate larger aircraft. Thus, it is proposed that near-term reconstruction of the runway dictated by poor pavement conditions include widening of the existing 3,000-foot length of the runway to 100 feet to match the future width requirement.

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<sup>1</sup> As identified in Chapter 4, *Demand/Capacity Assessment and Facility Requirements*, airport operations could necessitate the acquisition of additional or replacement fire-fighting equipment, but not expansion of the ARFF. Additionally, Chapter 5, *Alternatives Analysis and Recommended Development Plan*, identified the potential need to relocate the ARFF if ARFF vehicle response times are inadequate to serve the future parallel runway, given congestion in the terminal area or other unforeseen circumstances. Neither of these conditions, however, mandated relocation of the ARFF.

If passenger enplanements grow more rapidly than projected under the Baseline Forecast scenario over the 20-year planning period, replacement of the terminal building may be required to accommodate three or more aircraft gates at the terminal. Although the terminal apron would be sufficient to accommodate more than two aircraft, passenger processing and holding facilities in the terminal building, even with the proposed modular expansion proposed in the near term, would not be able to accommodate this level of enplanement activity.

#### **6.1.4 General Criteria for Implementation**

The primary criteria used to phase the recommended ADP for implementation include:

- **Initiation of project-specific planning, environmental analyses, and design so that improvements can be in place when needed.** Detailed, project-specific planning, preliminary design, and environmental studies must precede construction of airport projects. Detailed planning should assess the economic, operational, environmental and social impacts of the project to meet the Airport's needs. Preliminary design and environmental studies can take several years to complete. Time requirements for planning, design, and construction were estimated in the implementation schedule based on industry experience.
- **Minimizing operational impacts.** Implementation should avoid creating temporary operational impacts where possible. Project objectives should include reducing interim airfield capacity by minimizing closures of runways and taxiways, maintaining roadways accessible to vehicles, and retaining passenger convenience and customer service during implementation. The Airport should also consider operational and maintenance impacts of facilities as planning and design decisions are being made.
- **Maintaining a logical sequence of development.** The City should implement individual projects to achieve long-term airport development goals. Near-term development projects, such as land acquisition, should be configured to further long-term development and protect for future options. Proposed project sequencing has considered access and utility. For instance, taxiways must be in place for development of adjacent tenant facilities requiring airfield access.
- **Implementation of projects based on demand.** This section presents several representative phasing plans based on demand generated under the various demand forecasts presented in the forecast chapter. As such, tracking of overall demand and specific factors that would trigger project implementation will be important to the operation of the Airport.

The projects that compose the recommended ADP, as defined in Section 5, *Alternatives Analysis and Recommended Development Plan*, have been phased and scheduled based on the forecast growth in demand, financial feasibility, and maintaining a logical sequence of development. This phasing is intended for illustrative purposes and to support a financial feasibility analysis for the overall program. The actual implementation schedule may vary based on actual demand as growth materializes changes in funding availability, or, in the case of land acquisition, availability of various tracts. Probable costs of the various projects were estimated and a financial plan prepared to assess timing with respect to financing capabilities. Detailed cost estimates are included in Appendix A. The financial implications of the implementation schedule developed in this chapter will be addressed in detail in Section 7, *Financial Plan*, while the potential environmental impacts of the ADP will be addressed in Section 8, *Environmental Overview*.

## **6.1.5 Implementation Indicators**

The study defines specific and qualitative indicators that should trigger implementation of various development elements of the ADP. Indicators for each general area of airport development are discussed in this section. These indicators can help to identify the impending need for additional facilities given present demand/capacity relationships. **Exhibit 6-1** presents a simple decision tree that depicts review, evaluation and implementation processes based on activity levels tied to the various demand scenarios.

### **6.1.5.1 Airfield Indicators**

Typical indicators serving as triggers for implementation of airfield improvements include measures of airfield capacity, such as annual, peak day, or peak hour, to identify the need for specific facility improvements. Airfield projects over the 20-year planning period are not expected to be capacity-driven, except in relation to the segregation of student pilot training activity from other commercial, jet, and helicopter activity. Formal documentation of potential conflicts between student training activity, helicopter activity, and commercial activity should be maintained to establish the need for separation of GA training activity traffic to enhance safety.

Safety would drive the need for the extension of Runway 13-31. Charter carriers, when interviewed, indicated a need for additional runway length on Runway 13-31 to provide greater safety during inclement winter weather. As charter activity increases, the need for additional runway length should be reexamined. Documentation of charter aircraft types, load factors and destinations will help support these analyses.

### **6.1.5.2 Passenger Terminal Area Indicators**

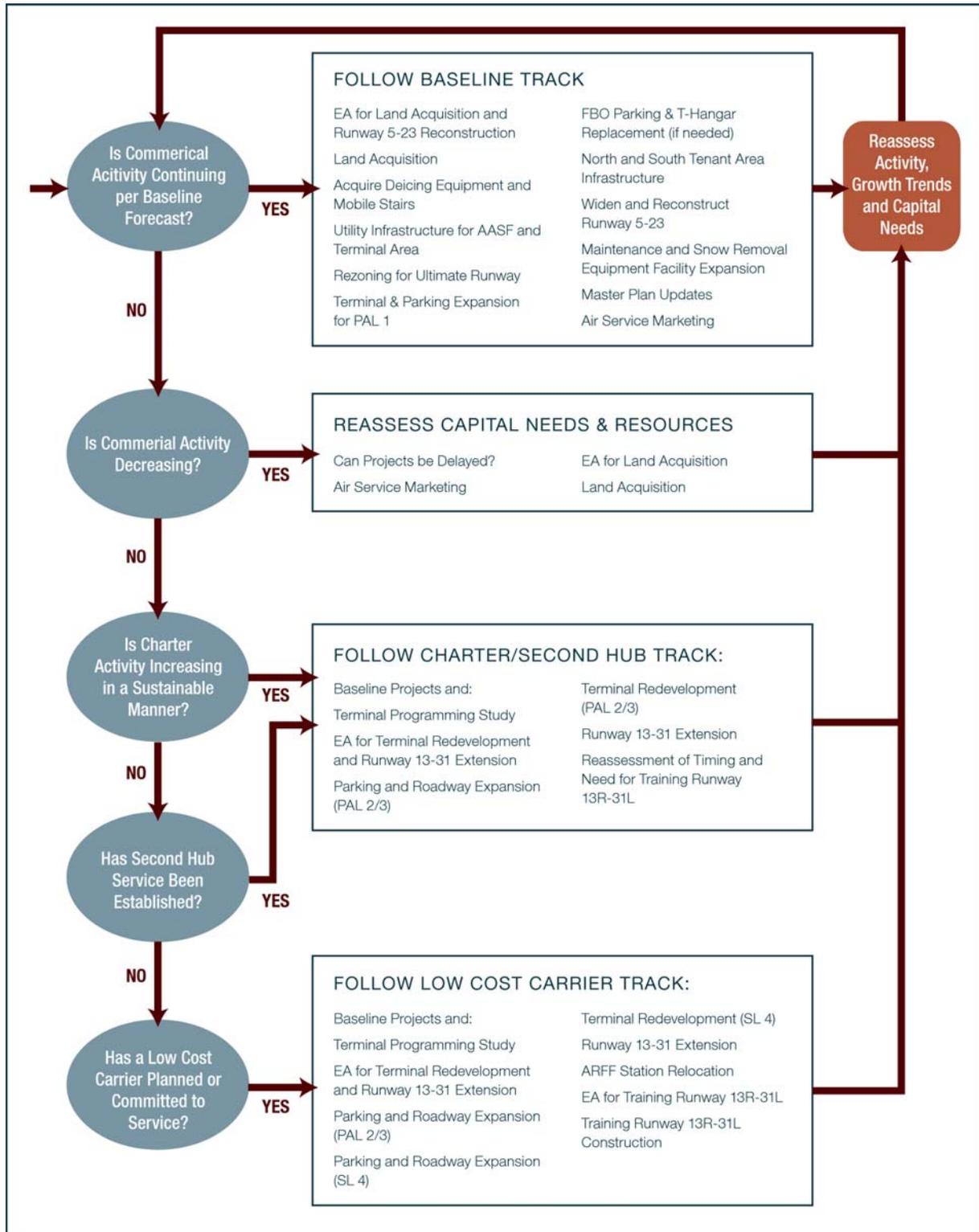
Timing of terminal replacement will be based on airline demand for additional facilities or the City of St. Cloud's need to replace facilities or enhance passenger service. Generally these needs would be linked to demand, such as annual, peak month, or peak hour enplaned passengers. The primary indicator for terminal replacement is when airline demand for facilities exceeds two gates; however, it is noted that the need for incremental terminal expansion currently exists and is recommend to be addressed in the near-term through modular building expansion. Expansion beyond this initial step would depend on the volume and character of passenger traffic served and anticipated.

Should passenger growth exceed the Baseline forecast, development of a new terminal facility to the west of the existing facility is recommended rather than further expansion of the existing facility. Through accurate tracking of the type of activity that develops, activity can be compared to one of the development scenarios such as charter, second-hub, low-cost carrier, or some blend thereof, and specific development options presented for each of those scenarios could be considered.

With respect to public parking, a typical primary indicator for parking development is parking lot occupancy (e.g., peak month). In general, planning for expansion for parking facilities should be initiated when occupancy reaches 85 percent of total capacity so that improvements can be in place when occupancy reaches 90 to 95 percent capacity.

**Exhibit 6-1**

**Decision Tree**



Source: Ricondo & Associates, Inc., December 2005  
 Prepared by: Ricondo & Associates, Inc.

Given the various terminal development options, if a replacement terminal is developed, parking improvements would be undertaken simultaneously to support the relocated terminal facility. Because parking is currently free and therefore use is not monitored through revenue control systems, it will be important to conduct regular surveys of the parking lot to assess use during various times of the year. Documenting public parking use during average, peak and holiday periods will provide valuable information for expansion planning.

Access and curbside improvements identified in this study include realignment of the terminal loop roadway and lengthening of the curbside. These improvements are planned to occur as part of the overall landside improvements and are driven by the need to expand public parking and/or replace the terminal building. Therefore, no specific indicators have been specified for access and curbside demand; however, in general, access roadway and curbside congestion provide indications that improvements to these facilities are needed. Documenting observations of curbside use during average, peak and holiday periods will provide valuable information for expansion planning.

### **6.1.5.3 General Aviation Indicators**

General aviation tenants at the Airport include those using corporate hangar, T-hangar, and FBO tie-down ramp facilities. Although general aviation development is typically driven by tenant needs rather than by City of St. Cloud initiatives, secondary indicators may be assessed to provide insight into overall general aviation demand. Based aircraft fleet and annual number of general aviation operations indicate the overall demand for general aviation facilities at the Airport, and specifically, growth of the based fleet can indicate the need for hangar or apron expansion. Additionally, more area than that projected could be required if new tenants opt to develop new hangars rather than store aircraft in existing facilities.

### **6.1.5.4 Support Facility Indicators**

Other facilities at the Airport, such as the ATCT are not projected to require relocation or renovation over the 20-year planning period. Although it is likely that additional fuel farm capacity will be required, the FBO provides fueling services for private and commercial aircraft, and thus the tenants would add fueling facilities when future demand dictates. As additional airfield pavement is constructed, the Airport will need to acquire and house additional maintenance and snow removal equipment, which could lead to expansion of the existing facility.

## **6.2 Development Projects**

The development projects that make up the ADP have been identified in terms of the demand scenarios that would require their implementation. Four demand scenarios were presented in the Master Plan Forecast: Baseline, Second Hub, Charter, and Low Cost Carrier. For purposes of implementation and later financial analyses, the Second Hub and Charter scenarios were combined since they produce mid-term facility requirements of similar magnitude. Therefore, three development tracks are presented. Projects were prioritized based on the Master Plan goals and objectives, needs identified by the City of St. Cloud, and needs identified by the Master Plan Team. After projects were defined, estimates of probable cost were prepared for each project. These were used to help ensure that the development plan was financially feasible. The financial plan presented in the next section of this document specifically addresses the economics of implementation.

### **6.2.1 Baseline Development Track**

Baseline projects are those that would be required to accommodate activity forecast under the Baseline Demand Scenario and to prepare the Airport for future growth. The timing of these

projects, along with their estimated costs, are depicted in **Exhibit 6-2**. Additional detail on the estimated costs is presented in **Appendix A**. These include:

- **Land acquisition:** Land acquisition to support the ultimate airport configuration would be initiated as soon as possible, due to the significant amount of time typically required to amass land for airport expansion and the cost of acquisition. Land acquisition would help to minimize the potential for urban encroachment and development of incompatible land uses in the vicinity of the Airport by providing a buffer. This project responds to one of the primary objectives of the Master Plan Study. The land acquisition would include any parcels within the future property line defined in the Future Airport Layout Plan and within MnDOT Zone A for all runways, but would not include property within the Sand Prairie Preserve. It is assumed that control of these areas would be by zoning or easement. Land acquisition was divided into three priorities. Priority 1 Acquisition consisted of areas required for a buffer to the existing airfield and the baseline and mid-term projects including the extension of Runway 13-31 with runway protection zones (RPZ) and Zone A areas. Priority 2 Acquisition consisted of areas required for mid- to long-term expansion, including extension of Runway 5-23 to 6,400 feet and construction of the 4,200-foot training runway, Runway 13R-31L, with all RPZ and Zone A areas. Priority 3 Acquisition would consist of the area required for the ultimate property line and to accommodate the extension of the training runway to 7,000 feet, including RPZ and Zone A areas. The proposed land acquisition limits (inclusive of Sand Prairie tracts) are depicted in Exhibit 5-6. It is anticipated that this acquisition would occur over a number of years, as willing buyer/willing seller transactions.
- **Environmental assessment (EA) for land acquisition:** An EA would be required in order for the Airport to be eligible to apply for federal or state grant funding and/or implementation of a passenger facility charge (PFC) to be imposed on commercial enplanements to finance land acquisition. The EA process would document the purpose and need for the land acquisition and explore the projected consequences of the acquisition in the impact categories defined in the National Environmental Policy Act (NEPA). The EA would address the aggregate area of future land acquisition.
- **Acquisition of deicing equipment and mobile stairs:** To enhance the safety and efficiency of winter aircraft operations, additional deicing equipment should be acquired. Additional equipment would reduce elapsed time from the start of aircraft deicing operations to the departure of the aircraft, increasing the likelihood that a departing aircraft would meet the holdover time requirements during deicing operations without needing supplemental or secondary deicing prior to departure. The need becomes more acute as charter activity increases since charter aircraft are larger than those used for scheduled passenger traffic and therefore require a greater volume of deicing fluid and equipment with a greater vertical reach. The acquisition of mobile stairs with a lift for handicapped passengers would provide an enhanced level of service to the passengers on charter flights. The terminal has no passenger loading bridges and therefore handicapped access to commuter aircraft is difficult and nearly impossible for charter aircraft. (Mobile stairs were obtained on a short term basis to accommodate prior charters.) One of the charter companies interviewed during the Master Plan Study cited the lack of de-icing equipment and air stairs as a deterrent to providing more frequent service to the Airport. Acquisition of this equipment would enhance competition for charter activity in the Minneapolis-St. Paul-St. Cloud region.

**Exhibit 6-2**

**Baseline Development Track**

Project	(2005 dollars)	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
EA for land acquisition and Rwy 5-23 reconstruction/extension	\$ 350,000	█																		
Land Acquisition - Priority 1	\$ 8,078,125		█	█	█	█	█													
Land Acquisition - Priority 2	\$ 16,011,875						█	█	█	█	█	█	█	█	█					
Land Acquisition - Priority 3	\$ 6,211,875														█	█	█	█	█	█
Acquire deicing equipment and mobile stairs	\$ 150,000	█																		
AASF Utility Infrastructure	\$ 4,411,515	█	█	█																
Terminal Utility Extension	\$ 583,510		█	█																
Rezoning for ultimate runway	\$ 40,000	█																		
Terminal expansion - PAL 1	\$ 1,122,030	█																		
Parking Expansion -- PAL 1	\$ 614,000	█																		
FBO Parking & T-Hangar Replacement	\$ 630,000				█	█														
Future North GA Area Paving & Drainage Infrastructure	\$ 650,000							█	█	█										
Existing North GA Utility Extension (Existing Tenants)	\$ 956,225		█	█	█															
Future North GA Utility Extension (Future Development)	\$ 715,760							█	█	█										
Future South GA Area Paving & Drainage Infrastructure	\$ 2,460,000	█	█	█	█	█	█	█	█	█										
Future South GA Utility Extension (Future Development)	\$ 1,473,035	█	█	█	█	█	█	█	█	█										
Widen & Reconstruct Rwy 5-23 (3,000' x 100')	\$ 7,820,000				█	█	█													
Expand Maintenance & Snow Removal Equipment Building	\$ 559,500									█	█									
Master Plan Update	\$ 550,000						█	█												
Master Plan Update	\$ 600,000												█	█						
Totals	\$ 53,987,450																			

- Notes:
- 1/ Future North and south GA Area projects include access roads, access taxiways and utilities to allow tenant development of sites. Actual timing of use of funds would be based on the level of tenant interest/development.
  - 2/ Assumes passenger traffic continues to follow the Baseline Forecast

Source: Short, Elliott & Hendrickson, Inc. December 2005, Ricondo & Associates, Inc., December 2005  
 Prepared by: Ricondo & Associates, Inc.

- **AASF Utility Infrastructure:** The City has committed to providing water, sewer and other utility infrastructure, as well as ground access, to the AASF by fall 2007. This project includes utility infrastructure extensions on Airport property that would serve the AASF. Infrastructure improvements would include utility trunk lines (water, sanitary sewer, gas, and electric), complete, in place. The scope and probable cost of improvements were based on information provided by the City's engineering consultant for this infrastructure project.
- **Terminal Utility Extension:** Construction of utilities to the AASF site provides an opportunity to eliminate the existing water wells and septic systems serving existing buildings in the existing terminal in favor of public water and wastewater systems. Planned and projected development at the Airport would require the improvement of the infrastructure in the terminal area. Infrastructure improvements would include utility trunk lines (water, sanitary sewer, gas, and electric) and service lines to terminal building, complete, in place.
- **Rezoning for ultimate runway:** Rezoning of land in the vicinity of the Airport would be initiated in the near term in an effort to minimize the potential for incompatible land uses to occur in areas that would constrain/limit or be impacted by the future airfield configuration. The area rezoning would encompass all areas within the future property line defined on the Future Airport Layout Plan, as well as property within the FAA-defined Runway Protection Zones and property within MNDOT Safety Zones. For estimating purposes it was assumed that the City would hire a consultant to assist with the work.
- **Terminal expansion – PAL 1:** Near-term terminal expansion would resolve existing terminal deficiencies in handling peak travel periods during which passenger processing demands exceed the capacity of the terminal building. The approximate 4,000-square foot expansion would consist of the placement of a modular unit near the south face of the existing terminal building, connecting to the existing holdroom by walkways. Additionally, a second modular unit would be placed at the west end of the existing terminal building to allow the reallocation of functional spaces within the terminal building to meet projected space requirements. These modular facilities would include public restrooms for use by passengers and a small concessions area in the hold room area. The space would be fully environmentally controlled (heating, cooling, ventilation). Exhibit 5-8 illustrates the near-term terminal improvements.
- **Parking expansion – PAL 1:** The existing public, employee and rental car parking facilities would be expanded to accommodate increased projected demand. This would be accomplished by the westward extension of the employee and rental car parking lot, and by the construction of a new surface lot west of the existing public parking area and on the west side of the Airport entrance road. This could not be done until after the terminal utility project was completed and the septic system out of service. The near-term parking expansion is depicted in Exhibit 5-11. Estimates of probable cost assume that an automated revenue control system would be incorporated so that the Airport could begin charging a fee for parking to offset some of the parking expansion costs.
- **FBO Parking and T-hangar replacement:** Currently, FBO customers park in the public parking lot. When the City implements revenue controls in the parking area, FBO parking should be provided in another location. The current location of Hangar 2 would provide adequate replacement parking in relatively close proximity to the FBO facilities. The construction of the FBO parking lot would require the relocation of the T-hangar Building 2. The replacement T-hangar building could be constructed immediately west of the two northernmost existing T-hangar buildings and would include appropriate taxilane paving to

provide aircraft access to the facility. Exhibit 5-11 illustrates the FBO parking and T-hangar replacement concepts while Exhibit 5-12 provides additional detail of the FBO parking improvements.

- **Future North GA Area Paving and Drainage Infrastructure:** Infrastructure to support the expansion of the north general aviation area would be undertaken in the near-term. This project would include airfield access to the area via a common-use taxiway, as well as roadway access, and security fencing/gates, as required. Exhibit 5-11 depicts the north general aviation tenant area development, with additional detail provided in Exhibit 5-15. In general, it was assumed that the Airport would pay for only infrastructure for public or multi-tenant use, while tenants would pay for infrastructure and buildings within leased areas.
- **Existing North GA Utility Extension:** This project would include extension of the water and sanitary sewer utilities from the utility trunk lines serving the terminal and AASF to the various existing tenant facilities in the north general aviation and terminal areas, including service to the T-hangars.
- **Future North GA Utility Extension:** This project would provide water and sanitary sewer service lines to the area designated for future GA development north of the existing T-hangars. This project should be done in conjunction with the Future North GA Area Paving and Drainage Infrastructure project.
- **Future South GA Area Paving and Drainage Infrastructure:** Infrastructure improvements would be required to allow development of the south tenant area. This project would include taxiway access to the area, as well as roadway access, and security fencing/gates, as required. This would allow corporate and other tenants to construct facilities on land leased from the Airport. T-hangars may also be constructed as part of the future GA infrastructure; however, current forecasts do not indicate that demand for T-hangars will exceed the available supply in the North GA area. The south tenant development concept, inclusive of tenant buildings, is defined in Exhibit 5-16. Development is expected to be implemented over a number of years.
- **Future South GA Area Utility Extension:** This project would provide water and sanitary sewer service lines to the area designated for future GA development south of Runway 5-23. This project should be done in conjunction with the Future South GA Area Paving and Drainage Infrastructure project, and is anticipated to be completed over a number of years as demand dictates.
- **Reconstruct and widen Runway 5-23:** Because of the condition of Runway 5-23, rehabilitation of the runway pavement is required in the near term. This rehabilitation would entail the reconstruction and widening of the runway in order to meet FAA recommendations for secondary runway capability. The runway, maintained in its current alignment, would be widened to 100 feet and reconstructed at its existing length. Appropriate runway lighting, marking and signage modifications would be included, as well as necessary clearing and grading of the RSA and OFA to meet FAA criteria.
- **Expansion of Maintenance and Snow Removal Equipment building:** As the Airport adds pavement, land and facilities, the need for additional maintenance and snow removal equipment will increase. This will require an expansion of the existing maintenance and snow removal equipment building. The expansion of 4,500 square feet would be to the north and would require re-working of drainage in the area. It is assumed that construction would be initiated near the mid-term of the planning period.

- **Master Plan update:** Within the planning period, at least two updates of the Master Plan Study would be undertaken to review and adjust the Airport's long range development plan to meet projected demand and changes in demand characteristics. Airport master plans are commonly updated within a 7- to 10-year window.

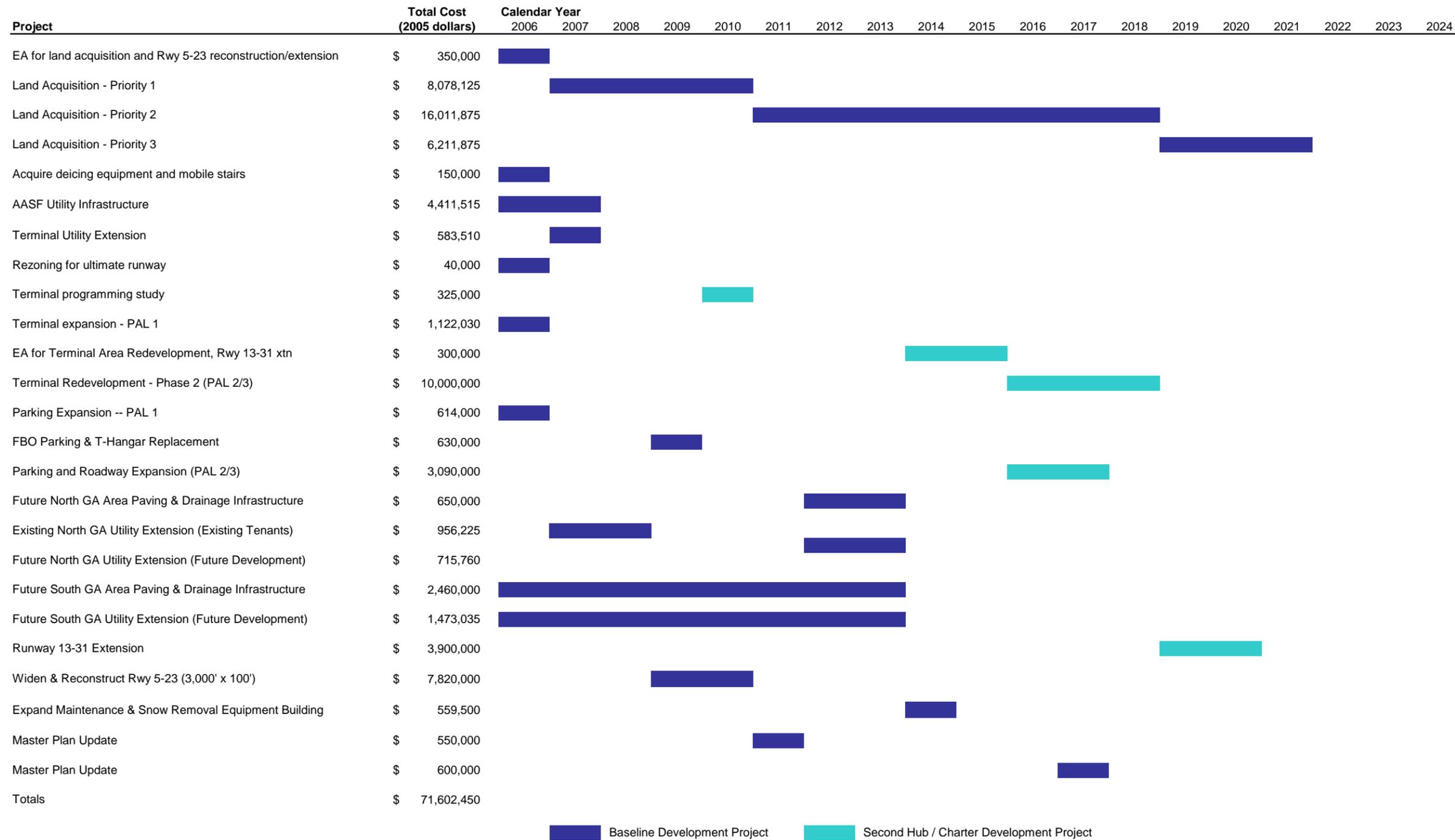
### **6.2.2 Second Hub/Charter Development Track**

As activity increases beyond that forecast under the Baseline Scenario, additional development would be required to accommodate that demand. For planning purposes, projects required under the Second Hub and Charter Scenarios are similar in magnitude, so are grouped together under the Second Hub/Charter development track. **Exhibit 6-3** illustrates project phasing under this development track. In addition to the Baseline projects, additional projects that would be initiated under this track include:

- **Terminal programming study:** Further expansion of the terminal would be required as passenger activity increases and eventually exceeds the capacity of the terminal facilities. A programming study is recommended to define the overall space program (total building enclosed space); develop concepts for accommodating that space program; and determine longer-term expansion capabilities based on forecast demand. It should also address whether to expand the existing facility or construct a new facility. The programming plan would define a building envelope that accommodates projected activity (terminal and airside/aircraft) and would allocate the interior space to the various required functions necessary to support airline and airport operations. It would include conceptual floor plans, aircraft parking configurations, planning for phasing during implementation, and estimates of probable cost for the recommended terminal plan. It would also address terminal parking and access.
- **EA for terminal area expansion and Runway 13-31 extension:** An EA would be prepared for the terminal expansion as defined by the terminal programming study and for the extension of Runway 13-31. The EA would document the purpose of and need for the projects, and explore the projected consequences of the expansion in the impact categories defined in NEPA. Exhibit 5-6 illustrates the planned ultimate extension of Runway 13-31 by a total of 1,000 feet, for a total length of 8,000 feet, and consisting of extensions to both ends of the runway.

**Exhibit 6-3**

**Second Hub/Charter Development Track**



Notes:  
 1/ Future North and south GA Area projects include access roads, access taxiways and utilities to allow tenant development of sites. Actual timing of use of funds would be based on the level of tenant interest/development.  
 2/ Assumes passenger traffic follows the Charter or Second Hub Demand Scenarios

Source: Short, Elliott & Hendrickson, Inc. December 2005, Ricondo & Associates, Inc., December 2005  
 Prepared by: Ricondo & Associates, Inc.

- **Terminal expansion – PAL 2/3:** Based on forecast demand, this subsequent expansion would be expected to increase the terminal building by over 49,000 square feet and would provide second-level departure holdrooms served by passenger loading bridges. This terminal expansion would entail substantial reconfiguration of the interior space to accommodate the functional space requirements associated with projected activity levels. A possible concept for mid-term terminal expansion is depicted in Exhibit 5-10.
- **Parking and roadway expansion – PAL 2/3:** Expansion of the parking facilities would be constructed to support increasing activity levels. As with the terminal building, this expansion would be based on the actual activity that develops. If activity does not develop as quickly as projected, this parking expansion could be deferred until needed. The expansion would entail a westward expansion of the public parking lot, requiring reconfiguration of the terminal entrance road and 45<sup>th</sup> Avenue along the west side of the terminal complex (if the future County Road along the west perimeter of the airport is constructed by this time, the reconfiguration of 45<sup>th</sup> Avenue would not be required). The parking expansion would also include the construction of an overflow parking lot, which would be used only during peak travel periods (e.g., winter holiday season). The expansion would include upgrades to lighting and the revenue control system. Exhibit 5-13 illustrates the conceptual terminal area roadway and parking expansion associated with this project.
- **Construction of Runway 13-31 extension:** Extension of Runway 13-31 would be undertaken as a mid-term development project to meet projected demand for increased stage length by airline users. This extension, which is planned as an extension at each end of the runway, would entail appropriate signage, lighting and marking, as well as extension of the parallel taxiway and construction of crossover taxiways at each end to provide access to the extended runway ends. Exhibit 5-6 illustrates the planned ultimate extension of Runway 13-31.
- **Assessment of need for training Runway 13R-31L:** With growth in commercial traffic, the need and timing for training Runway 13R-31L should be reassessed to determine whether development should be expedited. This should be done as part of the Master Plan Updates.

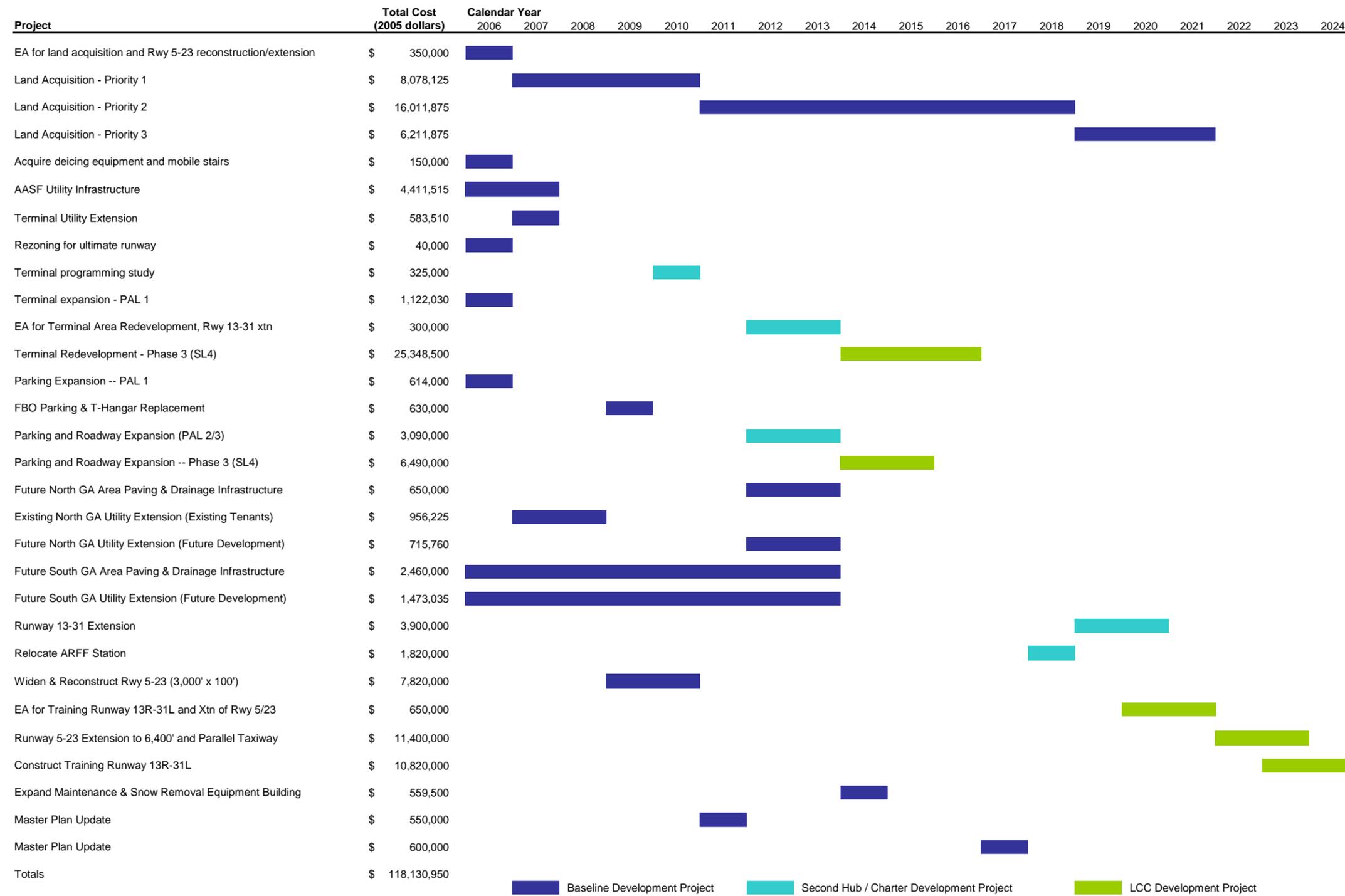
### **6.2.3 Low Cost Carrier Development Track**

If a low cost carrier were to establish service at the Airport, a number of improvements would need to be made to support that operation. These would include terminal and parking expansion, the extension of Runway 5-23, and construction of training Runway 13R-31L. **Exhibit 6-4** depicts project phasing following the Low Cost Carrier (LCC) Track. In addition to the Baseline and Second Hub/Charter projects that would have been undertaken, specific additional projects required under the LCC track include:

- **EA for Runway 5-23 extension and new training Runway 13R-31L:** An EA would be prepared to address both runways. It would include the extension of Runway 5-23 to a total length of 6,400 feet and construction of a new 4,200-foot training Runway 13R-31L to allow the segregation of general aviation/training activity and commercial air traffic. The EA would document the purpose of and need for these projects, and explore the projected consequences of the extension in the impact categories defined in NEPA. The EA would assess the extension of the parallel taxiway and the construction of crossover taxiways as components of the project. The ultimate configuration and length of Runway 5-23 is illustrated in Exhibit 5-6 along with training Runway 13R-31L located 4,300 feet from the centerline of existing Runway 13-31.

**Exhibit 6-4**

**Low Cost Carrier Development Track**



Notes:  
 1/ North and south GA Tenant Area infrastructure covers access roads, access taxiways and utilities to allow tenant development of sites. Timing of use of funds would be based on the level of tenant interest/development.  
 2/ Assumes passenger traffic follows the Low Cost Carrier Demand Scenario with introduction of LCC Service in 2012

Source: Short, Elliott & Hendrickson, Inc. December 2005, Ricondo & Associates, Inc., December 2005  
 Prepared by: Ricondo & Associates, Inc.

- **Construction of training Runway 13R-31L:** Construction of Runway 13R-31L would be constructed late in the planning period to meet projected demand under the LCC forecast and to segregate general aviation training activity from commercial air traffic. This runway, which is planned to be 4,200 feet long and have a 4,300-foot separation from the existing air carrier runway, would include appropriate signage, lighting and marking, as well as necessary clearing and grading of the RSA and OFA to meet FAA criteria, and construction of a parallel taxiway and crossover taxiways at appropriate locations along the runway to provide access to the extended runway ends. An Instrument Landing System would be also be installed.
- **Construction of Runway 5-23 extension:** Extension of Runway 5-23 to a total length of 6,400 feet would be constructed late in the planning period. To support the efficient operation of the extended runway, an extension of the parallel taxiway would be included, along with the construction of crossover taxiways to link it to the runway. Appropriate runway and taxiway lighting, marking and signage would be included, as well as necessary clearing and grading of the RSA and OFA to meet FAA criteria. Exhibit 5-6 illustrates the ultimate length of Runway 5-23, with extensions to both ends of the existing runway.
- **Terminal area redevelopment- Phase 3 (SL 4):** Redevelopment of the terminal complex would be needed to support the substantial increases in passenger activity envisioned under the LCC Scenario and SL 4. Should this level of activity materialize, a significant increase in terminal size would be required, along with associated parking facilities, aircraft ramp, and infrastructure. The new terminal complex would be located to the west of the existing terminal. The Phase 3 terminal redevelopment concept is depicted on Exhibit 5-14.
- **Roadway and parking expansion:** A new terminal access roadway and public parking area would be constructed with the terminal redevelopment project. Significant increases in parking demand could dictate the construction of a small parking garage to accommodate the overall parking demands in proximity to the redeveloped terminal building. Similarly, employee parking and rental car parking and support facilities would be expanded and/or relocated. The terminal roadway would be reconfigured to efficiently support vehicular circulation and meet curbside requirements associated with the increased activity levels. Exhibit 5-14 illustrates the roadway and parking configuration to support the Phase 3 terminal area redevelopment.

### **6.3 Other Outside Factors**

Development outside the Airport boundaries may affect the timing and configuration of projects identified in the Master Plan. To the extent possible, the City should endeavor to influence other development to support the Airport plans. Factors that could influence the future development at the Airport include, but are not limited to:

- **County road construction:** The planned construction of a future County Road that is tentatively aligned at the western perimeter of the existing airport property could affect Airport development. Because the specific alignment of this roadway has not been established, nor has a timeframe for construction, the exact impacts of the planned road construction are cannot be fully identified; however, the timing of the future County Road would be relevant as airport projects are implemented. Ideally the roadway should be aligned with the western and southwestern boundaries of the Airport to provide maximum

opportunity for Airport development. Alignment should also be appropriately routed around the Runway Safety Area and Object Free Area for the ultimate westward extension of Runway 5-23.

- **Infrastructure development within the airport environs:** Infrastructure development in the vicinity of the Airport would have the potential to foster additional development in proximity to the Airport – aviation-related or non-aviation-related. Implementation of airport zoning can help ensure that development would be compatible with Airport operations.
- **Northstar Rail Corridor development:** Current planning for the extension of the Northstar Rail Corridor could affect the planned Airport development and/or its timing. The rail corridor could create an increase in activity at the Airport if passengers in the northern suburbs of the Twin Cities opt to travel to STC rather than MSP and activity could increase more quickly than currently anticipated. However, it could also influence specific long-term development plans at the Airport as the exact alignment is finalized, particularly relative to Del Tone Road which is planned to remain as the main access road to the Airport. If the Northstar Rail Corridor station location is revised, it is possible that roadway plans for STC would require revision.
- **MnDOT highway improvements including the I-94/Hwy 10 connector:** MnDOT highway improvements have the potential to affect long-term development at the Airport as access to the Airport and regional circulation is affected. Current planning for access to the south airfield portion of the Airport is based on the construction of the I-94/Hwy 10 connector southwest of the Airport; however, any change in this connector location could affect the roadway/access planning related to Airport development.
- **MAC policies that may lead to growth at STC:** Decisions made and policies implemented by MAC can influence future activity levels at STC, particularly should those policies or actions that favor continued growth of air carrier activity over general aviation and charter activity at MSP, resulting in a gradual diversion of traffic to STC. While any actions by MAC cannot be predicted nor their impact known at this time, it is recognized that future decisions, policies and actions by MAC could result in an impact to activity levels at STC.