



June 8, 2001

TO: The Honorable Members of the San Francisco Board of Supervisors

FROM: Clarice Duma, Sr. Legislative Analyst

FILE #s: 002134 - Short term Airport Demand Management Solutions

HEARING: Housing, Transportation and Land Use Committee

HEARING DATE: June 14, 2001

SUMMARY OF REQUEST

A motion approved by majority vote of the Board of Supervisors requests that the Office of the Legislative Analyst study demand management strategies of major airports and assess which strategies could be used in San Francisco.

EXECUTIVE SUMMARY

According to the FAA, demand for air travel has doubled in the last 20 years, and is expected to grow annually from more than 600 million passengers to 1 billion passengers by 2010. Accompanying the growth in air travel, is mounting pressure for airports – including San Francisco International Airport (SFO), air carriers and governmental agencies, such as the Federal Aviation Administration (FAA), to improve air service by reducing flight delays (and cancellations) and increasing capacity in order to meet increasing demands in passenger and air traffic. This report focuses on three demand management strategies intended to address these issues: (1) Airport construction and runway expansion projects, currently occurring or being considered in many major airports, with the support of the FAA, and challenged in some communities by citizen's groups; (2) Modernization of the National Airspace System (NAS), an effort that has encountered funding and deployment difficulties in the past, but is still supported by the FAA through its ten-year modernization plan; and (3) Regional collaborations involving neighboring airports - a complex idea that will continue to form part of the national discourse, and draw the attention of groups in the aviation community.

BACKGROUND

According to the FAA, demand for air travel has doubled in the last 20 years. The Office of the Inspector General (OIG), a division of the Department of Transportation (DOT), also reports that between 1995 and 1999, air traffic grew by 8.3 percent. The Federal Aviation Administration (FAA) and the National Air Traffic Controllers Association (NATCA) expect this trend to continue through 2010, when the level of commercial passengers is expected to grow annually by 50 percent, from more than 600 million passengers to 1 billion passengers.

Accompanying the growth in air travel, is the challenge for air carriers and airports to provide the flying public with reliable and timely service, which is necessary to address chronic problems with flight delays and cancellations, particularly in the nation's hub airports. Data from the FAA indicate that between 1995 and 1999, the length and number of flight delays¹ increased by 58 percent nationally, and reached another record high in 2000, when delays increased by an additional 20 percent from the 1999 levels. The DOT's Bureau of Transportation and Statistics (BTS) also reports that the average delay

¹ Delays are defined by the Department of Transportation as arrivals at the gate more than 15 minutes after scheduled arrival time.

grew by 68 percent from 42 minutes in 1995 to over 50 minutes in 1999. Flight cancellations also increased by 68 percent during this same period, from almost 1.7 percent in 1995 to 3 percent in 1999.

Major airports, such as those located in Chicago, Dallas and of course, San Francisco, which are also the busiest hubs for air carriers, have come under fire to increase capacity in order to better manage demand by passengers and air carriers. The FAA and other federal agencies are also under pressure to upgrade outdated and unreliable technologies and equipment, which have also been blamed for contributing to airport delays. Airlines have also been criticized for their peak-hour scheduling practices, which critics believe contribute to flight delays and cancellations. Many of the demand management strategies that are currently under consideration are intended to address these issues.

Background: San Francisco International Airport (SFO)

Figures released by the FAA show that in 2000, SFO had the worst on-time record of any major airport in the United States and was also the nation's fourth worst airport for passengers. Airport officials have acknowledged problems with on-time performance. However, they point out that unlike other major airports such as La Guardia, and Kennedy, O'Hare, and Reagan National, which also suffer from chronic shortages of runway and/or gate capacity, aviation operations at SFO are frequently impacted by adverse weather conditions. Officials assert that bad weather in the Bay Area affects the ability of air carriers to land and take off on schedule. They point out that during summer mornings, problems with fog occur at a rate of no fewer than 10 days per month; and during the winter, SFO must contend with rainstorms, sometimes accompanied by gusty winds, which can last all day.

Airport officials further point out that during good weather, SFO can handle 60 arrivals per hour with two arrival runways. However, during poor weather, SFO's capacity is reduced by half, resulting in severe delays of up to several hours and flight cancellations, both into and out of SFO. Because SFO is a major hub for both national and international travel, SFO officials state that, flight delays and cancellations at the airport have global repercussions, affecting the air transportation system nationally and abroad.

A study conducted by SFO's consultants last April 2001, reported that while not all delays are weather related, bad weather is largely responsible for delays and cancellations at the airport.² For example, it reported that on good weather days when the airport operates at full capacity, about 2 percent of scheduled flights are cancelled and 83 percent arrive "on time" – i.e. no more than 14 minutes after their scheduled arrival time. During bad weather, the study reports that "on-time" arrivals slide to 67 percent when the weather is bad in the morning, and drop further to 48 percent when the weather is bad all day.

SFO officials state are studying various options to improve performance and meet passenger demand. They state that they are considering both "build" and "no-build" options to address these issues. Airport staff further states that, regarding the build option, SFO policy requires that there be "net environmental gains" associated with this alternative. They have developed the Runway Reconfiguration Program (RRP), whose purpose is to "reduce existing and projected flight delays and accommodate existing and anticipated aircraft, as well as accommodate projected flight demand; thereby, achieving efficient operations under all weather conditions, while addressing the Airport's goal of reducing human exposure to noise."³

Environmental groups, such as Save The Bay, are skeptical of the airport's statement of ensuring net environmental gains. While such project proposals are required to offer a mitigation plan, staff at Save the Bay believes it is premature for SFO to propose any particular mitigation package. They add that, only when the airport knows which alternative it wishes to pursue, would it be warranted to offer a specific type of mitigation. They instead, believe chronic delays and low capacity at SFO could be addressed through other means, including new technologies such as highly precise radar and global positioning satellite links. In addition, environmental groups have proposed that more efficient use of the airport, such as through scheduling more flights at off-peak times, could relieve problems with traffic congestion, flight cancellations, and flight

² The study, "Reducing Weather-related Delays and Cancellations at San Francisco International Airport," was published in April 2001 by Charles River Associates, Inc. and John F. Brown Company for SFO.

³ The Purpose and Need Statement for the RRP was developed by SFO in conjunction with the FAA and the Office of Environmental Review (OER).

delays at the airport. According to airport staff, the only off peak times at SFO are between 10pm and 7am, and scheduling more flights into these hours would substantially increase noise to the communities surrounding SFO. Staff also adds that it is unlikely that passengers would want to travel at these hours. A spokesperson for the Regional Airline Association (RAA)⁴ has also suggested that off-peak scheduling is not a viable option because the demand for peak hour travel is determined by air travelers who seek to optimize their business or leisure travel by choosing these convenient times. It should however, be noted that airlines, as a matter of practice, already do schedule some flights, including those referred to, colloquially, as “red-eye” flights- during these off-peak hours. Neighboring communities, affected by airport noise, have however, also protested and urged airports to curb late-night scheduling of flights.

There is also increasing pressure for the region’s three airports in San Francisco, Oakland, and San Jose to work collaboratively to ease traffic congestion and accommodate increases in passenger volume. SFO staff states that if legislative approvals (from Congress) were obtained for joint operations among these airports, this option would still require these airports to have excess capacity for future uses. They further cite the 2000 Regional Airport System Plan, which reports that adequate runway capacity in Oakland and San Jose, will last until 2010 and 2020, respectively. Therefore, according to airport staff, collaborations involving the shifting of flights among Bay Area airports, would cause these facilities to lose both runway and terminal capacity even sooner.

CURRENT LAW AND PRACTICE⁵

The FAA oversees the National Airspace System (NAS), which integrates all aspects of aviation including air traffic control management, aircraft standards, and flight procedures. Although they are subject to federal regulation on safety and security standards by the FAA, as well as some economic regulation by the DOT, airlines are generally free to establish pricing, routes, and services, and to operate at any airport at which they choose to serve. Congress grants authority and funding for the FAA and DOT to operate; it may also occasionally set national aviation policies and programs. Airlines and their contractors often argue that the Airline Deregulation Act (ADA), discussed below, preempts local airport regulations, although major airports, such as SFO, frequently challenge such preemption claims.

The provisions described below summarize regulations that impact operations in the nation’s aviation industry. For the most part, federal law supersedes regulatory actions at the state and local levels.

- Federal Grant Assurance Requiring the Airport be Available for Public Use on Reasonable Conditions and Without Unjust Discrimination [49 U.S.C. § 47107(a)(1)]. Airport sponsors must comply with the requirements of the “economic nondiscrimination” grant assurance as a condition of receiving federal assistance. This requirement curtails an airport proprietor’s ability to restrict particular classes or types of aircraft, even where such a restriction serves a salutary goal such as regulating airport noise or congestion.
- Multi-Airport Proprietor’s Rights. Pursuant to FAA Order 5190.6A, Airport Compliance Requirements, Section 2, ¶ 4-8(d), airport owners possess limited rights to allocate air traffic among airports that are commonly owned and operated for the purpose of reducing delay and congestion. The FAA Order imposes fairly stringent limitations on the rights of a multi-airport owner and operator. Moreover, federal law makes it clear that even a multi-airport proprietor cannot exclude entire classes of aircraft, such as general aviation.
- Title 49 of the United States Code (U.S.C.), Subtitle VII grants the FAA broad authority to regulate and control the use of the navigable airspace of the United States. Under 49 U.S.C. 40103, the FAA is authorized to develop plans for and formulate policy with respect to the use of navigable airspace and to assign by rule, regulation, or order the use of navigable airspace under such terms, conditions and limitations as may be deemed necessary. This regulation ensures the

⁴ The RAA represents U.S. regional airlines and the suppliers of products and services that support the industry, before the U.S. Congress, Federal Aviation Administration, Department of Transportation and other federal and state agencies.

⁵ Information provided by the City Attorney’s Office helped to compile the provisions described under this section. There may be other related provisions, which are not described in this report.

safety of aircraft and the efficient utilization of the navigable airspace. Section 40103 further authorizes and directs the FAA to prescribe air traffic rules and regulations governing the efficient utilization of the navigable space.

- The Preemption Clause of Airline Deregulation Act (“ADA”) of 1978 [49 U.S.C. 41713(b)(1)], prohibits local or state entities from adopting regulations “related to a price, route, or service of an air carrier that may provide air transportation.” Federal law that deregulates the air travel industry prohibits airports from determining which airlines and flights can use their facilities. Airline carriers can therefore determine scheduling for their flights, as well as which airports to use.
- Proprietor’s Exception to ADA [49 U.S.C. 41713(b)(3)] specifically provides that preemption authority under ADA does not prevent a local or state government entity that owns an airport from “carrying out its proprietary powers and rights.” Typically, these proprietary powers and rights have involved an airport’s exercise of control over noise, congestion, or other environmental issues relating to local airport operations. Furthermore, although the federal courts have not limited local airport proprietary rights to these particular issues, the scope of the proprietary rights exception has not been fully defined by the statute or the courts and is open to debate, according to the City Attorney’s Office.
- Parallel Runway Separation - Simultaneous IFR Operations [FAA Advisory Circular 150-5300-13, Section 208] recommends parallel runway centerline separation of at least 5,000 feet, “where practical.” Section 208(a) further provides that for simultaneous approaches, precision instrument approaches require electronic navigational aids and monitoring equipment, air traffic control, and approach procedures.

FAA regulations further provide that the 750 feet runway separation in airports like SFO, is sufficient to land two aircraft simultaneously during good weather, when visual flight rules (VFR) apply. However, during periods of limited visibility, when instrument flight rules (IFR) apply, the FAA requires airports with such narrow runways to operate with only one of their two arrival runways.

In summary, the FAA oversees the National Airspace System (NAS), as discussed earlier. The NAS also encompasses airports, airport management, and airport safety and security. As noted above, local airport owners and operators have limited authority to carry out their proprietary powers and rights in the management of the airport. However, as also noted above, the boundaries of these proprietary powers and rights have not been fully defined or tested. Furthermore, local authority to manage airports is also subject to state and local regulation - for example, SFO is subject to state provisions contained in the Public Utilities Code.

FACTORS CONTRIBUTING TO DECLINE IN AIR SERVICE

The aviation community - comprising passengers, airlines, airports, citizen groups, and government agencies, attributes declining air service and growing passenger dissatisfaction to various factors. Chief among them, are a growing demand for air travel, concerns over weather impacts, the scheduling practices of airlines, major airport construction projects, and the continuing reliance on outdated technological equipment and systems to run the nation’s aviation industry.

- Growth in passenger demand for air travel grew by 8.3% between 1995 and 1999, as noted earlier. As previously discussed, the number of commercial passengers is expected to grow annually by 50 percent to 1 billion by 2010. If passenger traffic does increase, as projected, airlines and airports will be challenged to devise ways of meeting this demand efficiently and in a timely manner. In many jurisdictions, various options are currently being considered in order to increase capacity and improve service.
- Inclement weather has been blamed for much of the aviation delays and traffic congestion in the nation’s major airports, including at SFO and in the western and north-western regions. During severe weather, certain flight paths must be blocked or closed to promote safety. Furthermore, air traffic controllers must either re-route or divert air traffic or place ground holds on planes if they are unable to fly to their destination airports. Additionally, the effects of bad weather on

air traffic appear to be worsening, according to some accounts. The FAA reports that in 1999, there were 247,586 reported weather-related delays, nationwide, which accounted for over 75 percent of all delays. By 2000, these delays had increased to over 300,000 – a 20 percent increase.

- Increased air traffic and airline scheduling practices have also been cited as major contributors to congestion, particularly in the nation's hub airports in San Francisco, New York City, Chicago and Dallas. The FAA and the National Air Traffic Controllers Association (NATCA) blame "over-scheduling" by airlines for causing systematic delays in the nation's major airports. They point out that airlines routinely schedule dozens of take-offs and landings within minutes of each other, thus greatly contributing to delays. Critics blame these flight delays and congestion problems on the 1978 deregulation laws which, they charge, indirectly led to peak-hour over-scheduling by allowing air carriers to control their own flight departure and arrival schedules. They add that these scheduling practices have caused gridlock in the runways and skies.

Airline associations have challenged these charges by stating that airlines are minimally responsible for flight delays in the nation's air industry. According to Deborah McElroy of the RAA, airline-scheduling practices have, in fact, been found to affect "only 11 percent" of delays. Airline associations such as RAA and the Air Transport Association (ATA) cite the FAA's OPSNET data, which they assert show that almost 90 percent of flight delays are attributable to other causes, such as weather.

- Airport construction, including runway construction and repair projects, have also been associated with delays and air traffic congestion. According to the FAA, construction-related delays rose by over 50 percent in 2000 to 26,587. These adverse impacts were noted especially in La Guardia, Boston, and Houston Inter-continental, airports that embarked on major construction projects.
- Technological and equipment failures in the FAA's air traffic control system also contributed to an increase in flight delays in 2000, according to the FAA. Critics have blamed antiquated equipment in the agency's flight control centers for service failures. The agency's own data, report that in 2000, equipment delays accounted for 2.14 percent of all flight delays – an increase of 20 percent from the 1999 levels. As discussed below, this agency has announced plans to improve air service by modernizing its systems and through equipment upgrades.

ANALYSIS: DEMAND MANAGEMENT STRATEGIES

Airport Construction and Runway Expansion

As noted earlier, insufficient airport capacity has been identified as one of the factors contributing to decline in air service. Major airports in Cincinnati, Washington - Dulles, Boston, Dallas, and Houston have either reviewed or launched plans to build new airports or expand their runways in order to accommodate the increasing demand in air and passenger traffic. Construction of new airport runways and expansion of existing runways are generally supported by the DOT and the National Air Traffic Controller's Association (NATCA) as the best, practical option for improving service and reducing flight delays. The FAA has also determined that a new runway allows an airport to conduct an additional 30 to 40 operations per hour in all weather conditions. Currently, there are 15 runway projects at various stages of development, which are slated for completion by 2010, according to the FAA. The FAA Airport Planning Division has pledged to expedite the construction of new runways -including those proposed in San Francisco, Cincinnati and Washington, DC - by streamlining environmental and administrative review requirements.

In the past, airport construction projects have proceeded at a slow pace, taking as much as 10 years to complete. For example, six new runways were built in the 1990s, even though there were over 30 runway construction projects in the pipeline. The highly bureaucratic approval process for such projects, to a large extent, affects the timing of projects. Findings made by the General Accounting Office also suggest that environmental reviews by state and federal agencies take as much as ten years or longer to complete. Challenges (of construction projects) by citizen's groups can also impact the time it takes to complete projects. These groups are usually concerned about the environmental soundness of projects as well

as impacts to wildlife and residents, and noise impacts that may result from landing larger jet aircraft on new and bigger runways. Political opposition to projects also plays a part in the timing of projects. It sometimes leads airport and federal officials to consider alternatives to airport and runway construction, for example, by urging air carriers to schedule fewer flights during peak periods and make other scheduling adjustments. For example, American Airlines has announced plans to relieve peak-hour congestion, and Delta Airlines is also working on realigning its schedules to relieve delays in Atlanta, according to the RAA. Therefore, even as the FAA pledges to expedite the review of airport construction projects, the ability of airports to launch construction and expansion projects will still be affected by these external factors and concerns.

Airport Construction at SFO

As discussed earlier, federal standards require instrument flight rule (IFR) operations during poor weather conditions. IFR operations require runways to be separated by 3,400 to 4,300 feet for simultaneous dual landings during low visibility. The current layout of the runways at SFO consists of two parallel runways spaced at 750 feet apart. According to airport officials, the current runway design reduces the airport's capacity when weather conditions are poor. To remedy this situation, airport officials have been considering proposals to reconfigure SFO's runways, which they believe will provide adequate capacity during adverse weather conditions. They estimate that the proposed runway reconfiguration will be a multi-billion dollar project, and will take up to a decade to complete. Airport officials believe that the new runways will provide sufficient capacity for simultaneous dual landings of aircraft during bad weather.

The airport's plans have encountered opposition from some members of the community. Environmental groups are concerned that the runway project, which includes bay fill, will displace and/or destroy wildlife and the bay's ecosystem, and that it will adversely impact water and air quality. Other critics fear that construction at SFO would exacerbate existing problems with traffic congestion. Government officials in San Mateo County have also weighed in, warning that the proposal for up to 1000 acres of bay fill would affect their community. They have demanded and been granted more participation in the airport's plans.

In regard to adding new runways, the Regional Airport Planning Committee recommends, in its 2000 Regional Airport System Plan, that all impacts on the Bay resources should be evaluated, including potential airspace interactions between airports, potential noise shifts, and increased air pollution.⁶ They also advise that mitigation plans need to be completed to offset any adverse impacts on the Bay. The draft Environmental Impact Report for SFO's runway project, due this Summer 2001, is expected to address issues around environmental and other impacts to the community. The airport's ability to launch such construction projects is also a policy matter for federal, state and local decision-makers. Local entities, such as the Bay Conservation Development Commission (BCDC), the Airport Commission, and the Board of Supervisors will review various aspects of SFO's construction project if and when they are presented to them for approval.

2. Modernization

Antiquated aviation equipment and systems have not sufficiently kept up with the demands of today's air traffic system. The FAA, which is largely responsible for managing the aviation system's technology, has pledged to improve the air traffic control system. Though plagued by funding constraints, the FAA has already begun deployment of its new technologies to large hubs and primary "bad" weather facilities. The agency also announced on June 6, 2001 that if its current air traffic control improvement program stayed on schedule for the next ten years, it would increase the capacity of the air traffic control system to handle commercial flights by as much as 30 percent. In addition, the control of aircraft in the air and on the ground would gradually shift to a satellite-based system. The agency also plans to re-equip the ground-based air traffic control system with digital radar and improved software and controller displays. The FAA has also announced other modernization plans that will help pilots and air traffic controllers to plan routes around bad weather. The FAA's 10-year modernization plan involves more than 100 projects, and it will be launched in the following three phases:

⁶ The Regional Airport System Plan is developed and updated by an advisory committee, the Regional Airport Planning Committee, comprising the Metropolitan Transportation Commission, the Association of Bay Area Governments, and the Bay Conservation and Development Commission.

- **Near-Term Plans** (2001) – For the short term, the FAA intends to resolve “choke points” in the national air traffic system that impede traffic flows. Secondly, it will revisit the issue of collaboration and information sharing with the airports and air carriers.
- **Mid-term Plans** (2002 - 2004) – This phase will be dedicated to modernization of the airspace, including navigation procedures. The agency will also promote its “Free Flight” program by collaborating with industry groups to ease congestion and improve the national air traffic system. Some in the air industry, including SFO officials, have stated that this program will do little to improve arrival capacity at airports during poor weather.
- **Long-Term Plans** (2005 - 2010) – Improved data communications, satellite navigation, and enhanced surveillance will be the key area of focus during the last five years of the FAA’s modernization plan.

The modernization plans proposed by the FAA have been in development for some time. The agency, while intending to improve air traffic systems, has encountered funding and deployment difficulties in the past in implementing its plans. The aviation community has pointed out that the success of the FAA’s ten-year modernization plans will depend on the agency’s ability to fund proposed projects, and provide training for air traffic personnel who will be utilizing new systems and technologies. The NATCA,⁷ has echoed these concerns by urging that modernization must be supported with sufficient and sustained funding. Even though Congress has resolved to infuse additional funding toward these efforts, it is still unclear how these commitments will translate to individual jurisdictions that are relying on federal support to upgrade their antiquated systems. In some regions, airports are already funding their own upgrades. For example, SFO staff states that they have advanced \$25 million of the airport’s own funding to expedite the deployment of critical technologies at SFO. See Attachment A for a description of new technology systems that will be installed at SFO to improve its navigation ability, including during bad weather.

Unlike the FAA’s past modernization efforts, local jurisdictions will expect the agency to launch these newly announced modernization plans with fewer hitches and greater efficacy. For example, many of the FAA’s breakthrough technologies - such as, automated systems and precision satellite guidance systems, are still under development and not ready for deployment. It remains to be seen the level to which new systems and technologies will benefit local jurisdictions, particularly major airports that have been plagued by delays and air traffic and passenger congestion.

Modernization in San Francisco

Airport officials state that SFO’s 30 year old technology has limited the airport’s capacity during bad weather. Local environmental groups believe that the airport’s performance could be improved through deployment of new technologies, such as highly precise radar and global positioning satellite links. As noted earlier, the airport has already allocated funding toward technological improvements. According to airport staff, SFO, together with the FAA and the airlines have begun investing in technology that will improve service at the airport, including installing new high precision radar. In addition, a flight procedure, called SOIA (Simultaneous Offset Instrument Approach), is in the development phase at the FAA, with the participation of airlines who will be using this new procedure. By installing this technology, SFO is expected to increase its capacity (during bad weather) from 30 arrivals per hour to up to 37 arrivals per hour, according to Andy Richards, Air Traffic Manager for the FAA Bay Terminal Radar Approach Control facility. While test flights have shown some promising results, airport staff states that the new procedure is effective for 7 percent of SFO’s weather conditions. They add that even with this increased capacity, the new technology will not provide full capacity to SFO, which occur during ideal weather conditions. Later this summer, a technology panel selected by SFO and BCDC is expected to provide recommendations on viable technology for the airport.

3. Collaboration in the Aviation Community and in the Bay Area

Stakeholders in the aviation community include air passengers, citizen’s groups, airports, air carriers, and governmental agencies who have their own perspectives on the challenges facing the aviation industry and the strategies needed to address them. The call for collaborative approaches is gaining momentum as many groups in the aviation community realize that no one entity can single-handedly address all the growing needs and challenges facing the NAS.

⁷ The NATCA is a labor organization that represents air traffic controllers.

Coordination among the Bay Area's three commercial airports - SFO, Oakland International Airport (OAK) and San Jose International Airport (SJC) - has been proposed as a viable strategy for reducing flight delays at SFO and expanding regional capacity. Proponents of this concept believe that by spreading flights among these airports, or by requiring two or more of the airports to "specialize" in particular kinds of service, delays and demand at SFO might be reduced.

Citizen's groups who support joint operations among the local airports view these three facilities as uniquely situated to address the region's challenges with traffic congestion and flight delays. The environmental group, Save the Bay, has suggested that the Bay Area needs immediate solutions to curb delays, including coordination and better transit links among the region's airports, and operational changes to maximize efficiency. If Bay Area airports were to operate jointly, SFO staff has suggested that a fleet of high-speed ferries could provide the transit links needed to shuttle passengers across the bay to partner airports. Other groups have suggested establishing high speed rail to accommodate regional passenger demand, and building Transbay underground tunnels that would shuttle passengers between SFO and OAK.

Local airports have generally viewed the idea of joint operation (among airports) a measure of skepticism. SFO officials state that local airports have limited capacity to increase flights. They further point out that terminal facilities at OAK and SJC are already overcrowded, and that expansion planned for these facilities will be unable to handle their own forecast growth. Both OAK and SFO have indicated that joint operation raises many complexities. For example, there are unresolved issues over revenue sharing between airports, and how airports would be able to shift aircraft, given current federal restrictions under ADA. It should be noted that some jurisdictions have already opted for joint operation, including the Port Authority of New York and New Jersey. Last September, the FAA and the Port Authority worked together to reduce traffic congestion by establishing a governmental lottery system to manage and distribute new commuter flights at La Guardia.

Information provided by the Deputy City Attorney also addresses the complexity of joint operation among regional airports by pointing out that, in order to comply with federal requirements, Bay Area airports must establish an entity having common operating authority, and probably common ownership, of the three airports. For example, the Port Authority of New York and New Jersey, as a common operator and owner under an interstate compact covering those airports, exercises limited control, through its perimeter rule, over airline operations at La Guardia, JFK and Newark Airports. Furthermore, the formation of such an entity would require a thorough examination not only of the federal and state laws regarding the operation of airports, but also of various local laws in each affected municipality. It is also likely that federal regulatory amendments (or congressional action to amend statutes) would be required, as well as local government actions (and possibly voter approval). It is also highly probable that this option would require negotiations with airport proprietors and other private parties (including, those affected by airport-airline lease and use agreements), and providers of fuel and aviation-related services. Because there is ongoing interest nationally in establishing collaborations - either among various public and private entities in the aviation industry or regionally between airports, jurisdictions will continue to assess the viability of this strategy.

CONCLUSION

The demand management strategies discussed above indicate ways in which stakeholders in the aviation community are attempting to address growing needs in the aviation industry. In the past, finger pointing among the various entities has hampered efforts at collaboration, at the national and regional levels. Therefore, the success of any proposed demand management strategies, will be determined by the level of commitment on the part of airports, air carriers, and federal regulators working with affected communities, consumers, and citizen groups to solve problems that plague the nation's air traffic industry. Most importantly, many of the proposed improvements, such as equipment upgrades, will require substantial funding and personnel commitments, which thus far, have not been readily available. Stakeholders in the aviation community will also need to engage in meaningful dialogue over strategies that would be appropriate for communities that are grappling with insufficient local capacity and inability to meet customer demand. Some of these strategies, such as runway expansion and airport construction, have been controversial. Nonetheless, communities will need to evaluate all options, adopting comprehensive approaches, and utilize multiple demand management strategies in order to fully understand and address the specific needs in their jurisdictions.

