

A Vision Plan

for John F. Kennedy International Airport



RECOMMENDATIONS FOR A 21ST CENTURY AIRPORT FOR THE STATE OF NEW YORK

A Report to the Governor from the Airport Advisory Panel

January 4, 2017

Dear Governor Cuomo:

John F. Kennedy International Airport (JFK) serves as the international gateway to the State of New York and to the nation, welcoming more international passengers to the United States than any other airport in the country. In 2016, the Airport served a record 60 million passengers and supported 285,000 jobs in the region.¹ Despite its importance to the region, JFK is not the airport passengers expect when arriving in one of the greatest cities in the world.

The Airport Advisory Panel found that JFK is in its current condition due to the lack of an overall plan to guide the Airport's development, resulting in an inconsistent passenger experience, facilities that are quickly reaching their capacity, on-airport roadways that are confusing to navigate, and an airport that is increasingly difficult to access. Currently ranked 59th among the world's top 100 airports, JFK falls far short of today's global standards for airport customers, visitors to our region, and our community.²

Airports serving other major global cities—London, Singapore, Istanbul, Los Angeles and others—are investing to expand and to provide an enhanced passenger experience. For the State of New York to remain competitive in the ever more interconnected global economy, we must develop a world-class gateway that is safe, secure and designed for the needs of the 21st century passenger, as well as one that serves and respects the needs of the neighboring communities in the Borough of Queens. However, if JFK continues its status quo approach to development, beginning in the mid-2020s, it will reach capacity and begin to lose passengers. Failing to act would be catastrophic to the economies of the City, State, and the region if passengers have increasing difficulty accessing New York, use competing airports or choose not to travel at all.

The Panel's recommendations for JFK focus on reconfiguring existing terminals to maximize airside and landside capabilities and efficiencies to handle passenger growth, enhance the overall passenger experience, and position the Airport to meet the needs of the 21st century. Throughout all stages of future development, the Port Authority must continue to enhance the overall safety and security of the airport, while continuing to be a good neighbor to the surrounding communities.

¹ Port Authority of New York and New Jersey.

² SkyTrax. *Customer Nominated World Airport Awards*, 20165.

Beyond the on-airport improvements needed, virtually all stakeholders emphasized the immediate need to improve access to JFK. On average, it takes over an hour by car or multi-seat mass transit ride to access JFK. But at some times of day, the trip can take twice as long. The unpredictable length of travel time threatens to become an ever-greater problem, as passenger growth will only exacerbate travel times and variability. If not addressed, the limitations of the transportation system to get to JFK will adversely affect the Airport and the community.

The importance of the overall economic growth of the State and the region, along with the continued partnership with the community of Queens, are fundamental considerations in the Panel's Vision Plan for JFK. To deliver these critical benefits, our report contains specific recommendations for immediate redevelopment of outdated assets and details the next steps necessary to ensure that the Panel's recommendations can be translated into an implementable master plan to guide development.

We thank you for the opportunity to serve and look forward to working with you in turning the Panel's Vision Plan for a new JFK into a reality.

Sincerely yours,

Dan Tishman

On behalf of the Airport Advisory Panel

CC:

John Degnan, *Chairman, Port Authority of New York & New Jersey*

Board of Commissioners, *Port Authority of New York & New Jersey*

Patrick Foye, *Executive Director, Port Authority of New York & New Jersey*

Thomas F. Prendergast, *Chairman and Chief Executive Officer*

Metropolitan Transportation Authority

Matthew Driscoll, *Commissioner New York State Department of Transportation*

Tony Collins

Jose Gomez-Ibanez

Queens Borough President Melinda Katz

Marilyn Jordan Taylor



Executive Summary

New York International Airport opened in 1948 at Idlewild in Queens, New York with one terminal building and one runway serving 200,000 annual passengers flying by propeller aircraft.

In the nearly 70 years, the aviation industry has seen massive technological and organizational change, and the airport, renamed John F. Kennedy International Airport (JFK) in 1963, has grown to six separate terminals and four runways across 4,930 acres. Over the last five years, passenger demand at the Airport has grown 22 percent, and the Airport served a record 60 million passengers in 2016.³ Today, the Port Authority of New York and New Jersey (Port Authority) operates the Airport,

and JFK is currently the nation's busiest airport for international passengers serving the largest and densest population in the country.⁴

JFK is also a major driving force in the regional economy, generating \$15 billion in wages and nearly 285,000 jobs.⁵ Despite its importance to the region, JFK is not the airport passengers expect when arriving at one of the greatest cities in the world. It is consistently given poor marks by the passengers it serves. Last year, Skytrax, an independent firm that conducts international passenger surveys of the world's airports, ranked JFK 59th out of the world's top 100 airports.⁶

3 Port Authority of New York and New Jersey

4 U.S. Department of Transportation Office of the Assistant Secretary for Aviation and International Affairs, *International Aviation Developments Series*, 2015.

5 Port Authority of New York and New Jersey.

6 SkyTrax. *Customer Nominated World Airport Awards*, 2016.

JFK's Current Challenges

JFK's challenges fall into five broad areas: 1) terminals and their configurations; 2) the airport's roadway network; 3) airport operations and delays; 4) cargo operations; and 5) increasingly crowded, congested, and unreliable transportation access to the airport.

AIRPORT TERMINALS

The evolution of JFK's terminal buildings has been a history of separate projects with private airlines or private terminal operators designing and building individual terminals at the Airport, with no overall master plan to guide development. As a result, today's Airport is fragmented. It has an unbalanced terminal configuration with inconsistent levels of service across six different terminals. Without a guiding master planning framework, the Airport's lack of easy connection between terminals coupled with the current mix of older and newer terminals will never yield a consistent world-class aviation experience for all passengers using JFK.

AIRPORT ROADWAYS

The roadways on the Airport are often congested and difficult to navigate for passengers with multiple bottlenecks at terminal entrance ramps and frontages. The current overall roadway design does not support future passenger growth.

CONSTRAINED AIRPORT OPERATIONS AND DELAYS

Taxiways – Physical constraints related to shallow sites at Terminals 1 and 7, along with the Airport's overall existing taxiway configuration, which does not allow for unimpeded circular aircraft flow around the

Airport's central terminal area, contribute to aircraft congestion on the ground and ground delays far exceeding the national average.⁷

Operating Limitations – Under current rules imposed by the federal government, JFK is limited to 81 aircraft takeoffs and landings per hour, despite passenger airline demand for more flights. This federal rule, known as "operating limitations," or "slot controls" constrains the Airport's operations and prevents passenger demand from driving air service frequency and routes.

CARGO FACILITIES

With its close proximity to New York City and the larger metropolitan region, JFK is one of the leading international air cargo centers in the world. Directly employing over 15,000 people and supporting 50,000 jobs, \$8.6 billion in sales, and almost \$3 billion in wages, the JFK air cargo operation is critically important to the region's economy.⁸ In the area of Queens directly adjacent to JFK, transportation and warehousing jobs account for over one in every ten jobs, four times higher than the citywide average.⁹

Despite its built-in geographic advantages and its high volume of cargo business, JFK's cargo operation has been unable to achieve its full potential. The Airport has an inefficient cargo operation that has steadily lost volume and has seen its leadership position in the market erode over the last ten years. Nearly two-thirds of the Airport's existing cargo facilities do not meet current industry standards. In addition, the facilities

⁷ Federal Aviation Administration, *NextGen*, 2015.

⁸ New York city Economic Development Corporation, Port Authority of New York and New Jersey, *JFK Air Cargo Study*, 2013.

⁹ Office of the New York State Comptroller, *An Economic Snapshot of the Greater Jamaica Area in Queens*, 2016.

are spread across the airport in four separate “zones.” The result is inefficient cargo operations, additional costs to businesses, and increased transfer times.

AIRPORT ACCESS

Transportation to and from JFK has become severely challenged. Not only do the existing options seriously lag compared to other world-class international airports, but the transportation system at many times of the day is simply unable to accommodate the growing demands of the Airport. These shortcomings frustrate passengers and result in vehicle congestion spilling into the surrounding Queens community.

Under current traffic conditions, travel time to JFK by car is extraordinarily unpredictable. The trip to JFK from midtown Manhattan can range anywhere from 35 minutes to two hours or more. Using mass transit, passengers have the option to take the subway or commuter rail to get to a difficult-to-navigate and dated station at Jamaica in order to transfer to the

JFK AirTrain for service to the airport. Despite these challenges and limitations, the JFK AirTrain system has experienced tremendous growth in ridership outpacing all projections made when the project was planned. This impressive growth demonstrates the need for and the importance of high quality rail mass transit access to JFK. However, the current JFK AirTrain system is itself overly crowded at peak times, with paid ridership of the system nearly tripling since opening in 2003.

As the Airport continues to grow, accessing JFK will only become more difficult. By 2030, the number of passengers at JFK is expected to grow by nearly one-third to over 75 million passengers. This overall growth will make roadway congestion, as well as transit access, to and from JFK even more challenging than it is today. Any assessment of JFK must view both the current condition and the Airport’s ability to manage the future trend line as simply unacceptable.



Consequences for Failing to Act

If JFK continues on the current course of incremental development, future airport capacity and improvement of the passenger experience would be severely limited. As early as the mid-2020s, JFK demand will exceed capacity by up to three million passengers annually. For each million passengers not accommodated, the New York/New Jersey region loses approximately \$140 million in annual wages, \$400 million in annual sales, and 2,500 jobs.¹⁰ Failing to act to meet this growing demand would be catastrophic to the future growth of the City, State, and the region.

While other global cities around the world are working towards, or have already built, modern, world-class airports, New York's airports have not remotely kept pace. In order to remain competitive in a 21st century global economy, JFK requires a comprehensive airport-wide master plan to meet increasing passenger demand and to become a world-class airport worthy of serving the greatest city in the world.

¹⁰ Port Authority of New York and New Jersey.

Panel Recommendations

With this in mind, New York Governor Andrew Cuomo’s Airport Advisory Panel recommends a series of global best practices that will provide for the development of a world-class airport that is befitting of the State of New York and that respond appropriately to the Airport’s growing passenger demand. The Panel recognizes that completely tearing down the Airport to build anew would be operationally impossible and cost prohibitive. However, the piece-meal, ad-hoc, and inconsistent terminal development of the past cannot continue. Therefore, the Panel recommends multiple critical improvements to the Airport and its supporting infrastructure—some near-term and incremental, and others more sweeping and transformational—that achieve positive change without precluding future development to accommodate the region’s long-term needs. More importantly, the Panel’s recommendations emphasize the need for an airport-wide master plan to better position the entire airport to meet the needs of the future.

Accommodate Growing Demand and Provide for a Consistent, World-Class, and Secure Passenger Experience

The Panel recommends a transformative approach for redeveloping the Airport as a modern, state-of-the-art facility that puts the passenger first. Overall, this calls for a more efficient use of land within the airport’s central terminal area and includes the following recommendations for immediate action to better position JFK to meet today’s standards for a leading global airport.

AIRPORT TERMINALS

Today’s six terminals are fragmented and provide inconsistent levels of service that do not support the passenger growth needs of JFK.

The Panel recommends:

- The Port Authority should develop global, world-class standards applicable to all JFK terminals to ensure a more consistent passenger experience, as today’s facilities are modernized and redeveloped.
- All future terminal expansion and redevelopment projects should be planned with a focus on interconnection with other terminals to enable JFK to grow over time into an integrated airport experience.
- Older terminals (such as Terminals 1, 2 and 7, opened in 1998, 1962, and 1972, respectively) should be redeveloped in partnership with their private lessees into terminal facilities that provide a world-class airport experience and accommodate additional gates.

This includes a development plan that makes informed decisions about the retention or modification of existing infrastructure to improve the airport's overall configuration.

- The Port Authority should work with the private operators of JFK's newer terminals (such as Terminals 4, 5, and 8, opened in 2001, 2008, and 2007, respectively) to enhance the passenger experience and provide additional capacity to accommodate the projected future passenger growth of JFK.

The Port Authority should promptly engage with the private lessees on a mutually agreeable framework that enhances the passenger experience.

AIRPORT ROADWAYS

The current airport roadway network is complex and confusing for drivers within the Airport's central terminal area. Terminal drop-off and pick-up locations are already bottlenecks and congested at today's passenger levels. As passenger volumes continue to grow, on-airport congestion will steadily increase in the absence of aggressive action.

The Panel recommends:

- Redesign the on-airport roadway network to evolve over time into a ring-road configuration and provide expanded parking capabilities within the airport's central terminal area as well as improved way-finding, to create a more efficient, simple airport roadway network, and appropriately sized and centrally located parking facilities.

AIRSIDE AND OPERATIONAL IMPROVEMENTS

JFK still ranks as one of most the delayed airports in the country, with ground delays far exceeding the national average.¹¹ JFK's operations are also constrained due to a federal rule that caps the number of take-offs and landings each hour at the Airport, which serves as a significant barrier that prevents growing passenger demand and the needs of the traveling public to govern the growth of the airport.

The Panel's recommends:

- Relocate Taxiways A and B to the west and expand taxiways as necessary as the airport's terminal footprint evolves to provide more efficient aircraft operations and reduce ground delays.
- Work with the Federal Aviation Administration (FAA) to reduce or remove operational limitations.
- The Port Authority should continue to evaluate options for additional airside capacity.

ENHANCED SECURITY

JFK must continue to remain one of the most secure airports in the world. As the Airport is developed and continues to grow, and in light of recent experiences elsewhere, the Panel recommends that the Port Authority should initiate periodic top-to-bottom security reviews to explore additional security measures (with a particular focus on new technology) to maintain the safety and security of passengers, employees, and the surrounding community as the top priority

¹¹ Federal Aviation Administration, *NextGen*, 2015.

of the Airport. The Panel recommends that JFK design the necessary optionality and flexibility to allow Airport facilities to easily incorporate future security advances. Following the false active shooter incident in August of 2016, Governor Cuomo and U.S. Department of Homeland Security Secretary Jeh Johnson initiated a Multi-Agency Security Review Team of the incident to ensure the Airport is ready to respond dynamically to evolving threats. The Panel supports the recommendations of the Review Team, which include establishing a unified operations center, coordinated training, emergency preparedness, and developing a plan for mass evacuation for all agencies at the Airport to ensure the safety and security of JFK.¹² This review is an example of the type of review the Port Authority should undertake on a regular basis in the future.

MORE EFFICIENT CARGO OPERATIONS AND SUPPORT FACILITIES

Cargo will continue to remain an important element of JFK activity and the region's global competitiveness. Yet the Airport's existing cargo facilities do not meet current industry standards and are spread inefficiently across the Airport. Other supporting infrastructure such as cogeneration, fueling, aircraft maintenance, aircraft deicing during inclement weather, and other airport operations are essential to world-class airports. At present, these support facilities are neither well-sized nor well-positioned at the airport. They should be appropriately sized and fit within the airport's design.

The panel recommends:

- Provide for new, consolidated and expanded cargo facilities in the north area of the Airport where there is convenient road access to off-airport cargo operations.
- At an appropriate location, minimize the footprint of supporting infrastructure while maintaining a superior level of service.

Expanded and Improved Transportation Access to the Airport

The Panel recognized that with the expansion of JFK to accommodate a growing passenger demand, it is critical that improvements be made to improve and increase transportation access to the airport – both on the roadways and through mass transit. Based on discussions with the New York State Department of Transportation (NYSDOT) and the New York Metropolitan Transportation Authority (MTA), the Panel has recommended the following:

ROADWAY IMPROVEMENTS

Travel time by car to JFK from midtown Manhattan can take from 35 minutes to two hours or more. The Panel consulted with NYSDOT to develop the following recommended changes to the regional roadways that serve JFK.

¹² New York State Governor's Office, *John F. Kennedy International Airport Multi-Agency Security Review Team*, 2016.

- Complete reconstruction of the interchange between the Grand Central Parkway and the Van Wyck Expressway to provide an additional access lane in each direction to better handle the traffic connecting from one of these major arteries to the other, thereby addressing the worst bottleneck to and from the Airport.
- Utilizing existing right-of-way, expand the Van Wyck Expressway from three lanes to four lanes in each direction.

A fourth lane could be utilized as a Managed Use Lane dedicated exclusively to airport traffic, such as express bus service and other high occupancy vehicles.
- Invest in short-term roadway improvements, including restriping of lanes, relocating ramps, and Intelligent Transportation Systems (ITS) and Active Transportation and Demand Management (ATDM) Programs to alleviate some congestion immediately. The improvements should include improving several heavily congested westbound exits on the Van Wyck Expressways heading from JFK into the City.
- Evaluate additional long-term improvements at the Grand Central Parkway and Brooklyn Queens Expressway interchange and exit ramps, the Long Island Expressway and Grand Central Parkway interchanges, the Westbound Nassau exit to Belt Parkway and North Conduit Ave, and the Long Island Expressway Collector and distributor roads between 97th Street and 108th Street.

MASS TRANSIT IMPROVEMENTS

JFK is well behind other world-class international airports when it comes to rail mass transit access to and from the Airport. The current mass transit system lacks a one-seat ride and requires a difficult and confusing transfer to an increasingly overcrowded JFK AirTrain. Consideration should be given to the following:

- A complete overhaul of the station complex at Jamaica to improve the connection between AirTrain and the Long Island Rail Road (“LIRR”) and the MTA Subway. Such an overhaul should include an upgraded mezzanine over the LIRR trains and a modernized Sutphin Boulevard/Archer Avenue subway station with information systems and walkways making it easier for passengers carrying baggage to connect to the AirTrain.
- The JFK AirTrain should be expanded from two cars up to four cars per train with more frequent service to provide additional capacity, with the goal of more than doubling the AirTrain’s current capacity.
- The MTA and the Port Authority should also conduct a comprehensive analysis to evaluate the possibility of a one-seat ride to JFK Airport from Penn Station New York, Grand Central Terminal, and/or Brooklyn’s Atlantic Avenue/Barclays Station.

Project Delivery Considerations and Public Private Partnerships: The Key Role of Private Financing

In March 2016, the Port Authority approved a \$4 billion public-private partnership to tear down the existing Terminal B at LaGuardia Airport and replace it with a new 21st century state of the art terminal and new Central Hall to unify for the first time Terminal B with Terminal C. The project is the largest public private partnership in the United States. Two-thirds of the \$4 billion price tag is financed with private funds and existing passenger fees. Subject to approval from the Port Authority Board of Commissioners, construction will also move forward on replacing LaGuardia's Terminals C and D, which are currently operated by Delta Airlines. This portion of LaGuardia's rebuild is an approximately \$4.5 billion project of which \$3.9 billion is financed by the private sector. As a whole, an entire new LaGuardia Airport will be constructed for approximately \$8.5 billion, the overwhelming majority of which will be paid for by the private sector

To deliver a 21st century JFK on the scale envisioned by the Panel and consistent with the Port Authority's achievement at LaGuardia, the Port Authority should employ a wide range of innovative financing tools for JFK redevelopment to maximize private sector investment, particularly in modernizing JFK's terminals. As countries around the world continue to utilize private sector capital and innovation to deliver infrastructure projects, the Port Authority should use its funds to leverage private financing to develop new state-of-the art airport terminals consistent with the Panel's recommendations for the Airport. In some projects, terminal

redevelopment may not require any Port Authority investment at all. In other projects, such as JFK AirTrain, the Port Authority should consider leasing, with clear standards and guidelines, the current operation to a private operator to expand the system based on private capital investment.

Conclusion

The Panel's Vision Plan for a 21st century JFK are intended to provide a high-level, conceptual approach and planning framework to guide future development. The recommended first step towards development of a new JFK is for the Port Authority to create a new JFK redevelopment office headed by a single project executive to develop and implement an airport-wide master plan consistent with the recommendations of the panel, subject to approval from the Port Authority Board of Commissioners.

As a whole, the Airport Advisory Panel's Vision Plan for JFK provide the framework and overall strategic approach to transform the existing facility into the world-class airport that the State of New York and the region deserve, as well as maintain the Airport's status as the nation's leading international gateway.

2

↑  **Passenger Pick-up**
Recogida de pasajeros 3 a 4

↑  **Buses**
Autobuses



Introduction

New York's participation in the global economy is heavily dependent on the success of John F. Kennedy International Airport (JFK). Among New York's many transportation assets, JFK is one of the most important. It is the largest of the region's three major airports, and it handles the most international passengers in the nation.¹³ Operated by the Port Authority of New York and New Jersey (Port Authority), JFK directly employs 37,000 employees and is a major driving force in the regional economy, generating \$15 billion in wages and nearly 285,000 jobs across the region.¹⁴

In spite of its importance to the overall New York and New Jersey metropolitan region, JFK is ranked by passengers as low as 59th among the world's top 100 airports.¹⁵ The airport is in the condition that it is today due to: 1) the lack of a coordinated, cohesive airport plan; 2), terminals that were developed on a piece-meal, ad-hoc basis resulting in varying levels of quality and passenger service across the airport; and 3) a confusing on-airport roadway system with multiple bottlenecks at terminal entrances. According to the SkyTrax air travel review forum, passengers on average give JFK three (3) stars out 10 for quality and customer service.

A sample of the SkyTrax 2016 customer reviews of JFK include comments such as:¹⁶

"...The airport itself is outdated and an embarrassment to the great state of New York..."

"...The standard of terminals varies, but none up to the high standard of an important airport you expect..."

"...New York JFK is very disorganized. Even renovated, JFK is dirty and worn out..."

"...I won't be back at JFK even if it means travelling with a different airline and I would not recommend to friends or family..."

¹³ U.S. Department of Transportation Office of the Assistant Secretary for Aviation and International Affairs, *International Aviation Developments Series*, 2015.

¹⁴ Port Authority of New York and New Jersey, *Annual Traffic Report*, 2015.

¹⁵ SkyTrax. *Customer Nominated World Airport Awards*, 2016.

¹⁶ SkyTrax. *Customer Nominated World Airport Awards*, 2016.

Airport Advisory Panel

In January 2015, New York Governor Andrew Cuomo created the Airport Advisory Panel to advise the State of New York and the Port Authority on the modernization of LaGuardia and JFK Airports. On July 27 of that same year, the Governor unveiled the Panel's holistic master plan and his vision for LaGuardia Airport. Action proceeded rapidly in implementing the Panel's recommendations and the Governor's vision. In March 2016, the Port Authority Board of Commissioners acted to move forward with the construction of a new Terminal B and the first phase of a new LaGuardia Airport. The \$4 billion project is the largest public-private partnership in the country, with two-thirds of the cost funded through private financing and existing passenger fees. The next phase of a new LaGuardia Airport, the replacement of Terminals C and D, also with a large majority of the cost financed by private capital, is expected to start construction in 2017, subject to final approval by the Port Authority Board of Commissioners.

Unlike LaGuardia Airport, where terminals and airport operations are squeezed into 680 acres, JFK is comprised of six disconnected terminals of varying ages operated by individual private operators, as well as a significant air cargo operation, four runways, and over 30 miles of roadways spread across 4,930 acres,¹⁷

The Governor's charge to the Airport Advisory Panel was to develop a Vision Plan to guide development of JFK International Airport for the short, medium, and long-term. The Panel's recommendations provide the framework to modernize and revitalize JFK into a 21st century Airport that puts the passenger first and expands the Airport to accommodate a vigorously growing passenger demand. The Panel's recommendations also seek to maximize job creation and economic opportunities for the New York-New Jersey metropolitan area, immediately and over the coming decades.

The Panel began its work in the fall of 2015 and met together as a Panel numerous times throughout 2016. In addition to examining JFK's facilities in person, the Panel met with the private operators of JFK's various terminals and worked closely with the Port Authority's Aviation Department, New York State Department of Transportation, and the New York MTA to develop its recommendations. The Port Authority's Aviation Department also retained the experienced and well-respected aviation-consulting firm, Ricondo & Associates, to provide technical analysis to the Panel, background on global best practices, and general expert support for the development of the Panel's recommendations for JFK.

¹⁷ The Port Authority of New York and New Jersey.

The Panel considered three potential paths to transform JFK into a 21st century airport:

Tear down and build a new airport

Consists of tearing down the existing Airport and construct completely new configuration for JFK with all new facilities. Such an approach could be very expensive and difficult to implement while keeping the Airport operational.

Preserve and expand existing infrastructure

A status-quo development approach of expanding existing terminals and prioritizes the preservation of existing facilities. This approach would primarily leave the Airport in its present condition.

Transform the airport for the 21st century

Completely redevelop, modify, or expand existing facilities and infrastructure over time but within an aggressive future-oriented master plan that provides for staged redevelopment the future focused on instituting 21st century airport standards to ultimately transform the Airport.

Completely tearing down the airport and replacing it with a new facility is not only cost-prohibitive, but the continued operation of the airport also is far too important to the region's economic viability. Continuing the status quo with a primary emphasis on preserving and expanding existing terminals and infrastructure largely with the Airport's current configuration is the development approach that has resulted in the condition that the airport is in today. Instead, the Panel opted for a pragmatic approach of a clear master plan to transform JFK into a world-class airport modifying the existing facilities as much as possible, but also constructing new facilities where necessary. The Panel believes that this is the best opportunity to accomplish significant steps that can begin immediately and continuously evolve over time. Such an approach will not only provide for a superior and consistent airport experience for passengers, but it will also guide development in a manner to enable future growth and to allow JFK to nearly double the number of passengers it serves over the next 35 years. To solve for this growing regional challenge, the Panel focused not only on the on-airport issues, but also on transportation access to the airport.

GOVERNOR'S AIRPORT ADVISORY PANEL

Dan Tishman

Vice Chairman at AECOM Technology Corporation and Principal and Vice Chairman of Tishman Realty

Tony Collins

President, Clarkson University

Jose Gomez-Ibanez

Professor of Urban Planning and Public Policy, Harvard University

Melinda Katz

Queens Borough President

Marilyn Jordan Taylor

Professor of Architecture and Urban Design, Former Dean University of Pennsylvania

The Panel concluded that planning for JFK's future should provide a balanced approach of systematic improvements to on-airport facilities such as terminal, on-airport roadway, airfield, and airspace capacity and should also address off-airport transportation capabilities. All components must accommodate a high level of demand at top-level quality service levels without one component becoming overloaded relative to the others.

For the on-airport elements, the Panel studied the existing airport configuration. The Panel concluded that the airport should strive for a total of approximately 250 narrow body equivalent gates, up from the current number of 167 narrow body equivalent gates, to fully meet the growing demand of the airport. However, the Panel's recommendations cover more than just increasing the number of gates. At least as important, the Panel focused on the need to develop an airport with a world-class level of service. For JFK to succeed, the development must proceed through a master plan that focuses on the best interest of the Airport as a whole. The Panel's recommendations for JFK were developed to ensure near-term decisions are consistent with and, do not preclude longer-term growth and expansion, to deliver a high quality passenger experience.

The Panel further recognized that access to the airport is a critical piece of offering a superior airport experience. Today, travel to and from JFK is unpredictable. From midtown Manhattan, travel time can vary from 35 minutes without traffic to two hours or more with traffic. Major access ways to the airport are frequently congested at the worst level (Level of Service "F"). Public transportation to the Airport can often be confusing and tedious for passengers. Conditions will only worsen as both the airport and the region continue to grow. To address the issue of improved access to JFK, the Panel solicited input from the New York Metropolitan Transportation Authority ("MTA") and New York State Department of Transportation ("NYSDOT") in addition to the Port Authority. The agencies partnered together to provide support in developing the Panel's recommendations to improve access to the airport.

JFK's Existing Limiting Factors



To provide for a superior airport experience and to meet regional needs, JFK faces a number of growing challenges both on-airport as well as in the transportation system accessing the airport. It is important that both on-airport development and transportation access to the airport have appropriate levels of capacity for a balanced 21st century airport.

Challenges On-Airport

AIRPORT TERMINALS

The evolution of JFK has been a history of separate, individual transactions with private airlines or private terminal operators designing and building individual terminals at the airport. The existing airport is fragmented with inconsistent facilities and levels of service across six different terminals situated on an area of roughly 700 acres known

as the JFK's central terminal area. The Airport's overall terminal design today cannot accommodate meaningful passenger growth.

Some of the terminal buildings at JFK were constructed in the past ten years, whereas other terminals were constructed as long ago as 1962. The varying levels of age and quality of JFK terminals also contribute to the Airport's inability to perform as a world-class facility. Recently constructed terminals. Terminals 4, 5, and 8 function reasonably well. Expanded in 2015, Terminal 4 is the busiest, and also has the highest productivity in terms of the average number of annual passengers using each gate. Also relatively new, opening in 2007, Terminal 8 is well-positioned for expansion at the nearby undeveloped site known as "Parcel M." Opening in 2008, Terminal 5 at JFK is an operation with high customer satisfaction. With plans to open in



2018, the Historic TWA Flight Center Hotel will also transform the storied Saarinen terminal into a world-class 505-room hotel with best-in-class services.

The older Terminals 1, 2, and 7 are physically constrained, limiting capacity and compromising the overall design of each terminal. Constructed in 1998 on a physically constrained site, Terminal 1 includes a head house with ticket lobby and other amenities that are too small. As a result, they are congested at today's passenger levels and not designed to meet today's standards for a world-class international terminal. Terminal 2, which opened in 1962, is an aging and rapidly deteriorating facility that also does not represent today's passenger terminal development standards.¹⁸ An expansion of the dated and below-standard Terminal 7, which opened in 1972, is impeded by an electrical cogeneration facility located just outside the terminal's front door.

The airport's lack of easy connection and mix of new and old terminals virtually eliminates the ability to provide a consistent world-class aviation experience for all passengers using JFK. The unconnected terminal configuration makes it difficult to respond to provide



additional gates for airlines opting to grow at the airport. Under the current piecemeal development approach, it would be difficult for the existing terminal configuration to support the approximately 250 narrow body equivalent gates, up from the current number of 167 narrow body equivalent gates, that will be needed to fully meet the growing demand at the airport over the next 10, 20, or 30 years at the level of world-class service that should be expected of New York's top international gateway.

18 Port Authority of New York and New Jersey.



ON-AIRPORT ROADWAYS

The roadway network within JFK's central terminal area is divided into five areas for motorists to access the different terminals, parking garages, and expressways connecting to the Airport. The Van Wyck Expressway and JFK Expressway loop into the Airport's central terminal area in a "clover-leaf" pattern, creating multiple flows of inbound and outbound traffic difficult for drivers to understand. In front of each terminal, the existing passenger drop-off and pick-up areas are insufficient with major bottlenecks, particularly at Terminals 4 and 5. Other terminals at JFK were not built to accommodate the forecasted demand and soon will be oversubscribed as passenger levels grow. Today's parking garages are located near each terminal, but they are not built in balance or scale that benefits the airport. For example, parking garages located in front of Terminal 4 and 5, are routinely filled while others such as the parking garage located in front of Terminal 7 routinely have excess capacity. In general, the Airport's roadway network is overly complicated, with decision points located closely together, requiring a number of vehicle merges and weaves to navigate the system.



Exacerbating this challenge is the fact that JFK's on-airport roads and parking garages were designed to accommodate around 50 million annual passengers. With current annual passenger levels exceeding this level by 10 million passengers, the existing roadway network is significantly overburdened and its inadequacy will only worsen as passenger levels grow.

CONSTRAINED AIRPORT OPERATIONS AND DELAYS

Operational Limitations (Slot Controls)

The Port Authority's large hub airports have been operating under a set of federal government-imposed demand management restrictions since 1969, initially in the form of the High Density Rule and most recently under the FAA Orders Limiting Operations.¹⁹ Through these practices, the FAA has limited the number of takeoffs and landings allowed during most hours of the day at the Port Authority's airports. As a result, JFK is limited to 81 combined aircraft takeoffs and landings per hour, but the Port Authority estimates that the Airport can handle at least 86 takeoffs and landings an hour under the current air traffic control system. (JFK could handle more than 86 takeoffs and landings in the future under a technologically upgraded air traffic control system.) Such an immediate increase in the hourly number of takeoffs and landings would enable JFK to handle another 20 to 30 flights per day. The federally imposed hourly cap is already restricting business potential at the airport and limiting the extent of air service available to the traveling public. Though the demand exists, this federal rule artificially constrains existing air travel capacity in the

¹⁹ Although EWR was included in the original High Density Rule, slots were never imposed at EWR until 2008.



region and prevents airlines from providing the frequency and routes at JFK in response to passenger demand.

Taxiways

JFK's taxiway configuration contributes to aircraft congestion and ground delays far exceeding the national average.²⁰ The existing taxiway configuration also does not allow for unimpeded circular aircraft flow surrounding the Airport's central terminal area. For example, Taxiways A and B were constructed around and to accommodate Terminal 8, cargo facilities, the Van Wyck Expressway and AirTrain right-of-way. This configuration limits direct aircraft access from the Terminals to the runways, which can increase an aircraft's ground time. Relocating these taxiways would free up airside real estate for expanded terminal development while also streamlining the airport's taxiways around the central terminal to reduce ground

²⁰ Federal Aviation Administration, *NextGen*, 2015.

delays. Aircraft taxi lanes at some terminals are single lanes, which causes congestion on the ground for arriving and departing aircraft. Without dual taxi lanes, aircraft at times are forced to wait for access to gates and access to the runway if a one-way taxiway is blocked by another aircraft.

Existing Runways

JFK's existing airfield consists of four runways: two widely spaced parallel runways oriented in a northwest/southeast direction (Runways 13L-31R and 13R-31L) and two closely spaced parallel runways oriented in a northeast/ southwest direction (Runways 4L-22R and 4R-22L).

Current flight levels are served on the existing runways at an adequate level of service. Once the FAA implements NextGen,²¹ a new air traffic control system to replace the existing 1950s-era radar-based system, the current runways will be able to accommodate an increased number of takeoffs and landings. Once the implications of the new air-traffic control system are fully analyzed, the Port Authority will need to evaluate whether the existing runways can adequately meet the future projected demand at the airport.

CARGO AND SUPPORT FACILITIES

Air cargo is an essential component of JFK enabling the movement of a tremendous volume of goods to and from this region and serves as a major economic generator for



the Borough of Queens, New York City, and the region. Ranked 19th globally by air freight tons, JFK is one of the leading international air cargo centers, offering direct access to the world's largest cities both through all-cargo aircraft and wide-body passenger aircraft flights.²² Over 15,000 people at JFK work directly in air cargo related jobs. Regionally, the air cargo industry supports over 50,000 jobs, \$8.6 billion in sales and almost \$3.0 billion in wages.²³

²¹ JFK, along with the rest of nation's airports, operate under a radar-based air-traffic control system from the 1950s. The current system results in an inefficient use of the region's air space and contributes to the increasing number of delays at the region's airport. NextGen is an initiative led by the FAA to modernize the nation's air traffic control system that when fully implemented will reduce the impact of poor weather conditions, decrease separation standards for more efficient arrivals, and lower aircraft exhaust emissions.

²² New York city Economic Development Corporation, Port Authority of New York and New Jersey, *JFK Air Cargo Study*, 2013.

²³ New York city Economic Development Corporation, Port Authority of New York and New Jersey, *JFK Air Cargo Study*, 2013.

However, many of JFK's cargo facilities are dated and substandard. Nearly two-thirds of the airport's existing cargo facilities do not meet current industry standards.²⁴ Further, these facilities are spread across the Airport in four separate "zones." The result is an environment that is excessively costly for cargo operators at the Airport due to increased transfer times and inefficient facilities.²⁵

Given the volume of international traffic and JFK's proximity to New York City, together with the prevalence of "belly cargo" on passenger flights, air cargo will continue to remain an important element of airport activity. Updating and streamlining JFK's cargo operation is critical to maintaining global competitiveness for the region.

AIRPORT SUPPORT FACILITIES

Existing airport-supporting infrastructure including cogeneration, fueling, aircraft maintenance, aircraft deicing during inclement weather, and others are essential to a world-class airport operation. Today, these facilities are distributed somewhat randomly throughout the airport, consuming nearly 15 percent of airport real estate, not including the cargo operation. As the airport grows and develops, each support facility should be evaluated for capacity, design, efficiency, and location.

Challenges with Transportation Access to the Airport

Access to JFK has become extremely difficult and unreliable due to a congested roadway network and an increasingly over-crowded mass transit system. Traveling to the Airport has become time consuming and notoriously unreliable. Not only do the options for airport access severely lag compared to other world-class international airports, the system provides a subpar passenger experience and is unable to accommodate the growing demand of the airport. Collectively, the impacts of the congested system spill over into the surrounding community.

²⁴ New York city Economic Development Corporation, Port Authority of New York and New Jersey, *JFK Air Cargo Study*, 2013.

²⁵ New York city Economic Development Corporation, Port Authority of New York and New Jersey, *JFK Air Cargo Study*, 2013.



ROADWAYS

Under current traffic conditions, travel time to JFK by road is hugely unpredictable. From midtown Manhattan, travel time on the roadway can vary from 35 minutes without traffic to two hours or more with traffic. Major access ways to the Airport, the Belt Parkway and Van Wyck Expressway (VWE), are frequently congested at the worst level reported by NYSDOT (Level of Service “F”). This variability and uncertainty makes it difficult for travelers to plan and carries a severe and unacceptable risk of missed flights. Business travelers often feel forced to leave a night early to ensure they make scheduled meetings.²⁶

²⁶ PwC, *NYC Airport Study*, 2016.

MASS TRANSIT

Using public transit, JFK passengers have the option to take the subway or commuter rail before transferring to the JFK AirTrain for service to the Airport at Jamaica or Howard Beach station. The transfer in Jamaica is particularly difficult to navigate for passengers with baggage, and is in a dated facility that lacks basic amenities such as climate control and information displays. Further, passengers are often met with long wait times at the station as the current JFK AirTrain system is oversubscribed during peak hours with its current 7-10 minute headways.



As the Airport continues to grow, accessing JFK will only become more difficult. This growth will make roadway congestion to and from the airport even worse than it is today, increasing travel times for passengers, employees, and those travelling in general proximity to the airport. However, not only is improved transportation access needed to accommodate the growing passenger demand of JFK, but improvements are also critical in order for the airport to remain competitive globally. Today, JFK is well behind other world-class international airports when it comes to transportation access. Cities such as London, Shanghai, Hong Kong, Seoul, Chicago, Moscow, Amsterdam, and many others, have a one-seat ride directly from the central business district to the central terminal area, in addition to multiple other modes of access.

There is a strong passenger demand for improved rail access to JFK. Last year, over seven million people rode the AirTrain to JFK—nearly tripling the ridership since the first year of operation 12 years prior. This growth far exceeds projections made



at the time the JFK AirTrain began service. Preliminary data estimates JFK AirTrain ridership will reach 12 million paying passengers transferring from Jamaica and Howard Beach and over 30 million total riders by 2026 and continue to grow over four percent per year.²⁷ In addition, a 2016 survey reported 78 percent of JFK business passengers said they would use a one-seat ride from Manhattan.²⁸

²⁷ Port Authority of New York and New Jersey.
²⁸ PwC, *NYC Airport Study*, 2016.

Consequences of Failing to Act

Over the past five years, passenger activity at JFK has reached record high levels with each year surpassing the year that preceded it. In 2016, the Airport handled 60 million total passengers, up from 57 million passengers in 2015.

Continuing the existing, status quo development approach for the airport will leave JFK ill-equipped to adequately accommodate future passenger growth. Once capacity at the Airport is reached, passengers will be forced to use airports outside the region or other modes of travel, or perhaps not travel at all. A recent survey found that one in four frequent business travelers purposely did not attend at least one meeting in New York because of the hassle of travel to and from JFK airport.²⁹

Not addressing this deficiency would be enormously detrimental to the economies of the City, State, and the region. For each million passengers not accommodated, the New York/New Jersey region loses \$140 million in annual wages, \$400 million in annual sales, and 2,500 jobs. Under the existing terminal configuration, as early as the mid 2020s, JFK demand will exceed capacity. New York City's status and the regional economy will be seriously threatened as long as JFK is left unaddressed.

Based on the trends reported in the latest FAA Terminal Area forecasts for JFK, the Airport should be planned and developed to accommodate 75 million passengers within the next 10 to 15 years and 100 million annual passengers within the next 35 years, increases of nearly 15 million passengers and 40 million passengers, respectively, over today's levels. In order to remain competitive in a 21st century global economy, JFK requires a comprehensive airport-wide master plan establishing a clear overall design for development to not only to meet the increasing passenger demand, but also to become a world-class airport worthy of serving the greatest city in the world. A failure to create such a master plan and a failure to transform JFK into a globally competitive airport would have long-lasting impacts to the strength of New York's and the region's economy.

For each million passengers not accommodated, the New York/New Jersey region loses \$140 million in annual wages, \$400 million in annual sales, and 2,500 jobs.

²⁹ PwC, NYC Airport Study, 2016.



Vision Plan for JFK



The Panel's recommendations for JFK are based on a pragmatic approach to redevelop and transform the Airport into a modern, advanced air transportation facility that puts the passenger first and that can respond appropriately to the airport's relentlessly growing demand.

The Panel's recommendations for JFK are based on a pragmatic approach to redevelop and transform the Airport into a modern, advanced air transportation facility that puts the passenger first and that can respond appropriately to the airport's relentlessly growing demand. The Panel's recommendations serve as a conceptual guide for the Airport, but require further detailed refinement through a larger master planning effort. The Panel recommends that the Port Authority create a new JFK redevelopment office headed by a single

project executive to develop and implement an airport-wide master plan consistent with the recommendations of the panel.

Given that the piece-meal, ad-hoc, and inconsistent project-by-project development of the past can no longer continue, the Panel recommends a number of both incremental and transformative improvements to the airport in the short, medium and long-term. The Panel's recommendations for JFK focus on improving passenger experience and optimizing land and airspace use, while expanding economic opportunities for the Borough of Queens and the region. Further, the Port Authority should continue to be a good neighbor by joining with the surrounding communities to create opportunities for economic development, while preserving local recreation and wildlife.

Accommodate Growing Demand and Provide for a Consistent, World-Class, and Secure Passenger Experience.

AIRPORT TERMINALS

Overall, the Panel calls for a more efficient use of land within the Airport's central terminal area in order to provide for an enhanced passenger experience. The Port Authority should develop global, world-class standards applied to all JFK terminals to ensure a more consistent passenger experience. The Airport's development should enhance connectivity between terminals and provide optionality for future passenger growth.

The Panel recommends that the airport's older terminals, (Terminals 1, 2, and 7) should be redeveloped as larger, modern, efficient facilities consistent with global, 21st century airport standards and amenities. The Port Authority should work with the private lessees of these terminals to formulate a development plan (including location and footprint) for these terminals that is consistent with the Panel's recommendations for interconnected terminals, moving towards a more unified airport, and that evaluates the retention or modification of existing infrastructure in light of this goal.

The airport's newer terminals (Terminals 4, 5, and 8) should be retained and expanded to enhance passenger experience and provide additional gate capacity. This process began in December 2016, when Governor Cuomo and others broke ground with an entirely privately-financed conversion of the historic Saarinen building (former TWA Flight Center) into a new world-class 505-room hotel just outside Terminal 5. The current private lessee

of Terminal 5 also has the option to expand its footprint into the former Terminal 6 area. The Port Authority should promptly engage in discussions with the Terminal 5 lessee to expand their terminal in a manner consistent with the Panel's recommendations for a more unified airport. An extension of Concourse A at Terminal 4, which has been previously explored by the private operator, can be initiated as soon as the permitting processes are complete and approved by the Port Authority Board. Infrastructure improvements should be evaluated to advance the goal of a more unified airport. Lastly, an area known as "Parcel M" located adjacent to Terminal 8, has long-been identified for development and should be planned for phased expansion of Terminal 8's footprint to provide for additional airline gates as they are needed.

Redevelopment of the airport's terminals is expected to be financed through private funds and requires commercial agreements with the respective terminal lease holders. Therefore, it is incumbent on the Port Authority to create and implement a consistent commercial agreement framework with well-defined guidelines for a 21st century airport to facilitate a consistent, state-of-the-art, safe, secure and high quality passenger experience within all terminals.



AIRPORT ROADWAYS

The roadway network within the Airport should be simplified to move toward a ring road concept (to be developed over time) with new and expanded parking facilities in the center that would increase parking for all passengers. Along with improved way-finding a ring road concept would maximize the efficiencies for vehicles within the airport's roadways. New terminal frontages would need to be developed with sufficient capacity to handle growing volumes of vehicles.

AIRSIDE AND OPERATIONAL IMPROVEMENTS

Taxiways

To provide for additional taxiway space at the Airport and to reduce ground delays, Taxiways A and B, located along the west edge of the Airport's central terminal area should be shifted westward and straightened, opening up additional space for passenger terminal development at Terminal 8, and improving the efficiency of these airport-critical taxiways by providing unimpeded circular flow around JFK's central terminal area. Additional taxiway space around the airport's central terminal area may be needed, particularly during peak activity.

Operating Limitations (Slot Controls)

In April 2016, the FAA announced that Newark Liberty International Airport (EWR) would move from a Level 3 slot controlled airport to a Level 2 Slot Coordinated Airport, which would improve operational procedures at EWR. JFK should receive similar relief in order to allow for passenger demand and the needs of the traveling public to govern the growth of the airport as opposed to federal operational restrictions. The Port Authority should work with the FAA to modify or eliminate federal limitations on JFK's operations to provide for additional service at the airport. The Port Authority should also work with the region's Congressional Delegation to ensure the funding for the implementation of NextGen technology into the nation's air traffic control system.

Expanded and Improved Transportation Access to the Airport

The Panel makes a number of recommendations based on input from multiple stakeholders to expand and improve transportation access to the airport. Together, these options will significantly improve travel to and from the airport.

ROADWAY ACCESS

NYS DOT has identified a number of short-term and long-term projects to improve roadway access to JFK. Two projects identified by NYS DOT that would provide for immediate improvement in accessing the airport are: 1) reconstruction of the interchange at Kew Gardens to provide for three lanes on the access ramps in both directions, and improve one of the worst JFK roadway access bottlenecks, and (2) an expansion of the Van Wyck Expressway from three lanes to four lanes utilizing existing right of way terminating at the airport. The fourth lane could be used as a Managed Use Lane dedicated exclusively to airport traffic, including express bus service and other high occupancy vehicles.

Additional short-term roadway improvements to ease congestion identified by NYS DOT include restriping the Long Island Expressway Ramp to eastbound Grand Central Parkway, relocating the Linden Boulevard Ramp at the Van Wyck Expressway northbound exit, and continuing to invest in Intelligent Transportation Systems (ITS) and Active Transportation and Demand Management (ATDM) Programs.

Other long-term projects identified by NYS DOT include addressing road access choke-points including the Grand Central Parkway and Brooklyn Queens Expressway interchange and exit ramps, the Long Island Expressway and Grand Central Parkway interchanges, the Westbound Nassau exit to Belt Parkway and North Conduit Avenue, and the Long Island Expressway collector and distributor roads between 97th Street and 108th Street.



SECURITY

JFK must continue to remain one of the safest and most secure airports in the world. As the Airport is developed and continues to grow, the Port Authority must remain ever vigilant and maintain safety and security of passengers, employees, and the surrounding community as the top priority of the airport. As the Port Authority develops JFK in accordance with an airport-wide master plan setting a strategic path for the development of terminals, roadways, and the airfield, the Port Authority must include flexibility to add technology-based security advances.

The Panel recommends a regular top-to-bottom security review that includes outside, third-party experts with global, best-practice knowledge to assure that security procedures get updated with the latest technological advances. Following the false active shooter incident in August of 2016, Governor Cuomo and U.S. Department of Homeland Security Secretary Jeh Johnson initiated a Multi-Agency Security Review Team of the incident to ensure the airport is ready to dynamically respond to evolving threats. A major recommendation of the Review Team was to implement a unified operations center and for all agencies at the airport to continue to work together to ensure the safety and security of JFK.³⁰ This is an example of the type of review that the Port Authority should undertake on a regular basis at all of its airports.

³⁰ New York State Governor's Office, *John F. Kennedy International Airport Multi-Agency Security Review Team*, 2016.

CARGO AND SUPPORT FACILITIES

Consistent with previous studies, the Panel recommends increased access to updated, affordable, and right-sized cargo and industrial spaces at JFK.³¹ The Panel recommends a major consolidation of these facilities in a planned, efficient configuration far different from today's layout. These new and expanded cargo facilities should be located in the north area of the airport for convenient road access to off-airport cargo operations. With any new cargo facilities, the Port Authority should comprehensively review on-airport cargo leasing and business practices to ensure the cargo operations continue to offer the essential global connections for the State of New York and the region.³²

Through a master plan, other support facilities such as cogeneration, fueling, aircraft maintenance, aircraft deicing during inclement weather, and airport operations should be carefully evaluated to ensure a minimized footprint in appropriate locations for the service provided. This will allow far more space for the terminals to grow and develop to serve the 21st century passenger.

³¹ New York City Economic Development Corporation and Port Authority of New York and New Jersey, *JFK Air Cargo Study*, January 2013.

³² New York City Economic Development Corporation and Port Authority of New York and New Jersey, *JFK Air Cargo Study*, January 2013.

MASS TRANSIT IMPROVEMENTS

JFK is well behind other world-class international airports when it comes mass transit access to the airport. The Panel recommends consideration of two courses of action:

Working with the Panel, the MTA has developed a preliminary plan to overhaul the LIRR/AirTrain Jamaica station and the Sutphin Blvd-JFK subway station to improve the connection between the AirTrain and the LIRR and New York City subways. The preliminary plan involves using state-of-the-art enhancements to make airport customers' access to and from AirTrain far easier than it is today. The overhaul would include the installation of high-performance escalators and elevators to provide swifter and more convenient passenger movement between station levels and provide an experience of feeling "at the airport."

In addition to an improved transfer experience at Jamaica, JFK's existing, crowded AirTrain system could be expanded from two cars to four cars per train, and headways should be reduced to provide for more frequent train service. Such an expansion would create the capacity to more than double the number of passengers of today's paid ridership of over seven million annually (and total ridership of over 20 million annually) and reduce the number of passengers and employees accessing the airport by car.

The Panel also recommends that the MTA and the Port Authority conduct a comprehensive analysis on rail access to JFK, including the possibility of a one-seat ride to JFK Airport from Penn Station New York, Grand Central Terminal, and/or Brooklyn's Atlantic Avenue/Barclays Station to JFK.



Leveraging Private Capital and Public Private Partnerships

Airports around the world are leveraging public sector investment to stimulate massive private sector investment. Airports around the world are leveraging public sector investment to stimulate massive private sector investment. In March 2016, the Port Authority approved a \$4 billion public private partnership to tear down the existing Terminal B at LaGuardia Airport and replace it with a new 21st century state of the art terminal and new central hall to unify for the first time Terminal B with Terminal C. The project is the largest public private partnership in the United States. Two-thirds of the \$4 billion

price tag is financed with private funds and existing passenger fees. Currently, Denver Airport is engaging in private sector investment of over \$1 billion to overhaul a key part of that airport. This comes shortly after Denver's Regional Transportation District (RTR) used an innovative financing package with private equity and federal-low cost loans and grants to support the development of a transit line to the airport.³³

Internationally, many world-class airports have utilized innovative means of attracting private capital and investment. From Melbourne and Sydney airports in Australia,



33 Denver Regional Transportation District.

to the United Kingdom's major airports including London's Heathrow and Gatwick, to Amsterdam's Schiphol airport, to France's Airports de Paris operated airports – a wide range of world-class facilities have utilized private capital. In the United States, full airport privatizations are restricted under the FAA's airport privatization pilot program, and that is not being suggested as appropriate for JFK. Nevertheless, it is important to point to the great deal of long-term private capital with experience in airport investing and operations. Creatively tapping into that private capital and expertise can help finance and fund some of the long-term infrastructure improvements suggested in this report.

JFK itself has a history of developing privately financed terminal improvements. The redevelopment of Terminal 4 paid for with private capital, created a large modern terminal that, together with Delta Air Lines' recent over \$1 billion investment, has created one of the better facilities at the Airport. Tapping this heritage of innovation and utilizing creative partnerships can yield both capital and expertise from world-class operators to modernize JFK for the 21st century.

To deliver a 21st century JFK on the scale envisioned by the Panel, the Port Authority should employ a wide range of innovative financing tools for the airport's redevelopment to maximize private sector investment and innovation, particularly at its terminals. As countries around the world continue to utilize private sector capital and innovation to deliver infrastructure projects, the Port Authority should utilize its public funds to leverage private financing to the maximum extent possible to develop new state of the art airport facilities consistent with the Panel's recommendations for the Airport. In some areas, terminal redevelopment may not require any Port Authority investment at all. In some projects such as JFK AirTrain, the Port Authority should consider leasing the current operation to a private operator to expand the system based on private capital investment.

With a comprehensive airport master plan, the Port Authority can direct capital spending in a cohesive, consistent manner to leverage development at the Airport.

Conclusion



The Panel's Vision Plan for JFK offer the opportunity to transform the facility into a world-class airport befitting of the State of New York. The recommendations provide for immediate improvements in the short and medium-term, as well as position the airport to accommodate long-term passenger growth, and create a consistent airport-wide, world-class passenger experience. Reconfigured terminals, redesigned roadways, increased airfield capacity, a revitalized and more efficient cargo operation,

and improved transportation access will enable the JFK of the future to continue to compete in the international market. As a whole, the implementation of the Panel's recommendations for JFK will transform the existing facility into the world-class airport and the nation's premier international gateway that the State of New York and the region deserve. With the leadership and vision that delivered a new LaGuardia, so too will there be a new JFK.