FINANCE

Capital Improvement Program (CIP) Planning and Management:

Assessing Approaches and Considering Tools for Airport Finance Leaders

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AIRPORT CONSORTIUM ON TRANSFORMATION

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1. Introduction

This paper has been developed in collaboration with the American Association of Airport Executives (AAAE) and was prepared by contributing advisory members of the Airport Consortium on Transformation (ACT) program, including RS&H, Ramirez & Co., Loop Capital Markets, and Steer, with guidance and leadership from Los Angeles World Airports (LAWA) and AAAE. The intention of this paper is to identify specific tools, technical approaches, and strategic considerations that airport finance leaders can use when approaching capital improvement programs (CIPs).

While every airport is unique, this paper aims to provide airport finance professionals with a summary of approaches and tactics that may be applicable as a CIP evolves through a lifecycle of planning and implementation. The paper focuses on key interfaces and the resulting need for coordination (internal and external) and identifies specific case studies that demonstrate tactics for managing these interfaces and risks at specific points in the CIP process. We hope this paper is useful for airport staff regardless of airport size, location, or organizational structure.

As always when considering major capital programs, we also recognize it is advisable for airport leaders to consider many alternatives and to consult with a range of advisors, including legal, financial, and industry experts, to gain a comprehensive perspective on the unique conditions, constraints, or opportunities your airport might support. This paper is meant as an introduction to key concepts in CIP management that may be useful for prompting and furthering such engagement.

In undertaking a review of CIP planning and management, the authors of this paper conducted a series of interviews with airport finance leaders. Some of the highlights of those conversations are summarized within this paper. The authors identified several key themes that repeatedly arose during conversations about planning and implementing capital project delivery:

- It is critical to develop CIPs in a way that enables execution of the initiatives within guiding documents such as a strategic plan and airport master plan.
- CIPs need detailed up-front planning that includes clearly identifying need and purpose statements.
- Conducting a debt affordability analysis, driven by financial metrics, creates a key constraint for the plan and must incorporate consideration of funding sources.
- Prudent planning, including contingency and reserve allocations, is necessary and expected.
- Ongoing management and oversight of the program must ensure alignment and visibility between the physical project progress and financial management. This often includes protocols for collaboration between external project managers and internal finance teams.
- Communication and stakeholder engagement, especially with credit rating agencies and airline partners, are critical to success throughout the whole lifecycle.

It is our hope that these themes, among other valuable insights, are accessible through this summary paper.

2. Governance, Management, and Communication

Introduction

Nearly all U.S. commercial airports are owned and operated by the public sector, mainly by state and local governments. From here, the governance structures vary from enterprise departments of a city, county, or state to independent authorities created by the city, county, or state[1]. The governance of an airport will greatly influence the reporting and management structure, capital planning and approval process, and program management, including change management. Other important influences include the airport's airline use and lease agreements, especially majority-in-interest provisions, if any; carrier dominance, or lack thereof; the size of an airport; and the financial and human resources it has available.

The focus of the discussion herein is on large, multi-year capital improvement programs rather than annual, rolling renewal, rehabilitation, and maintenance capital projects. The larger, "branded"[2] capital improvement programs "have the most controls and oversight versus…ongoing capital improvement programs which [can be] cash funded" and may go through the more regular operating budget process[3].

Communication is the connective tissue that permeates every step, from establishing the governance oversight of the planning, to the stakeholder outreach and approval process, to the ongoing monitoring and change management, as the capital program is executed. "Communication is the foundation for governance and management."[4]

Governance of the Capital Improvement Program

The starting point for an airport's capital improvement program is often the airport's long-term master plan and shorter-term strategic plan, which serve as key guiding documents for capital program planning. An airport's strategic plan is typically updated more frequently (e.g., every five years), and while it can update how the master plan may be reinterpreted and implemented, it is still generally guided by the long-term master plan.

[1] Two notable exceptions include: (i) the Metropolitan Washington Airports Authority, which was created by the Congress of the United States and operates Reagan National Airport and Dulles International Airport on land leased from the United States; and (ii) the Port Authority of New York and New Jersey, which was created by a compact between the two states and consented to by Congress.
[2] For example, the "New SLC" at the Salt Lake City International Airport or the "Ascent Program – Phase 1.5" at the San Francisco International Airport.
[3] Interview with the Salt Lake City International Airport.
[4] Interview with the airport commission of the City and County of San Francisco.

An airport master plan provides a road map for efficiently meeting aviation demand through the foreseeable future while preserving the flexibility necessary to respond to changing industry conditions. The general goals and objectives addressed by an airport master plan include the following: To provide a framework for long-range planning (20 to 30 years); To graphically present preferred airport development concepts; To define the purpose and need for development projects; To comply with all applicable FAA requirements; To enable the airport to achieve its mission; To assure compatible land use development; To support the financial health of one of a region's most powerful economic engines; To identify facility requirements for all airport users…The future plan…will only be implemented as warranted by actual activity. The recommendations contained in a Master Plan are contingent upon further environmental study and must be financially feasible.[5]

The successful execution of components of the airport master plan is not solely based on financial affordability but should be environmentally compatible and balance airport development needs and community impacts.[6]

Case Study: Airport Commission of the City and County of San Francisco[7]

The Planning Document

- Between July 1, 2021, and June 30, 2022, SFO served approximately 35 million passengers. The airport master plan, finalized in 1989, covered passenger growth to 51 million. SFO's strategic plan includes multiple sustainability-related goals, as well as social objectives dedicated to supporting its communities and workforce partners, as well as achieving racial equity and inclusive growth.[8]

The Capital Improvement Program

- In October 2023, the commission approved an $11 billion capital improvement program (CIP), including the $8 billion Ascent Program – Phase 1.5 (the Ascent 1.5) and $3 billion infrastructure projects.
- The focus of this discussion is on the Ascent 1.5 projects ($7.3 billion of project costs and a $730 million Ascent Program reserve) that represent an investment in capital projects to position the airport for projected passenger traffic growth and meeting demand-driven gate needs.

Project Selection and Approval Process

- The process of identifying, prioritizing and ranking projects must align with a stricter set of goals as established in its strategic plan.
- The process of identifying, prioritizing and ranking projects involves the chief development office and the airport planning & environmental affairs team within the chief resiliency and sustainability office. This group develops proposed projects to be included in the next CIP.
- The capital planning team – with the chief financial and commercial office – calls for project submittals by division.

[5] https://www.airportprojects.net/cvg-mpu/what-is-an-airport-master-plan/
[6] Ibid.
[7] Sources: SFO Official Statements and interview with SFO.
[8] Official Statement, Airport Commission of the City and County of San Francisco, Series 2023C/D.

- The capital planning team facilitates CIP working group sessions where capital projects are evaluated and ranked according to a set of objective criteria that reflects the airport's strategic goals. (The working group is made up of management staff, including a subcommittee that focuses solely on utility and rolling infrastructure capital projects).
- Executive advisory board (EAB) – made up of senior management – reviews the working group's ranking list of projects for funding in a CIP, considering available funding and the projected fiscal impact of the program as a whole and makes recommendations to the airport director. Considerations include alignment with strategic priorities, scope, in-service dates, end-user benefit, and the airport director's priorities.
- Prioritized projects graduate to the environmental review process – NEPA and/or CEQA (federal and state oversight).
- Approved projects are sent to the airport commission for its consideration and approval.

Implementing the Projects

- Following the airport commission approval, the San Francisco Airport Airline Affairs Committee Finance Subcommittee, made up of airline representatives, is presented projects during a series of monthly workshops pursuant to the lease and use agreement. Certain projects above a threshold cost require airlines' consent.
- The EAB continues to track the implementation of each project.
- The chief development office oversees the implementation progress:
    - Design and construction team: responsible for program development and management of the construction schedule and status of the projects.
    - Project management team: oversees the day-to-day operations of each project. This team is assisted by outside project managers and construction managers who represent the airport with the design/builder and negotiate any contract modifications and scope updates and support the projects staying on schedule.
- A monthly report is prepared by the program managers and chief development office, which highlights budget and cost, milestones, and schedule summary, among other information.

Case Study: Salt Lake City International Airport (SLC)[9]

The Planning Document

- The New SLC program was initially developed and designed based on the airport's 1997 master plan.

The Capital Improvement Program

- The "New SLC," formerly known as the Airport Redevelopment Program, is a comprehensive and integrated series of projects that have resulted in the replacement of substantially all of the airport's landside and terminal complex facilities and the demolition of the previous facilities. The New SLC consists of the $2.86 billion Terminal Redevelopment Program (TRP) and the $2.27 billion North Concourse Program (NCP).

Project Selection and Approval Process

- The airport director, director of engineering, director of properties, and the director of finance made up the executive team and were assisted by the remaining directors (operations, maintenance, IT, etc.) to work with principal architect HOK to design the facilities.

[9] Sources: SLC Official Statements and interview with SLC.

- The New SLC is designed to replace aging facilities, mitigate seismic risks, accommodate current operations, and prepare for future growth. Prior to executing the New SLC projects, the existing facilities were built to accommodate 11 million passengers annually whereas SLC served over 22 million passengers by 2015.
- The projects are to right-size the airport facilities to accommodate current and future demand, with the TRP expected to meet current requirements for seismic resiliency, solve certain operational problems due to existing facility layout, improve customer service, and maintain SLC competitive cost structure.
- As initially conceived, SLC was to proceed with the TRP followed by the NCP, a separate set of projects, as a future development as demand warranted. However, as the planning of the TRP progressed, the department and signatory airlines re-evaluated the NCP and determined that the preferred approach was to proceed with the NCP in phases.

Implementing the Projects

- Two committees of department directors to oversee all capital projects:
  - **Financial oversight committee:** chaired by director of finance and accounting and includes director of engineering and director of administration & commercial services. The financial oversight committee authorizes the funding, including source of funds, and approves the guaranteed maximum price of each component.
  - **Construction committee**: chaired by the director of engineering and includes members of finance oversight committee and directors of operations and planning – approves scope of the work and authorizes execution of the construction contract, including component guaranteed maximum price.
- The airline technical representative is integrated into the project management team and must be included in the development of contract documents and discussions relating to cost controls and design changes.
- The department hired R.W. Block Consulting, Inc. to develop a plan of execution, a plan for program management and delivery of the projects. The department further contracted with several teams of experts to manage the specific elements of the project, with the external management team overseen and complemented by department staff.
- R.W. Block continues to work with the department, overseeing the financial and program controls and reports directly to the executive director.

Prioritizing the Capital Projects

Given a comprehensive set of projects suggested in a long-term master plan but with finite financial resources and an obligation to operate in a fiscally responsible way, how do airport sponsors prioritize and select the projects to move forward? In general, while available funding and the fiscal impact of the projects are essential considerations, more important are an airport's evaluation and ranking based on its strategic goals and objectives and the response to its particular set of opportunities and challenges. As managers of public assets and limited by the terms of their airline agreements and federal rates and charges regulations, a "return on investment" (ROI) analysis based on the traditional "profitability" may be difficult to use in prioritizing and selecting projects. That said, an ROI analysis can help inform prioritization and selection decisions if the "return" is more broadly defined as positive impacts on financial metrics, operational efficiency, passenger generation, customer satisfaction and/or some other measurable variable. Some airports have taken to defining "demand-driven" projects that are undertaken if some pre-determined level of operations is met (e.g., various planning activity levels). Other airports are developing a more detailed prioritization matrix. The approaches that airports take to address project prioritization and

selection continue to evolve but will remain unique to their own situations based on their role in the transportation network.

The Role of the Governing Bodies

While a governing board will have final approval of an airport's major capital projects and the funding plan, publicly elected officials may or may not be involved in the planning and pre-approval process, depending on the airport's governance structure. In general, independent authorities – even though the governing board is likely appointed by elected officials – by definition do not require the involvement, review or approval of elected officials during the capital planning process. On the other hand, even those airports with city or county oversight differ from one another in the role of publicly elected officials in the capital planning and budgeting process. Although the various public governing bodies do tend to have final approval, whether in the context of the capital budget or a capital program authorization, they generally do not play a major role in the project selection or planning process. This is primarily because tax dollars are not used to support the operations or capital investments at the airports, although there are limited exceptions in which an airport may issue tax-supported general obligation debt or a city or county issues tax-supported general obligation debt on behalf of the airport (e.g., in 2023 Gerald R. Ford International Airport Authority issued bonds secured by net revenues of the airport but also backed by the limited tax full faith and credit of Kent County, Michigan).

At SFO, the airport commission consists of five members appointed by the mayor and is responsible for the operating and management of the airport. The commission approves the capital plan as a whole, and the airport also seeks approval of the capital projects by the San Francisco Board of Supervisors[10]. Both the commission and board of supervisors authorize bond authority, as needed, for the capital projects. When the airport is preparing for a bond sale, it seeks sale authority from the commission and appropriation from the board of supervisors.

At SLC, the airport is a department of the city and its budget is approved by the city council. Furthermore, the airport provides at least annual updates to the city council. The airport also provides monthly updates to its airport advisory board, which itself reports to the mayor and makes recommendations regarding the operating and management of the airport.

In general, at an independent airport authority the role and responsibilities of staff, senior staff and airport director are similar to those in the SFO and SLC discussion above. The primary difference is that, at an independent authority, final guidance and decisions regarding project approval, capital budgets and operating budgets reside with the authority's board and do not go to elected officials in their capacity as a council or mayor.

The Role of the Public

During the review or budget process at the governing body level, these entities typically have a process for public and comment. Moreover, prior to the issuance of private activity bonds (e.g., bonds to fund terminal improvements), current federal tax law requires a TEFRA (Tax Equity and Fiscal Responsibility Act) hearing at which the public has an opportunity to comment or oppose such projects. In addition, while not often

[10] The San Francisco Board of Supervisors is the legislative body within the government of the City and County of San Francisco.

the case, an airport could consider a charrette process[11] for more formalized public input and to build more public support for a capital program. For example, beginning in March 2019:

> *The Hollywood Burbank Airport Authority (Airport Authority) conducted nine Community Design Charrette Workshops and five online design charrette workshops to gather community and stakeholder input on the design and functionality of the 14-gate replacement passenger terminal (RPT). This collaborative and transparent process effectively recorded the community's vision and ideas for the RPT through a series of iterative discussions and exercises…The Airport Authority successfully solicited meaningful input on safety improvements, design features, and amenities that the community and passengers would like to see in the RPT.*[12]

The Role of the Airlines

While the general trend is toward shorter airline use agreement (AUA) terms, for example 5 or 10 years as opposed to prior 20- to 30-year terms, the more frequent negotiations of AUA renewals or a new AUA can serve as the decision point to encourage airports to seek airlines' approval for larger-scale capital programs. Even if this approval is secured, inevitably, new projects are subsequently considered, or previously approved projects could be changed. Approval by the airlines could be required based on the size of a capital project, magnitude of a change in scope, additional projects, and/or the funding source of a capital project. Disapproval by the airlines could stop a proposed airport project or could simply delay the start of implementation. Stronger airline input is often found at airports with a dominant carrier, while airports with more diverse service offerings often have more leverage in their negotiations with the airlines.

Although airlines' approval may be required, their role and level of input in the planning process can vary by airport.

At SFO, following airport commission approval, the San Francisco Airport Airline Affairs Committee ("SFAAAC") Finance Subcommittee, made up of airline representatives, is presented projects during a series of monthly workshops, pursuant to the lease and use agreement ("LUA"). Capital projects approved by the airport commission, with a cost of more than an $841,000 threshold (adjusted annually for inflation), require airline consent per the current LUA. Projects above the threshold are presented for review and a ballot to indicate recommendation to move forward, with vote weighting dependent on the LUA's majority-in-interest (MII) rules.

In October 2023, SFO adopted an $11 billion CIP, with $4.8 billion approved by the airlines pursuant to new airline agreements, effective July 1, 2023. SFO has plans to seek the remaining MII reviews.

For its New SLC redevelopment program, SLC involved the airlines, primarily Delta, during initial design.

[11] "[A] "Charrette" combines creative, intense working sessions with public workshops and open houses. A Charrette is a collaborative planning process that [involves]… interested parties to create and support a master plan that represents transformative community change." Source: https://www.sandiego.gov/sites/default/files/gvchardesc081110.pdf

[12] https://elevatebur.com/wp-content/uploads/2021/10/Burbank-Airport_Final-Report_CharretteDocumentation_1.8.2020-Print-Ready.pdf

At SLC, during the initial design work with the principal architect, all the airlines – but primarily Delta, which has over 70% market share at SLC – provided input, along with the federal agencies, including the Transportation Security Administration and Customs and Border Protection.

Management and Oversight of the Implementation

Governance Transition to Overseeing the Implementation Phase

While the specifics of an airport's governance of projects during the implementation phase will vary depending on the form of project delivery, as detailed further in **Chapter 4**, in general, day-to-day oversight will involve regular progress and budget reports to the project managers or project management team. This typically includes both internal and retained outside professionals, and various departments/divisions within the airport, including planning, environmental affairs, and finance, and, depending on the airport, representatives of certain airlines. It is important to note that this governance transition is generally not a hand-off from a development team to a project team but rather a transition in the role of certain airport departments and personnel that have been involved in the development phases (see **Airport Point of Contact for Oversight** below).

Physical Progress

Given the size and scope of airport development programs, while the ultimate governance resides with the airport, even large hub airports can rely on a team of outside professionals. The use of outside professionals not only brings a wide range of outside expertise but also allows an airport to easily staff up during a program and, as importantly, staff down as a program nears completion. Sometimes an airport will contract with a single outside firm to provide project management services. At other times, depending on the different components of the development program, an airport – such as SLC for its New SLC program – will pre-qualify multiple firms to manage specific elements of the development program.

Day-to-day Management of the Projects – Project managers and construction managers (including potentially a construction manager at risk as further discussed in Chapter 4), made up of outside professionals, are often engaged to complement an airport's internal project management team to oversee the day-to-day operation of the projects, manage the construction schedule, confirm funding availability and communicate the status of projects to stakeholders. When interfacing with the design or construction teams, the outside project manager and construction manager represent the airport.

Airport Point of Contact for Oversight – The ultimate responsibility for oversight at the airport could be a standing internal department or an ad hoc oversight group. At SFO, oversight of the physical progress of the projects is provided by the chief development office through its design and construction team. For the New SLC, the department established two committees consisting of department directors – the construction committee and the financial oversight committee.

For the New SLC, the construction committee is chaired by the director of engineering and includes the other members of the financial oversight committee and the directors of maintenance, planning and capital programs, and administration and commercial services. The financial oversight committee is chaired by the department's chief financial officer and includes the director of engineering and the chief operating officer.

Financial Progress

Unlike the oversight of the physical progress of a capital program, the oversight of the financial progress is typically the responsibility of internal airport professionals. Even then, communication between internal and external teams is key, as evidenced by the regular reporting requirements and the participation of key individuals and groups in overseeing both the physical and financial progress of the capital program.

In actuality, for an airport the governance and oversight of the fiscal aspects of a capital program are not so much a transfer from one group to another but rather more a continuum of responsibilities. Key internal individuals and groups that worked on project selection and approval (developing capital project and program budgets, evaluating the affordability, and considering alternative funding sources) transition to implementation responsibilities. These key individuals and groups are now tasked with monitoring burn rate and fund balances, project milestones, measuring performance against budget, and reviewing additional budget and scope requests.

Communication with internal stakeholders requires at least monthly and often weekly progress reports as a vehicle to flag concerns and mitigate risks. This oversight often manifests itself in the decisions related to change orders, scope changes, and use of contingencies and reserves.

Other than the airport, stakeholders for these monthly updates may or may not include the airlines, depending on their level of involvement during the initial development, and based on certain terms of the airline use and lease agreements. However, at least annually, airports typically broaden their stakeholder outreach to include their governing bodies (authority board or elected officials), airlines per the terms of the airline use and lease agreements, rating agencies and investors/bondholders. These last two stakeholders are relevant for airports that publicly issued bonds. It is good practice to communicate with these parties at least annually, even if the airport does not issue bonds every year.

Change Management

As cited above, “Change is inevitable, and budgets are never accurate.” Also as discussed above, during the approval process for a capital program, there are two tools available to avoid budget increases once the program is authorized. As a first line of defense to increasing costs due to inflation, change orders, scope changes or unknown conditions, the airport can use built-in project allowances and contingencies to avoid increasing the budget or requiring additional funding. The use of these contingencies typically is monitored and reported but does not require additional authorization or approval. On the other hand, the application of some portion of the program reserve to a project or projects requires an additional request and affirmative authorization.

For the New SLC, a unanimous vote of the financial oversight committee is required to transfer a portion of its owner’s reserve. For SFO, proposals are reviewed by the executive advisory board and recommended to the airport director for approval. Decisions to use an actual application of either the project contingency or program reserve are kept within the airport senior management governance structure. In both cases, there are clear processes outlined for change management, which can allow decisions to be made in a timely fashion. On the other hand, as discussed below, there are times when the airport will need to advise or seek additional authorization from external stakeholders.

Communication and Stakeholder Outreach

Communication of the project is intertwined as part of governance and management.[13] Aside from the internal communication required to oversee and manage the implementation, especially as it relates to change management, there are various other stakeholders that need to be engaged at the appropriate times.

Should a project or program budget need to be increased, after application or consideration of the available allowances, contingencies and/or reserves, the airport may need to consult and seek approval from the airlines under the terms of its airline use and lease agreements, as well as seek additional authorization from its governing bodies (authority board or elected officials) through the budget amendment or additional budget request process. Other stakeholders may include the FAA as part of the grant assurance process. Additionally, as certain airports are considering federal funding through the Transportation Infrastructure and Innovation Act (TIFIA), such airports should be cognizant of the reporting and/or approval requirements that the TIFIA program may require. This caution is warranted because of the untested nature of the TIFIA loans for expanded airport project eligibility under the 2021 Bipartisan Infrastructure Law.

In general, there tends not to be direct outreach to the public other than communications related to how changes in project implementation may impact their travel experience. However, communication to the public does occur indirectly through the budget process of the airport's governing body, as well as any TEFRA hearing that may be required.

For airports that have bank facilities (e.g., a line of credit, letter of credit, or direct purchased obligations), the bank agreements typically have specific periodic reporting requirements related to the operational and financial performance at the airport. For airports that publicly issue bonds, the documents impose similar continuing disclosure undertaking requirements that must be posted to the Municipal Securities Rulemaking Board's (MSRB) Electronic Municipal Market Access (EMMA) website. In general, posting of subsequent official statements, annual comprehensive financial reports and certain statistical information (operational and financial) are sufficient, but an airport should be aware of certain other specific requirements such as rating changes and bond defeasance notices. Neither these bank agreements nor continuing disclosure undertakings typically have reporting requirements related to ongoing capital programs aside from the financial performance that can be impacted by the issuance of additional debt (e.g., ongoing compliance with a rate covenant or periodic compliance with the additional bonds test).

However, when an airport does issue public bonds, its updates to the rating agencies and to investors/bondholders involve updates to the physical and financial progress of its capital development programs. While these reports take place around the time of a planned bond sale, an airport should strive to communicate with these parties at least annually, even if the airport does not issue bonds every year. In fact, credit agencies that rate an airport's outstanding bonds will require annual surveillance, but the information provided at the time of an annual bond sale will often suffice. Investors often will be satisfied by an airport's annual continuing disclosure filings posted to EMMA, although they may request an opportunity to ask specific questions of an airport's senior management. An airport undertaking a large capital development program but that may not issue bonds annually, in addition to its required annual continuing disclosure filings should consider posting an annual investor presentation to update the progress status of the capital program, as well as providing additional operational and financial updates. This will

[13] Interview with Salt Lake City International Airport.

better enable the airport to control the narrative of its credit story rather than allowing rating agencies and investors to interpret other publicly available information. Moreover, not only would an annual presentation impose good discipline and is good management practice, but when the airport is preparing for a subsequent bond issue, it is administratively simpler to update a prior year's investor presentation rather than a presentation that is more dated and where the narrative has evolved over time.

3. Project Scoping

As mentioned in other sections of this paper, identifying the projects to be included in a capital improvement program requires a well-thought-out process that provides rigor and thoroughness in project definition and scoping. This process should be bound within clearly defined and pre-established affordability limits. Key in following the project definition and scoping process is clearly determining the project's need and purpose. Having a clear statement that explains in simple language why a project is needed clears up most questions and doubts when scoping a project. It also provides useful information to airport boards and executives in prioritizing projects and can be a useful source of information in determining the funding sources available for the project.

Need and Purpose

Establishing the need and purpose (N&P) of a project should be the first step and a priority in project scoping. Even though this appears to be an obvious first step in the project scoping phase in the development of a CIP, most airports delegate the justification of a project to a request from their operations or engineering divisions or as a recommendation from a recent master plan. This can be as simple as "We need to purchase a new 1,500-gallon fire truck to be able to maintain the Airport's current Index."

These N&P profiles are great sources to identify projects and should continue to be used, although airports should consider adding a needs and purpose process to project identification. What does this mean? Each airport can tailor its needs and purpose process to whatever process best fits its needs. However, having this process demonstrates a better understanding of the project scope by involved parties and participants. It also provides a clearer path to establishing funding options available for project implementation.

Hint! *The N&P should be a clear and easy-to-read-and-understand statement.*

The following items are a sample of elements frequently considered in establishing the need and purpose of a project. Often several of these elements help to define the N&P. In defining a project's N&P, responses don't need to be elaborate unless additional details enhance its understanding by participants that will be developing, reviewing, and approving the project scope.

Table 1: Sample Elements to Consider in Establishing a Project's Need and Purpose

Ask: Is the project **needed** because:	Ask: Does the project's purpose:
Mandatory by regulation	Advance the airport's strategic plan
Adds capacity	Enhance safety
Preserves capacity	Improve security
Required maintenance/replacement	Reduce costs
Improves customer service	Add revenue
Maintains customer service	Relate to marketing
Resolves operational efficiency	Relate to the environment
Off-airport user/tenants demand it	Meet or heighten future growth

By responding to the above suggested elements or other airport-specific elements, an N&P can be established and incorporated into project scoping. This exercise also allows the airport to better identify funding options considering that several of the above-listed elements are determinant in establishing eligibility requirements with FAA Airport Improvement Program (AIP) grants, Passenger Facility Charges (PFCs), and state and local funding programs.

Scoping

When scoping a project, it's important to focus on the main objective the project seeks to achieve. The scope needs to set project boundaries, clearly define its purpose and need, and establish deadlines and expected deliverables.

As a minimum, the project scope should include:

- project outline;
- a timeline;
- budget;
- project delivery method;
- potential funding sources;
- assigned tasks;
- project cost risk index;
- deliverables;
- relevant project participants/interested parties; and
- workflow/implementation strategies.

Project outline: A detailed comprehensive non-technical narrative of the project that includes descriptions of all major required tasks.

Timeline: A graphical representation of the implementation times of all major project tasks.

Budget: A cost estimate of all major tasks that will be required to implement the project. The budget should be in current dollars and account for cost escalation and include a project contingency or allowance (as discussed in Chapter 2).

Hint! *Early consultation and engagement with interested parties should be part of project scoping.*

Project Delivery Method: A description of the method proposed to implement and deliver the project.

Potential Funding Sources: A list of funding sources and amounts available for project implementation.

Assigned Tasks: A description of responsible parties within the airport for each of the project's major tasks.

Project Cost Risk Index: Establish whether the project has a high, medium or low-cost risk index considering length of project implementation, previous experiences in implementing similar projects, project complexity, and project delivery method used.

Deliverables: A list and brief narrative description of expected project deliverables.

Relevant project participants and other stakeholders: A list of interested parties that will be positively or negatively impacted by the project.

Workflow/implementation strategies: A description of expected project workflow and implementation requirements and strategies. Include a list of all required predecessors that can impact project implementation.

Project Delivery Methods

The decision on the preferred project delivery method to be used by the airport rests largely on the level of control the airport chooses to maintain through planning, construction, and operation. Some of the airports interviewed for this paper have used public-private partnership (P3) delivery approaches for specific projects, generally for non-terminal related activities (e.g., rental car, cargo, people movers or trains), allowing them to maintain focus on their primary activities (terminal and airfield). P3s are viewed as another option in project delivery. However, based on the feedback provided, this option has been and will be used selectively by airports.

In evaluating project delivery methods, airports are focused on maintaining control. Private capital approaches, such as P3 transactions, are considered but have been implemented sporadically, especially for terminal development projects.

In contrast, the U.S. has seen more alternative delivery approaches for non-terminal developments, such as consolidated rental car facilities.

As an example, the Reno-Tahoe Airport Authority (RTAA), operator of Reno-Tahoe International Airport (RNO), has examined and utilized alternative delivery approaches. The key factors RTAA identified in evaluating approaches were 1) maintaining requisite level of control and 2) cost effectiveness. For terminal-

related concourse projects, RNO is utilizing a construction manager-at-risk (CMAR) approach. Alternatively, for development of a consolidated rental car facility, RTAA is considering utilizing a P3 long-term concession. This project is designed to be fully supported by customer facility charges (i.e., no airport revenues). By shifting responsibility for delivery of this project to a third-party developer/operator, RTAA can focus on other airport projects and offload any issues for the RAC.

Case Study: Eugene (OR) Airport

Eugene Airport (EUG) is a municipally owned airport that is classified as a small hub airport by the FAA, ranked as the 106th busiest airport (based on enplanements). In calendar year 2023, EUG experienced over 780,000 enplanements, representing a 38% growth over the prior year record in 2019. EUG operates as an enterprise fund of the City of Eugene with its financial operations presented as part of the city's annual report. With the growth in enplanements, EUG is experiencing upgauging of aircraft providing service, adding additional seats to serve the market.

EUG conducted an advanced terminal planning study related to addressing the impacts of new airline entrants, more expeditious growth and recovery after COVID, passenger recovery from Portland International Airport, and the addition of new routes with larger aircraft for existing airlines. As of September 2021, EUG's terminal reached capacity with all ticket counters, all gates and all remain overnight (RON) aircraft parking spaces being fully utilized. To accommodate the additional passenger demand, EUG will need to expand its infrastructure. EUG's planning consultant has recommended the following projects for development: ticketing expansion, outgoing baggage/baggage claim reconfiguration and expansion, construction of new Concourse C, expansion of Concourse A, and additional improvements. In aggregate, the cost for the terminal and related improvements exceeds $300 million (as of December 2022 EUG Advanced Terminal Planning Study).

As an enterprise of the City of Eugene, decisions regarding the method of funding are made by city council. For example, city council approval would be required as EUG evaluates whether an alternative delivery method/P3 would be utilized in connection with its terminal development. Based on conversations with airport management representatives, the appeal of the P3 approach is that it would accelerate the delivery time for the new project, potentially alleviating more quickly the immediate capacity crunch that EUG is experiencing. Additionally, the P3 approach may be cheaper to implement. At the same time, management recognizes that it would be giving up control in the P3 approach, and that there would be a long-term relationship with a commitment by the city to forego certain functions that historically had been its responsibility.

Cost Estimating

Estimating project costs accurately is essential to the development of a capital improvement plan. When relevant, project costs not only should include construction costs, but also related design, planning, environmental and other costs commonly referred to as soft costs. The level of accuracy of cost estimates generally increases as projects are better defined and as designs are progressed and ultimately completed. Frequently, cost estimates for projects that are included in capital improvement plans are developed from basic project sketches that provide minimum technical information and definition, requiring cost estimators to add large contingency amounts to total project costs. (As discussed in Chapter 4, different project delivery methods aim to balance control, costs, and risks.)

Airport capital improvement plans would greatly benefit from having better defined projects that generate more accurate cost estimates. An effective practice used by several major airports around the nation to improve the accuracy of cost estimates is conceptually to design projects that have been tentatively included in a CIP. The level of design used provides sufficient detail of all major project components for estimators to improve the accuracy of cost estimates. Generally, the level of the concept design used is 30% of the total design.

Hint! *Local cost escalation should be accounted for in all project cost estimates.*

Cost estimates need to account for the time it will take for the project to be completed. This is generally done by including cost escalation. Cost escalation is a provision included in cost estimates to account for changes in the cost of labor, equipment, and material due to continuing price variations over time. Construction cost escalation indices can be obtained from a variety of sources, including RSMeans, S&P Global, ENR and others.

Airports have generally incorporated escalation into project cost estimates either by directly including them as a distinct separate line item in project budgets, commonly referred to as an escalation reserve (or a contingency or allowance as discussed in Chapter 2), while others include them as integral component of the overall project budget.

Contingency Planning

The primary objective of contingency planning is the creation of a plan of actions and decisions that the organization will need to make before or after an unexpected event occurs. Contingency plans consider identifiable risks and unexpected events that may arise during different project phases. As it relates to the management of capital improvement plans, airport entities often plan for both changes in project cost and completion times, as well as unpredictable risk exposure to the airport entity. Contingency planning needs to be an integral component in the development of CIPs.

Under the cost contingency method, airport entities and their consultants have typically used cost contingencies that are established as a percentage of project costs by estimators and project managers. The percentage value is determined by considering the design level of the project when cost estimates are prepared, or in the case of projects under construction, based on the project's implementation progress level. Cost contingencies can be as high as 35% of total project costs if the project has not been designed and is still at a planning level. Contingencies are normally reduced to single digit percentages once projects are fully designed and awarded.

Cost and time contingency amounts depend on a variety of direct and indirect factors that have an impact on project costs, timeline, and risk levels. Direct factors are those directly attributable to events and actions caused by airport entities such as changes in policies, project scope and expectations, risk levels, changes in management and others. Indirect factors are those attributable to regulating agencies, airport users, changes in air traffic volumes, weather, and other factors not attributable to the airport entity.

Most recently, airport entities are creating general CIP reserve accounts that include a budget that accounts for amounts estimated for all CIP projects. Having a single reserve account has its advantages and

challenges when dealing with projects being implemented simultaneously. As projects are implemented and risk levels decrease, the amount of budgeted reserves could be reduced. However, airport entities often maintain them at the same level.

Time contingencies are often reserved for high profile projects with long implementation timelines. Time contingency planning is typically a result of information that is provided by examining estimates of project completion timelines in monthly progress reports and is often kept at a project level. Time contingencies should be shared with the financial departments as part of the project monitoring and report submittals. Recently, there has been interest in using other non-deterministic methods to develop contingency plans and values, mainly for cost contingencies. These are based on probabilistic estimates using, for example, Monte Carlo simulations, to control target costs and keep actual project costs below them. This method provides a performance status rating that can be used as a benchmark for decision-making.

Contingencies vs. Reserves

Cost and fiscal feasibility are critical considerations near the final step of approving capital projects or a capital program to move forward to environmental review. An important part of this cost will be the appropriate level of contingencies and reserves. In this context, there is an important distinction between a contingency and a reserve.

- **Contingency** – a *project* would have a contingency or allowance, determined and budgeted when a project is awarded, for cost overruns due to cost escalation or other unknown conditions. Often, once approved, no additional authorization is needed for the use of a contingency.
- **Reserve** – sometimes referred to as a program reserve, owner's reserve, or director's reserve. This is an allowance for the capital *program* as a whole and includes funds set aside that are tracked and reported on separately. The use of a program reserve requires a request and approval before monies can be allocated to individual projects for scope increases, or if an individual project has exhausted its previously budgeted contingency.

"Reserves and contingencies are important as change is inevitable, and budgets are never accurate. It's a fine balance of setting up too many or excessive reserves or contingencies as there is a high probability that additional scope may be added when not necessary."[14]

Monitoring and Reporting

Monitoring and control of project implementation is a crucial component of a proper CIP project implementation strategy. Airport project monitoring and control provides management with regular information on projects status, allows identification of potential problems before they occur, identifies potential risks, and identifies deviations from the project scope and plan. Project monitoring is essential to complete projects on budget, on scope and on time.

Project monitoring should be conducted with various levels of scrutiny with an organizational structure in which project managers and financial staff are aligned at the highest level. Reports on project status and controls need to be provided to all agency executives, including at a minimum the chief financial officer, chief executive officer, and the chief operating officer. Directors of operations, safety, maintenance, facility

[14] Interview with the Salt Lake City International Airport.

and security all should be involved in project monitoring, although their monitoring levels are lower than those of the project managers.

Project monitoring and control methods vary from the use of highly sophisticated software systems to simple MS Excel spreadsheets. The frequency and quality of the monitoring process has a direct impact on its effectiveness, although its cost needs to be balanced against the benefits it generates.

Organizations should have a well-defined, standardized project monitoring and control process that establishes monitoring levels and frequency of reporting. The process should also include a template that describes the required information and the level of detail expected. Requests from interested parties using the report should be sought when defining the report's content and level of detail.

> ***Hint!*** *Develop a project monitoring and reporting standard process with input from interested parties.*

Reports often include the following:

- Project performance status: Activities and achievements during the period, level of progress by tasks, amounts spent and balance by task, overall project schedule.
- Project performance look-ahead: Expected level of progress by task, expected amounts to spend by task, expected project schedule by the next progress report.
- Change orders during the period.
- Change orders to date.
- Problems that occurred during the period.
- Future Issues of concern or risk to the project.
- Use of project contingency against contingency allowance.

Case Studies

A conversation with the chief financial officers of Los Angeles World Airports (LAWA) and the Maryland Aviation Administration (MAA) provided the following highlights related to the processes used in the management of their respective CIPs. They included components as they relate to project scoping, cost estimating, contingency planning, and project monitoring.

LAWA

Project Scoping:

- Having an approved airport strategic plan (ASP) is a key first step in establishing what projects are included in the CIP.
- The development of the CIP is an iterative process between the finance and planning departments guided by the ASP, and vision and the leadership of the airport CEO and the board.
- A clean sheet process to develop a 10-year CIP starts with the finance department determining affordability limits that will bind the projects that the planning department will include in the CIP.
- The planning department determines the list of projects that will be included in the CIP, considering the affordability limits provided by finance less a reserve amount that they maintain for cost increases and unexpected projects.

- The CIP scoping and funding process starts with identifying the projects that fit within the affordability limits, minus the reserve, prioritizing those that are key to meet the ASP.
- The CIP should be updated with some regularity, not necessarily adding new projects but adjusting and refining those that already have a placeholder in the CIP.
- The airport's current ASP demands very large key projects, so the prioritization of these projects is simpler as the planning department knew it had to include those projects to realize the ASP.
- The planning department guides the CIP process, including project priority, with the airport's CEO leading the prioritization process.
- The first version of the approved CIP provides placeholders for projects that will be implemented. However, actual project implementation requires approval by the airport governance team before the project can go to the board for contract approval.

Cost Estimating:

- Project costs are developed jointly by an internal cost estimating group within the planning group and by third parties.
- Finance and planning collaborate on setting escalation costs for the various projects. Planning determines a calculated uniform escalation rate for every project, and occasionally updates it to reflect specific events that impact project costs.
- The airport would benefit from having better tools and information on construction pricing as it has been difficult to estimate escalation and contingency costs to have a more "realistic" forecast/look-ahead of costs.

Contingency Planning:

- Once a project is included in the CIP, it is assigned a budget and funding. Every effort is made to ensure that the project stays within the budget and funding plan.
- If a project goes over budget, the planning group determines if it can find an offset. For example, this could be done by deprogramming something else. The group avoids dipping into the reserve as much as possible.
- Project budget underruns are also tracked, and any savings are sent back to finance for use in the next fiscal year or for other uses.
- The planning department determines the list of projects that will be included in the CIP, considering the affordability limits provided by finance less a reserve amount maintained for contingencies, including project cost increases and unexpected projects.

Reporting:

- Planning provides finance with a monthly project progress report that includes amounts spent and a look-ahead of what they estimate is required to complete the project.
- Planning reports include contingency amounts used and a percentage of the contingency allowance that has been used on the project.

MAA

Project Scoping:

- Having an approved airport strategic plan (ASP) is a key first step in establishing what projects are included in the CIP.

- The development of the CIP is an iterative process between the finance and planning departments guided by the ASP and the vision and the leadership of the airport CEO and the board.
- All projects included in the first CIP list are developed at a 30% level to improve the accuracy of the project's scope and budget.
- Heads of finance and the planning and engineering departments meet monthly to assess the status of the projects in the CIP and those being implemented.

Cost Estimating:

- Because projects that go into the final CIP are already at a 30% design level, cost estimates developed by consultants are considered more accurate.
- All cost estimates include local cost escalation costs determined by the consultants that designed the projects.
- MAA has been using alternative delivery methods such as CMAR to better control scope, cost and schedule.

Contingency Planning:

- Once a project is included in the CIP, it is assigned a budget and funding. Every effort is made to make sure that the project stays within the budget and funding plan.
- If a project goes over budget, MAA's engineering department determines if they can find ways to offset the additional funds by delaying a project or by deprogramming something else. If this is not possible, they request a state trust fund for the additional funding.
- Project budget underruns are also tracked, and any savings are sent back to finance for use in the next fiscal year or for other uses.

Reporting:

- MAA's engineering department provides finance with monthly project progress reports, including amounts spent and a look-ahead of what they estimate is required to complete the project.

4. Financing Strategies

Airport capital needs are currently estimated to exceed $150 billion through the year 2027, representing an increase of over 30% from the previous five-year timeframe. Given the size of this funding need, airports must develop approaches to match their capital financing requirements with the level of available funding, regardless of source. While in the recent past the amount of capital available for commercial airport development in the U.S. has not been constrained, best practice for airport finance managers is to put in place a process of evaluating and prioritizing capital investment needs and considering multiple available funding sources.

This chapter will focus on the processes utilized by several airports to evaluate the various capital expenditures that they may be considering to determine affordability and the appropriate project delivery method to balance control, costs and risks. There will be a focus on the particular metrics that airports consider when assessing if a project is considered affordable. Once that determination is made, there will be decisions made regarding the various methods for project delivery. Finally, the airport will evaluate financing approaches to provide funding.

In developing this chapter, interviews were held with senior finance representatives of the following: San Diego County Regional Airport Authority, Reno-Tahoe Airport Authority, Norman Y. Mineta San Jose International Airport, and City of Eugene (Oregon) Airport. The chapter includes brief case studies of these airports that demonstrate their approaches to evaluate projects and the funding for them.

As discussed in Chapter 2, the governance nature of the organization is an important factor in evaluating and proceeding with the capital program. Of airports that participated in the above referenced interviews, two are enterprises of municipal governments (San Jose and Eugene) and two are independent municipal authorities (San Diego and Reno-Tahoe).

The above airports listed several documents that provide guideposts in evaluating capital program and funding decisions, some of which have been previously mentioned in other sections of this paper:

- **Airport master plan**: Long-term planning document that provides overall strategic direction for airport development and serves as a required document for regulatory approval and grant eligibility.
- **Strategic master plan**: Generally, a shorter-term planning document (period of 5 years) with annual review to assess progress.
- **Airline agreement**: Governs nature of business relationship between airport and airlines providing service.
- **Debt policy**: Sets forth alternative financing structures with targeted financial metrics associated with each.

Based on favorable conditions in the financing markets, highlighted by low interest rates and the availability of tax-exempt municipal bonds for most airport projects, the airports have generally utilized what they consider as conservative financing approaches, focused on maximizing grant receipts (including AIP and BIL program grants), as well as PFC revenues. The bonding component of the finance plan is oriented to long-term fixed rate borrowing with the use of an alternate interim funding vehicle (such as commercial paper or revolving credit line) to provide flexibility and to provide ongoing capital funds between long-term borrowings. The interim funding vehicle has been utilized to provide a relatively cost-effective source of

short-term funding for start-up program elements (e.g., design costs) in advance of the full CIP details being finalized.

Below are case studies of the various airports that participated in interviews highlighting their financing decision-making process and their key considerations in moving to fund airport capital programs.

The Role of Airline Agreements

Airports of all sizes undertake a thorough planning exercise when considering a new capital program. The process is guided by an approved strategic plan that provides the strategic direction for the airport, but also closely involves the airlines serving the airport. The nature of airport/airline business arrangements can significantly impact the amount and timing of capital projects. Although the terms of the airline lease agreements may not require it, from a credit rating agencies' standpoint, airline buy-in is more necessary when the cost and impact of the project is more substantial.

Case Study: Norman Y. Mineta San Jose International Airport

San Jose Mineta International Airport (SJC) is a medium hub airport, one of three main commercial service airports located in the San Francisco Bay Area (the others are San Francisco International Airport and Oakland International Airport). SJC is an enterprise of the City of San Jose. SJC is ranked by the FAA as the 39th largest airport in the United States based on enplanement levels in calendar 2022. During the timeframe fiscal year 2016-2017 through to fiscal year 2018-2019, SJC experienced three years of double-digit passenger traffic growth at a compound annual growth rate of 14%, leading it to build a six-gate interim facility to accommodate the traffic. COVID followed this growth, which led to a dramatic reduction in passenger traffic activity.

SJC is run by the City of San Jose Airport Department and the airport director reports to the city manager. The finances of SJC are managed by SJC staff, who coordinate with the San Jose Departments of Finance and Budget. SJC operates as a self-sustaining enterprise of the City of San Jose and is not supported by general city revenues or tax receipts.

SJC currently operates under an airline-airport lease and operating agreement that is scheduled to expire in June 2029. The agreement calls for rates to be set based on a residual methodology in which signatory airlines commit to full cost recovery, including operating expenses and capital charges/debt service, for airfield costs and airline gates and ticket counters within the terminal. Other terminal-related costs are compensatory in nature, whereas SJC is responsible for related costs and maintains financial benefit from such facilities. According to airport management representatives, SJC reached an agreement with airlines because its approach preserves balance of risk and reward between the airlines and the airport.

The city has outstanding approximately $1 billion of airport revenue bonds secured by general airport revenues, including certain bonds issued to finance construction of a consolidated rental car facility. Additionally, the city is authorized to have up to $75 million in commercial paper notes to provide additional liquidity as needed. SJC has taken a conservative approach to its bonding needs, utilizing long-term fixed rate bonds as the primary financing vehicle. When large capital projects are approved, management indicates that they will use commercial paper as an interim funding source, which will then be retired/refinanced with the issuance of long-term debt.

SJC determines project affordability based on project size and the impact it may have on airline costs, as well as the airport's ability to pay for its portion, based on the terms and conditions of the airline/airport lease and operating agreement. Management monitors cost per enplanement (CPE) levels, debt per enplaned passenger and days cash on hand (DCOH) as key financial metrics. The focus on DCOH results in certain projects that could otherwise be paid for with cash to be delayed pending the accumulation of additional liquidity, balancing the operational need with financial considerations. **Under the airline agreement, SJC may proceed without airline approval for capital projects that cost less than $10 million.**

SJC is in the planning process for a new terminal concourse, including a total of 14 additional gates, as well as a new central utility plant. The estimated cost of the new terminal project is more than $1 billion. While costs related to the new terminal are pre-approved by the SJC signatory airlines in the current airline agreement, SJC will only proceed with the new terminal project when the operational need exists, taking into account relevant financial concerns. Following the COVID pandemic, the recovery of business travelers has been slow for SJC and with the other Bay Area airports. **Discussions with the airlines regarding the terminal project to develop a financing plan that will meet SJC and airline financing objectives are expected to reconvene in 2024 as passenger levels continue to recover.**

SJC management indicated that for projects that are not eligible to be included in the airline rate base, they will delay moving forward on the project. This will allow management to amass additional available discretionary cash that could be used to pay for the project without the requirement for airline-supported revenues to repay related debt service.

Funding Sources

Airports have benefited from plentiful availability of capital at attractive funding rates. Consequently, airports have adopted conservative financing plans to lock in long-term financings. This financing vehicle can be diversified with the implementation of an interim financing program, either commercial paper or credit line, providing airports with a means for funding before/between long-term bond transactions.

Case Study: Reno-Tahoe Airport Authority

Reno-Tahoe Airport Authority (RTAA) is a quasi-municipal corporation that began operation on July 1, 1978. It is governed by a nine-member board of trustees appointed by the City of Reno, City of Sparks, Washoe County, and the Reno-Sparks Convention & Visitors Authority. RTAA is an independent entity that is not part of any other unit of state or local government and does not use property or sales tax to fund its operations. It is the owner of Reno-Tahoe International Airport (RNO), its primary commercial service airport, and Reno-Stead Airport (RTS), a general aviation facility. RNO is classified by the FAA as a medium hub airport (had been classified as a small hub as recently as 2019) and was the 63rd busiest airport in the United States in calendar year 2022.

RTAA maintains a five-year strategic plan that is based on input from the RTAA board, employees, the public and interested stakeholders. Based on the mission statement and strategic direction articulated in the strategic plan, RTAA developed eight strategic priorities focused on air service and cargo, safety and security, general aviation, customer experience, people, financial diversification and growth, facilities for the future and sustainability.

RTAA completed a detailed planning study in 2023 that recommended the full replacement of two terminal concourses, replacing the existing 23 gates with 28 gate concourses. Project costs are approximately $570 million.

In evaluating a capital program, RTAA starts with its existing airline agreement as many of the projects in its capital program will be paid for by airline rates and charges. RTAA's objective is to keep CPE as low as possible, while satisfying certain financial metrics, including maintaining debt service coverage of at least 1.50 times, maintaining DCOH of at least 365 days, and maximizing the use of grant and PFC revenues with the objective of limiting airline costs. For example, RTAA will attempt to maximize grant proceeds and PFC revenues for airfield costs. **RTAA's financing approach endeavors to limit bond related and other borrowed funds as much as possible, maximizing PFCs on a PAYGO basis and utilizing grant funding. With respect to bonding alternatives, RTAA takes a conservative approach, focusing on long-term, fixed-rate borrowing.** To provide financing flexibility, it maintains a short-term borrowing facility that provides cash flow funding on an interim basis that will then be retired with the issuance of long-term bonds. As mentioned above, RTAA is evaluating an Airport Terminal development, with cost estimates in the range of $570 million. Faced with an uncertain interest rate environment, RTAA is in the process of updating its financial model to include a higher interest rate scenario. In addition to a potentially higher financing cost, the tighter availability of labor is resulting in greater cost pressures on its projects. As a result, RTAA is evaluating modular based construction allowing for phased construction and deferral of costs.

Financial Metrics

Airports are mindful of financial metrics in evaluating projects. The most important measures are debt service coverage, DCOH, and airline CPE.

Case Study: San Diego County Regional Airport Authority

The San Diego County Regional Airport Authority (SDCRAA) was established to operate San Diego International Airport (SAN). SDCRAA's governance board is comprised of nine directors appointed by regional governmental bodies. SDCRAA operates as a self-sufficient, stand-alone enterprise without any management responsibility or financial support provided by local governmental agencies.

SAN is classified by the FAA as a large hub airport, ranked in 2022 as the 25th busiest airport based on enplanements. It is the busiest single-runway commercial airport in the United States based on passenger levels. For calendar year 2022, passenger traffic at SAN was 98% origin and destination in nature.

As of December 2023, SAN had approximately $3.8 billion in general airport revenue bonds outstanding, along with a subordinate credit agreement in the amount of up to $200 million. Additionally, SAN has outstanding approximately $270 million of special facilities bonds that were issued to finance the cost of development and construction of a consolidated rental car facility.

SAN has entered into airline lease agreements for a 10-year term expiring in July 2029. The agreements call for landing fees calculated according to a cost center residual methodology and terminal rental rates that are established based on a cost center compensatory methodology.

SAN maintains a rolling five-year capital program that consists of 1) ongoing airfield safety and capacity improvement program, and 2) the construction of New T1 that replaces the existing Terminal 1 with a larger more efficient facility. New T1 is expected to be designed and constructed through CY 2028.

Budgeted cost of New T1, and required associated costs, is approximately $3.83 billion, of which approximately $1 billion has been incurred through June 30, 2023.

In determining its approach to pursuing capital projects, the SDCRAA uses its master plan and strategic plan as guiding documents. Additionally, the SDCRAA maintains a rolling five-year capital program budget that governs the nature of projects being financed and is refreshed and annually approved by the board. The capital budget ranks capital projects based on the following criteria:

- Safety/regulatory requirement
- Maintain core building systems
- Enhance access
- Customer service/revenue enhancement/cost savings

Additionally, SDCRAA maintains a strategic plan (like its master plan) that has as core a tenet maintaining affordability. The current strategic plan was adopted in 2017 and extends at least through the first phase of the New T1 Program. It is subject to review on an annual basis. The authority board has adopted a debt issuance and management policy that contains certain affordability guidelines. **Affordability for these purposes is designed to reflect the following targets: 1) seek to maintain a competitive CPE, 2) DCOH of at least 600 days, 3) maintain true debt service coverage at a minimum balance of 1.40 times, and 4) maintain a rating on senior bonds of at least not lower than A1/A+ category.**

Key affordability targets for SAN are based on maintaining its targeted minimum credit ratings. **For purposes of financial metrics, SAN uses the metric of net debt to cash flow after debt service (CFADS), which is designed to be a comprehensive calculation of net revenues that flow through the flow of funds waterfall and contribute to enterprise surplus. SAN also targets DCOH as a measure of available liquidity.** Finally, from an airline cost per enplanement perspective, SAN does not have a hard and fast number that it is targeting, only that it desires to have its CPE be cost competitive with other airports within its peer group.

The decision on what type of financing to use for a capital program is part of a financial planning exercise. According to SAN management feedback, the financial planning team will take a conservative view regarding assumed borrowing costs and capital costs.

5. Summary and Conclusions

Maintaining and expanding U.S. airport infrastructure requires constant identification, evaluation, prioritization, and implementation of the appropriate projects that constitute major investment programs. This is expected to be particularly critical over the next several decades, as U.S. airports face a combination of continuing air traffic growth, aging infrastructure assets, consolidation of air traffic that has accelerated growth in many markets, and a period of deferred and delayed maintenance and development during COVID, which is now leaving many airports in catch-up mode.

This review of CIP planning and delivery approaches has highlighted critical elements for the successful rollout of major capital cycles from the perspective of finance professionals. This includes elements of foundational planning exercises, as well as ongoing oversight of projects and finances with stakeholder management throughout.

Through a series of interviews with airport finance leaders, the authors of this paper noted the critical importance of integrating CIPs into broader, longer-term airport strategic planning, including both physical master planning and organizational strategic planning. This context is important to ensure that CIPs are consistent with both the broader aims of the organization and compatible with long-term site constraints. Given the different sizes of airports and their capital needs, the extent to which the techniques addressed in this paper may vary, but all airports that participated in this whitepaper stressed the need for both long term and shorter-term planning with an ongoing assessment of how best to meet needs of the air trade area.

Noted throughout our conversations with airport officials was the importance of early engagement with a broad spectrum of stakeholders. Some airline agreements have specific mechanisms for review and approval (at the outset of a CIP and/or for certain changes) but even for those that do not, airlines represent a critical end user whose needs and strategies should be aligned with the airport's investment goals. Collaboration with airline users regarding project scope, timing and delivery method can lead to successful CIP implementation. Communication with other key stakeholders such as the public, governmental agencies, investors/ lenders, and rating agencies, are also key to ensure broad alignment behind the interests of the airport and ensure full access to a variety of funding and financing options that can help support ambitious CIPs.

As airports proceed with planning, it is essential to develop clear statements of need and purpose and to develop internal procedures upfront for the evaluation of the operational and financial viability of projects, for monitoring project progress and for making decisions regarding changes as required. This requires consideration of how project management and financial management will be aligned and progress monitored, especially considering the typical mix of management partners that include contractors, consultants, and other advisors in addition to airport staff. Clear decision-making frameworks and procedures ensure timely review and decision-making and avoid the pitfalls of reactive decision-making midstream.

Throughout the planning and implementation of a CIP, airport finance staff should continue to lean on the strategic planning materials mentioned at the outset. These should again focus on integration of the CIP into a broader vision and mission of the organization. They should also consider the physical development of the airport as a mechanism to achieve those goals. This broader strategic perspective requires finance staff to think and act collaboratively, working across their own organizations and externally with

construction and development partners. Finance staff can and should benefit from the experiences of other airports – as this paper has tried to highlight. This can include outreach and consultation with airport management peers. It should also incorporate an appropriate mix of external project, commercial, legal, and financial advisors to help evaluate and develop program options that are best suited for each unique airport environment.

Additional information and resources about CIP management can be found from AAAE, as well as from the authors of this paper.

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