City of Los Angeles
Office of the Controller

Industrial, Economic, & Administrative (IEA) Survey Report of
Los Angeles World Airports (LAWA)
February 2016
February 2016

Attn.: The Honorable Mayor Eric Garcetti, City of Los Angeles, Office of the Mayor
The Honorable Ron Galperin, City Controller, City of Los Angeles, Office of the Controller
The Honorable Herb J. Wesson, Jr., City of Los Angeles, Council President

Re.: Industrial, Administrative, and Economic (IEA) Survey, of Los Angeles World Airports (LAWA)

KH Consulting Group (KH) is pleased to deliver the 2016 Industrial, Administrative, and Economic (IEA) Survey of Los Angeles World Airports (LAWA). The IEA Survey is overseen by Joint-Administrator representatives of the Offices of the Mayor, Controller, and Chief Legislative Analyst (CLA) (on behalf of the City Council), which met periodically with KH. A LAWA executive and the Internal Auditor attended in advisory roles the Joint Administrators’ meetings.

The 2016 LAWA IEA Survey is divided into the following parts:

- **Executive Summary**

- **Part I – Managing and Delivering.** This part outlines major findings and recommendations aimed at enhancing LAWA’s management of specific areas: Corporate Social Responsibility (CSR), including economic and environmental impact; guest experience at LAX, including core services and world-class initiatives; and capital planning and delivery and associated administrative processes.

- **Part II – Measuring and Improving.** In the 2016 IEA Survey, the Joint Administrators wanted to enhance public accountability through performance measurements. Such a system is intended to provide LAWA with the tools to move toward an evidence-based, decision-making culture. It also provides baseline data to assess progress on an ongoing basis and in future IEA Surveys. Part II contains the IEA Survey findings and recommendations for LAWA TO develop a comprehensive performance management system through Balanced Scorecards (BSCs).

- **Part III – Implementing and Monitoring.** Part III outlines the steps that the City of Los Angeles, including LAWA, should take to address the recommendations in the IEA Survey and monitor progress in making needed improvements.

- **Appendices.** The appendices contain additional background information, including:
  - Appendix A, which outlines the objectives, scope, and tasks KH completed during the IEA Survey
  - Appendix B, which contains additional Geographical Information System (GIS) maps on the economic and environmental impact of LAWA on the City of Los Angeles and the Southern California Association of Governments (SCAG) region
  - Appendix C, which defines common abbreviations and terminology
  - Appendix D, which includes additional performance measurements that LAWA might consider for environmental responsibility and guest experiences as it develops a complete performance management system
On behalf of the KH Team, we would like to thank the Joint-Administrators from your offices – Felipe Cusnir, Monique Earl, and Mandana Khatibshahidi – who helped guide the review. We valued their direction throughout the IEA Survey, combined with their shared focus on strengthening LAWA’s accountability and responsiveness to external stakeholders (the communities and City Hall) and enhancing LAWA’s ability to manage its operations.

We also wish to acknowledge the LAWA executive team and staff members for their cooperation in compiling performance measurements, discussing our findings, and embracing our recommendations. The new Chief Executive Officer (CEO, Deborah Ale Flint, has been receptive to new ideas and innovations at LAWA, such as Corporate Social Responsibility (CSR), as well as aligning LAWA’s structure with its next strategic directions. As a result, we have already observed LAWA begin to implement some of the 2016 IEA Survey Report recommendations as a result of our preliminary briefings.

KH also values our multi-disciplinary and integrated team, consisting of KH consultants and subcontractors. The KH team’s collaborative efforts resulted in this IEA Survey Report:

- Bob Schilling, KH Vice President, Project Manager, Operations
- Charlotte Maure, KH Vice President, Project Manager, Administration
- Jeffrey Hartsough, KH Associate
- Terry Matsumoto, Matsumoto Consulting LLC
- Cameron (Cam) Koblish, Airport/Airline Subject Matter Expert
- Hubert Horan, Airport/Airline Subject Matter Expert
- Lia Reyes, LVR International
- Kati Rubinyi, Civic Projects
- David Bergman, MR+E
- Jim Ayers, CGR Management Consultants

We wish LAWA and the City of Los Angeles the best in addressing these change initiatives in making LAX world-class. Please let us know if we can ever be of further assistance.

Sincerely,

Gayla Kraetsch Hartsough, Ph.D.
KH President

Attachment: 2016 LAWA IEA Survey Report
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Executive Summary
EXECUTIVE SUMMARY

CONTEXT FOR THE IEA SURVEY

The City of Los Angeles retained KH Consulting Group (KH) of Los Angeles to conduct a City Charter-mandated performance review, also known as an Industrial, Administrative, and Economic (IEA) Survey, of Los Angeles World Airports (LAWA). LAWA is the City’s Department of Airports and consists of three airports – Los Angeles International Airport (LAX), Ontario International Airport (ONT), and Van Nuys Airport (VNY). Palmdale Airport (PMD) is no longer an operating airport.

KH also performed the last two IEA Surveys in 2008 and 1999; thus, KH brings an understanding of the progress and changes made at LAWA during the past 17 years. Consistent with KH’s approach in the last two IEA Surveys, KH focused more on what LAWA should do to improve its strategy, structure, processes, and operations, and less on looking backward at its prior years’ performance. The 2016 IEA Survey also developed performance measurements to enhance LAWA’s accountability and responsiveness to external stakeholders as well as LAWA’s ability to internally manage its operations.

STRENGTHS AND ACCOMPLISHMENTS

Highlights of LAWA’s numerous noteworthy accomplishments since the 2008 IEA Survey include:

- **LAX Modernization and Improved Concessions**
  - Terminal modernization and facility upgrades, including the transformation of the Tom Bradley International Terminal (TBIT), earning it LEED Gold certification from the U.S. Green Building Council
  - The new Central Utility Plant (CUP) while continuing to operate the old plant and earning LEED Gold status, given its enhancements for energy efficiency and conservation
  - Buy-back agreements for LAX’s terminal assets, which has encouraged further terminal development and modernization
  - Improved concessions at LAX, many of which now have a Los Angeles (LA) motif
  - Formation of the Construction & Logistics Management (CALM) team to develop tactics to handle utility shut-downs and traffic lane closures to improve coordination and minimize impact to people going to and from LAX

- **Financial Viability**
  - Maintaining ‘AA’ senior lien bond ratings while issuing nearly $4 billion of bonds to support LAX’s modernization
  - Strengthened revenue streams through new rate agreements with airlines and new concessions agreements

- **Better Systems**
  - The Federal Aviation Administration (FAA) finding of zero discrepancies during its annual airfield inspection
The new Airport Response Control Center (ARCC) for managing LAX daily operations and emergencies
- An improved pavement management system across all airports
- New technology upgrades to information systems

**KEY FINDINGS AND RECOMMENDATIONS**

This section highlights the 30 recommendations in the 2016 IEA Survey Report. All of the proposed action steps should be started within the next six months to two years. Many of the recommendations, once implemented, will become ongoing initiatives.

**Strategy and Budgeting**

**LAWA would benefit from a strategic framework for defining priorities, which it should then budget for, measure, and improve.** Beyond the modernization initiatives, LAWA currently lacks strategic priorities that guide its business directions. Strategic priorities can also serve as the foundation for budgeting and a performance management system. A “strategy-linked” budgeting process will reflect expected outcomes, providing insights regarding priorities, along with budget performance reports against outcomes for BOAC, executive leadership, and divisions.

**Corporate Social Responsibility (CSR)**

**To improve public accountability, LAWA should embrace the principles of Corporate Social Responsibility (CSR).** LAWA currently lacks formal corporate values and guiding principles about how it will conduct itself. CSR emphasizes the role of organizations to embrace actively their responsibility to stakeholders, moving beyond regulatory compliance to include meeting high ethical standards and national or international norms.

**Because of LAWA’s public accountability role, it must continually strive to be a prudent steward of the airport assets, while ensuring the quality, safety, and convenience demanded by its passenger base and Los Angeles residents.** LAWA has many stakeholders: airlines, passengers, adjacent communities, airport-related businesses, and government. LAWA must balance the public trust, accountability to the airlines, and needs of government (e.g., City of Los Angeles, LA Metro, FAA, or Transportation Security Administration (TSA)).

**LAWA should monitor and plan to increase its contribution to the Los Angeles economy.** LAWA is an important economic engine, contributing at least $2.6 billion to the regional economy and 360,000 jobs in Los Angeles County. Despite its importance, economic development is seen as a consequence or secondary effect of airport activities, and not as a central part of LAWA’s mission. As a result, LAWA has neither developed a strategic approach to maximize its economic impact and benefits, nor compiled and monitored data on its economic impact.

The FAA requires LAWA to spend all airport-generated revenues for aviation-related purposes, including land acquisition projects. Following these guidelines, LAWA has begun to invest successfully in real estate surrounding LAX. The new LA Metro Crenshaw/LAX Line and the Automated People Mover (APM)
that will connect LA Metro trains with LAX will stimulate economic development in the vicinity of LAX. To systematically and effectively employ land use development, LAWA should establish a comprehensive economic development strategy that can guide policy and investments by LAWA to meet measurable goals and objectives for economic development.

**LAWA should present the "big picture" of its environmental impact, while communicating its sustainability efforts.** The 2008 Los Angeles World Airports Sustainability Plan remains the most recent policy document guiding LAWA’s sustainability efforts. LAWA has prepared Environmental Sustainability Reports since 2008 as part of its public accountability. During the past six months, LAWA’s environmental staff members have made progress in achieving a more cohesive perspective on environmental sustainability and the environmental reality of LAWA’s facilities. Consistent with CSR principles, LAWA’s next environmental report will expand from the original focus on compliance with regulations and the production of required Environmental Impact Reports (EIRs) to a broader view of the issues. LAWA is seeking Level 3 accreditation through the Airport Council International—North America (ACI-NA) Airport Carbon Accreditation program\(^1\) for achieving carbon reduction. LAWA has also set targets in Greenhouse Gas (GHG) emission reductions.

LAWA should continuously work toward moderating its environmental impact and informing the public about both its environmental impact and its mitigation efforts. All airports are sources of pollution, consuming natural resources and producing pollutants. Any assessment of environmental sustainability at LAWA inevitably occurs in the context of an unspoken, but widespread belief, on the part of the public and stakeholders that the economic and social benefits of air travel outweigh the environmental impacts. Transparency is the best way to ensure that environmental costs and economic benefits are being considered. LAWA must establish goals and objectives to meet its CSR goals, and not just comply with regulations, but go beyond them.

**LAWA must always strive to maintain good relationships with external stakeholders, given their diverse interests.** LAWA has a dispersed and complex network of external stakeholders. Local communities and neighbors are primarily concerned about adverse environmental impacts on them – primarily traffic and noise. Many of the residents also benefit from airport-related businesses and employment opportunities.

**LAWA should establish goals and measurements for evaluating the effectiveness of government affairs’ activities.** Airports require close working relationships with other governmental agencies, including the FAA, TSA, LA Metro, and other City of Los Angeles departments and elected officials. Since the 2008 IEA Survey, LAWA has had uneven working relationships with City Hall. City of Los Angeles relationships are important to nurture. For example, LAWA has been working with the Los Angeles Department of Water & Power (LADWP) to mitigate power outages and surges at LAX. Such outages and surges are a major hindrance to the airlines and airport operations; they can also erode travelers’ perceptions when elevators or escalators are out of commission.

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1 Airport Council International (ACI), Airport Carbon Accreditation, Issue 5.3, January 2015.  
www.airportcarbonaccredited.org
**LAWA may reduce losses and improve performance with a stronger Internal Audit function with BOAC oversight.** LAWLA lacks an active Audit Committee on BOAC and a robust Internal Audit function. Some key areas have not had independent audits in years. Therefore, BOAC should re-activate its Audit Committee, which would approve and ensure completion of the annual risk-based audit plan.

**Guest Experience**

Mayor Garcetti established “Guest Experience” at LAX as a priority for LAWA in early 2015. The term “guest” includes both passengers and people who come to LAX as “meeters and greeters” of passengers. KH divided the Guest Experience initiative into two parts: core services and world-class features.

**Core Services**

Core services are expected of all airports, and include safety and security, efficient movement to and through LAX, level of air services (cities served), and clean and well-maintained facilities. Unless the airport meets acceptable thresholds in these areas, travelers will rate LAX – or any other airport – lower in terms of satisfaction and as a desirable airport to use.

**LAWA’s highest priority is to ensure that the airports are safe and secure.** LAWA should continually strive to protect guest safety and security in a partnership that includes both sworn and non-sworn officers, including those from other law enforcement agencies (e.g., TSA, Customs Border Patrol (CBP), or Federal Bureau of Investigation (FBI)). The total number of Part 1 violent crimes (aggravated assault, homicide, rape, and robbery) has steadily declined from 14 in 2013 to 3 in 2015 (year-end estimate). Most Part 1 crimes at LAX are property crimes (e.g., burglary, theft, and auto theft), which have averaged between 7.5 and 8.1 Part 1 Crimes per 1 million annual passengers (MAP) per year for the last 3 years.²

**LAWA needs to proactively manage Central Terminal Area (CTA) congestion during and after construction.** LAWA completed the preferred concept plan for its $5-billion Second Modernization Program to improve land access to LAX, including a 2.2-mile APM that will link a Consolidated Rent-A-Car Center (CONRAC) with a new LA Metro Crenshaw/LAX station and the LAX terminals.

In the next few years with the Second Modernization Program, guests will face increasing challenges in accessing the CTA because of major construction and rising passenger volumes. The lack of focus on landside operations appears to be one of the most serious weaknesses at LAWA. ARCC and CALM are steps in the right direction; however, LAWA lacks traffic engineering expertise and sufficient staffing for landside operations to deal with CTA congestion problems. LAWA will need an integrated approach on accessing and exiting the CTA, parking, and terminals to minimize congestion. Specific actions LAWA can take are to:

- Assign landside operations overall operating responsibility for terminal, traffic, and parking performance
- Add staff to allow adequate 24/7 coverage of landside operations as a function distinct from airside operations

- Add specialized expertise in traffic engineering
- Form a cross-functional team to draw on the experience in ARCC and CALM to develop and execute a coordinated landside operations strategy³
- Increase operations technology investments, given anticipated construction-related challenges

**LAWA maintenance should continue its efforts to address preventive and unscheduled maintenance.**
LAWA only began to track planned maintenance systematically through Maximo in July 2015. Such tracking is important for stabilizing operations and system reliability, which affect the guest experience.

**World-Class Features⁴**
The City of Los Angeles wants LAX to be world class and competitive with other international airports in the United States and overseas. City of Los Angeles officials believe that arriving passengers’ first impression of Los Angeles is based on what they experience at LAX. A bland corridor does not evoke the desired image of Los Angeles, as discussed under “Guest Experiences.”

**World-class features heighten the guest experience by making the airport friendly and enjoyable.**
World-class elements include ambiance/LA sense of place, concessions and amenities, hospitality, and informed guests. International airports are gateways to metropolitan areas, and these factors distinguish truly excellent airports from more mundane facilities, serving as introductions to the anticipated experiences in the local areas. World-class features can also be a major source of airport revenue; for example, LAWÀ’s concessions generate $1.5 billion in total revenues. The Second Modernization Project will further improve these features and the guest experience.

**LAWA needs to ramp up its sense of LA and its amenities for LAX to be world class.** LAWÀ has focused on upgrading its concessions and ensuring that more of them reflect the ambiance of Los Angeles. Although improving, LAX does not evoke a vibrant sense of Los Angeles.

World-class airports also ensure that desired commercial outlets, especially multiple food and shopping opportunities, technology, and amenities, are available on both sides of the security checkpoint. But even at the newly renovated TBIT, the waiting area for meeters and greeters is still dark and crowded with insufficient seating and difficult sight lines to see arriving passengers. With the closure of the Theme building, the only terminal with sit-down restaurants where departing passengers can check in and share a meal with friends and relatives before going through security is TBIT.

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³ Should include Operations, Maintenance, & Emergency Management Group (OMEMG); Commercial Development Group (CDG); Facilities Maintenance & Utilities Group (FMUG); Guest Experience; and Law Enforcement & Homeland Security (LAX airport police).
Times and expectations also change. What was once considered a world-class feature may become a core service, such as Wi-Fi connectivity or charging stations. Despite concerted efforts by LAWA, LAX’s Wi-Fi services lag behind other world-class airports in terms of speed.

**LAX needs to focus on improving its reputation for hospitality and helping to make it easier for guests to navigate LAX.** LAWA’s goal should be to enable guests to feel confident that they know what they need to know about getting to, moving through, and leaving LAX before they start their journeys. LAWA’s “LAX is Happening” website provides travel tips for each terminal; however, wayfinding is a challenge at LAX. Little signage is in foreign languages. Guests should feel welcomed with friendly and informed airport workers. Guests do not care whether their questions are answered by an airline employee, a LAWA employee, or a contract worker – all should be trained in hospitality and airport information. To guests, the combined actions of all those people generate their LAX experience.

**Guest Experience Metrics**

**LAWA will need to be nimble and move expeditiously to leverage technology and access data through proprietary applications (apps) or partnerships.** LAWA has only part of the data needed to track the entire guest experience. The guest experience begins from the moment individuals leave their homes, hotels, or work to get to LAX. Moreover, guests demand real-time information so passengers can be on time for flights and meeters and greeters can meet passengers. LAWA should work with partners to develop technology and wayfinding applications that direct people to the proper place and inform them about waiting times (e.g., Waze, Google, MapQuest, Go LA, CBP, TSA, etc.).

**LAWA should continue its guest experience efforts, tied to performance measurements.** LAWA will need to develop collaborative relationships with multiple jurisdictions (e.g., airlines, TSA, and CBP) to measure guest experiences across their travel experience at LAX.

**Capital Improvements**

Since 2007, LAWA has spent $5.2 billion of its $8.5-billion Capital Improvement Program (CIP) to modernize LAX, including TBIT, making it the largest public works project in the City’s history. The Second Modernization Program, already discussed, is a comprehensive redevelopment of the ground transportation system. In 2016, LAWA intends to initiate procurement of the first two CIP elements, the APM and the CONRAC, using a Design-Build-Finance-Operate-Maintain (DBFOM) delivery method.

**LAWA should undertake some internal improvements to strengthen LAWA’s capacity to implement the Second Modernization Program.** LAWA should enhance its financial system (SAP) to better support capital projects. SAP provides budget versus actual reports; however, for large dollar line items (e.g., construction), budget amounts are released incrementally during the year. Consequently, staff members maintain separate Excel spreadsheets to monitor these costs. LAWA should engage in a business process review of the SAP enterprise software system to evaluate how to take full advantage of SAP functionality, especially data warehousing and linkages to the Prolog construction management and Maximo maintenance management systems.
LAWA can also improve capital program implementation through stronger management readiness and coordinated processes. LAWA would benefit from establishing a business solutions unit at LAWA to focus on process improvements and information systems design. Better estimations of the number of augmentation staff (e.g., contractors) needed may lower capital program and project costs. LAWA will need a full complement of capable staff to implement its aggressive capital program; thus, LAWA should apply additional resources and improved approaches to human resource processes, especially recruitment, hiring, discipline, and promotion (i.e., streamlining the overall cycle time and transparency for these processes).

**LAWA should establish at least 5-year and 10-year CIPs** that include anticipated multi-year capital projects and maintenance of existing and planned facilities.

**Changes in procurement can reinforce LAWA’s commitment to fair and impartial procurement processes.** LAWA Procurement awarded $593 million, of which $103,839,725 was for Requests for Bids (RFBs) last year. Procurement has challenges in knowing whether LAWA is getting the best value from vendors and contractors responding to these RFBs because, in 2014-2015, 58% of the solicitations received only 1 or 2 bids. In some situations, LAWA is limited in its ability to ensure competition because the FAA only approves one vendor to provide specific products; however, there is room for improvement at LAWA.

LAWA should investigate the causes for the low number of bidders, and take actions to ensure that specifications are biddable, that there are qualified proposers, and that bids are responsible and responsive. In addition, LAWA should assign a more active role to Procurement in managing the selection process for Requests for Proposal (RFPs), especially the larger ones.

**Balanced Scorecards (BSCs) and Performance Measurements**

Major themes of this IEA Survey report include the need to establish much more rigorous, data-driven management processes; the need to significantly improve the passenger experience; and the need to manage increasingly cross-functional and cross-jurisdictional challenges, such as CTA congestion, particularly during the Second Modernization Program.

LAWA currently collects substantial quantities of data related to its operations. Some are mandated, while others are common practice. What is missing is the arrangement of the measurements so that the metrics:

- Support LAWA’s mission and strategic priorities
- Facilitate regular monitoring and continuous improvement of operations and services
- Are shared regularly within LAWA, and with BOAC, City officials, City departments, and other governmental agencies, as well as with the public at large

Based on guidance from the Joint Administrators, and with confirmation from LAWA executive leadership, the KH team applied the Balanced Scorecard (BSC) model\(^5\) to performance measurements in

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5 Robert S. Kaplan and David P. Norton developed the BSC model, which is widely used in corporate America because it strategically links performance planning with a measurement framework.
some key areas that could serve as prototypes for expanding the BSCs into a complete performance management system for all LAWA divisions. The first two BSC prototypes are more strategic and cross-functional; the other two are business-oriented BSC prototypes that affect all LAWA operations:

- **Corporate Social Responsibility (CSR) BSC** (economic and fiscal impact; environmental responsibility (e.g., air, water, and noise impacts))
- **LAX Guest Experience BSC** (core services and world-class services)
- **Administrative BSC** (Procurement, Human Resources, and Internal Audit)
- **Finance BSC** (Finance, Accounting, and Risk Management)

LAWA has multiple challenges in developing a complete performance management system with dashboards, however:

- LAWA has neither identified its strategic priorities nor established goals, objectives, and targets to measure, benchmark, and monitor progress against its programs and services, except for its Modernization Programs.
- LAWA executives do not have a set of cross-functional, high-level metrics upon which to focus. Divisions do not routinely share data. Some data collection efforts are labor intensive or the data are not available.
- LAWA will need to work with its partners to obtain data, particularly for measuring and monitoring guest experiences (e.g., TSA screening times or airline counter baggage check in).

KH developed goals, defined measurements in support of those goals based on prevailing practices and statistics, compiled data for one or more years if available, defined the frequency that LAWA managers should monitor the measurement, and established targets where feasible. LAWA now has a framework for further refinement, such as the development of specific objectives in support of the goals tied to targets.

**On the basis of these BSC prototypes, LAWA should develop BSCs and a complete performance measurement system.** The use of a performance management system will be a dramatic cultural shift toward increased evidence-based, decision-making at LAWA. LAWA should review, refine, adopt, and monitor the BSCs developed during the IEA Survey. LAWA should also develop BSCs for its top strategic priorities and all LAWA divisions. LAWA should designate Finance to manage financial metrics reported in all BSCs.

**ONT – OUTSIDE THE SCOPE OF THE IEA SURVEY**

During the course of the IEA Survey, the City of Los Angeles entered into an agreement to transfer ONT to the newly created Ontario International Airport Authority (OIAA). This transfer will require significant planning and administrative work to ensure a smooth transition of ONT.

Part I: Managing and Delivering
I.1: BACKGROUND

This section provides some facts and figures about Los Angeles World Airports (LAWA) and highlights its many strengths and accomplishments since the 2008 Industrial, Economic, & Administrative (IEA) Survey.

FACTS AND FIGURES

LAWA Overview

LAWA consists of three airports with total operating revenues of $1.1 billion.

- Los Angeles International Airport (LAX) accounts for 93% of revenues. The primary focus of this 2016 IEA Survey Report is on LAX.

- Ontario International Airport (ONT) is primarily a regional airport with some international flights. During the course of the 2016 IEA Survey, the City of Los Angeles reached an agreement to transfer ONT to the newly created Ontario International Airport Authority (OIAA).

- Van Nuys Airport (VNY) is one of the nation’s most heavily used general aviation airports. The number of operations at VNY, however, decreased from 270,000 in 2013 to 238,000 in 2014, a difference of -11.9%.

Palmdale Airport (PMD) is no longer an operating airport.

A seven-member Board of Airport Commissioners (BOAC) establishes policies that are carried out by the LAWA Chief Executive Officer (CEO), the executive team, and 3,170 professional, technical, and administrative staff members. As a proprietary department of the City of Los Angeles, LAWA generates its own revenues and requires no taxpayer funding. Federal Aviation Authority (FAA) regulations require that all revenues be reinvested in the airports.
LAX

LAX is a major international gateway and economic engine for the region. LAX is the world’s busiest airport in terms of Origin & Destination (O&D) passengers.¹

As shown in Table I.1a, LAX served a total of 74.9 million passengers in 2015, setting a new record. Passenger volume grew 6% over the previous year, making LAX the second-busiest airport in the United States, just after Hartsfield-Jackson Atlanta (ATL), and the seventh-busiest airport in the world, just after London Heathrow. Of LAX’s 74.9 million passengers, a record 20.7 million passengers were aboard international flights, an increase of 8.5% over 2014. Approximately 27% of LAX’s passengers are from other countries.

Table I.1a: Number of Passengers (2012 through 2015)²

<table>
<thead>
<tr>
<th>Calendar Year (CY)</th>
<th>Annual Passengers (Arriving and Leaving LAX)¹</th>
<th>% Change Over Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Domestic</td>
<td>International</td>
</tr>
<tr>
<td>2012</td>
<td>46,535,207</td>
<td>17,152,914</td>
</tr>
<tr>
<td>2013</td>
<td>48,813,587</td>
<td>17,852,139</td>
</tr>
<tr>
<td>2014</td>
<td>51,556,545</td>
<td>19,105,667</td>
</tr>
<tr>
<td>2015</td>
<td>54,196,181</td>
<td>20,740,075</td>
</tr>
</tbody>
</table>

Approximately 70 passenger airlines serve LAX. Market share leaders at LAX, displayed in Table I.1b, include Delta Airlines, American Airlines, United Airlines, and Southwest Airlines, followed by Alaska Airlines, Virgin America, U. S. Airways, Spirit Airlines, Air Canada, and JetBlue Airlines. These 10 air carriers account for 77.8% of the passengers at LAX.

Table I.1b: Top 10 Air Carriers at LAX⁴

<table>
<thead>
<tr>
<th>Air Carrier</th>
<th>Number of Passengers</th>
<th>% of LAX Market</th>
<th># of Domestic Passengers</th>
<th># of International Passengers</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Delta Air Lines</td>
<td>12,644,137</td>
<td>16.9%</td>
<td>10,982,055</td>
<td>1,662,082</td>
</tr>
<tr>
<td>2 American Airlines</td>
<td>12,355,407</td>
<td>16.5%</td>
<td>11,128,704</td>
<td>1,226,703</td>
</tr>
<tr>
<td>3 United Air Lines</td>
<td>12,252,085</td>
<td>16.4%</td>
<td>11,005,036</td>
<td>1,247,049</td>
</tr>
<tr>
<td>4 Southwest Airlines</td>
<td>8,615,401</td>
<td>11.5%</td>
<td>8,615,401</td>
<td>0</td>
</tr>
<tr>
<td>5 Alaska Airlines</td>
<td>3,379,687</td>
<td>4.5%</td>
<td>2,668,320</td>
<td>711,367</td>
</tr>
<tr>
<td>6 Virgin America</td>
<td>3,068,386</td>
<td>4.1%</td>
<td>3,007,335</td>
<td>61,051</td>
</tr>
<tr>
<td>7 U. S. Airways</td>
<td>2,023,759</td>
<td>2.7%</td>
<td>2,023,689</td>
<td>70</td>
</tr>
</tbody>
</table>

¹ Origin and destination traffic consists of passengers who either board or deplane at a particular stop, In this case Los Angeles, versus passengers who remain on the plane or at the airport to go to another destination.
² Source: Los Angeles World Airports (LAWA), Traffic Comparison (TCOM) reports, Revenue Asset Management System (RAMS), December 31, 2015.
³ Transit passengers are only counted once.
⁴ Source: LAWA, TCOM reports, RAMS, December 31, 2015.
Approximately 2.1 million tons of cargo passed through LAX in 2015, a 6.5% increase over 2014, as shown in Table I.1c. Of this tonnage, 95.6% was freight and 4.4% was mail. Cargo freight tends to be high-value items; the total value of the 2.0 million tons of cargo in 2014 was estimated to be worth $91.6 billion, averaging $45,733 per ton.

- **Cargo – Air freight tonnage.** Ten 10 carriers represent 52.2% of the freight tonnage in 2015: Federal Express (17.4%), Delta Air Lines (4.6%), Korean Airlines (4.4%), ABX Air Inc. (4.3%), and Cathy Pacific (4.2%), followed by China Airlines, NCA, American Airlines, China Southern Airlines, and Eva Airways Corporation.

- **Cargo – Air mail tonnage.** The top 10 carriers that carry air mail represent 88.5% of all air mail tonnage: United Air Lines (29.2%), Delta Air Lines (26.1%), American Airlines (12.5%), Kalitta Air LLC (4.8%), and Qantas Airways System (4.5%), followed by U. S. Airways, Alaska Airlines, Japan Airlines, Cathay Pacific, and China Airlines.

### Table I.1c: Cargo Tonnage (2012 through 2015)

<table>
<thead>
<tr>
<th>Calendar Year (CY)</th>
<th>Freight</th>
<th>Mail</th>
<th>Totals</th>
<th>% Change Over Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>1,867,155</td>
<td>88,438</td>
<td>1,955,593</td>
<td>--</td>
</tr>
<tr>
<td>2013</td>
<td>1,851,433</td>
<td>77,286</td>
<td>1,928,720</td>
<td>-1.4%</td>
</tr>
<tr>
<td>2014</td>
<td>1,923,003</td>
<td>79,877</td>
<td>2,002,910</td>
<td>3.8%</td>
</tr>
<tr>
<td>2015</td>
<td>2,038,221</td>
<td>94,265</td>
<td>2,132,486</td>
<td>6.5%</td>
</tr>
</tbody>
</table>

The majority of LAX’s $1 billion in revenue is from rentals, landing fees, and other aeronautical sources (66%). The balance is from concessions and parking (34%), as shown in Table I.1d.

### Table I.1d: LAX Revenue Sources (2015)

<table>
<thead>
<tr>
<th>LAX Revenue Sources</th>
<th>Revenue ($000s)</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total Aviation</td>
<td>$687,856</td>
<td>66%</td>
</tr>
<tr>
<td>Total Concessions &amp; Parking</td>
<td>$357,944</td>
<td>34%</td>
</tr>
<tr>
<td>Total</td>
<td>$1,045,800</td>
<td>100%</td>
</tr>
</tbody>
</table>

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5 Source: LAWA, TCOM reports, RAMS, December 31, 2015..
STRENGTHS AND ACCOMPLISHMENTS
Facility Modernization

TOM BRADLEY INTERNATIONAL TERMINAL (TBIT) UNDERWENT A MAJOR TRANSFORMATION, ALONG WITH OTHER NEEDED MODERNIZATION PROJECTS.

With a total budget of $8.5 billion, the LAX Capital Improvement Program (CIP) collectively is the largest public works project in the City’s history. Since 2007, LAWA has spent $5.2 billion of the CIP budget to modernize LAX, including the Tom Bradley International Terminal (TBIT).

Initial TBIT Renovation

In March 2010, LAWA completed a $737-million renovation of TBIT to make traveling through this international gateway safer, faster, and more comfortable. Originally built in 1984, TBIT’s major renovations were:

- Improvements to the ticketing lobby, arrivals corridors and arrivals waiting area
- Modifications to two gates (including a two-level gate) to accommodate the Airbus A380 for use prior to the opening of the renovated TBIT departure area in 2013
- The addition of 45,000 square feet to house a new baggage screening and handling facility to make it easier and more efficient to check bags, reduce congestion in the check-in lobby, and an improved baggage claim experience for arriving international passengers
- A state-of-the-art environmental control system, automated high-efficiency lighting, and high-efficiency Heating, Ventilation, and Air Conditioning (HVAC) systems, which earned the project a Silver LEED-EB (Leadership in Energy and Environmental Design-Existing Building) award from the U. S. Green Building Council

LAWA’s improved materials and resource conservation efforts resulted in recycling or salvaging of more than 75% of construction and demolition waste.

New TBIT Project

Between 2010 and 2015, LAWA embarked on the $1.5 billion New Tom Bradley International Terminal Project (called the “New TBIT Project”), which today provides travelers with improved:

- **Boarding gates.** TBIT has 18 expanded boarding gates/waiting areas with 9 gates able to accommodate the new generation aircraft (Airbus 380 super jumbo jet and Boeing 747-8 Intercontinental). Boarding areas have 50% more seating, including counters with electrical


outlets for travelers who want to work before their flights and seats with electrical outlets for charging personal electronic devices.

- **Great Hall.** After passengers complete check-in and screening, they have access to TBIT’s 150,000 square-foot Great Hall, which offers dining, retail shopping, airline club lounges, and passenger amenities.
  - Dining includes Los Angeles and international cuisine, healthy and fresh food, and grab-and-go options; 15 of the 27 dining units are local Los Angeles brands.
  - TBIT has 6 VIP business- and first-class lounges on the 5th floor (Qantas, KAL, and OneWorld Alliance) and 6th floor (Star Alliance, Emirates, and LA International Lounge (unaligned airlines)).
  - A LAX Beach Children’s Play Area provides a safe and fun place for children.

- **Retail.** TBIT houses 42 retail offerings, including luxury designer brands, duty-free retail, and Los Angeles brands.

- **Media.** TBIT’s Integrated Environmental Media System (IEMS) is the first media system to synchronize and manage content to create an environmental experience using live data, flight departure and arrival information, and passenger interactions.
  - IEMS provides entertainment for guests and a source of non-aeronautical revenue for LAWA.
  - As part of IEMS, the Time Tower/elevator inside the Great Hall has an interactive surface that reacts to the movements of passengers by triggering customized, real-time visual effects.

- **Customs area.** The upgrades to customs and immigration Federal inspection areas have enabled passengers to be cleared to enter more efficiently with planned secured corridors between TBIT, Terminal 3, and Terminal 4. The connection between TBIT and Terminal 4 is currently under construction; the connection between Terminals 3 and 4 is included in the ongoing plans for the renovation of Terminal 3.

The New TBIT Project achieved LEED Gold certification from the U. S. Green Building Council. LAWA adopted practices to minimize the environmental impact, including:

- Recycling or salvaging more than 75% of construction and demolition waste
- Installing efficient lighting fixtures and controls with occupancy sensors throughout the terminal
- Installing HVAC controls
- Using interior finishes with materials made of recycled content and low volatile organic chemicals (VOC) paints, adhesives, carpets, and sealants
- Using ultra-low-flow plumbing fixtures in restrooms with provisions to convert the toilet and urinal fixtures to reclaimed water when it becomes available to LAX
TBIT, regarded today as the “crown jewel” at LAX, can now accommodate 4,500 passengers per hour, up from 2,800 passengers – a 60% increase in capacity. In keeping with the desire to promote a sense of Los Angeles at LAX, the new architectural profile of TBIT reflects the Pacific Ocean’s waves lapping on the Los Angeles shores.

Since 2009, TBIT has garnered many awards from such organizations as:

**TBIT ARCHITECTURE, ENGINEERING, CONSTRUCTION MANAGEMENT, CONCESSIONS, AND OTHER FIELDS**

- 2009: Westside Urban Forum
- 2010: Executive Travel Magazine National (silver award for “Best Domestic Airport”)
- 2012: Bentley International and Engineering News Record
- 2013: Los Angeles Business Journal-California, Future Travel Experience Awards, Los Angeles Business Council, American Institute Architects/Los Angeles
- 2014: Airport Revenue News awards (TBIT concessions), Engineering News Record (ENR) (Westfield TBIT concessions), and Engineering News Record (Roger Johnson, Deputy Executive Director, LAWA, for the Airports Development Group (ADG))

**TBIT INTEGRATED ENVIRONMENTAL MEDIA SYSTEM (IEMS)**

- 2013: ICON Awards (interior)
- 2014: American Advertising Federation Los Angeles ADDY awards (Best in Show (Digital Kitchen)); InAVation Awards; and Numix Award (Canada) for experiential cultural production. Among LAWA’s award recipients are Moment Factory (multiple awards) for innovation, technology, creativity, digital installation, live design, and architectural entertainment; and Moment Factory, MRA/Sardi, SMI (multiple awards) for graphic design, permanent Installations, global design, and international category (InAVation)

**Other Capital Improvements**

In addition to the two TBIT improvement projects, LAWA made significant strides with its CIP and other aspects of the Modernization Program at LAX, combined with other improvements at VNY and ONT.

- LAX built the Central Utility Plant (CUP) while continuing to operate the old plant. This project was the first design-build contract awarded in the City of Los Angeles, and required 9 miles of new pipes and 23 new equipment rooms. It was completed under budget. The CUP was awarded LEED Gold status, given its many new enhancements for energy efficiency and conservation.
- LAX and ONT successfully coordinated the build-out of space as needed for required concessions improvements.

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9 LAX is Happening, “Facts about Modernizing LAX,” LAWA, November 2014
- VNY completed the Redevelopment Plan and runway improvements to improve service.

**LAWA HAS ESTABLISHED BUY-BACK AGREEMENTS FOR LAX’S TERMINAL ASSETS.**

LAWA is working to buy back airline terminal assets to encourage terminal development and modernization. LAWCA restructured many airline terminal lease agreements to accelerate badly needed terminal improvements and better manage the financial risks of these projects. The current renovation to Terminal 1, involving Southwest Airlines, is an example of this improvement. As a result, LAWCA has been able to develop a unified strategic grasp of terminal directions and future renovations. This strategic grasp was recently demonstrated by Delta Airlines’ Letter of Intent to rebuild Terminals 2 and 3 into a unified facility. If this major realignment of airline leaseholds occurs, it could result in a more modern and efficient airport.

**LAWA HAS IMPLEMENTED PROCESS IMPROVEMENTS TO SUPPORT ITS OPERATIONS AND ITS CAPITAL IMPROVEMENT PROJECTS.**

As testimony to the effectiveness of LAWCA’s operational and maintenance efforts, the Federal Aviation Administration (FAA) found zero discrepancies during its CFR 139 FAA annual airfield inspection at LAX – a remarkable accomplishment that few airports achieve.

This accomplishment was due, in part, to process such changes and improvements as:

- LAWCA’s Airports Development Group (ADG) prepared Program Status Reports (PSR) monthly on all construction projects and shared them with LAWCA executives, Board of Airport Commissioners (BOAC), and the Office of the Mayor to increase transparency and coordination efforts.
- LAWCA created the Construction and Logistics Management (CALM) team to monitor historic spend rates (averaging $4 million per day).
- LAWCA developed coordination tactics and daily reports to handle shut-downs, increasing coordination and minimizing impact to guests.
- LAWCA’s Capital Programming, Planning & Engineering Group (CPPEG) developed guidebooks and process flows to improve consistency and standardization across the organization, including:
  - New CIP process flow and standard form creation
  - Policies and Procedures Guidebook
  - Project Approval Process and Design and Construction Handbook
- LAWCA established a CIP, strengthening planning capability through a biennial process, starting with its first Open Call in 2012 and publication of the FY 2014-2018 CIP. The CIP helped to earn the bond rating agencies’ confidence.

Note: KH has also identified the need, discussed in Chapter I.5, to continue to define the CIP to cover more years moving forward.

- Two LAWA organizations – Information Management & Technology Group (IMTG) and Facilities Maintenance & Utilities Group (FMUG) – implemented Maximo software for maintenance operations, which allows for better and more efficient tracking and planning of routine and preventive maintenance and better estimating of staffing allocations.

- FMUG defined and published LAWA’s first Facilities Management Handbook, which includes policies, conventions, guidelines, and performance measures for staff responsible for planning, construction, acquisition, operation, and maintenance of facilities.

- LAWA enhanced the pavement management system across all airports.

- LAWA’s Commercial Development Group (CDG) improved its management of Requests for Proposal (RFPs), leading to faster implementation of concessionaire improvements and shorter timelines to increased revenues.
  
  Note: KH has recommendations for improving procurement in Chapters I.5 and II.5.

Financial and Commercial

LAWA HAS MADE SIGNIFICANT FINANCIAL STRIDES SINCE 2008 TO INCREASE AND SECURE REVENUES AND MANAGE OPERATING COSTS ACROSS ALL AIRPORTS.

Through a combination of initiatives, LAWA Finance has continued to manage and improve its financial picture.

*Maintained AA senior lien bond ratings.* Fitch Ratings recently assigned an 'AA' rating to LAWA for $317 million in senior revenue bonds series 2015D and 2015E. Fitch also affirmed its AA rating on $3.31 billion parity senior revenue bonds, and its AA-rating on LAX's $797.3 million subordinate revenue bonds. Continuance of the AA rating is vital for LAWA to embark on its Second Modernization Program, discussed later in this IEA Survey Report. Chapter II.4 on “BSC – Finance” discusses bond ratings in greater depth.

### Senior Lien Bond Ratings

<table>
<thead>
<tr>
<th>Year</th>
<th>Fitch Ratings</th>
<th>Moody's Investor Service</th>
<th>S&amp;P</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>AA</td>
<td>A3</td>
<td>AA</td>
</tr>
<tr>
<td>2007</td>
<td>AA</td>
<td>A3</td>
<td>AA</td>
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<td>2008</td>
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<tr>
<td>2014</td>
<td>AA</td>
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<td>AA</td>
</tr>
<tr>
<td>2015</td>
<td>AA</td>
<td>A3</td>
<td>AA</td>
</tr>
</tbody>
</table>

*Issued bonds.* LAWA issued nearly $4 billion of bonds to support LAX modernization, outlined in the CIP.

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Improved debt service. To reduce interest costs and debt service needs when issuing bonds for the CIP, LAWA improved investor relations by revamping its website to make financial information more available and transparent. To preserve flexibility in the use of revenue sources, Finance employed accumulated Passenger Facility Charge (PFC) restricted cash balances to reduce debt service demands on discretionary revenue sources.

Increased revenues. Strengthened revenue streams come primarily from two sources:

- New rate agreements with airlines
- New concessions agreements, which also ensure better airline relationships and improved passenger experiences; specifically:
  - LAX awarded concessions at Terminals 1, 2, 3, 6, and TBIT to Westfield and sold packages for Terminals 4, 5, 7, and 8.
  - ONT extended concessionaire agreements and negotiated a 7-year deal for parking and rental car shuttle services.

Reduced or contained operating costs. Through organizational changes, process improvements, and active cost control, LAWA has managed operating costs better at its airports.

- LAX managed operating costs at near-inflation levels, despite significant passenger growth.
- ONT decreased operating costs at ONT by 25% to 30%.
- VNY reduced costs and increased tenant revenue and activity to largely eliminate subsidies. For example, VNY negotiated a new Fixed Base Operation (FBO) and evicted non-paying tenants to make room for new tenants.
- PMD closed airfield operations since it was a money-losing proposition ($232 subsidy per passenger per trip).

Other initiatives included:

- Implementing an Owner-Controlled Insurance Program (OCIP) for the provision of Workers’ Compensation and liability insurance during the second phase of the most recent modernization
- Employing automated “3-way match” of Vendor Invoice Management and Automated Clearing House (ACH) payments, which reduced cycle time for vendor payments, thereby improving LAWA’s cash flows and vendor relations, and strengthening LAWA’s position when negotiating future costs
- Reducing the FAA cycle time for approval of PFC funding applications from 18 months to 9 months by working closely with LAWA and FAA staff, effectively using restricted cash balances and future restricted receipts to preserve flexibility in using discretionary revenues
Airport Response Control Center (ARCC)

LAWA HAS IMPROVED ITS DAILY OPERATIONS AND EMERGENCY MANAGEMENT FUNCTIONS.

The design and implementation of the Airport Response Control Center (ARCC) at LAX was a major achievement that has strengthened LAX’s ability to manage daily operations and emergencies. The ARCC includes LAWA staff members from operations, maintenance, traffic, parking, security, and law enforcement; these LAWA staff members are supplemented as needed by Los Angeles Department of Transportation (LADOT) staff. They work together to respond to day-to-day operating needs at LAX across functional areas. The ARCC has access to significant real-time data that allows it to anticipate and respond to arrival and departure peaks through sophisticated technology, including:

- Arrival and departure aircraft and passenger counts
- Live video of Central Terminal Area (CTA) and airfield conditions
- Real-time displays of aircraft locations and movements

The design and implementation of the ARCC at LAX was a major achievement that has strengthened LAX’s ability to manage daily operations and emergencies. The ARCC has significant real-time data that allows it to anticipate and prepare for incoming and outgoing traffic peaks via:

- Arrival and departure aircraft and passenger counts
- Live video of CTA conditions
- Real-time displays of aircraft locations and movements

The colocation of multiple, formerly disparate, functions under a single duty manager allows for more efficient and optimized responses, ensuring operational effectiveness and a better guest experience. To support the ARCC and other operational needs, LAWA established a 24/7 Airport Operations Duty Staff presence.

Adjacent to and included in the ARCC is the Department Operations Center (DOC), which is activated to support LAX responses to major incidents, significantly improving emergency management preparedness and the safety and security of the airport. As a result, LAWA was able to more rapidly and effectively implement a coordinated response to the November 1, 2013, shooting at LAX.

The building of the ARCC itself was a collaborative effort, involving Airports Development Group (ADG) in the physical structure and IMTG as the project manager for the installation and implementation of the IT systems and communication links that are the backbone of the ARCC. IMTG dedicated more than 20 full-time employees to the effort. Input from stakeholders across functions helped to align needs and improve the ARCC’s effectiveness.
LAX Air Services and Guest Experience

LAWA HAS ADDED AIRLINES AND EXPANDED THE NUMBER OF INTERNATIONAL DESTINATIONS AT LAX.

LAX today has 72 non-stop and 1-stop international cities served in 40 counties. During 2014 and 2015, LAWA added 17 non-stop international destinations and 5 new airlines at LAX:

- **New international destinations:** Abu Dhabi (United Arab Emirates), Belize City (Belize), Copenhagen (Denmark), Liberia/Guanacaste (Costa Rica), London-Gatwick (United Kingdom), Monterrey (Mexico), Oslo (Norway), Stockholm (Sweden), Addis Ababa (Ethiopia), Bogota (Colombia), Dublin (Ireland), Managua (Nicaragua), Montego Bay (Jamaica), Jeddah (Saudi Arabia), Riyadh (Saudi Arabia), Nanjing (China), and Osaka (Japan).
- **New airlines:** Saudia, Etihad, Norwegian, Ethiopian, and Avianca Airlines

This expansion required coordinating the efforts of operations, badging, permits, and real estate to simplify adding new service. Chapter I.4 on “Guest Experience” elaborates further on the importance of air services development – travelers want to use airports that have flights to places they want to go to and at times they want to travel. Moreover, having multiple airlines provide travelers with more options in the event they have cancellations or miss flights and can help keep fare prices stable.

LAWA HAS BEEN WORKING ON ENHANCING THE “GUEST EXPERIENCE” FOR BOTH PASSENGERS AND “MEETERS AND GREETERS” AT LAX.

Mayor Garcetti established “Guest Experience” at LAX as a priority for LAWA in early 2015. The purpose of the Guest Experience initiative was to: “…fuel customer service, cultural change, and foster a guest experience ethic among all who work and do business...” at LAX. The term “guest” includes both passengers as well as individuals who come to LAX as “meeters and greeters” of passengers.

In response to the Mayor’s initiative, LAWA assigned responsibility for Guest Experience to a manager, who formed a cross-disciplinary working group of 25 executives and managers. The working group participated in a three-day workshop, began to define Guest Experience standards, developed the LAXceptional Xperience brand, and discussed objectives. Chapter I.4 elaborates further on the working group’s efforts; KH worked with this working group to develop the Guest Experience Balanced Scorecard (BSC), contained in Chapter II.3.

Other efforts to enhance the guest experience include:

- LAWA modernized the terminals and concessions at LAX, including dining and retail offerings that reflect LA’s culture, cuisine, and lifestyle, as mentioned earlier.

12 Memorandum from Barbara Yamamoto, Guest Experience Team, to all LAWA employees, May 27, 2015.
- LAWA worked with the Transportation Security Administration (TSA) to reduce wait times and shorten lines through security checkpoints.
- LAWA created a therapy dog program that has been established as an industry best practice.
- LAWA improved and enhanced its Public Art and Exhibition Program at LAX with an increased focus on local artists; several news articles and public radio stations have showcased and complimented the exhibitions.

Recognizing the progress made by LAWA and its tenants:

- TBIT’s Star Alliance Lounge received 27 awards and was voted the best Alliance lounge by Skytrax, improving TBIT’s luxury and international competitiveness. Serving 13 Star Alliance carriers and managed by Air New Zealand, the lounge offers space for approximately 400 business class and Star Alliance Gold passengers, with an exclusive area for first class passengers.
- In April 2015, Condé Nast Traveler acknowledged the Virgin Atlantic Clubhouse at LAX as reflecting Los Angeles living.

Environment

**LAWA CONTINUES TO FOCUS ON MITIGATING ITS ENVIRONMENTAL IMPACT.**

LAWA has prepared Environmental Sustainability Reports since 2008 as part of its public accountability. LAWA’s Environmental & Land Use Planning staff members are developing a new and more coherent approach to environmental sustainability and the environmental reality of LAWA’s facilities. This approach expands the original focus on compliance with regulations and the production of required Environmental Impact Reports (EIRs). The LEED Certifications for TBIT and CUP improvements, discussed earlier, are evidence of this new proactive strategy. Chapter I.3 discusses LAWA’s environmental responsibility further.

In addition:

- LAWA awarded $90 million in sound insulation grants to local jurisdictions for the noise insulation program in FY 2014-2015.
- LAX incorporated environmental responsibility into the Specific Plan Amendment Study and LAX Northside Land Use Design Guidelines.
Technology

LAWA HAS ENHANCED ITS TECHNOLOGY CAPABILITIES SINCE 2008.

IMTG has supported LAWA organizations and operations by developing critical IT infrastructure to support organizational efficiency and effectiveness (e.g., business systems (SAP, Maximo); unique airport systems (e.g., badging, airport police, and AARC); and the airport network of fiber optics). Since 2009, IMTG has completed more than 70 projects; notable projects were done in collaboration with LAWA clients. Significant improvements include:

- **Maximo and ARCC** (already cited)
- **CCTV.** IMTG replaced an antiquated analog Closed-Circuit Television (CCTV) system with a modern, digital camera storage and management system, one of the largest expansions of any airport in the world, involving more than 3,000 cameras covering more than 5-million square feet of terminal space, enhancing LAWA’s safety and security posture.
- **Document management.** IMTG implemented a LAWA-wide document management system, including SharePoint and a new Intranet.
- **Data center.** IMTG implemented a major data center and disaster recovery replacement strategy, ensuring LAWA has redundancy and protection in the case of a major natural or man-made disaster.
- **Finance.** Finance’s SAP software, the enterprise financial system at LAWA, was upgraded to the current version supported by the vendor.
- **Payroll.** LD-time was implemented to reduce staff effort in payroll processing and reconciliation, thereby freeing staff resources to focus on analysis and control rather than manual timesheet entries.
- **Multiple systems improvements.** IMTG has improved LAWA’s dispatching for the Law Enforcement & Homeland Security Division, terminal operations systems (TASS) at TBIT, LAX’s Automatic Vehicle Identification (AVI) system,13 Geographic Information System (GIS) mapping system, and VNY FlyAway parking system.

IMTG reports on its IT initiatives in its organizational strategic plan. IMTG created a Technology Innovations Officer position to test new, cutting-edge technologies at LAWA.


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13 AVI is a system of GPS sensors and supporting hardware and software that allows the precise tracking of vehicles on roadways.
**Procurement**

**PROCUREMENT HAS MADE STRIDES IN IMPROVING ITS OPERATIONS.**

Procurement has a number of accomplishments:

- Procurement worked with the Los Angeles City Council and BOAC to increase the Chief Executive Officer (CEO) authority to award multi-year contracts up to $150,000 for the purchase of Goods, Equipment, and Non-Professional Services (GENPS), thereby improving pricing and reducing administration costs and turnaround time for 60% of all contract awards.

- Procurement created a Designated Contract Administrator (DCA) function within LAWA divisions and conducted multiple training sessions to improve the contracting process and compliance with procurement policies and procedures.

- The Small Business Enterprise (SBE) program was integrated into the procurement process to track LAWA SBE usage and encourage community economic development. LAWA exceeded departmental goals for the first two years.
  
  o Note: The mandatory SBE program was an outgrowth of the Good Faith Effort for the Minority Business Enterprise (MBE)/Women Business Enterprise (WBE) outreach program. Unlike the MBE/WBE program, which only called for a good faith effort, the SBE program requires the SBE goals to be met or exceeded.

- A Procurement Manual was developed and placed online to improve compliance.

- Procurement reports 100% compliance with the administrative requirements in all procurements.

**People and Structure**

**LAWA LEADERS AND KEY STAFF HAVE BEGUN TO FOCUS ON HUMAN RESOURCES-RELATED ISSUES.**

LAWA faces several challenges in ensuring that it recruits, develops, and retains the best staff to position itself to address its challenges today and into the future. One of its greatest challenges is staffing.

**Attendance.** To help with staff availability, LAWA has designed and administered an attendance management program that incentivizes good attendance. In the fourth quarter of 2010, LAWA’s Human Resources Services Division (HR) began monitoring the percent of employees who were absent from work more than six times per year or more than 96 hours per year. Employees who exceeded these thresholds were placed on the “Attendance Deviation List,” because they demonstrated high rates of absenteeism.\(^{14}\) The list tracks attendance rates, by division, including the number of employees’ records reviewed, percent in compliance, and percent on attendance development.

\[^{14}\) Note: Not captured on the Attendance Deviation List are employees who are absent but are on an approved Worker’s Compensation or FMLA leave list.\]
At the time of the initial list (2010), 30% of LAWA employees were on the list. By the first quarter of 2011, the percent had dropped to 28% and has been declining since then. As of December 2015, 16% of the LAWA city employees are now on the Attendance Deviation List, which means more employees are reporting to work regularly.

**Sworn officers.** The Law Enforcement & Homeland Security Division now uses the Los Angeles Police Department (LAPD) Academy in its training, which:

- Reduces costs
- Provides effective training
- Improves coordination and communication when the two departments are working together

The Law Enforcement & Homeland Security Division has also contracted to obtain confidential counseling for its sworn officers, helping them to better cope with the stresses of their work. In addition, Airport Police has implemented a Rolling Recruitment program to maintain force levels, reducing the need to fill key posts with overtime assignments or leave them unfilled.

**Employee training and development.** LAWA’s HR has worked on a number of initiatives to improve the development of LAWA’s talent:

- LAWA has implemented an automated performance management system.
- HR offers professional coaching services to LAWA management staff members to help improve team effectiveness.
- HR’s training unit has launched well-received training courses. For example:
  - A 6-week Supervisor’s Toolkit course received excellent ratings, with demand exceeding capacity (discussed further in Chapter II.5).
  - HR has trained existing supervisors and is including staff interested in becoming supervisors. This approach improves individual supervisory effectiveness, and also promotes managerial consistency across LAWA.
  - HR has implemented in-house training and a team-building retreat day, along with “HR Employee of the Month,” to improve HR cohesiveness and effectiveness.

**LAWA HAS MADE ORGANIZATIONAL ENHANCEMENTS TO ENHANCE COLLABORATION.**

Some of the organizational enhancements are:

- LAWA integrated functions into matrix structures. For example, IMTG and FMUG staff members are assigned to the Operations, Maintenance, & Emergency Group (OMEG); Law Enforcement & Homeland Security and FMUG staff members are assigned to ONT and VNY, deploying critical resources closer to users.
- LAWA assigned Engineering staff to CPPEG to improve organizational capacity to identify new projects and begin needs-based assessments of capital project proposals throughout design and completion, thus reducing design costs associated with construction.
- LAWA integrated Purchasing and Contracts into one organization, streamlining their processes and increasing efficiency.
- The Facilities & Technical Services Division (FTSD), which is part of FMUG, has remained unchanged organizationally, but has developed a stronger collaborative and working relationship with ADG.

**Metrics**

SOME LAWA DIVISIONS ARE NOW USING PERFORMANCE MEASUREMENTS TO MONITOR OPERATIONS AND OUTCOMES.

A number of LAWA divisions have developed their own performance measurements:

- Staff working for the Chief Financial Officer (CFO) and Comptroller can extract extensive financial data, routinely produce financial reports, and monitor financial performance.
- LAWA’s produces monthly Traffic Comparison (TCOM) reports from its Revenue Asset Management System (RAMS). The traffic comparisons include month-to-month and year-to-date (YTD) measurements on passenger traffic (by domestic and international passengers, by scheduled carriers/scheduled commuters/charter, and by terminal); air cargo (freight and mail); and aircraft movements (take-offs and landings). These metrics are further refined, by other indicators (e.g., departures, arrivals, and transits; passenger traffic by terminal and airline; and LAX airline market share).
- ADG uses Prolog and other tools to develop detailed monthly progress reports on its Modernization Projects, which it shares with LAWA executives, BOAC, and City officials.
- In an effort to improve the capability of managing revenues, CDG prepares monthly statistics of revenues, by concession type and terminal, for monitoring performance internally, including trend data, year-over-year comparisons, charts, and comments for anomalous or outlying reductions or increases.
- As part of the ARCC, a wide range of operations, maintenance, traffic, parking, security, and law enforcement data sources were centralized and systematized into dashboards and reports to better manage daily operations and CTA congestion.
- The Law Enforcement & Homeland Security Division produces a wide variety of mandated statistical reports, including Part 1 Crimes (murder, rape, robbery, aggravated assault, burglary, motor vehicle theft, larceny-theft, and arson). Airport Police also maintain a wide variety of information regarding the use of its resources, including budget, bi-weekly overtime, absences, use of force, and contacts with the public (Incident Reports).
  - The division developed geographic crime reports used to shape law enforcement response and reduce crime.
Note: Pacific Division and West Traffic Division report and LAPD’s facilities record some of the arrests, motor vehicle accidents, and motor vehicle citations. In addition, Airport Police reports a variety of airfield violations, including accidents and traffic citations, independently of LAPD.

- IMTG, as part of its organizational strategic plan, developed and publishes a set of IT performance measurements to better manage its organization and projects.
- In 2015, FMUG implemented Maximo, which generates reports on work orders and preventive maintenance needs.

As discussed further in Chapter II.1, however, LAWA lacks an integrated and holistic approach to performance measurements.

**Other Accomplishments**

**LAWA’S OTHER ACCOMPLISHMENTS ARE NOTEWORTHY, BUT TOO LONG TO HIGHLIGHT.**

This IEA Survey Report cannot possibly list all of the accomplishments at LAWA since 2008, but did want to highlight the most significant ones. LAWA has many other noteworthy accomplishments, such as:

- **Internal Audit.** LAWA’s Internal Audit staff supported the City Attorney in its concessions audit and completed risk analysis, improving risk management.

- **Parking system equipment.** CDG replaced the parking system equipment in the CTA garages and Lot C as part of its new Parking Access Revenue Control System (PARCS). PARCS improves revenue control, transaction speeds, and overall management.

- **Master Conditional Use Permit.** LAX completed the City’s largest LAX Master Conditional Use Permit Application (200+ applications) and instituted a web-based tracking process to assist and expedite LAX Tenants through the City of Los Angeles approval process for concessionaire alcohol licenses.
I.2: STRATEGY AND STRUCTURE

This chapter presents a strategic framework for a performance management system, using a Balanced Scorecard (BSC) approach linked to Los Angeles World Airport (LAWA)’s priorities. It also highlights structural issues that should be addressed to ensure that the organizational structure aligns with LAWA’s strategic direction. The strategic framework outlined in this chapter is the foundation for developing BSCs at LAWA, discussed further in Part II of this 2016 Industrial, Economic, & Administrative (IEA) Survey Report.

FINDINGS AND RECOMMENDATIONS

Strategic Framework

RECOMMENDATION I.2.1: LAWA WOULD BENEFIT FROM A STRATEGIC FRAMEWORK FOR DEFINING PRIORITIES, WHICH IT SHOULD THEN MEASURE AND IMPROVE.

KH believes that LAWA’s vision and strategy for its future should guide LAWA executives in implementing real and lasting improvements in LAWA’s performance. Such a framework balances short-term cost reduction with the need to ensure LAWA has the capacity to achieve strategic goals. KH advocates for changes that reflect both an appreciation of LAWA’s long-term goals and an analysis of its current operations.

This approach typically enables KH to focus on how sound the current strategy is, and whether LAWA has the organizational capacity to realize that strategy.

Unfortunately, at the time of the 2016 IEA Survey, LAWA did not have a current strategic plan, vision statement, or formal strategic priorities to serve as guidelines for the KH team during the IEA Survey.

Finding. Beyond the modernization initiatives, LAWA lacks strategic priorities that can serve as the foundation for a performance management system.

Planning is never easy. It is particularly challenging in high-profile government agencies, such as LAWA, with diverse stakeholders. LAWA faced more than 15 years of community and political resistance to the master-planning process needed to address essential capital improvements. Starting in 2008, LAWA management’s focus has been on LAX modernization efforts, which served as LAWA’s primary strategic driver: carry out the rebuilding of TBIT. LAWA’s stated vision in 2009 became: “Fulfill the ideal purpose of each of our airports and, in so doing, honor our promise to rebuild LAX as America’s premier international gateway.”

Its mission statement was to: “Realize this vision by building positive relationships with our customers and stakeholders; creating an effective, efficient, and nimble organization; and designing, funding, and rebuilding facilities equal to the needs of the most demanding domestic and international passengers and the airlines that serve them.”
Today, it is difficult to locate LAWA’s vision or mission; neither is posted on LAWA’s website nor prominent in any of LAWA’s documents. Several LAWA divisions have mission statements posted on the LAWA website, but these missions do not align with each other or with an overall LAWA mission statement.

Prior IEA Surveys encouraged LAWA to develop Strategic Plans. In response, LAWA adopted Strategic Plans until 2008. LAWA recently prepared a document called a “Strategic Plan” (July 8, 2015, but it served as more of a transitional plan from the prior Chief Executive Officer (CEO) to the new CEO. The report was prepared by a consulting firm with input from selected LAWA executives, and was not vetted with key stakeholders, Board of Airport Commissioners (BOAC), City officials, or within LAWA. It does not fulfill the promise of its title.

The challenge for KH has been to develop a meaningful performance measurement system in the absence of clear strategic priorities.

Proposed Actions. LAWA should identify critical strategic business priorities for the next three years.

As part of this IEA Survey, KH prepared a pro forma Strategy Map to provide an initial strategic framework for LAWA’s performance management system. During the IEA Survey, KH vetted and refined the Strategy Map with the Joint Administrators, LAWA executives, LAWA working groups, elected officials, and others. It serves as a straw model for purposes of this IEA Survey, but deserves wider discussions with BOAC, City officials, and additional LAWA employees and stakeholders before it is amended and adopted.

LAWA’s highest purpose is placed at the top of the strategy map. KH began with a simplified mission for LAWA to: “Operate and develop world-class, guest-friendly, safe, and secure airport facilities that serve as the LA region’s travel and trade gateways to the world.”

The Strategy Map has both an external focus on what LAWA needs to do to meet the needs and expectations of its stakeholders and partners, and an internal focus on what LAWA needs to do to achieve the desired changes externally.

**External priorities.** The external priorities proposed are:

- **Corporate Social Responsibility (CSR).** LAWA should execute its mission in accordance with CSR principles. CSR is an approach for improving public accountability, discussed in Chapter I.3, and addresses economic, environmental, and community impact, requiring collaborative work with other governmental agencies, discussed in Chapter I.3 and Chapter II.2.

- **Guest Experience.** Mayor Garcetti has emphasized the importance of LAWA shifting from a passenger or customer focus to a guest experience perspective, serving guests (passengers, meeters, and greeters). LAX’s Guest Experience initiative encompasses core services, which must be done at any modern airport, and world-class services, which distinguish the highest-rated airports around the world, discussed in Chapter I.4 and Chapter II.3.
Mission: Operate and develop world-class, guest-friendly, safe, and secure airport facilities that serve as the LA region’s travel and trade gateways to the world.

Corporate Social Responsibility/Accountability
- Economic & Fiscal Impact
- Environmental Responsibility
- Community Relations & Impact
- Government Relations

Guest Experience
- Core Services: Safe & Secure, Transportation/Access, Air Services Development, Maintained & Clean
- World-Class Services: Ambiance & LA Sense of Place; Services, Concessions, Amenities, & Technology; Hospitality; Informed Guests

Airport Infrastructure/Operations
- World-Class Facilities
- Cost-Effective Capital Development & Renewal
- Landside, Terminals, & Airside Operations

Internal Organization/Technology
- Leveraging of Technology
- Efficient Internal Operations & Processes
- Organizational Structure to Support Strategy

Learning/Employees
- Leadership & Talent Development
- Commitment To Strategy/Goals/Measurements
- Internal Communication & Work Culture

Financial
- Fiscal Responsibility
- Capital Budgeting
- Risk Management

Partners/Stakeholders
- Airlines
- Traveling public
- FAA & other regulatory agencies
- Business associations, businesses benefiting from the airports
- City of LA departments
- City of LA elected officials
- LA Metro
- SCAG
- County governments
- Communities served
- Adjacent local cities
- Neighborhood Councils, homeowners’ associations, etc.
- Etc.

Strategy Map Developed by KH Consulting Group (KH)
**Internal priorities.** Internal priorities are important for achieving the external priorities and include:

- **Airport Infrastructure/Operations.** LAWA must design, build, operate, and maintain world-class facilities and operations to ensure a great guest experience.

- **Internal Organization/Structure.** LAWA must build the internal organization, processes, and procedures to deliver the core services and world-class services for the best guest experiences. To do this, LAWA must leverage technology, nurture expert leadership, establish appropriate processes, and develop innovative solutions to ensure that the organization operates effectively and efficiently.

- **Learning/Employees.** To be world-class and address CSR challenges, LAWA must attract, retain, and develop the best talent in the industry. To do this, LAWA must invest in its people.

- **Financial.** Underlying all of these efforts is LAWA’s commitment to maintain a strong fiscal posture. As a proprietary department in the City of Los Angeles, LAWA pays for all of its activities through revenues generated at the airports. Financial ramifications entail:
  - **Fiscal responsibility:** Strategy-guided budgets, policies, and plans; cost management; and diversified revenues (landside, terminals, and airlines (PAX/cargo))
  - **Capital management:** Capital budgeting and financing (bond rating and multi-year plans)
  - **Risk management:** Risk auditing and risk identification and calibration

All of these internal priorities must also be executed in accordance with CSR principles, as discussed in Chapter I.3.

**LAWA’s partners and stakeholders.** LAWA’s key stakeholders are diverse and include:

- **Direct beneficiaries of an airport,** including airlines, guests (passengers, meeters, and greeters), and businesses operating at or near the airports (e.g., concessionaires, hotels, car rental companies, etc.)

- **City of Los Angeles,** including elected officials and LAWA’s sister departments

- **Other governmental agencies,** such as the Federal Aviation Administration (FAA), Transportation Security Administration (TSA), Customs and Border Patrol (CBP), and other regulatory or airport-related agencies; LA Metro; County of Los Angeles; adjacent cities; and Southern California Regional Association of Governments (SCAG)

- **Community groups,** involving nearby residents, communities served, Neighborhood Councils, homeowners’ associations, chambers of commerce, etc.

Despite the diversity of these stakeholders and, at times, their conflicting stances on issues, LAWA must listen and be responsive to their concerns.
PROPOSED ACTION STEPS

1. LAWA executives should define its vision, mission, and values for the coming years, particularly in light of the Second Modernization Program
   1.1. LAWA executives should present the vision, mission, and values to BOAC for adoption.

2. LAWA should adopt, at a minimum, a Strategy Map with defined priorities, objectives, and initiatives to achieve desired outcomes, and eventually formulate a full strategic plan
   2.1. KH has outlined proposed goals, linked to potential measurements, in Part II of this IEA Survey. The goals are broad and directional in nature.
   2.2. LAWA needs to review, refine, and adopt these goals.
   2.3. Once adopted, LAWA can establish objectives that are Specific, Measurable, Achievable, and Relevant with Time lines (frequently referred to as SMART objectives).
   2.4. LAWA should develop initiatives that tie to these measurable objectives.

3. LAWA should communicate the vision, mission, strategic priorities, and values within LAWA, with City officials, and with other stakeholders

4. LAWA should post the vision, mission, strategic priorities, and values within workplace sites as reminders to LAWA employees and externally for LAWA’s stakeholders

Recommendation I.2.3 in this chapter and Chapter II.1 regarding “BSC Implementation” elaborate further on this recommendation.

LAWA Budgeting Linked to Strategic Priorities

This section emphasizes the importance of linking LAWA’s budget to its strategic priorities. Chapter II.4 delves more deeply into the financial performance measurements and Financial BSC developed during this IEA Survey.

RECOMMENDATION I.2.2: LAWA SHOULD USE A MORE STRATEGIC APPROACH TO DEVELOPING ITS BUDGET.

A strategic-budgeting approach ties an organization’s vision and strategic priorities and goals to the budget. It frequently involves a longer-time horizon than an annual budget, and provides guidance from an overall organizational perspective to inform the division and sectional levels so they can design initiatives that are in alignment with the overall organizational strategy.

Finding. LAWA uses a “bottom-up budget” process that allows divisions to determine what is important for their own areas, but not necessarily for the overall organization.

LAWA’s current budgeting process is a bottom-up process, which does not come together until the details are reviewed at the Chief Financial Officer (CFO) and Chief Operating Officer (COO) levels.

Limitations of the bottom-up budgeting process. LAWA’s “bottom-up budget” process is an approach frequently used in government. LAWA divisions prepare their own budgets to meet planned net expense goals. This approach has some limitations:
- LAWA top management lacks a systematic way to monitor performance against predetermined goals, objectives, and measurements. They do not set SMART goals to be accomplished with budget dollars as a starting point.

- The Finance & Budget Division Manager and the CFO review detailed information for all budget submissions and assume primary responsibility for identifying gaps and overlaps.

- Opportunities for cross-divisional collaboration on initiatives may be missed.

- Lack of an adopted strategic plan precludes staff from tying budgets to strategic priorities.

- Divisions are not given an opportunity to present and “defend” their submissions.

- The bottom-up process does not have a top-down component that provides feedback to the divisions regarding why certain areas got funded over others.

**LAWA does not share budgets across divisions.** LAWA uses SAP’s standard reports so that all divisions can view their own divisions/sections’ actual expenses versus available budget. Budget staff members regularly review these “budget versus actual” reports for their assigned divisions and communicate concerns as necessary; however, the reports are not typically shared across divisions. Many LAWA activities require coordinated action by more than one division; failure to share these reports widely hampers the ability of divisions to adjust their activities to align with the progress of other divisions in the implementation of programs or projects.

**SAP reports lack large dollar amount expenditures, making it hard to monitor costs.** SAP provides “budget versus actual” reports; however, for large dollar line items (e.g., construction), budget amounts are released incrementally during the year. Therefore, the SAP budget amount is not always the annual budget amount. Hence, individual divisions sometimes develop custom reports, using SAP data (frequently in Excel spreadsheets), to explain their budget performance more clearly to managers and directors. Such customized reports become “shadow systems” to SAP residing on computers in various divisions.

**Although many financial metrics are monitored, some additional ones should be added.** For example, metrics are not regularly used to demonstrate the financial or operational benefits of significant budget expenditures. Chapter II.4 elaborates further on this area.

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**Proposed Actions.** LAWA should improve its budgeting process with linkages to strategic priorities, policies, plans, and measurable outcomes.

LAWA should build on its budgeting process to make some specific enhancements that would help align the budget with its strategic direction. If the divisions understand the strategic priorities, they will be in a better position to build their budget submissions.
PROPOSED ACTION STEPS
To link the budgeting process to strategic priorities, policies, and plans:

1. LAWA’s CFO should develop a strategy-linked budgeting process that reflects expected outcomes and goals, under the guidance of BOAC, the CEO, and executive leadership.
2. The CFO should provide opportunities for divisions to present their budget proposals to a broader panel of non-financial executives.
3. The CFO should provide feedback regarding funding priorities and decisions made.
4. The CFO should incorporate construction and other large dollar amounts into the SAP reports to reduce the reliance on shadow systems.
5. The CFO should provide centrally prepared budget performance reports to BOAC for all LAWA units.
6. The CFO should share division budgets across LAWA.
7. The CFO should link the metrics in the BSCs to the budgeting process, discussed in Part II.

Such a strategic-budgeting approach will facilitate:

- Developing quantitative measures of what LAWA and its stakeholders can expect for LAWA’s budget expenditures
- Linking budget resources and metrics to the achievement of LAWA’s goals and strategic priorities
- Nurturing evidenced-based decision-making
- Encouraging inter-divisional collaborations
- Reporting in a consistent framework
- Increasing transparency with respect to LAWA’s progress in accomplishing its goals

Performance Measurements Linked to Strategic Improvements

RECOMMENDATION I.2.3: LAWA SHOULD IMPLEMENT A BALANCED SCORECARD (BSC) APPROACH AS A PERFORMANCE MANAGEMENT SYSTEM.

There’s an old adage, “what gets measured gets done.” This recommendation focuses on the best methods for developing a meaningful performance measurement system at LAWA. Part II expands on these concepts further and applies performance measurements to key areas at LAWA as models for further development across LAWA.

Finding. LAWA currently lacks an integrated performance management system for organizational units or groups.

As discussed in Chapter I.1 under “Strengths and Accomplishments,” some LAWA divisions develop and monitor measurements for their internal use; however, the information is not widely shared or integrated into a LAWA-wide performance management system. Many of these measurements are isolated on shadow systems (e.g., Excel spreadsheets).

As discussed in depth in Chapter II.1, LAWA has several challenges in developing an integrated performance measurement system, including data limitations, lack of automation for compiling...
Proposed Actions. LAWA should develop a better understanding of performance measurement management to drive an evidence-based, decision-making culture.

During the IEA Survey, KH piloted the application of the BSC model to LAWA. In 1992, Robert S. Kaplan and David P. Norton began publicizing the BSC model through a series of journal articles and subsequent books. Today, it is a widely used because it strategically links performance planning with a measurement framework; BSCs:

- Translate vision into operational goals
- Design performance measures that track completion of strategic priorities
- Consider broader metrics (including customer service, learning and growth, and systems and processes) rather than just direct financial metrics that contribute to financial outcomes
- Communicate the vision by linking measurements to organizational performance, business planning, and feedback and learning
- Use feedback and learning mechanisms to adjust the strategy as needed

Much of KH’s work in the past 15 years has involved in adaption of BSC concepts to governmental agencies. Part II of this IEA Survey Report presents the BSC models that KH developed as prototypes for LAWA. These prototypes were developed with the understanding that LAWA would build on their usefulness and expand the use of BSCs to all divisions.

The BSCs are tied to the Strategy Map. In the private sector, financial outcomes are typically the drivers and measures of success. Not so, in the public sector -- public agencies must focus on the public good. KH typically defines public outcomes as the ultimate goals and uses the financial perspective as an important factor for identifying the necessary financial resources to achieve the desired outcomes: economic, environmental, guest experience, and societal gains. Because the Strategy Maps depict cause-and-effect relationships, the BSC performance measurements are important in helping managers to diagnose and correct problems as they implement key strategies and identify key additions that emerge.

Using a BSC approach helps executives and managers to use data strategically. There are thousands of data points that are gathered regularly and used at LAWA. A BSC focuses the attention of an organization’s leadership on the measurement of activities and outcomes that are most important to success.

KH collaborated with LAWA staff to develop BSC prototypes that can serve as models for the organization. Areas selected for this BSC pilot project were all cross-functional, supporting strategies and services that cut across the entire organization. The Joint Administrators and LAWA executives believed they were good areas for developing the BSC prototypes. LAWA will likely have additional strategic priorities once it defines them.
The **Corporate Social Responsibility (CSR) BSC** includes metrics that will allow LAWA to assess and manage its environmental, community, and economic impacts to its neighbors, the City of Los Angeles, and the larger region.

The **Guest Experience BSC** tracks baseline information associated with:

- **Core service indicators** (safety and security, speedy access/transportation, flight schedules and cities/countries served, and airport cleanliness and maintenance)

- **World-class indicators** (concession quality and amenities, hospitality, informed guests, and LA-featured ambiance)

The **Administrative BSCs** focus on staff organizations that affect all divisions within LAWA. Human Resources and Procurement are tracking metrics that help them ensure that the people, goods, and services are available on a timely basis to provide for a well-run organization. Internal Audit supports public accountability and CSR.

The **Finance BSC** reflects data associated with tracking LAWA’s fiscal health, risk management for the airports, and financial functions operations.

To prepare the initial BSCs, KH focused on:

- Reviewing metrics currently gathered
- Identifying optimal performance measures
- Compiling sample measurements showing annual trends and LAWA-wide or LAX-wide trends
- Indicating the frequency at which measurements might best be gathered or reported (e.g., daily, weekly, monthly, annually)
- Indicating what measurements warrant further delineation (e.g., by terminal, time of day, or some other factors)

**PROPOSED ACTION STEPS**

To continue the development and expansion of the BSCs:

1. **LAWA should adopt the BSC model for LAWA’s performance management system.**
   1.1. **LAWA should build on the BSC prototypes in Part II of the IEA Survey Report, which outlines what steps LAWA needs to do to implement a complete BSC system**
   1.2. **LAWA should link the vision and Strategy Map to the measurements in the BSCs, discussed in greater detail in Part II.**
   1.3. **LAWA executives should require the development of BSCs in unit’s that were not covered in this IEA Survey.**
   1.4. **LAWA executives should use metrics to justify new or changed initiatives.**

2. **LAWA should establish a unit – a BSC Office – to manage the BSCs, discussed in Chapter II.1.**
   2.1. **This BSC Office should monitor and communicate progress in achieving targeted improvements to the BSC measurements.**
2.2. The BSC Office should work with divisions in modifying the BSCs based on experience and changes in priorities and trends over time.
2.3. LAWA should continuously work on developing more sophisticated metrics.

3. LAWA’s Information Management Technology Group (IMTG) should develop technology to gather and integrate data, also discussed in Chapter II.1.

The BSC benefits are multiple. BSCs are tools that will:

- Translate vision and strategy into a performance management system for an organization
- Help manage operational issues and link operational performance measures with strategy
- Develop plans to address increases/decreases in workload
- Provide warning of emerging problems
- Track progress toward program objectives
- Highlight divisional strengths and successes
- Help staff members understand their contributions to the airport’s operations and coordinate and monitor cross-functional process performance
- Track actual outcomes to test conventional wisdom and traditional solutions
- Increase transparency, public accountability, and insights

The greatest challenges in implementing BSCs (or any performance management system) are:

- Determining what to measure – a primary focus of the KH team
- Establishing how many measurements to track, and at what frequency
- Compiling high-priority metrics or data critical to effective decision-making
- Establishing targets for improvement
- Recognizing restrictions in the degree of control that LAWA has over what is being measured
- Instilling a culture that wants to use measurements for continually improving operations (as contrasted with being concerned that punitive actions will be taken if targets are not met)

Organizational Structure

RECOMMENDATION I.2.4: LAWA’S ORGANIZATIONAL STRUCTURE SHOULD BE DESIGNED TO REFLECT ITS STRATEGIC DIRECTIONS.

Finding. LAWA’s current organizational structure misses opportunities for improved effectiveness.

Organizational Fragmentation (up until January 2016)

Just as form follows function in architecture, structure follows strategy in organizations. The organizational structure that has been in place for the last was designed to focus on the first Modernization Program, which is now completed.

During the fact-finding and analysis phases of the IEA Survey (June 2015 through December 2015), the KH team identified a number of management functions that were fragmented:
- **Finance and accounting.** CFO and Comptroller functions were separated, although coordinated action from both is integral to LAWA’s success.

- **Landside.** ARCC is vital for coordinating landside and airside operations; however, LAWA lacked centralized management accountability for landside operations management.
  - The Commercial Development Group (CDG) managed contracts for parking operations, FlyAway services, and shuttle bus permits.
  - The Operations, Maintenance, & Emergency Group (OMEG) had some responsibility for Central Terminal Area (CTA) transportation; operations supervisors sometimes assumed a role in terminals and lots; and the ARCC coordinated responses to events in the terminals and within the CTA.
  - LAX Airport Police handled traffic on the roadways, including the ARCC.
  - Facilities Maintenance & Utilities Group (FMUG) addressed roadway conditions and repairs.

- **Maintenance.** FMUG reported to two Deputy Executive Directors (DEDs), responsible respectively for operations and support of capital projects. Differences in priorities were difficult to resolve below the level of the COO.

- **Engineering.** The structure and interfaces resulted in more complicated working relationships for the Airports Development Group (ADG) and Capital Programming, Planning & Engineering Group (CPPEG). There was no leader in place for Engineering.

- **Procurement.** As discussed in Chapter I.5, Procurement has a limited role in Requests for Proposal (RFPs) and Requests for Bids (RFBs), which does not reflect prevailing or best practices in public procurement oversight and monitoring.

- **External relations.** LAWA lacked an integrated and strategic approach to external affairs – community relationship; inter-governmental relationships, including City Hall; and public relations. Government Affairs and Public Relations were separate organizational units; community relations were handled elsewhere in the organization, primarily in Environmental & Land Use Planning under the Capital Programming, Planning, & Engineering Group (CPPEG). LAWA has ongoing working relationships with governmental agencies directly involved with the airports (e. g., FAA, TSA, and CPB). Its relationships with elected officials in City Hall and other City departments have not been as strong, which have impeded LAWA’s ability to gain support for some of its initiatives within the City family.

- **Business planning, and strategy.** LAWA lacks organizational focus on how to strengthen its business through strategic or business planning, process improvements, and performance measurements systems and other accountability systems.

- **Internal audit.** Internal Audit was under a DED for Administration – four levels below BOAC – and lacked a reporting relationship to the COO, CEO, or the non-functioning BOAC Audit Committee, as discussed in Recommendation I.3.7.
During the IEA Survey, the KH team briefed the new CEO regarding the organizational fragmentation.

New Management Structure (January 2016)

On January 14, 2016, Deborah Ale Flint, LAWA CEO, issued a Memorandum to LAWA employees, regarding a new organizational structure to position LAWA as “...a premier global gateway and regional economic driver.” She acknowledged LAWA’s need to execute LAMP and the Midfield Concourse and continually upgrade its domestic terminals. She outlined four priorities:

1. Manage overall business strategy, guest experience, and external stakeholder relationships
2. Manage the delivery of LAWA’s capital program
3. Operate the airport effectively and competitively
4. Ensure safe and secure airports for guests and employees

In support of these four priorities, the new structure consists of four executive areas:

- **Chief Executive Officer (CEO)** – focus on “...strategy, stakeholder relationships and overall leadership,” with an integrated external relations function under a Chief External Affairs Officer and a Guest Experience Director
- **Chief Development Officer (CDO)** – “...responsible for leading and coordinating the planning and delivery of all elements of the LAWA capital program, including LAMP” (i.e., APM, CONRAC, Intermodal Transit Facility (ITF), and CTA roadways), discussed further in Chapter I.4 on “Guest Experience”
- **Chief Operating Officer (COO)** – “...responsible for leading and coordinating the management of all operational and administrative aspects of the LAWA enterprise,” including an integrated landside operations, VNY, ONT, Facilities Maintenance, Air Service Development, Finance, Human Resources, and Procurement
- **Chief of Security & Public Safety** – continuation of responsibility “...for leading and coordinating all aspects of Airport Police, homeland security and intelligence”

The new structure was made effective on January 18, 2016, and addresses many of the structural improvements that the KH team had identified:

- Landside operations are now better integrated.
- Facilities Maintenance is now combined.
- Environmental programs are organizationally elevated.
- External relations are more integrated.
- Internal audit has higher visibility.

Proposed Actions. The CEO should continually enhance working relationships and hone the organizational structure to be responsive to LAWA’s strategic directions.

The new organizational structure reflects the CEO’s priorities, consolidates functions, and addresses the requirements for concentrated attention on the Second Modernization Program and airside operations.
Because the new structure is just now being implemented, KH references the names of the organizational units in place prior to the new structure in this IEA Survey Report.

**PROPOSED ACTION STEPS**

1. Once the new structure is in place, the LAWA executive team should ensure that:
   - 1.1. Improved teamwork and inter-divisional coordination occurs
   - 1.2. Opportunities to nurture innovation occur
   - 1.3. Accountability is embedded in the new structure
2. As LAWA fine-tunes its strategy, it may need to make further organizational refinements as part of continuous process improvements.
3. As LAWA implements other recommendations in this IEA Survey Report, it may identify additional changes that are necessary, such as:
   
   3.1. The creation of an office to manage the Balanced Scorecard and performance management system, discussed in Chapter II.1
   3.2. Acknowledgement that Corporate Social Responsibility (CSR), discussed in Chapter I.3, is everyone at LAWA’s responsibility, combined with the potential need for an office to promote CSR initiatives and monitor and report on LAWA’s economic and social impact, along with LAWA’s environmental initiatives
      
      3.2.1. Note: LAWA’s ethics function might be better positioned with CSR rather than with the Ombudsman, whose role may require protecting an individual where there is an employee-supervisor conflict and an imbalance of power.
   3.3. Enhancing Procurement’s role to reflect best practices in the public and private sector by:
      
      3.3.1. Increasing Procurement’s roles and responsibilities for better coordination, consistency, and compliance across LAWA
      3.3.2. Broadening and redefining the Procurement function to embrace supply chain expertise and approaches
   3.4. Organizationally consolidate finance, budgeting, financial reporting, and accounting into one Finance function
This chapter discusses public accountability by applying Corporate Social Responsibility (CSR) concepts to Los Angeles World Airports (LAWA). The chapter covers LAWA’s economic and fiscal impacts on the region, its environmental responsibility to the region, its impacts on neighboring communities, its working relationships with other governmental entities, and its responsibility to ensure transparency through more effective use of Internal Audit. Chapter II.5 delves more deeply into the CSR Balanced Scorecard (BSC) prototype developed during this Industrial, Economic, & Administrative (IEA) Survey.

INTRODUCTION

LAWA’s Public Accountability Role

LAWA must continuously seek “best business practices” – developed in-house or proven elsewhere – to demonstrate to the public, to Los Angeles City officials, and to air transport operators and regulators that it is managing LAWA’s assets and operations effectively, and is a strong partner in the economic success of the City and the region.

Because of this role, LAWA must continually strive to be a prudent steward of the airport assets, while ensuring the quality, safety, and convenience demanded by its global passenger base. As already cited, LAWA has many stakeholders: airlines, passengers, adjacent communities, airport-related businesses, and governmental agencies, including the City of Los Angeles. LAWA must constantly balance:

- **Public trust.** As a public agency, LAWA must continuously strive to maintain the public trust through transparency and accountability by demonstrating that LAWA managers and employees are acting responsibly in their decision-making, practices, and policies.

- **Accountability to airlines.** Because many costs incurred by LAWA are passed on to the airlines, there is an ongoing need for transparency in its operation and finances. The airline industry regularly experiences “booms and busts” that track overall economic cycles and fuel costs. During the difficult times, there have been multiple airline bankruptcies and mergers. Airlines treat terminal expenses as overhead costs that they attempt to minimize. All levels of airport costs are subject to intense scrutiny and insistent demands for further reduction. Airlines impose this scrutiny on their own operations, and expect no less from airport operators.

- **Governmental relationships.** LAWA is a governmental agency and must work closely with officials and other departments in the City of Los Angeles, as well as governmental agencies outside of City government, such as LA Metro, Federal Aviation Administration (FAA), Transportation Security Administration (TSA), and other agencies.
CSR Model

CSR emphasizes the role of organizations to monitor and ensure compliance with laws, ethical standards, and national or international norms. It emphasizes an organization’s responsibility to: “…the community and environment (both ecological and social) in which it operates.” As a public agency, LAWA must ensure that its actions serve the public and social good, which may require it to go beyond the legal requirements to have a positive impact on the Los Angeles region in terms of the economy, environment, image, traveling public, airlines, employees, taxpayers, and the communities surrounding its airports.

The United Nations and other public sector organizations adhere to a Triple Bottom Line (TBL) or the Three Ps framework for evaluating CSR at higher social and moral levels.

- **Planet** refers to sustainable environmental practices.
- **Prosperity**\(^\text{16}\) is the economic value created by the organization.\(^\text{17}\)
- **People** refers to fair labor practices, the community, and region where the business operates.\(^\text{18}\)

An organization adopting CSR principles measures the 3Ps over a period of time.

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16 Referred to as “Profit” in the for-profit world.


18 Note: CSR “People” initiatives include both internal stakeholders (employees) and external stakeholders.
CSR encompasses everything LAWA does.

LAWA’s Procurement Division helps with the region’s prosperity, particularly when buying from local firms; it helps the planet when purchasing goods that are recyclable. Similarly, construction builds Leadership in Energy and Environmental Design (LEED)-certified buildings, which is good for the planet; creates jobs, which bolsters our regional prosperity; and builds a better airport as a social benefit for people – residents and travelers. Finance and Internal Audit focus on ensuring that the airport uses its resources prudently and in accordance with good governmental practices. The examples at LAWA can go on...

Consistent with the Three Ps is the Mayor’s recently issued Sustainable City pLAn (pLAn) for Los Angeles that focuses on:

- **Environmental** (Planet), “protecting the Environment of LA ensures that we harness our natural resources efficiently and effectively, while providing a clean, healthy and safe City for present and future generations of Angelenos.”
- **Economic** (Prosperity), “strengthening the Economy of LA ensures we can satisfy the basic need of jobs, housing, mobility, and resiliency in the face of external shocks.”
- **Equity** (People), “building Equity in our community ensures all Angelenos have access to healthy, livable neighborhoods and strengthens a sense of collective ownership of our common future.”

The pLAn is made up of short-term (by 2017) and longer-term (by 2025 and 2035) targets in 14 categories that will advance LA’s environment, economy, and equity.

**FINDINGS AND RECOMMENDATIONS**

**CSR Principles for LAWA**

**RECOMMENDATION I.3.1: TO IMPROVE PUBLIC ACCOUNTABILITY, LAWA SHOULD EMBRACE CORPORATE SOCIAL RESPONSIBILITY (CSR) PRINCIPLES.**

Finding. LAWA currently lacks formal corporate values and guiding principles about how it will conduct itself.

Corporate values, ethics statements, and CSR policies are underpinnings of organizations that promote social responsibility. Although LAWA has defined its values and ethics in the past, they have not been...
refreshed and reinforced in recent years. That does not imply that the organization is not ethnical or socially responsible. Nevertheless, LAWA does lack a formally defined values structure that can provide employees, managers, and Board of Airport Commissioners (BOAC) with a framework on how they will conduct themselves and what factors need to be considered in decision-making and policy-making.

Moreover, other airports have begun to incorporate CSR principles into their value structures, decision-making, and operations. For example, Aéroports de Paris\textsuperscript{20} emphasizes:

- Transparency, a code of ethics, and a fight against corruption
- Employee awareness
- Systematic surveys of the reputation of new partners
- Monitoring of progress in environment and social affairs, including its clients and airport managers, with an emphasis on sustainable development
- Access for its partners to attend training on environmental issues
- Promotion of investments and developments for environmental purposes (e.g., water treatment)
- A comprehensive external and independent evaluation of airport management every two years, starting in 2009 (non-financial and similar to the IEA Survey)

To date, the majority of airports under Aéroports de Paris management have an ISO 14001 environmental certification (Amman, Liege, Algiers, 13 airports in Mexico, Cambodia, and Zagreb) and several others have received the Airport Council International (ACI) CO\textsuperscript{2} certification (Airport Carbon Accreditation) to demonstrate voluntary carbon management.

If LAWA embraces a CSR approach, it will be in the forefront of applying these principles, not only to a U.S. airport, but also within a LA City department.

Proposed Actions. LAWA should adopt CSR principles in support of its Strategy Map with targeted performance measurements in the near and longer term.

KH proposes that LAWA adopt a CSR orientation that focuses on the following priorities:

- **Economic and fiscal impact**, which ties in with “Prosperity” in the TBL as an economic engine for the Los Angeles region, aligned with strategies for economic sustainability
- **Environmental responsibility**, which ties in with the “Planet” in the TBL framework and in the Mayor’s pLAn for a sustainable environment
- **Community impact**, which aligns with “People” and the Mayor’s equity concerns in pLAn
- **Governmental relations**, which reflects the need for LAWA to cultivate strong relationships with BOAC, Los Angeles City departments and elected officials, and regulatory and other governmental agencies (FAA, TSA, etc.) to succeed

As a public agency, LAWA exists for the public good. Three of the public-good priorities – economic, environmental, and community impact – pose challenges to corporations and governmental agencies because sometimes they work at odds against each other. For example, jurisdictions have sometimes resigned themselves to the fact that environmental quality will suffer to provide greater prosperity for their communities. China is a classic example today of a nation that has been sacrificing the environment for economic growth to address its social needs for food, education, housing, and jobs. It is only now beginning to appreciate – and address – the negative environmental impacts of that strategy.

The challenge for LAWA will be to drive innovations that will help achieve a sustainable balance among economic, environmental, and social priorities. In future years, LAWA may increasingly choose to use its economic gains to invest in new technologies that will improve the environment or mitigate adverse environmental conditions. It may leverage Cap & Trade opportunities and escalate its efforts to reduce its carbon footprint through intensified resource conservation, increased use of electric vehicles, or further utility plant improvements.

Embracing a CSR approach can change the options considered and decisions made in future years at LAWA. Los Angeles is not only a local economy, but also a key player in the global economy. LAX’s economic engine affects Southern California, and to a lesser extent the nation and the world. Similarly, LAWA’s environmental policies also affect air quality, water quality and supply, noise levels, and land use – critical factors in the quality of life for Angelenos, our nation, and the world.

KH’s proposed CSR strategic priorities for LAWA are displayed graphically. KH has drafted potential goals and performance measurements for each of these CSR priorities in Chapter II.2.

**PROPOSED ACTION STEPS**

1. LAWA executives should develop a CSR program with stated values, initiatives, and goals.
   - Note: KH has proposed goals for economic, environmental, community, and governmental aspects for a CSR program at LAWA in the subsequent recommendations in this chapter.
2. LAWA executives should educate LAWA employees so that they:
   - Understand the CSR values and initiatives
   - Learn how CSR affects decision-making and operations
2.3. Celebrate efforts that support CSR objectives

3. LAWA should implement, monitor, and refine over time KH’s BSC prototypes for CSR in Chapter II.2.

Economic & Fiscal Impact

LAWA has a major role in the region’s economy. LAX serves the five-county Southern California region, and is a major aviation port of entry to the United States. LAWA promotes trade and tourism, creates jobs, provides opportunities for businesses, and contributes to the tax base. LAWA creates, attracts, and supports economic activity throughout Southern California.

To date, the three airports contribute:

- $92.7 million annually in Possessory & Secured Property Taxes and sales taxes from retail, food, and beverages sold (another $33.4 million in sales taxes goes to the State of California)
- $876,000 in Parking Occupancy Tax (POT) generated by LAWA-operated facilities
- $1.2 billion in procurement activities to the regional economy
- $153.1 million in LAWA payroll
- At least $1.2 billion in wages of the 39,381 badged employees and workers at LAWA (direct employment)
- 360,000 direct and indirect jobs in Southern California, of which 294,000 jobs are in Los Angeles County

Tax Revenue

Table I.3a displays the Possessory & Secured Property assessments performed at LAX and VNY by the Los Angeles County Office of the Assessor. These assessments translate into $88.5 million per year in Possessory & Secured Property Taxes.

<table>
<thead>
<tr>
<th>Los Angeles County Office of the Assessor’s Assessments</th>
<th>Tax Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ Possessory Interest Tax Revenue LAX</td>
<td>$57,370,978</td>
</tr>
<tr>
<td>$ Secured Property Tax Revenue LAX</td>
<td>$13,708,686</td>
</tr>
<tr>
<td>$ Possessory Interest Tax Revenue VNY</td>
<td>$16,941,663</td>
</tr>
<tr>
<td>$ Secured Property Tax Revenue VNY</td>
<td>$518,067</td>
</tr>
<tr>
<td>Totals</td>
<td>$88,539,394</td>
</tr>
</tbody>
</table>

21 Special data report prepared by the County of Los Angeles, Office of the Assessor, for purposes of KH’s analysis for this IEA Survey, October 2015.
Concession revenues total $1.5 billion and have increased by 5.5% between FY 2013-2014 and FY 2014-2015, as summarized in Table I.3b. LAWA’s food, beverage, and retail revenue generates $37.5 million in sales tax, of which $4.16 million is for local use.

### Table I.3b: Concession Revenues that Generate Sales Taxes

<table>
<thead>
<tr>
<th>Concession Revenue Sources</th>
<th>FY 2012-2013</th>
<th>FY 2013-2014</th>
<th>FY 2014-2015</th>
<th>% Change from Prior Year</th>
<th>Total Sales Taxes (9%)</th>
<th>LA Share of Sales Taxes (1%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Food &amp; Beverage</td>
<td>$204,713,565</td>
<td>$234,639,213</td>
<td>$262,834,301</td>
<td>12.0%</td>
<td>$23,655,087</td>
<td>$2,628,343</td>
</tr>
<tr>
<td>Retail</td>
<td>$102,700,022</td>
<td>$135,730,250</td>
<td>$153,561,722</td>
<td>13.1%</td>
<td>$13,820,555</td>
<td>$1,535,617</td>
</tr>
<tr>
<td>Totals</td>
<td>$307,413,587</td>
<td>$370,369,463</td>
<td>$416,396,023</td>
<td></td>
<td>$37,475,642</td>
<td>$4,163,960</td>
</tr>
</tbody>
</table>

### Economic Impact

Economic impact can be measured by a number of factors. For this analysis, the KH team focused on household income (as measured by earnings at LAWA) and goods and services purchased from LAWA. To do this analysis, the KH team worked with data provided by LAWA and generated a series of Geographic Information System (GIS) maps to analyze LAWA payroll by residential location, badged LAWA workers by residential location, and LAWA’s expenditures for goods and services by payee address.

**LAWA PAYROLL (BLUE MAPS)**

The blue map displays W-2 employees working for LAWA, by zip code, in Los Angeles County; it does not include all people who work at the airports. LAWA’s total payroll is $153.1 million. LAWA employees generate financial benefits primarily to the communities surrounding LAX, VNY to the north, and ONT and to the east. Table I.3c displays the 10 leading cities for payroll from LAWA, by place of residence. The City of Los Angeles has the highest concentration with $45.6 million, representing 30% of the total LAWA payroll.

### Table I.3c: Top 10 Cities for LAWA Payroll in Los Angeles County

<table>
<thead>
<tr>
<th>City</th>
<th>LAWA Payroll</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Los Angeles</td>
<td>$45,563,334</td>
<td>30%</td>
</tr>
<tr>
<td>Inglewood</td>
<td>$7,863,889</td>
<td>5%</td>
</tr>
<tr>
<td>Long Beach</td>
<td>$6,574,992</td>
<td>4%</td>
</tr>
<tr>
<td>Torrance</td>
<td>$5,309,395</td>
<td>3%</td>
</tr>
<tr>
<td>Hawthorne</td>
<td>$4,609,825</td>
<td>3%</td>
</tr>
<tr>
<td>Carson</td>
<td>$3,998,677</td>
<td>3%</td>
</tr>
<tr>
<td>Downey</td>
<td>$2,879,185</td>
<td>2%</td>
</tr>
</tbody>
</table>

22 Source: State of California, Board of Equalization.

Note: Sales tax distribution for Los Angeles County is: 6.25% for the State of California for its General Fund; Local Public Safety Fund to support local criminal justice activities (1993); Education Protection Account to support school districts, county offices of education, charter schools, and community college districts; Local Revenue Fund to support local health and social services programs (1991 Realignment); and Local Revenue Fund (2011); 1.00% for the City of Los Angeles (or LA County) operations; and 1.75% for local MTA special Assessments, including 0.25% for county transportation.
<table>
<thead>
<tr>
<th>City</th>
<th>LAWA Payroll</th>
<th>Percent of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Redondo Beach</td>
<td>$2,798,412</td>
<td>2%</td>
</tr>
<tr>
<td>Rancho Cucamonga</td>
<td>$2,699,875</td>
<td>2%</td>
</tr>
<tr>
<td>Fontana</td>
<td>$2,670,865</td>
<td>2%</td>
</tr>
<tr>
<td>Total LAWA Payroll</td>
<td>$153.1 million</td>
<td></td>
</tr>
</tbody>
</table>

Almost all significantly populated geographic areas in the region benefit to some extent from residents employed at LAWA’s airports.

LAWA BADGED WORKERS AND EMPLOYEES (ORANGE MAPS)

The KH team analyzed the residential location of the 39,381 badged individuals, who work at LAWA facilities. The data include full-time and part-time workers and employees of airport tenants and vendors, as well as LAWA itself. The orange map shows where these individuals live within Los Angeles County, by zip code.

Because KH did not have salary information for these workers, KH developed a conservative estimate of what the earnings might be. According to the U.S. Bureau of Labor Statistics, workers in the Los Angeles-Long Beach-Glendale Metropolitan Division had an average (mean) hourly wage of $25.48 in May 2014.23 Using this mean, KH assumed 1,200 hours per worker per year, reflecting a full-time and part-time split. This calculation equated into $30,576 for an annual salary (without benefits) per worker. Therefore, the estimated earnings of badged employees (excluding LAWA staff members) were likely to have exceeded $1.2 billion annually.

LAWA EXPENDITURES FOR GOODS AND SERVICES (PURPLE MAPS)

LAWA cut checks for $1.9 billion for goods and services during a 12-month period (2014-2015). In the case of capital construction, only payments made to prime contractors are shown. The purple map displays these payments made to entities in Los Angeles County.

Of the $1.9 billion that LAWA spends on goods and services, 49.3% of it stays in Los Angeles County, most of which is spent in the City of Los Angeles – $831.4 million. Overall, 76.8% (or $1.5 billion) remains in California and most of the balance is spent with U.S. firms and companies. Table I.3d summarizes how these Accounts Payable expenditures break down, by geographic locality.

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Distribution of Airport Workers
LAWA Badges Issued, by Zip Codes in LA County, 2015

LAWA Purchases
LAWA Accounts Payable Paid, by Zip Codes in LA County, 2014 & 2015

Source: GIS map compiled by KH Consulting Group (KH) team members, Metropolitan Research and Economics (MR+E), Civic Projects, Inc., GIS West Consulting, using LAWA payroll, by zip code, data.
Table I.3d: LAWA Goods & Services Purchased, by Geographic Area

<table>
<thead>
<tr>
<th>Locality of Goods and Services Purchased</th>
<th>$ Goods and Services Purchased</th>
<th>% of Total Goods &amp; Services Purchased</th>
<th>Accumulative %</th>
</tr>
</thead>
<tbody>
<tr>
<td>City of Los Angeles</td>
<td>$831,366,327</td>
<td>42.5%</td>
<td>42.5%</td>
</tr>
<tr>
<td>Rest of LA County</td>
<td>$132,158,465</td>
<td>6.8%</td>
<td>49.3%</td>
</tr>
<tr>
<td>Rest of SCAG Region</td>
<td>$283,833,494</td>
<td>14.5%</td>
<td>63.8%</td>
</tr>
<tr>
<td>Rest of California</td>
<td>$255,313,114</td>
<td>13.0%</td>
<td>76.8%</td>
</tr>
<tr>
<td>Rest of U. S.</td>
<td>$454,622,892</td>
<td>23.2%</td>
<td>&gt;99%</td>
</tr>
<tr>
<td>Rest of World</td>
<td>$164,267</td>
<td>&lt;0.01%</td>
<td>100%</td>
</tr>
<tr>
<td><strong>Totals</strong></td>
<td><strong>$1,957,458,560</strong></td>
<td>100.0%</td>
<td></td>
</tr>
</tbody>
</table>

RECOMMENDATION I.3.2: LAWA CAN MONITOR AND PLAN TO INCREASE ITS CONTRIBUTIONS TO THE LOS ANGELES ECONOMY.

Finding. LAWA is a major economic engine in the region, but lacks comprehensive economic development policies or plans.

Economic development is seen as a consequence or secondary effect of airport activities, and not as a central part of LAWA’s mission. As a result, LAWA has neither developed a strategic approach to maximize its economic impact and benefits, nor compiled and monitored data on its economic impact.

LAWA’s economic development resources are deployed to address land use entitlements, compile environmental documents, and support capital projects at the airports. The economic impact data presented to the public is largely dated and piecemeal:

- The LAX Capital Improvement Program (CIP) has a home page – [www.LAXisHappening.com](http://www.LAXisHappening.com) – that provides links that outline the economic benefits and contributions of their construction projects: a $4.1 billion project has created “40,000 good-paying local jobs and pumps $6.89 billion into the local economy.”

- During the past four years, LAWA’s media and public relations reports consistently recap highlights of LAX’s economic contributions at news conferences and in news releases from the 2011 Los Angeles Economic Development Corporation (LAEDC) report. A 2015 report is being finalized and will provide updated economic contribution information.
LAWA also produces the “LAX Airfield and Construction Projects – Economic Analysis” and “The Economic Activity Dependent on Overseas Flights at LAX.”

LAWA currently assesses the short-term economic benefits related to its new or renovated facility projects by citing the number of new jobs generated during construction.

While it is appropriate to measure the impact of those temporary jobs, LAWA does not currently measure the long-term economic impacts of these projects, such as new permanent, full-time jobs and businesses supported by a completed new facility. Such long-term measurements are considered to be better lasting outcomes and are referred to as Genuine Progress Indicators (GPI).

Proposed Actions. LAWA should adopt economic development strategies and report its economic impact, resulting from those strategies.

**In establishing goals, LAWA must abide by the FAA’s rules pertaining to Federal revenue diversion.** LAWA may not have a stated goal of increasing its contribution to the Los Angeles economy, but it can have goals of increasing passenger and commercial activity that, in turn, results in increased contributions to the region’s economy. To measure and evaluate the impact of LAWA as an economic engine to the Los Angeles region, KH developed a series of proposed goals, combined with possible ways to measure progress or outcomes, as a starting point.

**KH’s Proposed Goals for LAWA: Economic & Fiscal Impact**

| Overall Economic Impact – Facilities operated by LAWA support the economic health of the region, as well as surrounding communities. |
| Trade: Passengers and Cargo – LAWA’s airports are a trade gateway between the LA region and the world. |
| Jobs: Employment and Payroll – LAWA facilities are an important source of jobs to the residents of Los Angeles County and the Southern California Association of Governments (SCAG) region. |
| Businesses – LAWA facilities are an important source of opportunity for businesses in Los Angeles County and the SCAG region. |
| Taxes – LAWA is an important source of tax revenue to the City of Los Angeles, Los Angeles County, and the rest of the State. |
| Tourism – LAWA airports are key partners and stakeholders in the Los Angeles regional tourism industry. |
| Land Use – LAWA plans prudently and seeks to use the land it needs in ways that improve the environment and aesthetics of airport properties. |
| Fiscal Viability – LAWA operates facilities in a fiscally responsible manner, ensuring the long-term sustainability of its assets. |
| Environmental Fines/Cap & Trade – LAWA’s consistently reduces its carbon-emission fines. In the long term, LAWA envisions the Carbon Cap-and-Trade system as a possible potential revenue opportunity. |

The FAA requires LAWA to spend all airport-generated revenues for aviation-related purposes.
Chapter II.2 presents sample measurements for these economic impact goals; Chapter II.4 describes relevant measurements for fiscal viability.

PROPOSED ACTION STEPS

1. LAWA should establish an ongoing system to:
   1.1. Discuss KH’s proposed Economic & Fiscal Impact goals, refine them as necessary, and develop a set of goals that LAWA embraces, communicates, and includes in its capital and operational planning
   1.2. Prepare a comprehensive economic development strategy with measurable objectives that can guide policy and investments by LAWA
   1.3. Communicate the economic development strategies for the City of Los Angeles and the regional economy to decision-makers and the general public

2. LAWA should monitor and report on the results of the strategies, including:
   2.1. The amount of direct employment at LAWA facilities by the residential location of employees
   2.2. The locations and industrial sectors of direct expenditures for goods and services by LAWA
   2.3. Direct payroll to households as a result of LAWA activities
   2.4. Taxes, including Possessory & Secured Property Taxes, sales tax, Transient Occupancy Tax (TOT), Parking Occupancy Tax (POT), utility user taxes, business license taxes, etc.
   2.5. Payments for environmental fines, mitigations, and community benefit agreements
   2.6. Genuine Progress Indicators (GPI)

3. LAWA should aggregate the data at meaningful levels of geography, such as Council Districts, LA City, or the region as a whole.

4. LAWA should enhance the economic metric forecasts and modeling to produce more robust metrics of economic and fiscal impact in going forward.

Regarding the last action step, there are many analytics that will be useful for LAWA to know as it moves forward. For example, LAWA could analyze the sectors and activities that take place in the community that are part of the economic export base of the airport, using Location Quotients (LQ) for concentration of employment and output for the community, based on North American Industry Classification System (NAICS) codes.24

\[
\text{LQ} = \frac{\left( \frac{\text{Region's Industry Employment}}{\text{Region's Total Employment}} \right)}{\left( \frac{\text{U.S. Industry Employment}}{\text{U.S. Total Employment}} \right)}
\]

24 LQ metrics are used in economic geography and is a mathematical means for calculating the concentration ratio of employment.
**Recommendation I.3.3: LAWA Should Continue to Leverage Land Use Planning and Investments to Maximize Economic Development Around LAX.**

**Finding.** The new LA Metro Crenshaw/LAX Line will stimulate further economic development in the vicinity of LAX.

The FAA requires LAWA to spend all airport-generated revenues for aviation-related purposes. Hence, current land acquisition projects must directly benefit the airport and passengers. Following these guidelines, LAWA has begun to invest successfully in real estate surrounding LAX. The LAX Northside Plan Update was well regarded by both the community and LAWA. LAWA has undertaken land use plans as part of the Airport Transit Connector (ATC) process. Today, LAWA is a significant property owner and tenant along Century Boulevard and within the Westchester Playa del Rey Community Plan Area.

LA Metro is building an 8.5-mile, $2-billion light rail project that will connect the Expo and Green lines near LAX. The new line is projected to open in 2019. The arrival of this LA Metro Crenshaw/LAX Line will allow LAX guests to connect to the regional transit network in new and potentially powerful ways.

Simultaneously, LAWA plans on constructing the ATC station, a Consolidated Rent-A-Car Center (CONRAC), and an Automated People Mover (APM) to move guests from the LA Metro Crenshaw/LAX station into LAX.

LAWA is currently working with the Los Angeles Department of City Planning (LADCP), LA Metro, and other agencies regarding the community and land use plans for the surrounding areas. LAWA and LA Metro’s projects have the potential for joint development opportunities that will serve as catalysts for new private investment along Century Boulevard, around Manchester Square, and in adjacent areas.

This capital improvement Modernization Project is discussed further in Chapter I.4, regarding “Guest Experience” and access to LAX, and Chapter I.5, regarding capital program planning, readiness, and project management.

**Proposed Actions.** LAWA should encourage and participate in land use plans for areas impacted by its proposed off-site capital investments to increase economic benefits.

Economic benefits to the community surrounding LAX and City of Los Angeles as a whole can be maximized through a comprehensive land use plan that integrates transportation imperatives with community economic development goals. Therefore, when looking at land use surrounding the airports, the City of Los Angeles and its Planning Department should coordinate land use planning and investments in a manner that maximizes economic development within the Community Plans, particularly for the proposed new off-site capital investments.
PROPOSED ACTION STEPS

1. LAWA should formally assign economic impact analysis responsibility to an organizational unit.
   1.1. This organization should monitor the economic impact goals.

2. The land use plan can be part of LAWA’s economic development strategy that focuses on the opportunities outside the boundaries of LAX and the Central Terminal Area (CTA), including opportunities to support economic development along Century Boulevard and within the Westchester and Playa Del Rey Community Plan areas.
   2.1. LAWA’s participation must include a healthy respect for FAA revenue diversion restrictions.

3. The goals for an economic development strategy should include efforts to:
   3.1. Monitor contributions to tax revenues for Los Angeles City and other jurisdictions
   3.2. Continue collaborating with LADCP, LA County, and neighboring communities to foster the highest and best use of the commercial real estate surrounding LAX, particularly while balancing adjacent communities’ needs
   3.3. Continue working with LA Metro and LADCP to support development of a Transit Oriented District (TOD) around the Crenshaw/LAX Metro station
   3.4. Monitor employment wages that are the result of the airport and optimally the creation of jobs in the surrounding areas

Environmental Responsibility

Environmental responsibility encompasses several topics: air quality (e.g., Greenhouse Gas (GHG) emissions affected by aircraft, Vehicular Miles Traveled (VMT), etc.); green buying; water conservation; noise pollution; energy sourcing and use; materials and resources; green construction; and natural resource preservation.

Many people and entities hold LAWA accountable for its environmental sustainability. The public expects LAWA to be a responsible consumer of resources, including fuel and energy conservation programs. The City of Los Angeles monitors LAWA’s water usage and other environmental impacts. In addition, the State of California is a key regulator of LAWA’s resource consumption and pollution, such as reducing hazardous waste in compliance with the State’s SB14 rules covering the proper disposal of E-waste.
RECOMMENDATION I.3.4: LAWA SHOULD PRESENT THE “BIG PICTURE” OF ITS ENVIRONMENTAL IMPACT, WHILE COMMUNICATING ITS SUSTAINABILITY EFFORTS.

Finding. LAWA has prepared Environmental Sustainability Reports since 2008 as part of its public accountability.

As discussed in Chapter I.1 under “Strengths and Accomplishments,” LAWA has prepared Environmental Sustainability Reports since 2008 as part of its public accountability. The 2008 Los Angeles World Airports Sustainability Plan remains the most recent policy document guiding LAWA’s sustainability efforts, however.

During the past six months, LAWA’s environmental staff members have made progress in achieving a more cohesive perspective on environmental sustainability and the environmental reality of LAWA’s facilities. It expands the original focus on compliance with regulations and the production of required Environmental Impact Reports (EIRs) to a broader facility-wide and LAWA-wide view of the issues.

LAWA is seeking Level 3 accreditation through the Airport Council International—North America (ACI-NA) Airport Carbon Accreditation program for achieving carbon reduction. LAWA has set target reductions in GHG emissions of:

- 45% by 2025 from 1990 levels
- 60% by 2035 from 1990 levels
- 80% by 2050 from 1990 levels

LAWA’s most recent GHG inventory was done in 2009. LAWA works to minimize GHG emissions and negative impacts to air quality from emissions. As an indication of LAWA’s new emphasis on sustainability, LAX is embarking on an effort to calculate GHG on an ongoing basis according to international best practices for airports. The landside access facilities are being designed to reduce single vehicle trips and Vehicle Miles Travelled (VMT) in and out of LAX by 2024. Although the primary mode of transport to and from LAX is likely to remain passenger vehicles for the foreseeable future, the Landside Access Modernization Program (LAMP) promises environmental benefits by reducing the number of shuttles circulating in the CTA, as well as improvements in the guest experience.

LAWA spends money on exceeded carbon credits from LAX’s new power plant in accordance with AB 32 – California’s Cap and Trade legislation. LAWA violated a narrow part of the Title V permit for air emissions based on fuel throughput at some of its LAX terminals last year. It negotiated with the South

Coast Air Quality Management District (AQMD) to pay a fine of $75,000 in cash and $99,000 for a separate environmental project for electric passenger vehicles. Today 59% of LAWA’s fleet uses alternative fuel, as shown in Table I.3e:

<table>
<thead>
<tr>
<th>Type of Unit</th>
<th>Total in Fleet</th>
<th>Number Using Alternative Fuel</th>
<th>% of Fleet</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vehicles</td>
<td>555</td>
<td>273</td>
<td>49%</td>
</tr>
<tr>
<td>Pick-ups</td>
<td>227</td>
<td>155</td>
<td>68%</td>
</tr>
<tr>
<td>Light trucks (up to 8 tons)</td>
<td>25</td>
<td>6</td>
<td>24%</td>
</tr>
<tr>
<td>Heavy trucks</td>
<td>56</td>
<td>32</td>
<td>57%</td>
</tr>
<tr>
<td>Buses</td>
<td>81</td>
<td>67</td>
<td>83%</td>
</tr>
<tr>
<td>Equipment (not counting generators)</td>
<td>69</td>
<td>66</td>
<td>96%</td>
</tr>
<tr>
<td><strong>Overall</strong></td>
<td><strong>1,013</strong></td>
<td><strong>599</strong></td>
<td><strong>59%</strong></td>
</tr>
</tbody>
</table>

Noise is a function of aircraft, traffic, and FAA flight path routing – and a major concern of communities adjacent to the airports. Although LAWA does not have any direct control over jet or helicopter noise, it has worked with the airlines and the FAA to institute voluntary measures that result in noise reduction. For example, at VNY, LAWA has been working with the FAA, helicopter operators, and community groups about helicopter noise levels and compliance with Federal legislation for voluntary reductions; not all of the targets set for December 2014 have been reached, and efforts continue.

**Proposed Actions.** LAWA should continuously work toward moderating its environmental impact and informing the public about both its environmental impact and mitigation efforts.

As LAWA strives to make its airports world-class, what “world-class environmental sustainability” looks like for an airport remains an open question. All airports are sources of pollution, consuming natural resources, producing pollutants, and contributing to climate change. Any assessment of environmental sustainability at an airport inevitably occurs in the context of an unspoken, but widespread belief, on the part of the public and stakeholders that the economic and social benefits that air travel provides outweigh the environmental impacts. The trade-offs between social benefits, economics, and environment impacts are difficult to quantify. There is no equation that meaningfully weighs the pros and cons.

Transparency is the best way to ensure that environmental costs and economic benefits are both considered. The public needs to be aware – in a clear, objective, and timely way – of the environmental impact of LAWA facilities. Such an approach supplements and builds on the reports on LAWA’s programs and activities to mitigate environmental impacts. LAWA needs to explain its successes and commitment to sustainability, while succinctly presenting the “Big Picture” of resource consumption, GHG, and pollution at its facilities, and their actual or potential effects.

In addition, LAWA must work toward minimizing its environmental impacts. A patchwork of regulations, either governing LAWA directly or governing activities of its commercial partners, provides a poor framework for sustainability.
To measure and evaluate LAWA’s environmental responsibility, KH developed a series of goals for LAWA’s consideration and ideally adoption:

<table>
<thead>
<tr>
<th>KH’s Proposed Goals for LAWA: Environmental Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Buying</strong> – Sustainability is a priority in purchasing decisions regarding sources and materials purchased.</td>
</tr>
<tr>
<td><strong>Water Conservation</strong> – Water is conserved to the greatest extent feasible.</td>
</tr>
<tr>
<td><strong>Noise</strong> – LAWA encourages and promotes aircraft operations that minimize community noise impact. LAWA takes steps to mitigate traffic and aircraft noise impact on surrounding communities.</td>
</tr>
<tr>
<td><strong>Energy Stewardship</strong> – LAWA takes consistent steps to use its energy resources more efficiently.</td>
</tr>
<tr>
<td><strong>Greenhouse House Gas/Vehicular Miles Traveled (GHG/VMT)</strong> – LAWA takes steps to reduce GHG and VMT where feasible.</td>
</tr>
<tr>
<td><strong>Air Quality</strong> – LAWA takes steps to minimize and diminish negative impacts on air quality.</td>
</tr>
<tr>
<td><strong>Materials and Resources</strong> – LAWA conserves materials and natural resources and uses renewable materials whenever possible.</td>
</tr>
<tr>
<td><strong>Green Construction</strong> – LAWA uses best practices of green construction.</td>
</tr>
<tr>
<td><strong>Natural Resources</strong> – LAWA conserves natural resources where feasible.</td>
</tr>
</tbody>
</table>

Chapter II.2 displays these economic impact goals with sample measurements for each of them.

**PROPOSED ACTION STEPS**

1. LAWA should discuss KH’s proposed goals, refine them as necessary, and develop a set of goals on environmental responsibility, which LAWA embraces, communicates, and applies to all of its efforts.
2. LAWA should use these policy goals to guide an ongoing system of reporting on the status of the environmental impact (good and bad news), including progress, or lack thereof, toward sustainability goals.
   
   2.1. The policy-setting process should capture substantive input of LAWA’s environmental staff members.
   2.2. The goals should be based on industry standards (e.g., BTU per square foot for energy stewardship).
   2.3. LAWA executives should include these goals as part LAWA priorities.
   2.4. LAWA should use best practices when communicating the environmental impact with the public and stakeholders.
3. To inform the broader (and less detailed) LAWA-wide policy document, just described, LAWA should revise the 2008 Los Angeles World Airports Sustainability Plan with a commitment to:
   
   3.1. Regular updates
   3.2. Presentation of the information in a more dynamic digital medium and accessible format
   3.3. Linkages to environmental impact performance metrics
4. LAWA should continue and expand its environmental initiatives, such as:
   4.1. Analysis of the environmental and community impacts of new initiatives, in addition to their economic benefits
   4.2. Working with the FAA and community groups regarding environmental issues
   4.3. Investing in new technologies that will improve the environment or mitigate adverse environmental conditions
   4.4. Increasing the portion of airport structures that meet LEED standards

5. LAWA should leverage Cap & Trade opportunities and continue to reduce LAWA’s carbon footprint by:
   5.1. Increasing resource conservation
   5.2. Reducing Vehicle Miles Traveled (VMT)
   5.3. Continuing to pursue additional energy efficiency and conservation in the new Central Utility Plant (CUP)\(^{26}\)
   5.4. Increasing the proportion of alternate fuel vehicles in its fleet
   5.5. Increasing the proportion of electric and alternate fuel ground handling equipment at the airports

6. LAWA should actively pursue alternative energy sources, such as expanded use of solar panels wherever opportunities can be seized or innovated (e.g., over parking lots, on top of terminals, and elsewhere).

7. LAWA should continue to monitor and report noise levels.
   7.1. LAWA should continue to identify air carriers and flight numbers for any aircraft operation that results in 2 or more complaints.
   7.2. LAWA should continue to work with the FAA, helicopter operators, and community groups to address helicopter noise levels at VNY and might consider such options as:
      7.2.1. Restricting low-altitude helicopter flying
      7.2.2. Restricting the number and length of time helicopters may hover in one place
      7.2.3. Working with media companies to pool their helicopter coverage
      7.2.4. Rerouting helicopters along less populated routes, such as the coastline

\(^{26}\) The CUP is already awarded LEED Gold status, as discussed in Chapter I.1 on “Strengths and Accomplishments.”
External Stakeholders and Community Impact

Community impact can be measured from several perspectives:

- Socio-economic and demographic trends at an airport and its surrounding markets, such as population, households, age distribution, income distribution, and educational attainment
- Economic impact in support of jobs and businesses (discussed earlier)
- Environmental impact (noise, air, water, and traffic) (discussed earlier)

Residents neighboring LAX complain primarily of noise and traffic. As already indicated, noise is a function of the airlines, their aircraft, FAA routing decisions, and the traffic volume. The red map displays “Traveler Trips in One Direction to LAX for the Peak Day of the Average Month (PDAM)” for Los Angeles County. The map displays the number of one-way trips by travelers using LAX, and does not include workers or employees at LAX. There are likely equal numbers of trips from LAX back to the travelers’ place of origin if residing in the Los Angeles area. Place of origin is based on Transportation Analysis Zones (TAZ), which are units of measure that transportation planners use.27

The new LA Metro Crenshaw/LAX Station may help to mitigate some of the travel density, but LAX clearly serves a wide geographic area of Southern California. Greenhouse House Gas/Vehicular Miles Traveled (GHG/VMT) contribute to such environmental factors as air, water, noise, and traffic congestion.

**RECOMMENDATION I.3.5: LAWA MUST ALWAYS STRIVE TO MAINTAIN GOOD EXTERNAL STAKEHOLDER RELATIONSHIPS.**

Finding. LAWA has a complex network of external stakeholders, including its neighboring communities, Los Angeles, and the region.

LAWA is a regional asset. LAWA’s “community stakeholders” are diverse and sometimes have conflicting priorities and needs. The stakeholders can be segmented into three groups, as shown in Table I.3f:

<table>
<thead>
<tr>
<th>Stakeholder Segmentation</th>
<th>Stakeholders’ Priorities</th>
<th>Stakeholders (Illustrative)</th>
</tr>
</thead>
</table>
| Local communities and neighbors  | These stakeholders are primarily concerned about adverse environmental impacts – primarily traffic and noise. Many also benefit from airport-related businesses and employment opportunities. LAWA has had good success in working with the community regarding the LAX Northside Plan Update adjacent to LAX. This positive experience should form the foundation for future community engagement activities. | - Los Angeles City Neighborhood Councils
|                                  |                                                                                        | - Homeowners’ associations
|                                  |                                                                                        | - Local community groups
|                                  |                                                                                        | - Local business associations
|                                  |                                                                                        | - Neighboring city councils                        |

27 Based on survey data, PDAM is 0.3% of annual trips.
Land Use – One-Way Trips to LAX

2012 Traveler Trips in One Direction to LAX for the Peak Day of the Average Month – LA County

Stakeholder Segmentation | Stakeholders’ Priorities | Stakeholders (Illustrative)
--- | --- | ---
City of Los Angeles’s image | Although LAX is an asset to the City of Los Angeles, City officials have become concerned that it is not world class and competitive with other international airports in the United States and overseas. They believe that arriving passengers’ first impression of Los Angeles is based on what they experience at LAX. A bland corridor or terminal does not evoke the desired spirit of Los Angeles. New local concessions and art exhibits are significant improvements, but LAWA can do more. LA’s image is further discussed in Chapter I.4 on “LAX Guest Experience.” | Los Angeles City Mayor, Council members, City Controller, and other officials | Los Angeles City departments
Southern California region | As a major international airport, LAWA is a significant regional asset and its collaboration with LA Metro, County of Los Angeles, and other public agencies are important. | Los Angeles County government | Other cities in LA County | Unincorporated areas in LA County | SCAG | Other community groups, homeowners’ associations, etc. | Other business associations

Proposed Actions. LAWA’s plans should balance the needs of the local communities with those of the City of Los Angeles and the region.

To measure and evaluate the impact of LAWA’s role in the community, KH developed a series of goals. The goals cluster into the following relationships:
KH’s Proposed Goals for LAWA: Community Impact

**Local communities and neighbors** – LAWA maintains good relationships with its local neighbors by mitigating and minimizing the environmental impacts (noise, air quality, and traffic). Simultaneously, it contributes to the economy of its neighbors. LAWA plans inclusively with its local neighbors.

**City of Los Angeles’s image** – LAWA is an asset to the City of Los Angeles by welcoming visitors from the U. S. and around the world to a modern, efficiently-run airport.

**Southern California region** (County of Los Angeles, public agencies) – LAWA cooperates with County of Los Angeles departments and other agencies, such as LA Metro, to improve the value of the airports as Southern California assets.

Chapter II.2 on CSR displays sample ways that these goals can be measured.

**PROPOSED ACTION STEPS**

1. As part of transparency, LAWA should post this IEA Survey Report on the LAWA website and make it available for the public to read; LAWA should also:
   1.1. Detail the economic benefits of LAWA to local officials and the public (discussed in Recommendations 1.3.2 and 1.3.3)
   1.2. Acknowledge the environmental impacts LAWA creates, and the steps it is taking to mitigate them (discussed in Recommendation 1.3.4)
2. LAWA executives should discuss KH’s proposed goals, refine them as necessary, and develop a set of goals on community impact, which LAWA embraces, communicates, and reflects in all of its efforts.
   2.1. Before finalizing the goals, LAWA should share and discuss the IEA Survey recommendations and these goals with community groups, including Neighborhood Councils, homeowners’ associations, business associations, etc.
   2.2. LAWA should integrate the community’s feedback into the draft goals as appropriate.
   2.3. On an ongoing basis, LAWA should provide feedback on issues the community raises, report on progress LAWA has made vis-à-vis the goals, and outline actions LAWA plans to take to address areas that still lag.
3. LAWA should develop a coordinated effort for working with the local community and in sharing environmental impact information and mitigation initiatives with them (discussed in Recommendation 1.3.4).
4. LAWA should continue its efforts to:
   4.1. Attract businesses at LAX that reflect the Los Angeles spirit, as discussed further in Chapter I.4 on “LAX Guest Experience”
   4.2. Do business with Local Small Business Enterprises (LSBEs), discussed further in Chapter II.5, as a means of helping local businesses and retaining revenue within the region
5. LAWA should move head on its Second Modernization Program that involves the construction of the APM that will link LAX and the new LA Metro Crenshaw/LAX station.
6. LAWA should continue and expand the efforts to improve the ambiance of the terminals to match the spirit of Los Angeles (discussed further in Chapter I.4 on “Guest Experience”).
7. LAWA should complete its redesign of its website, ensuring it is up-to-date, presents a unified image, and provides user-friendly navigation so that public communication and messaging is branded in a more coherent way.

8. LAWA should increase its efforts to make real-time information regarding roadway congestion, parking, and delays available to guests as they approach the airport to minimize impact on the surrounding communities (also discussed in Chapter I.4 on “Guest Experience”).

Governmental Relations

RECOMMENDATION I.3.6: LAWA SHOULD ESTABLISH GOALS AND MEASUREMENTS FOR EVALUATING THE EFFECTIVENESS OF GOVERNMENT AFFAIRS’ ACTIVITIES.

To operate airports requires a close working relationship with other governmental agencies, including the FAA, TSA, LA Metro, and other Los Angeles City departments and elected officials.

Finding. LAWA lacks a strategic approach with goals and means for evaluating success or progress for governmental affairs activities.

LAWA prides itself in its working relationship with other governmental entities at the airports – FAA, TSA, Los Angeles Police Department (LAPD), Immigration & Customs Enforcement, and Customs & Border Patrol (CBP). LAWA also has close relationships with a variety of Federal law enforcement and intelligence agencies.

- **LAWA lacks a governmental affairs strategy with goals for measuring success or progress.** LAWA’s current approach is reactive versus inclusive in the formative stages. There are no formal goals or measurements.

- **LAWA has had uneven working relationships with City Hall.** As a proprietary department, LAWA generates its own revenues and, thus, has greater autonomy in program development and spending than Mayoral departments. Because of this comparative autonomy, LAWA executives should be particularly aware of the need to share plans or ideas in their formative stages with elected officials. Confirmation by the City Council is required for major contracts, and the Mayor can exert control by the appointment or dismissal of BOAC members. Therefore, it is essential for LAWA to maintain strong relationships with the Mayor and City Council.

- **LAWA should continue to maintain its working relationships with other City departments.** LAWA has established working relationships with various City departments, including:
  - Los Angeles Police Department (LAPD) to supplement Law Enforcement & Homeland Security Division operations
  - Los Angeles Fire Department (LAFD) to provide emergency medical and fire services
  - Los Angeles Department of Cultural Affairs to display art exhibits at LAX
  - Los Angeles Department of Transportation (LADOT) for support with traffic control of local street approaches
Los Angeles Department of City Planning (LADCP) to support the Transit-Oriented District (TOD) efforts around the new LA Metro Crenshaw/LAX station and various land use entitlements required for day-to-day operations and modernization

Los Angeles Department of Building & Safety (LADBS) to provide staff onsite for LAWA’s major construction projects at LAX

Los Angeles Department of Water & Power (LADWP) through monthly meetings with senior power and water people

Given the complexities of LAWA, it must continually develop working relationships with other City departments to tackle such complex issues as:

- Expediting human resources (HR) processes by working in collaboration with the City’s Personnel Department
- Launching additional conservation efforts with LADWP
- Reducing power outages and surges\(^\text{28}\) at LAX by working with LADWP, discussed next

**Finding.** LAWA faces challenges in dealing with power outage and surge issues at LAX.

LAWA has been working with LADWP to mitigate outages and surges. LAWA’s trend lines indicate an escalation in power problems over the past few years with the number of outages increasing steadily since 2013-2014, including events that are rectified in less than 2 hours.

### Power Outages and Surges at LAX

2013-2014 Through December 2015

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\(^{28}\) The issue of frequent power outages was raised by the Guest Experience working group, as part of the core services that need to be addressed at LAX, in Chapter I.4.
Surges are more difficult to recover from than outages because they trip protective circuits on conveyances, especially the new escalators; the software systems in each conveyance must be individually rebooted (a 20-minute process) before it can be used by passengers.

LAX is sensitive to its power problems, because it is a 24/7/365 operation, and has little leeway for "down time" for recovery. It has been meeting monthly with LADWP regarding the issue.

**Proposed Actions.** LAWA must operate safe and welcoming facilities within the context of the City of Los Angeles’s overall directions and priorities.

LAWA must work collaboratively to do what is in the overall best interest of Los Angeles. For government relations, KH developed a series of goals:

<table>
<thead>
<tr>
<th>KH’s Proposed Goals for LAWA: Government Relations</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supporting LA City’s Interests</strong> – LAWA supports the fiscal well-being of LA City by operating fiscally sound, welcoming and safe airports that contribute to the economic growth of the region through jobs, tax revenue, trade, and other factors. LAWA furthers the successful implementation of LA City goals, including the Mayor’s Sustainable City Plan.</td>
</tr>
<tr>
<td><strong>Supporting LAWA’s Interests</strong> – LAWA advances its informed interests, as defined by its mission and validated by BOAC, with government and public agencies at all levels, as well as with industry, unions, and the public.</td>
</tr>
<tr>
<td><strong>Mechanisms and Systems</strong> – LAWA ensures that systems are in place to advocate for its mission as it relates to governmental action at all levels. Advocacy mechanisms are assessed, on the basis of the level of support LAWA garners for its initiatives.</td>
</tr>
<tr>
<td><strong>Communication</strong> – LAWA Government Relations communicates in a timely fashion to relevant entities inside and outside of the organization on matters that could impact LAWA. This process is supported within LAWA by swift and accurate communication of needed information to Government Relations.</td>
</tr>
</tbody>
</table>

**PROPOSED ACTION STEPS**

1. LAWA’s executives should discuss KH’s proposed goals, refine them as necessary, and develop a set of goals on government relations, which LAWA embraces, communicates, and reflects in its efforts.
2. LAWA should increase transparency of LAWA’s position on specific issues of interest to City Hall and the public.
3. LAWA’s executives should strengthen working relationships with City Hall and engage key City Council members regarding important issues so that they have the necessary information and understand the context when considering LAWA or BOAC actions and recommendations.
4. LAWA should continue to collaborate with City departments to address LAWA issues, leverage LAWA’s economic impact, and support LAWA’s environmental initiatives.
5. Because of the complexity of the situation, LAWA should continue to work with LADWP and relevant City of Los Angeles representatives and departments to mitigate surges and power outages at LADWP.
   5.1. LAWA might explore entering into an effective interagency request system with LADWP.
Internal Audit

The mission of LAWA’s Internal Audit is to:

- Provide independent assurance that public funds are spent appropriately and efficiently and in accordance with applicable laws and ordinances
- Promote transparency, strengthen public accountability, and increase efficiency
- Help prevent fraud, waste, and abuse
- Conduct independent performance, compliance, and financial related audits

RECOMMENDATION I.3.7: LAWA MAY REDUCE LOSSES AND IMPROVE PERFORMANCE WITH A STRONGER INTERNAL AUDIT FUNCTION WITH BOAC OVERSIGHT.

Finding. Internal audit functions have been a low priority at LAWA in the last few years.

LAWA lacks an active Audit Committee on BOAC and a robust Internal Audit function.

LAWA’s BOAC Audit Committee is inactive. Audit committees’ roles have evolved with the passage of the Sarbanes-Oxley Act of 2002. Most U.S. corporations, particularly publicly traded companies, have audit committees as operating committees of the boards of directors. Not only are audit committees a prevailing practice in corporate America and international corporations, they are also a practice frequently used by not-for-profit organizations.

The audit committee serves an important role in protecting the public’s interests in a governmental agency. According to the International Federation of Accountants, public interest is defined as “the net benefits derived for, and procedural rigor employed on behalf of, all society in relation to any action, decision or policy.” As such, the audit committee can help ensure that the decisions made at LAWA are based on objective analysis and credible information that result in a better future for Los Angeles and the region.

LAWA leadership has downplayed the important role of Internal Audit. For the past few years, the Internal Audit Division has served primarily as a “clearinghouse” for many outside audits of LAWA, such as audits by the California Department of Transportation (Office of the Inspector General), Office of the Controller, FAA, TSA, and Los Angeles County Civil Grand Jury.

In 2011, Internal Audit prepared a risk-based Audit Plan, which recommended four “Top-Tier” audits; only one was approved to be conducted. The conducted audit involved the Airports Development Group (ADG) contractor, Gensler, and one of its subcontractors regarding an overbilling issue; a follow-up audit was also conducted.

Some of the other shortcomings in LAWA’s approach to Internal Audit are:

- No recent audits of prime construction contractors have been performed or overseen by Internal Audit; there is no immediate evidence of a rigorous audit of ongoing construction contracts.
- Audits of contracts valued at $2 billion were skipped in favor of audits with less financial risk (e.g., petty cash).
- There is no apparent “arm’s length” audit of parking lot financial operations, despite its significant revenues of $87.6 million (discussed further in Chapter I.5, Recommendation I.5.7).
- Results of audits of outside jurisdictions, such as Residential Sound Insulation audits of the Cities of Inglewood, El Segundo, and LA County, were encouraged.
- LAWA only budgeted for a staff of three in Internal Audit to cover a $1.1-billion enterprise.

Proposed Actions. BOAC and LAWA leadership should recognize Internal Audit as a critical function as part of public accountability and best business practices.

The proposed actions are two-fold and involve strengthening the roles and responsibilities of BOAC’s Audit Committee and LAWA’s Internal Audit capabilities.

PROPOSED ACTION STEPS

1. BOAC should re-activate its Audit Committee
2. The BOAC Audit Committee should:
   2.1. Develop an Audit Committee Charter; the Audit Committee Charter should include oversight of:
       2.1.1. Financial reporting, internal control framework, and public accountability reports and disclosure
       2.1.2. Monitoring of changes to accounting policies and principles
       2.1.3. Regulatory compliance, values and ethics, and whistleblower hotlines
       2.1.4. Risk management policies and practices
       2.1.5. Selection, performance, and independence of the external auditors
       2.1.6. Receipt of audit results from both internal and external auditors
       2.1.7. Recommendations to BOAC and management action reports within the scope of the Audit Committee’s charter
   2.2. Follow the charter as a means of building trust and confidence in agency management
   2.3. Review, approve, and ensure the completion of a risk-based audit plan prepared by the Internal Auditor
   2.4. Provide guidance regarding the audit cycle, the assignment of audits to the risk tiers, and the frequency with which high-, medium-, and low-tier audits be conducted
   2.5. Require regular reports regarding how the LAWA organization responds to audit findings and recommendations, so Audit Committee members have assurance that the issues raised in an audit are being addressed
   2.6. Monitor LAWA management’s implementation of this IEA Survey Report’s recommendations
   2.7. Consider inclusion of some areas identified in this IEA Survey in need of further investigations:
2.7.1. Procurement (discussed in Recommendation I.5.6)
2.7.2. Parking operations (discussed in Recommendation I.5.7)

2.8. Monitor Internal Audit’s performance via follow-up surveys after an audit to assess:

2.8.1. Audit process. The audit objectives and audit progress were clearly communicated. Areas of concern were solicited and considered.

2.8.2. Audit staff. The audit team conducted the audit in a professional and technically proficient manner.

2.8.3. Audit report. Audit results were accurately reported with logical and reasonable recommendations. Adequate time was given to respond to the draft report. The overall time to complete the audit and issue the final report was acceptable.

2.8.4. Overall satisfaction. Overall, the audit added value and provided meaningful results.

3. LAWA’s executives should establish a more active and independent Internal Audit function, with solid-dotted line relationships between Internal Audit and the Chief Executive Officer (CEO) and BOAC Audit Committee (also discussed in Recommendation I.2.4).

3.1. Note: This reporting relationship is important if there are findings associated with his/her direct supervisor or others up the chain of command because it provides an appropriate avenue to bring forward findings for review and action. This safeguard is essential to both the fact and perception of Internal Audit independence.

4. LAWA executives should establish a Code of Ethics, which LAWA communicates and embraces in all of its efforts.

5. Internal Audit should continue to monitor and support external audits, conducted by the City Comptroller, by the State, and by Federal Agencies.

6. BOAC and the LAWA executives should establish a larger budget item to adequately staff and perform audits by Internal Audit, Office of the Controller, or third-party firms.

7. Internal Audit can expand its capabilities in performing and monitoring larger audit efforts, such as LAMP, by collaborating and using its Master Agreements with external auditors and establishing a Memorandum of Understanding (MOU) with the Office of the Comptroller.

7.1. Funding for these agreements will need to be provided for, and approved to by the proposed Audit Committee of BOAC.

A re-invigorated BOAC Audit Committee and strengthened LAWA Internal Audit function could:

- Confirm the integrity and effectiveness of key program areas
- Increase the confidence of external stakeholders in LAWA management and operations
- Reduce risk of financial losses
- Ensure that LAWA’s most important assets and activities are regularly and impartially reviewed
- Assist LAWA executive staff in managing risk
- Undertake performance audits to improve efficiency and effectiveness
- Provide visibility and transparency of the intention of LAWA to provide excellent and responsible public service
I.4: LAX GUEST EXPERIENCE

This chapter discusses a framework for developing and monitoring Guest Experience performance at LAX. Chapter II.3 delves more deeply into the Guest Experience Balanced Scorecards (BSC) – one for core services and the other for value-added services to position LAX as a world-class airport.

INTRODUCTION

LAX Modernization and Future Transit Lines

As already discussed, LAX is the primary airport serving the Southern California region, and serves as a major international gateway with flights to six continents. LAX served a total of 74.9 million passengers in 2015, 6% growth over 2014 and making it the No.2 busiest airport in the United States.

Los Angeles World Airports (LAWA) is working to improve the guest experience. As discussed in Chapter I.1 on “Strengths and Accomplishments,” since 2008, LAWA has made significant strides in advancing LAX modernization efforts, including a major overhaul and expansion of the Tom Bradley International Terminal (TBIT). Several airline tenants have also conducted significant modernization of their terminals.

Since 9/11, LAWA has been working to use better processes and technology for screening checked baggage and items. “In-Line” inspection systems use conveyor belts to automatically screen, sort, and track checked items, including Explosive Detection Systems (EDS), that can process thousands of bags per hour. The EDSs are monitored and can trigger an alarm if something suspicious is detected that may warrant a physical inspection. Although LAWA has made progress in installing in-line baggage, some terminals (e.g., T1) still do not have that capability.

In addition, as also discussed in Chapter I.5, LAWA completed the preferred concept plan for the LAX Landside Access Modernization Program (LAMP) to improve land access to LAX. In December 2015, BOAC approved the Second Modernization Program at LAX, including a 2.2-mile Automated People Mover (APM) that will link a Consolidated Rent-A-Car Center (CONRAC) with a new LA Metro Crenshaw/LAX station and the LAX terminals. At an estimated cost of $5 billion, this program will be the largest public-private partnership procurement in the history of California. The APM will have 6 stops:

- 3 stops within the Central Terminal Area (CTA) with pedestrian walkway systems to airport terminals, parking garages, and fixed facilities
- 1 stop at a new Intermodal Transit Facility (ITF West), where passengers can be dropped off by private cars as well as public transportation services (rail cars and buses), and where “meeters and greeters” can wait to greet travelers
- 1 stop at a second ITF (ITF East) at the new LA Metro Crenshaw/LAX at 96th Street and Aviation Boulevard, just west of CONRAC near the 405 freeway
- 1 stop at the new CONRAC, which will relocate existing rental car companies into one location adjacent to the 405 freeway

Los Angeles Mayor Eric Garcetti observed, “This $5-billion project adds to the continuous effort to transform LAX into the world-class airport that Los Angeles deserves.”

FINDINGS AND RECOMMENDATIONS

KH worked with LAWA’s existing Guest Experience Working Group to:

- Focus on measurements important to guest experience, defined as passengers and “meeters and greeters”
- Identify potential key indicators, including what metrics to include and exclude so as not to overwhelm the effort with an excess of information
- Gather available information
- Modify indicators, as needed, to incorporate currently gathered or available information
- Discuss how to tell a complete story when multiple jurisdictions are involved in the provision and measurement of the guest experience
- Provide data for the BSC and IEA Survey Report (this document)
Guest Experience Initiative

**RECOMMENDATION I.4.1: LAWA SHOULD CONTINUE ITS GUEST EXPERIENCE EFFORTS, TIED TO BALANCED SCORECARD (BSC) PERFORMANCE MEASUREMENTS.**

Finding. LAWA is focused on the need to improve the guest experience at LAX as a strategic priority.

As discussed in Chapter I.1 on “Strengths and Accomplishments,” Mayor Garcetti established “Guest Experience” at LAX as a priority for LAWA in early 2015. LAWA acknowledges that it must work closely with the entire LAX airport community to ensure that the Guest Experience initiatives undertaken by airlines, LAWA, and all other tenants and stakeholders align. The aim is to enhance LAWA’s ability to “…provide excellent, seamless airport experiences… regardless of who is responsible for delivering specific services.” The Mayor also encouraged LAWA and its tenants to nurture a hospitality mindset of “Guests” as contrasted with “Customers.”

**Guest Experience Standards and Actions to Date**

As highlighted in Chapter I.1, the Guest Experience Working Group has begun to define Guest Experience standards, developed the LAXceptional Xperience brand, and discussed objectives and such issues as:

- **Guest Impacts:** What are the impacts on the guests – positive and negative (i.e., convenience, hospitality, time, efficiency, wayfinding, stressful/calming, etc.)?
- **Guests Types Impacted:** What type of guests will be impacted (i.e., business, leisure, domestic, international, “meeters and greeters,” families, guests with special needs)? Who will benefit most from a new guest initiative?
- **Guest Feedback:** What is the current feedback concerning the current service or satisfaction level from these types of guests (complaints, comment cards, social media, focus groups, surveys, etc.)?
- **LAXceptional Xperience Service Standards:** What service standards are required to ensure consistency of exceptional service delivery in compliance with the LAX brand?
- **Collaboration Plan:** How well has LAWA briefed or consulted with those within the airport community who will be impacted by a new guest initiative?
- **Communication Plan:** How is LAWA going to communicate with guests and keep guests informed regarding a new guest initiative and its benefits/impact on the guests? What improvements are needed in

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30 Memorandum from Barbara Yamamoto, Guest Experience Team, to all LAWA employees, May 27, 2015.
signage, public address announcements, Internet, media, social media, or other areas?

- **Sensory Clues:** What will guests SEE (barricades, construction material, signage); HEAR (noise); SMELL (odors); TASTE (food/beverage); TOUCH; and FEEL (combined with opportunities to de-stress, recompose, inform, enjoy, and delight)?

- **Sense of Place:** How well does each initiative enhance an LA ambiance and LA locality?

- **Safety:** How can we reduce or eliminate safety issues that may impact guests?

In May 2015, the Guest Experience Working Group briefed the Board of Airport Commissioners (BOAC) about the initiative, as a LAX-wide “…cultural change that will complement our hallmark capital program in the re-imagining of LAX” through a $1.5 million program of surveys, mystery shopping, training, and rewards and recognition.\(^{31}\) In addition, the Guest Experience initiative has:

- Adopted a hospitality mindset and created an LAX airport brand statement
- Communicated the Guest Experience concepts through briefings and a LAX Guest Experience Information Sheet for internal and external stakeholders
- Drafted Requests for Proposal (RFPs) for training, performance management, and rewards/recognition program
- Drafted standards for “Attitude, Appearance, and Knowledge” for the LAX community
- Incorporated the Guest Experience into administrative processes, including BOAC report reviews, hiring processes, and new employee orientation
- Created opportunities to surprise and “wow” guests, including holiday activities, special events, and promotions
- Established a review process to assess positive and negative impacts on guests
- Conducted curb-to-gate workshops with the LAWA Working Group
- Created the Guest Experience Liaisons (GELs) to “adopt” the guest experience in each terminal
- Identified and trained Guest Experience Members (GEMs) to be available within the LAX terminals

In the near future, LAWA plans to install Los Angeles images in the Federal Inspection Services (FIS) area of TBIT, as part of the national Brand USA/Market the Welcome effort.

**Guest Satisfaction Surveys**

LAWA has retained the Airport Council International—North America (ACI-NA) to conduct the Airport Service Quality (ACI/ASQ) survey to benchmark LAX with other international airports. ACI will conduct the passenger survey in the first quarter of 2016. The survey results will provide greater insights into levels of satisfaction with LAX, by terminal, based on feedback from guests currently traveling through LAX. Moreover, the ACI/ASQ results will be complemented with a separate LAWA contract with another survey company (Unison) early next year.

The upcoming 2016 ACI/ASQ survey will be important for LAWA because LAX is beginning to overcome past negative perceptions, formed before the current set of modernization initiatives. For example, J. D.

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31 Memorandum from Barbara Yamamoto, Guest Experience Team, to all LAWA Employees, May 27, 2015.
Powers released the results of its 2015 North American Airport Study, an online survey of 20,000 passengers, including approximately 400 to 500 familiar with LAX, on December 16, 2015.

The J. D. Power survey assessed both large- and medium-sized airports in North America on such factors as access, terminals, check-in, screening checkpoints, airport shopping, and baggage claim. The largest airport average is 719, on a 1,000-point scale. Overall passenger satisfaction with the airport experience averaged 725 points on a 1,000-point scale. This average is an increase of 35 points since the survey was last administered in 2010.

**LAX ranked 29th out of 31 large airports with a score of 670**, which placed it above Newark Liberty International Airport (EWR) in New Jersey and LaGuardia Airport (LGA) in New York City. Chicago O'Hare International Airport (ORD) was ranked slightly higher than LAX.  

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There is an important caveat about the J. D. Power survey results. Although the results may be an indicator of the traveling public’s perception of LAX, the respondents may or may not have recently traveled there so their assessments may be based on dated experiences. Moreover, the survey results are an overall score as contrasted with scores by terminal. The experiences at LAX differ significantly based on what terminal a guest uses.

Despite these caveats, the survey results help to identify and reinforce LAWA’s understanding of what is important for improving guest experiences. According to the J. D. Power survey:

- Key factors influencing guest satisfaction were terminal facilities, specifically stores, dining, restrooms, and gate-side seating.
- Timing and efficiency were important factors; for example:
  - Guests who took fewer than 5 minutes to check in their baggage were more satisfied; levels of satisfaction dropped when check-in of baggage took longer.
  - Guest satisfaction dropped when security processing took more than 10 minutes.
- Clean and maintained spaces were important, including clean restrooms and waiting areas near the gates, unstained carpeting and furniture, and trash removal.
- Gate-side satisfaction improved when announcements were clear, and when sufficient seats and electrical outlets were available.
- Airport accessibility was important. Curb space for dropping off travelers was an important consideration.

Concessions are a major source of revenue for an airport. At LAX, LAWA’s concessions generate $1.5 billion in total revenues. Table I.4a shows growth in revenues, particularly in terms of Food & Beverage (12.0% sales increase) and Retail (13.1% sales increase) as LAWA modernized its facilities between FY 2013 and FY 2015:

<table>
<thead>
<tr>
<th>Concession Sales (LAX)</th>
<th>FY 2013</th>
<th>FY 2014</th>
<th>FY 2015</th>
<th>% Change Over Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>Advertising</td>
<td>$28,667,556</td>
<td>$23,402,759</td>
<td>$22,557,300</td>
<td>-3.6%</td>
</tr>
<tr>
<td>Duty Free</td>
<td>$161,263,832</td>
<td>$184,558,767</td>
<td>$195,340,502</td>
<td>5.8%</td>
</tr>
<tr>
<td>Food &amp; Beverage</td>
<td>$204,713,565</td>
<td>$234,639,213</td>
<td>$262,834,301</td>
<td>12.0%</td>
</tr>
<tr>
<td>Car Rentals</td>
<td>$697,843,055</td>
<td>$763,058,881</td>
<td>$785,410,890</td>
<td>2.9%</td>
</tr>
<tr>
<td>Retail</td>
<td>$102,700,022</td>
<td>$135,730,250</td>
<td>$153,561,722</td>
<td>13.1%</td>
</tr>
<tr>
<td>Services</td>
<td>$83,586,476</td>
<td>$92,989,747</td>
<td>$93,810,455</td>
<td>0.9%</td>
</tr>
<tr>
<td>Totals</td>
<td>$1,278,774,506</td>
<td>$1,434,379,618</td>
<td>$1,513,515,170</td>
<td>5.5%</td>
</tr>
</tbody>
</table>
Another key finding of J. D. Power is that satisfied passengers spend more at the airport, which translates into greater revenues for the airport. **LAX has been working on upgrading its concessions and the results show an increase in average passenger spending patterns:**

- At LAX in 2014, enplaned passengers (EPAX) spent an average of $38.39, including duty free, food & beverage, car rentals, and retail – a 7% or $2.52 increase over 2013’s average spend of $35.87.
- While in LAX terminals, the average passenger spent $14.41 in 2013 and $16.16 in 2014 – an increase of 12.2% or $1.75. This dollar amount is more compatible with what “pleased” travelers spend, according to the J. D. Power survey.

The J. D. Power survey also found differences by type of traveler:

- Younger travelers (Gen X and Millennials) were more satisfied and spent more money while at the airports. When spending 50 minutes at a terminal, Gen X/Millennials spend an average of $18 to $25; Pre-Boomers/Baby Boomers spent an average of $7 and $10, respectively.  

- Travelers who combine business with pleasure have higher satisfaction ratings. Business travelers spend more than double than leisure travelers spend when in the terminals.
- Spending levels also vary based on how long passengers are in the terminals:
  - 30 or fewer minutes ($41.79 for business versus $20.41 for leisure travelers)
  - 120 minutes or longer ($50.89 for business versus $17.98 for leisure travelers)

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Finally, according to J. D. Power, dissatisfied customers are more vocal and likely to share their experiences with others, making 13 negative comments, while satisfied customers average 5 positive comments.

**Multiple Factors Influencing Guest Experiences**

LAWA developed a “Service Delivery Chain” that pinpoints the key “touch points” with guests as they progress through LAX – for departures and when arriving.

LAWA is aware that improving the guest experience requires changes internally – effective and efficient airport infrastructure and operations, organizational changes, technology upgrades, and a work culture change. It also requires strong working relationships with LAWAs partners and stakeholders (e.g., Federal Aviation Administration (FAA), cargo, airlines, Transportation Security Administration (TSA), etc.), as discussed in Recommendation I.4.6.

The timing of KHs IEA Survey of LAWAs was opportune because it coincided with the Guest Experience Working Groups identified need to develop performance measurements.
Proposed Actions. LAX’s Guest Experience initiative should build on its work to date and measure and monitor performance and progress made.

LAWA perceives that much of its Guest Experience strategy will be informed by the ACI/ASQ survey. The Guest Experience Working Group should continue its work effort and incorporate the ACI/ASQ survey results into their initiatives, along with the BSC on Guest Experience and other proposed action steps in the IEA Survey Report.

**PROPOSED ACTION STEPS**

During discussions with the Guest Experience Working Group, several ideas to improve guest experience, as well as the ability to track successes, emerged.

1. LAWAN executives should develop a set of goals for Guest Experience, which LAWAN embraces, communicates, and uses as a guide in all of its efforts.

2. LAWAN’s Guest Experience Working Group should incorporate the concepts outlined by Butterfly Consulting, who is working at LAX. These concepts entail:

   2.1. **Vision and branding.** Build an airport brand – a shared Guest Experience vision and a consistent service delivery strategy to encompass the entire continuum of services provided to LAX guests
   
   2.1.1. Understand that excellent guest service is one of the airport’s prime objectives
   
   2.1.2. Develop the LAX brand collaboratively to gain buy-in of the entire airport community

   2.2. **Guests’ needs and expectations.** Focus on guests’ priorities and manage performance across the entire service delivery chain

   2.2.1. Identify what LAX guests value and want

   2.2.2. Design airport experiences from the guests’ point of view

   2.2.3. Adopt service standards aligned with the airport brand to define service levels

   2.2.4. Manage performance LAX-wide

3. The Guest Experience Working Group should:

   3.1. Establish service standards

   3.2. Monitor LAX’s Guest Experience performance against the BSC developed and service-level standards

   3.3. Continue to gather data and metrics for measuring progress made

   3.4. Routinely report progress made to LAWA executives, BOAC, and the Office of the Mayor

4. The Guest Experience Working Group should analyze the results of the ACI/ASQ survey and:

   4.1. Analyze the primary drivers of guest satisfaction

   4.2. Develop responses and tactics to improve performance on those drivers

   4.3. Develop action plans to enhance the guest experience based on this analysis

In developing performance measurements for guest experience, KH distinguished between core services and world-class services. The graphic provides a framework for Guest Experience priorities and is the foundation for the proposed measurements for “BSC – LAX Guest Experience” in Chapter II.3.

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LAWA’s Guest Experience initiative is focusing on both world-class and core services, discussed next.

**World-Class Services**

World-class services involve creating a great ambiance and evoking a sense of being in Los Angeles, not just another airport or at LAX. It also requires that the services, concessions, amenities, and technology be competitive with other world-class airports. Airport staff members – LAWA, airline, concessionaire, and contractor workers alike – need to be informed and friendly. And, finally, efforts need to be made so that guests can independently know what they need to do to navigate the airport and have their questions and needs met.

**RECOMMENDATION I.4.2: LAWA NEEDS TO RAMP UP THE SENSE OF LA AND ITS AMENITIES FOR LAX TO BE WORLD CLASS.**

LAWA must strive to be “world class” and rank among the best airports in the world for guest experiences.

Finding. Although improving, LAX does not evoke a great and vibrant “Sense of LA.”

**LAWA needs to create a LA-specific ambiance in world-class facilities.** LAWA has made progress by ensuring that local concessions (restaurants and shops) and art exhibits now populate the renovated terminals. In addition, LAWA has posted more LA images in the terminals and LAX images on the columns around the CTA.

During KH’s interviews, many City officials still believe more can be done to project a vibrant LA image at LAX. There was a consensus that passengers are not able to distinguish LAX from other airports. In contrast, many of the better-rated airports have incorporated aspects of their cities into their environments, such as:
Charlotte Douglas International Airport (CLT) with its Southern white rocking chairs and potted trees
Denver International Airport (DEN) with its Rocky Mountain rooftop and fossil imprints in the flooring
Miami International Airport (MIA) with its Cuban accent
Pittsburgh International Airport (PIT) with its Warhol and Calder artwork
Funky Austin (TX) airport with its “Stay Weird” motif
Long Beach airport with its modernized main terminal and historic Art Deco architecture
...even Las Vegas airport with its slot machines. Whether or not passengers like to gamble, upon arrival, they know where they are.

That sense of place is not usually the case at LAX, even though Los Angeles (LA) has world-wide recognized sites and destinations to promote. To create a sense of LA will require show-casing LA’s natural resources and vistas (Pacific Ocean, beaches, mountains, canyons, whale-watching, etc.); LA’s art scene and cultural centers (Griffith Observatory, The Getty Center, Getty Villa, Los Angeles County Museum of Art (LACMA), California Science Center, Exposition Park, Natural History Museum of LA County, Hammer Museum, Museum of Tolerance, Museum of Contemporary Art (MOCA), Gene Autry National Center, Page Museum at the La Brea Tar Pits, Japanese American Museum, The Brewery, etc.); LA’s downtown center (DTLA, LA Live!, historic Broadway corridor, Grand Central Market, City Hall, Disney Music Center, the subway system, etc.); the entertainment industry (NBC, CBS television, Disney, Warner Brothers, Sony, comedy shows, etc.); nearby destinations (Los Angeles Zoo, Dodger Stadium, Hollywood Bowl, Universal Studios, Disneyland, Knott’s Berry Farm, etc.); LA’s parks and fun activities (CicLAvia, art walks, Barnsdall art workshops, Greystone Mansion gardens, Grand Park, Echo Park, etc.); LA’s famous landmarks (colleges and universities, Hollywood sign, Bradbury Building, Jet Propulsion Lab, etc.); and LA’s diverse and fun neighborhoods (Hollywood, Silver Lake/Echo Park, Venice Canal, Santa Monica, Culver City, Beverly Hills, NoHo, Korea Town, Little Tokyo, Thai Town, beaches communities, Ventura Boulevard, etc.)... And the list goes on. Some of these destinations would pay to be part of promoting and creating a sense of LA! via photo murals, décor motifs, or other creative experiences.

LAWA should develop terminal environments that nurture positive experiences with a “WOW!” factor that delights guests that they are in LA.
LAX has many featureless walkways between its terminals, bare hallways from the gates to baggage claim, stark waiting space for guests at the bottom of the escalators used by arriving passengers, undecorated baggage claim areas, etc. – all of these locales are opportunities for an improved ambiance and reinforcement of the LA image. Done properly such art can both communicate a sense of place and reassure passengers that they are going in the right direction.

For example, the long underground corridor connecting United Airlines’ gates at ORD has an iconic use of George Gershwin’s “American in Paris” orchestration with an overhead kinetic art display that passengers experience as they move along.

These efforts will require strong partner/stakeholder relationships, so that the airline terminal operators cooperate in “Los Angelizing” LAX.

**Finding.** LAX amenities and available concessions throughout the terminals are not yet world class.

*World-class airports ensure that the desired concessions, especially multiple food and shopping opportunities, technology, and amenities, are available on both sides of the security checkpoint.*  
As already mentioned, LAWA has focused on upgrading the concessions. But even at the newly renovated TBIT, the waiting area for meeters and greeters is still dark, and crowded with insufficient seating and difficult sight lines. Meeters and greeters have little information about international passengers clearing customs. Consequently, meeters and greeters stand crowded against barriers and wait to watch for their guests to arrive.

With the closure of the Theme building, the only terminal with sit down restaurants outside of security where departing passengers can check in and then share a meal with friends and relatives is TBIT.

LAWA has done even less in terms of amenities. LAX currently has:

- 6 nursing rooms (with plans for 8 by year-end (1 per terminal))
- 2 shoeshine stations
- Charging stations in every terminal (including charging stations provided by advertising and airlines (seat, stations, and laptop “lanes”), and LAWA-powered seats) but some concerns that are still not sufficient charging stations
- 1 pet relief space (with plans for 8 by 2017 (1 per terminal))

These numbers of amenities, given the number of terminals and passengers at LAX, are meager and lower than the level of service expected by today’s passengers.

World-class airports overseas, particularly in Asia, offer extensive amenities. Even some domestic airports are thinking more creatively about amenities, such as:

- Free applications (apps) to pre-order your meals that will be delivered to your gate (“B4 You Board” at ORD and John F. Kennedy Airport (JFK))

**36 KH distinguishes between concessions that guests pay for versus amenities that LAWA makes available free of charge. Concessions are revenue generators, whereas amenities may or may not generate revenue for LAWA.**
Live music, such as the pianist in the central corridor at the Detroit airport (DTW) or string quartets and Baroque guitarists at George Bush Intercontinental Airport Houston (IAH)
Kids’ play zones (ORD, Dallas/Fort Worth International Airport (DFW), and TBIT at LAX)
Yoga rooms with free loaner mats and cleansing wipes (originated at San Francisco International Airport (SFO))
Art collections (DEN and IAH (including a brochure as a guide to IAH’s 26 pieces of artwork))
Interactive light tower triggered by motion-detection camera (Denver International Airport (DEN) and TBIT at LAX)
Interactive games (e.g., “The Nation’s Game” on NFL at SFO, scavenger hunt for marine plants and vertebrates inlaid in terrazzo floors by the artist Michele Oka Downer at MIA)
Outdoor terraces with dog walks (JFK), 24,000-square-foot container vegetable garden that guests can visit at curbside (JFK), and panoramic views with the sun setting over the Rockies (DEN)
Airport-based therapy sessions that culminate in a flight (www.fearlessflight.com at Phoenix Sky Harbor International Airport (PHX) and www.fofc.com in SFO)
Baggage storage services for passengers with long layovers either:
  o Behind security so passengers can explore the airport (MIA)
  o Before security for passengers who want to explore the city or surrounding areas

Some airports are broadening their concession offerings to include what many call amenities – services beyond food and beverages – for a fee:

  Clinics offering flu shots (ORD)
  Mini-offices with daybeds and private bathrooms (DFW)
  Spa services (DFW)
  One-day priority access, available for premium economy passengers (LGA)

Selecting and implementing the appropriate amenities will require market research to confirm exactly what appeals to LAX guests.

Times and expectations also change. What is sometimes considered world-class shifts over time as an expected service, such as Wi-Fi connectivity or charging stations. LAWA, similar to many airport operators, faces the challenge of keeping abreast of these new expectations. Moreover, LAX’s Wi-Fi services lag behind other airports in terms of speed. RootMetrics ranks cellphone service quality and availability at the nation’s top airports. LAX ranks No.48 out of 50 airports; ATL is No.1. It can take 38 minutes to download a 45-minute video at LAX via AT&T as compared to 2 minutes at ATL.
Proposed Actions. LAWA should dramatically enhance its sense of LA and amenities at LAX.

LAWA has lots of opportunities to enhance the sense of LA and amenities at LAX.

**PROPOSED ACTION STEPS**

1. All LAWA divisions should collaborate to foster exceptional ambiance throughout LAX, creating opportunities that delight guests by:
   1.1. Increasing Wi-Fi speed
   1.2. Offering substantially more charging stations
   1.3. Collaborating with WAZE, Go LA, Google, and other app developers to include detailed information about LAX in their offerings
   1.4. Leveraging emerging technologies to optimize operations and help guests, particularly in wayfinding
   1.5. Modernizing the facilities
   1.6. Offering delightfully memorable experiences, including art, amenities, concessions, music, etc.
   1.7. Continuously innovating and improving
2. LAWA executives should ensure the LA theme emphasizes Los Angeles landmarks, not just LAX – the sense of having arrived in LA should “pop” for all guests.
3. LAWA’s Guest Experience Working Group should use the results of research, such as the ACI/ASQ survey, to inform them regarding the kinds of amenities that are most attractive to LAX guests.

**RECOMMENDATION I.4.3: LAX NEEDS TO FOCUS ON IMPROVING ITS REPUTATION FOR HOSPITALITY AND HELPING TO MAKE IT EASIER FOR GUESTS TO NAVIGATE LAX.**

People are critical factors for successful guest experiences. When guests are able to find the information they need on their own, they can move quickly to their destinations. When guests need to seek out information from airport workers or media sites, both need to be friendly, informative, and accessible.

Finding. LAWA guests do not always feel welcomed with friendly, informed airport workers.

Guests do not care whether their questions are answered by an airline employee, a LAWA employee, or a contract worker. To guests, the combined actions of all these people generate their LAX experience. How guests are treated can make or break the traveling experience. Helpful airport workers are:

- Knowledgeable and committed to ensuring they imparted the needed information so the guest knows what to do
- Committed to shared hospitality values, combined with an attitude of wanting to help guests, throughout LAWA and its partners
Finding. LAWA has insufficient sources for keeping guests informed, so guests know what they need to do for a smooth and positive experience at LAX.

The goal should be to enable guests to feel confident that they know what they need to know about getting to, moving through, and leaving the airport. LAWA now has the “LAX is Happening” website, which provides travel tips for each terminal. In general, however, wayfinding is a challenge at LAX.

Despite the fact that LAX is an international gateway, LAX has few signs in foreign languages. When guests exit a terminal, the CTA lower level is often dark, noisy, impersonal, congested, and unclear regarding which direction to walk to get to shuttle services, taxi services, parking lots, etc.

LAWA can use art in its efforts to create a sense of LA in improving way-finding. For example, at PIT, when passengers get off of the APM, there is an art wall mural with silhouettes of people walking in the direction that the passengers need to go.

Proposed Actions. LAWA should continue its efforts to ensure airport workers are knowledgeable and hospitable in combination with improvements in wayfinding for guests.

LAWA should build on Los Angeles’s reputation for being a friendly city and create an atmosphere of hospitality at LAX. Increasing the available tools for guests to be able to find their way will result in greater guest satisfaction.

**PROPOSED ACTION STEPS**

LAWA should increase its focus on the many “little” things that add up to an improved guest experience.

1. **Routine and consistent communications.** LAX should communicate frequently and ensure the message is consistently “on-brand.”
   1.1. LAX should empower guests so they have the right information when they need it.
   1.2. LAX should use communications channels that guests prefer.
   1.3. LAX should leverage social media and build guest relationships that are mobile, 24/7, and yet human.

2. **Employee engagement.** LAWA should understand the importance and value of employee engagement and empowerment by:
   2.1. Investing in employees through training
   2.2. Building a work culture of continuous improvement and innovation

3. **Wayfinding and languages.** LAX should improve wayfinding by:
   3.1. Working with commercial partners to develop technology and wayfinding applications that direct people to the proper place and inform them about waiting times through their mobile phones (e.g., Waze, Google, Xerox’s Go LA, etc.), discussed further in Recommendation I.4.9
   3.2. Posting more signs in different foreign languages, especially in terminals with international arrivals and departures
      3.2.1. Wayfinding signs should be translated into Spanish, Mandarin, Korean, and other languages used by significant numbers of guests, particularly in terms that receive international passengers.
3.2.2. Mobile applications can include provisions for language selection, which would be of great utility to guests with limited English skills.

3.3. Posting signs that inform guests where to locate airport information agents who speak their language

3.4. Developing interactive and touch screen maps of LAX and the terminals so guests can locate where they are, what concessions and amenities are nearby, and how they can get to their gates

4. **GEL/GEM program.** Guest Experience should enhance the GEL/GEM program so measurements are more quantitative in nature and involve guest input versus reliance on visual inspections.

5. **Responsiveness to guest complaints.** Guest Experience should continue to enhance the guest complaint tracking system, so guests’ concerns are routed rapidly to the people that can address the problem (e.g., LAWA maintenance, airlines, TSA, etc.).

   5.1. LAWA should post hotline phone numbers on mirrors in the restrooms so users can quickly alert ARCC of any problems (e.g., faulty water shut-off, over-flowing toilets, etc.).

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**Core Services**

Core services are “must have” services that an airport must provide. When an airport does not provide the core services, it typically faces significant negative consequences, including loss of confidence in the viability of the airport. These are “gateway” items. Guests will only consider ranking the airport as “exceptional” after core services, such as the ones in the following list, are addressed:

- **Safe and secure airports** are needed to gain and keep public trust in airport facilities and operations. Guests must feel safe and secure.

- **Access: time and efficiency** is critical so guests know they can expeditiously transit the CTA, park or access terminal curb space, complete security screening, and get to and from their gates. This mobility requires efficient landside, terminals, and airside operations.

- **Air services** must ensure the airlines operating out of the airport fly to destinations passengers’ desire and have convenient and reliable schedules (air services development).

- **Well-maintained and clean airports** ensure that all systems, from power sources to bathrooms, from floors to escalators and elevators, are clean and working.

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37 LAWA has professional Call Takers (CIRs) in the ARCC, who dispatch the right maintenance personnel immediately as calls come in. The CIRs also help sort out priorities at times when there are insufficient numbers of staff to respond.
LAWA’s efforts in air services development was identified in Chapter I.1 as a noteworthy accomplishment with new city-pair offerings, increased countries served, and more nonstop flights. Therefore, the remaining recommendations in this chapter focus on:

- Continuing emphasis on safety and security
- Improving LAWA’s other core services, particularly in light of the next round of construction at LAX, which will likely impede efficiency and increase time required to access LAX.

Safe & Secure

**RECOMMENDATION I.4.4: LAWA’S HIGHEST PRIORITY IS TO ENSURE THAT THE AIRPORTS ARE SAFE & SECURE.**

Finding. Airport safety and security changed dramatically after 9/11 and continues as an ongoing effort requiring constant diligence and vigilance.

Fundamental to any airport operation is safety and security. Unless they are maintained at very high levels, nothing else will register with guests. Since the 1999 IEA Survey, airports around the world have had to deal with challenging airport safety and security risks. Among the most often discussed are:

- **Terrorist Attacks.** The attack on the World Trade Center in New York and the Pentagon in Washington, D. C., on September 11, 2001, had a major impact on airport operations. Subsequent terror threats and actions have targeted the airline and aviation industry. Perimeter security, passenger screening, baggage inspection, freight examination, and airport worker identification have been substantially strengthened. For passengers, these changes have resulted in delays and sometimes intrusive searches, which have significantly degraded passengers’ experiences at airports. In the past few years, the specter of “lone wolf” attacks has surfaced, including one at LAX in November 2013.

  During this IEA Survey, on November 17, 2015, two Air France flights inbound to Paris were diverted and grounded because of bomb threats; one of them was departing from LAX. Such situations are difficult to anticipate, and can be damaging to guest perceptions of an airport, sometimes unfairly. Rapid and effective responses, including clear public information systems, are essential to maintaining public confidence during these events.

- **Airport health risks.** Airports sometimes need to screen incoming passengers for signs of communicable disease including fever, heavy coughing, and other symptoms. The Centers for Disease Control and Prevention (CDC) periodically recommends taking temperatures of at-risk passengers – a precautionary measure that Asian airports did in past years with flu influenza breakouts or airlines have done with countries recently affected by Zika, a mosquito-borne virus, particularly in Latin America. Flight crew and cabin cleaners have particularly raised concerns because of their regular contact with passengers and their personal effects.

In addition to these high-profile risks to airport safety, there are a number of less prominent, but equally important elements to guard against. These elements include:
- **Airfield safety.** It is essential that traffic rules be enforced on the active airfield to prevent serious property damage and potentially serious injuries. It is also important to ensure that all airfield vehicles are properly identified.

- **Personal safety.** Personal safety is a requirement in terminal areas and parking lots. At night, when visibility is limited, airport staff – especially LAX Airport Police – must be vigilant to ensure that guests coming and going from the terminals to the parking lots have both the perception and reality of safety.

In addition, there are special cases where real or suspected threats to the airport require the evacuation of one or more terminals. Under these stressful circumstances, it is doubly important to have carefully crafted plans informed by experience to conduct evacuations and care for guests and employees, who will be confused and possibly traumatized. At LAX, Law Enforcement & Homeland Security, LAXPD, and Operations, Maintenance, & Emergency Group (OMEG) have such plans, and must continually refine them as experience demonstrates shortcomings and weak points.

Of immediate concern should be systems to inform and advise guests throughout LAX if/when such events occur, including directions to stay in place or move to safe areas. Training is also needed for non-sworn and operational workers, both LAWA employees and others, so they can serve as assets in these emergency situations.

- **Property security.** Property security consists of:
  - **Baggage theft.** Consistent enforcement efforts are made to keep LAX from becoming a target of opportunity for baggage theft, including plain-clothes police surveillance of baggage claim areas. Some airports and air carriers check baggage claim stubs against bag tags randomly to reduce the opportunity for theft. LAX once did such bag checks, but has since stopped that practice.
  - **Cargo theft.** In collaboration with other law enforcement and security agencies, LAWA is taking steps to minimize the loss of cargo from airfield facilities. Cargo theft can be a sophisticated enterprise, and considerable effort and technology are required.
  - **Auto theft and vandalism.** There are thousands of cars parked at LAX and VNY. The police take persistent actions designed to prevent vandalism, theft of contents, and theft of the autos themselves. Failure to do so threatens the substantial parking revenues LAWA realizes from its parking operations.
The Law Enforcement & Homeland Security Division has several programs in place to reduce auto theft and vandalism, such as “iWATCH and “Lock It, Hide It, Keep It.”

These programs are regularly publicized via social media, during news conferences, and in holiday travel interviews/messaging.

Signs about these programs are posted in LAWA’s parking structures at LAX.

Law enforcement uses the FBI’s Uniform Crime Reporting (UCR) program to report crimes. Part I offenses are more serious and violent crimes against people and property. The number of Part 1 Crimes per 1 million passengers is a reasonable measure of personal safety at LAX. Table II.4b in Chapter II.4 displays LAX’s Part 1 Crimes between 2013 and 2015.

- The total number of violent crimes (aggravated assault, homicide, rape, and robbery) has steadily declined from 14 in 2013, to 9 in 2014, and to 3 in 2015 (year-end estimate).
- Most of the crimes are property crimes (e.g., burglary, theft, auto theft), which range between 523 and 580 per year for the last 3 years.
- LAX averages between 7.5 and 8.1 Part 1 Crimes per 1 million annual passengers (MAP) per year (2013, 2014, and 2015).

Proposed Actions. LAWA should continually strive to protect guest safety and security with increased involvement of non-law enforcement partners.

Airfield safety is highly regulated and under the mandates of the FAA. In this IEA Survey Report, the proposed actions focus on personal and property safety, particularly on the landside and in the terminals, because these are areas that are under LAWA’s purview. The proposed goals for these two areas are:

<table>
<thead>
<tr>
<th>KH’s Proposed Goals for LAWA: Airport Safety &amp; Security</th>
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<tbody>
<tr>
<td><strong>Personal safety</strong> – Travelers and guests, using LAWA’s airports, are and feel safe in and around all LAWA facilities, including parking lots and access routes, in the terminals, aboard aircraft, in the LAX Central Terminal Area, and at VNY.</td>
</tr>
<tr>
<td><strong>Property security</strong> – Travelers and guests, using LAWA’s airports, have confidence that their property is secure in and around all LAWA facilities, including parking lots and access routes, in the terminals, aboard aircraft, in the LAX Central Terminal Area, and at VNY.</td>
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**PROPOSED ACTION STEPS**

1. LAWA executives should discuss KH’s proposed goals, refine them as necessary, and develop a set of goals on airport safety and security, which LAWA embraces, communicates, and uses as a guide in all of its efforts.
2. LAWA’s Law Enforcement & Homeland Security Division should:

2.1. Train multiple classifications of employees who work at LAWA including (but not limited to) custodians, concession workers, baggage handlers, wheel chair providers, guest service staff, and parking staff on the correct actions to take in the event of an emergency (e. g., terminal evacuations)

2.2. Open channels of communication to encourage all airport workers to identify opportunities to improve safety and security, including potentially overlooked risk areas

2.3. To the extent possible, conduct periodic drills for various kinds of disaster scenarios, such as earthquakes, fire, or attacks

2.4. Alert other terminals when one terminal is being evacuated regarding the appropriate actions to take (e. g., stay in place or evacuate, including where to go)

Access: Time & Efficiency

LAWA has developed a variety of transportation options into and out of LAX over the years. Vehicular transportation options at LAX include personal vehicles, taxis, shuttle vans, limousines, FlyAway buses, and, most recently, ride-sharing services, such as LYFT and UBER. LAWA has expanded its LAX FlyAway Service to include Santa Monica and Hollywood. The City has also widened Arbor Vitae Street (Airport Boulevard to La Cienega Boulevard) approaching LAX.

There are also various studies that are completed or ongoing, such as the I-105 report for interchange improvements at LAX Airport, Specific Plan Amendment Study, LAX Airport Metro Connector, Coastal Corridor Study, LA Metro green line extension study, and Century Corridor Streetscape Plan, to name a few.

LA Metro is building a light-rail station near LAX. Accessing LAX by rail has historically been challenging. Now under construction are the new LA Metro Crenshaw/LAX Transit Corridor Project and expansion of regional rail connectivity (Expo/Green Lines). This 8.5-mile, $2-billion light rail project will connect the Expo and Green lines, scheduled to open in 2019.

World-class airports generally provide rail access from airports to nearby city centers, including four of the top 5 international airports ranked by Skytrax – Singapore, Incheon, Munich, and Hong Kong. Three of the top U. S. airports in that list, including DEN, SFO, and ATL, also have rail access. Such direct rail access is important because it provides predictable transit times to the airport during peak traffic periods. This predictability is important to:

- Travelers and airport workers, who need to meet firm schedules
- Guests who may find it difficult to drive, or who may feel vulnerable in taxis and confused by urban bus systems

Unlike other international airport best practices overseas (e. g., Singapore, Hong Kong, and Amsterdam), the LA Metro station will not directly come into LAX.
To address the last 2.25 miles into LAX, **LAWA is implementing significant plans to build the APM, linking LAX with the CONRAC, parking, and the new LA Metro Crenshaw/LAX station.** Such a solution is not uncommon at domestic airports. LAX’s APM connection will be similar to the situation at such airports as SFO, JFK, EWR, Orlando, Oakland (OAK), and MIA airports. SeaTac requires a 4-minute walk from the light rail station to the terminal doors. In Boston, guests take a bus from the nearest subway station. ORD and DEN have direct subway service to the airport, but guests may still have to transfer to other modes to get to the check-in counters. And even in London, guests have to walk a distance or take secondary forms of transportation to reach their terminals.

**Best practices do not have the APM outside of security for inter-terminal transfers.** At LAX, although a long walk, passengers can walk after security screening between Terminals 4, 5, 6, 7, and 8; LAW A has plans to enable passengers to walk between Terminal 4 and TBIT and eventually TBIT and Terminal 3. In the case of the new APM at LAX, passengers who are making connecting flights in different terminals and who want to use the APM, will have to exit security to get to their terminals and go through security again. This kind of inconvenience adds time and complexities for the traveler in making connections and is not considered ideal (e.g., JFK’S AirTrain). Dallas/Fort Worth International Airport (DFW), George Bush Intercontinental Airport Houston (IAH), and Pittsburgh International Airport (PIT) operate their trains post-security.

If LAX were to be built from the ground up today, it would be different, most likely with central check-in, easy transit access, and remote parking. But LAX is an existing, massive airport that has transportation access challenges. In addition, LAX has its limitations as one of the densest airports in the world.

**Adding to the CTA construction and congestion is the announcement by Delta Airlines of its intention to complete a major terminal move at LAX.** Delta and LAWA have signed a Letter of Intent for Delta to move from its recent $229-million overhaul of Terminal 5 to a LAWA-renovated terminal, involving the consolidation of Terminals 2 and 3. The new terminal will be transformational, since it will be the largest terminal at LAX.

During construction, LAWA will face the added complexities and challenges in managing interior and exterior passenger flow, similar to what LAWA faced with TBIT. Once built, LAWA will have a significant shift in traffic destination to the “earlier” part of the CTA, which may require improvements and widening of the Terminal 2 and Terminal 3 cutoffs. This longer-term possibility may also affect the planned APM stops or incorporation into the Theme building complex. Moreover, this new terminal will likely motivate other major air carriers to rebuild. The future LAX could eventually consist of two unified terminals – one on the north side and the other on the south side – that connect to TBIT.

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39 Note: There are many steps between a Letter of Intent and before a new terminal is built.
RECOMMENDATION I.4.5: LAWA NEEDS TO PROACTIVELY MANAGE CTA CONGESTION DURING AND AFTER CONSTRUCTION.

Finding. In the next few years, guests will face increasing challenges in accessing the CTA because of major construction and rising passenger volumes.

Recent developments at LAX suggest that construction may go on for a number of years, making the need for this function semi-permanent. During LAMP construction, LAWA will face the added complexities and challenges in managing interior traffic and exterior passenger flow, similar to what LAWA faced during the TBIT reconstruction and potentially even more daunting than the TBIT modernization.

Landside strategic components consist of traffic flow, access to parking, and pedestrian flow to and within the terminals. Improved management of CTA traffic is critical to realizing the projected passenger levels at LAX while maintaining even adequate levels of guest satisfaction. LAWA has made significant progress in the past five years by including additional cameras, LAXPD Sergeants, Maintenance Supervisors, and Los Angeles Department of Transportation (LADOT) traffic supervisors in the ARCC.

The traffic flow problems will become exacerbated during LAMP, CONRAC, and possible Terminal 2/3 construction, which will cause major traffic and parking capacity reduction in the CTA. The construction of the APM alone through the center of the CTA will result in:

- Reduced vehicular traffic capacity
- Limited access to parking garages
- Reduced parking capacity
- Guests and construction vehicles competing for space
- Increased congestion on CTA access routes

A number of organizational challenges at LAWA compound the situation:

- **LAWA lacks organizational focus on landside operations.** The lack of an organizational focus on the landside operations appears to be one of the most serious faults with the operations of LAX. This function is critical to excellence in guest experience. CTA traffic, roadways, parking, and terminal operations are managed by separate LAX units. The current point of coordination is the ARCC, but that unit is inherently reactive in nature and cannot provide the advance planning and operational anticipation needed. No individual or unit is ultimately responsible or accountable
for the performance of all of the transportation systems and infrastructure that comprise landside operations at LAX.

- **LAWA has devoted insufficient staffing levels to this function.** The two existing Landside operations supervisors can neither provide the oversight needed to ensure contractor performance, nor respond to operational issues that arise on a day-to-day basis. Beyond that, there are not enough operations supervisors to monitor service levels in the terminals – service levels that are critical to improving and maintaining desired guest experiences. Existing oversight appears to be conducted when and where possible by staff members who have multiple responsibilities. There may be service breakdowns in some key guest service areas, including the handling of disabled passengers, which have delays before they are reported.

- **LAWA lacks dedicated traffic engineer expertise.** During the IEA Survey, the KH team observed traffic situations leading to the CTA that were adversely impacted by uncontrolled lane mergers at critical points, such as the entrance from the north to the departure-level, traffic lanes. While there are organizational units within LAWA involved with different CTA operational aspects, LAWA does not have resources specifically dedicated to traffic engineering.

- **Wayfinding continues as a challenge at LAX.** Wayfinding continues as a passenger challenge – transferring between terminals, finding shuttle and taxi services, locating pedestrian information, etc., as discussed earlier under the need for informed guests.

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**Proposed Actions.** LAWA should manage an integrated approach on accessing and exiting the CTA, parking, and terminals to minimize congestion.

LAWA will need to manage the disruptions that will inevitably occur in the CTA while building and commissioning the APM and potential future projects, including access to parking and smooth flow within the terminals.

- **Planning for the construction impact of the APM needs to be careful and thorough.** LAWA will need to ensure that parking and roadway capacity is not reduced more than is absolutely necessary, even though some capacity loss is inevitable.

- **The ARCC is an important center for managing landside operations.** The ARCC is correctly noted as a strength in Chapter I.1, but LAWA is only beginning to develop its full capabilities. The ARCC is an excellent platform for data-driven performance management and a key tool for the executive team. Therefore, the ARCC’s capabilities should be expanded as quickly as possible. Except for the ARCC, there is no single organizational focus for CTA operations strategy.

- **The complexity of CTA congestion warrants traffic engineering expertise.** Given that the guest experience is going to deteriorate seriously in the coming years due to the LAMP and potentially Terminal 2/3 construction, LAWA should have a unit focusing on traffic engineering. Traffic engineering is a key organization at other airports facing traffic challenges associated with both construction and general congestion.
For example, the Port Authority of New York & New Jersey (PANY&NJ) has long had a traffic engineering unit with special skills in improving and maintaining traffic flows and capacity in the face of many challenges. The ARCC and CALM are steps in the right direction; however, strengthening LAWA’s capability to do traffic engineering — especially good design for construction-related diversions — is critical in the coming years.

**PROPOSED ACTION STEPS**

1. LAWA’s Chief Executive Officer (CEO) should establish a single point of responsibility for day-to-day landside operations (terminal, traffic, and parking).

2. LAWA should form a joint-services team that includes Operations, Maintenance, & Emergency Management Group (OMEMG); Law Enforcement & Homeland Security; Traffic, Airports Development Group (ADG), and Commercial Development Group (CDG) to:
   2.1. Plan and execute a coordinated landside operations strategy
   2.2. Review and update its regulations and operational rules for landside operations
   2.3. Build on the ARCC’s capabilities as a powerful platform for data-driven performance management, outlined in this IEA Survey Report
   2.4. Begin evidence-based management of landside operations designed to:
      2.4.1. Ensure rapid response to issues that arise during the service day
      2.4.2. Anticipate congestion and wherever possible deploy resources before it occurs
      2.4.3. Propose policies and procedures to reduce CTA vehicle congestion in peak periods
      2.4.4. Work closely with airlines and other airport tenants to establish and maintain guest service excellence

3. LAWA should increase landside operations staffing levels by:
   3.1. Adding staffing to allow 24/7 coverage of terminal and landside operations
   3.2. Increasing terminal and landside operations supervisory staff
   3.3. Providing robust Traffic Officer and Airport Police staffing to carry out flexible manual traffic control during construction

4. LAWA should assign overall APM construction impact coordination on the landside to a single position.
   4.1. LAWA should provide this position with sufficient planning and construction coordination resources to ensure that he/she is able to anticipate and address CTA traffic and parking capacity reductions during construction.
   4.2. This landside management position would have the scope to respond to CALM plans and immediately react to identified shortcomings in execution.

5. LAWA should include in its contract provisions with APM planning, construction, and operations contractor(s) that they:
   5.1. Have significant incentives for maintaining CTA capacity and substantial penalties for reducing it
   5.2. Provide coordination staffing and performance requirements in APM construction contracts
6. LAWA should conduct periodic reviews of the construction process to learn from successes and failures, with the understanding that it may well be in order to change approaches if existing arrangements prove unworkable or ineffective.

7. LAWA should also establish or obtain traffic engineering capability:
   7.1. Traffic engineering should focus on:
      7.1.1. Developing traffic mitigation plans
      7.1.2. Evaluating diversions for shuttle services and taxis/limos/vans and other strategies or systems that might help contain and manage CTA roadway congestion
      7.1.3. Conducting needs analyses based on projected traffic levels and designing construction-related diversions (Note: Another possibility might be to include the needs analysis as part of LAMP in the contractors’ specifications.)
   7.2. LAWA should engage traffic engineering expertise, based on a cost-benefit analysis of different options:
      7.2.1. Option 1 -- LAWA staff. Recruit and build its own traffic engineering unit
      7.2.2. Option 2 – LADOT. Retain the services of LADOT through an MOU that would reimburse the department for its expenses in compliance with FAA requirements for revenue use and BOAC action to review and approve such agreements
         7.2.2.1. Note: LADOT also has technical knowledge and experience in traffic design and control systems. LADOT has jurisdiction over the "upstream" systems that deliver traffic to LAX and some involvement in CTA traffic influx.
      7.2.3. Option 3 – Private contractor. Retain the traffic engineering services of a private contractor (LAWA should request LADOT to participate on the selection panel if this option is chosen.)

8. LAWA should train airport contract workers regarding Guest Experience initiatives, including wayfinding during construction.

9. LAWA should increase existing staffing and systems to ensure that the public is kept informed, preferably well in advance, of significant disruptions to CTA traffic arising from APM construction.
   9.1. LAWA might build on the proven “Carmageddon” model of saturation notices used during the widening of the 405 through Sepulveda pass).

Access and congestion are the heart of the guest experience and environmental problems. Moreover, LAMP implementation failure could be financially devastating. These challenges are widely understood within LAWA, and warrant LAWA getting City Hall’s full support in going forward.
RECOMMENDATION I.4.6: LAW A SHOULD INCREASE ITS OPERATIONS TECHNOLOGY INVESTMENTS, GIVEN ANTICIPATED CONSTRUCTION-RELATED CHALLENGES.

Finding. Operations technology does not appear to be part of a comprehensive strategy or overall plan.

Operations technology initiatives have not been able to compete successfully for resources and do not appear to be part of a comprehensive strategy or overall plan at LAWA. As a result, a number of systems appear incomplete, partially implemented, obsolete, or in need of redesign, such as:

- Maximo’s work planning and control system, which needs some additional work to fully implement and use it in the Facilities Maintenance & Utilities Group (FMUG) and Capital Programming, Planning, & Engineering Group (CPPEG)
- The “Sit Stat Board” and communications system used by the ARCC
- Radios used by FMUG
- Badging Office technology, which is currently operational, though not optimal (Note: Its transaction volume has increased during the past 10 years because of the major construction work.)
  - The core services of employee information verification and fingerprint checks are described as "stable," but Badging Office throughput has dropped below pre-upgrade levels. Part of this difficulty has been the impact of technology upgrades on the part of a Federal contractor tasked with the transmittal of fingerprint data to the FBI and NCIC databases.
  - The Badging Office’s capacity is about 275 applicants per day; the Office would like to increase this capacity to 400 applicants by reducing the processing time needed. In response, the Law Enforcement & Homeland Security Division and Information Management Technology Group (IMTG) are analyzing their staffing, facilities, scheduling systems, and technology upgrade needs, such as office automation, to allow:
    - More electronic exchange of data between Badging Office functions
    - Potential authorized application signers within tenant companies and their contractors to enter substantial amounts of employee information before an applicant is interviewed, photographed, and fingerprinted

IMTG reports that some LAWA division staff are slow adopters of new technology; the divisions do not always develop performance objectives and invest the resources necessary to make the new technology fully effective. LAWA has not adopted industry best practices associated with change management in the adoption of new technology. These practices include IT collaborating during design and implementation with the “client” divisions to integrate ideas offered by the staff members that will smooth transition, and address concerns and questions well before the launch of a new system.
Proposed Actions. LAWA should take a more strategic approach for establishing and implementing operations technology.

LAWA requires increased investments in operations technology that will enhance the guest experiences.

**PROPOSED ACTION STEPS**

To enhance operations technology:

1. LAWA executives should develop strategic priorities for operations that includes safety, capacity optimization, and improved guest experiences.
2. Involved divisions should develop an operations technology plan, in collaboration with IMTG, to support the Guest Experience strategy; the operations technology plan should:
   2.1. Incorporate current and planned initiatives
   2.2. Include responses to currently known issues and needs within the plan
   2.3. Give priority to proposals that will strengthen the ability of operations staff to safely support increasing passenger levels, improve guest experiences, and address concurrent construction-related challenges
3. LAWA and IMTG should continue to invest in making process improvements and technological upgrades to the Badging Office operations.
4. LAWA’s divisions should use change management best practices to ensure smooth adoption of new technologies.

**Maintained and Clean**

**RECOMMENDATION I.4.7: LAWA MAINTENANCE SHOULD CONTINUE ITS EFFORTS TO TACKLE PREVENTIVE AND UNSCHEDULED MAINTENANCE.**

Finding: LAWA only began to track planned maintenance through automation in July 2015.

LAWA has not developed prevailing practices in large organizations for tracking performance measurements in maintenance and custodial services. At the time of the 2008 IEA Survey, LAWA’s Maintenance & Operations staff members were using a manual system that required extensive time and labor and was prone to human error. In 2010, LAWA implemented Issue Track, which still required extensive manual implementation to obtain data.

LAWA has recently installed Maximo, which should help collect the needed data for better tracking and monitoring. For example, LAWA now knows the number of maintenance requests it gets, by terminal. At the time of this IEA Survey, however, LAWA:

- Did not track downtime of some equipment and Heating, Ventilation, and Air Conditioning (HVAC) systems
- Only started tracking other planned maintenance in July 2015

The best world-class efforts are negated if elevators and escalators are out of order, power outages occur, and restrooms are dirty.
Did not plan to track custodial services, landscaping services, or the locksmith shop in the Maximo system, because FMUG reports an insufficient return to merit the effort that would be required.

Proposed Actions: LAWA should take full advantage of Maximo to ensure it collects and monitors performance for both preventive and unscheduled maintenance.

Work to implement these tracking features in Maximo is under way, and should be continued.

PROPOSED ACTION STEPS

1. LAWA should leverage Maximo to produce valuable information for tracking and reporting on:
   1.1. Work orders to determine which ones are complete and which ones remain open
   1.2. Open work orders that should be prioritized and expedited
   1.3. Compliance with preventive maintenance schedules, particularly for major systems
   1.4. Downtime hours for major systems
2. LAWA should track hours between cleaning cycles for bathrooms and the terminals.

Partner Collaboration

RECOMMENDATION 1.4.8: LAWA WILL NEED TO DEVELOP COLLABORATIVE RELATIONSHIPS WITH MULTIPLE JURISDICTIONS TO MEASURE GUEST EXPERIENCES IN/OUT OF LAX.

Finding. LAWA has only part of the data needed to evaluate the entire guest experience.

Some argue that the guest experiences begin from the moment individuals leave their homes, hotels, or work to get to LAX. Travel applications and CalTrans estimate travel time to LAX. LAWA’s data points begin as individuals enter the CTA, but many other jurisdictions also process guests that are not directly under LAWA’s control, such as TSA and the airlines.

The partners and members of the airport community are central to the Guest Experience initiative. The partners include many individuals, including airlines, concessionaires, terminal services, custodial and maintenance workers, etc.

40 FMUG has completed both a Custodial Staffing Survey and a Landscaping Staffing Survey this year; the Custodial Staffing Survey contained detailed custodial maintenance schedules and staffing plans, backed by employee and supervisory reports.
As shown in the LAX diagram, multiple jurisdictions are involved in guest experiences, ranging from:

- **LAWA** (in blue)
- Other City of Los Angeles departments, including LADOT, LAPD, and Los Angeles Fire Department (LAFD) (in green)
- Other governmental agencies, such as FAA, TSA, and LA Metro (in yellow)
- The private sector, including airlines, concessionaires, off-site parking operations, or traffic app companies (in peach)

**Proposed Actions.** LAW A should develop collaborative relationships with other jurisdictions to develop metrics, share data, and enhance the guest experience.

To develop metrics regarding LAX Guest Experiences from when passengers and other users leave home/work to when they are airborne will require extensive collaboration and data-sharing across many jurisdictions.
PROPOSED ACTION STEPS

1. LAWA Guest Experience management should meet with the private corporate partners (e.g., airlines, concessionaires, shuttle services, etc.) regarding the Guest Experience initiative and values; explore what measurements they can share.
   1.1. LAWA should build into future contracts between LAWA and private companies a data-sharing component linked to the Guest Experience initiative.
   1.2. LAWA should include partner organizations (e.g., airlines, concessionaires, government agencies) in the Guest Experience Working Group.
2. LAWA Guest Experience management should meet with TSA, Customs and Border Patrol (CBP), LADOT, and LAPD regarding the Guest Experience initiative and values.
   2.1. During these meetings, LAWA should discuss what measurements they can share with the public.
      2.1.1. These measurements should then be included in the Guest Experience BSC, discussed further in Chapter II.3.
   2.2. LAWA should explore if TSA and CBP might adopt some of the customer queuing concepts used at theme parks and elsewhere, such as place markers in the queue line to indicate estimated wait time from that point on.
      2.2.1. CBP and TSA could mark 10, 15, and 20 minute points, based on observed experiences.
      2.2.2. CBP and TSA might pilot the program with several terminals and, based on lessons learned, expand it to the other terminals, including Terminal 1 once it is remodeled.
3. LAWA should develop the Guest Experience measurements based on industry best practices and criteria used by outside rating agencies.
4. LAWA should evaluate emerging applications that estimate travel time to LAX as possible sources of data. Just as the ARCC has advance information on incoming aircraft and passengers, LAWA might attempt to find similar data on departing passengers.

RECOMMENDATION I.4.9: LAWA WILL NEED TO BE NIMBLE AND MOVE EXPEDITIOUSLY TO LEVERAGE TECHNOLOGY AND DEVELOP APPLICATIONS.

Finding. Guests demand real-time information so passengers can be on time for flights and “meeters and greeters” can meet passengers.

LAWA is currently pursuing partners to develop applications for LAX that will provide such real-time data:

- LAWA is in discussions with WAZE to provide its application as the real-time traffic map on the www.LAXisHappening.com website. This site would include real-time drive time in the CTA and future parking structure availability.
- Xerox Corporation has recently released Go LA, an app that shares different travel options in the LA region, including travel times. There may be possible areas of collaboration for LAWA here.
Go LA is the first app to provide mobile access for all available public and private transportation services, presenting “...the time, cost, carbon footprint, and health benefits of walking, biking, driving, parking and riding public transit.”

Go LA also includes emerging transportation options, such as Lyft, Uber, Flitways, and Zipcar.

- LAWA is currently reviewing a mobile platform/app for LAX that was developed by JCDecaux; the app is expected to be released in 2016.
- LAWA is working with the CBP to develop a free Mobile Passport Control (MPC) app. The primary beneficiaries would be limited to the estimated 9,000 U.S. citizens and Canadian passengers arriving each day. With the app, CBP can process passengers more rapidly, relieve CBP wait times (from 33 minutes to 18 minutes), and reduce CBP congestion.

LAX will need strong Wi-Fi and cellular access to benefit from these opportunities. As already mentioned, LAX’s Wi-Fi services lag behind other airports in terms of speed.

Proposed Actions. LAWA should expedite its efforts to develop applications, partner with app providers, and leverage technology and data to improve guest experiences and monitor performance and operations.

Our technological world is changing rapidly. The ability of guests to use new technology, especially mobile applications, is evolving from menu driven to artificial intelligence technology. Users will rely less on menus and more on oral directions, almost like conversation, with their technology. LAWA should continually strive to stay abreast of the technological changes.

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42 The LAWA IT Governance Committee has recently recommended proceeding with implementation of the app and is seeking funding for the initiative ($80,000 for software, equipment and installation services). This collaboration involves the cooperation of LAWA, CBP, airlines, and passengers.
PROPOSED ACTION STEPS

1. LAWA should expedite its current efforts to develop applications by establishing agreements with the major companies that compile and produce travel applications (e.g., WAZE, Google, Go LA, MapQuest, etc.) to extend estimated time of arrival to include destinations points within LAX, encompassing:
   1.1. CTA roadway congestion with alternative best routing (e.g., lower and upper levels and suggested approaches, such as Century Boulevard or Sepulveda North)
   1.2. Construction-related impediments and other irregular operational situations
   1.3. Time to specific parking lots
   1.4. Parking space availability, by parking lot, once the new parking lot operations contract is awarded
   1.5. Specific terminals, including TSA processing times and time to specific gates

2. LAWA should continue to invite current and emerging developers to use detailed LAX data in their applications, and encourage the developers to offer products that assist LAX guests in wayfinding, providing alternate language maps, and producing other amenities.

3. LAWA should discuss with the Los Angeles City Department of Public Works (LADPW) the terms of an agreement it recently entered into with WAZE to see if LAWA can either partner with LADPW or gain insights in developing its own agreements with such a private service provider.

4. LAWA will need to address the issues surrounding its Wi-Fi speed at LAX to be world-class and competitive.
I.5: CAPITAL IMPROVEMENT PROCESSES

In December 2015, the Board of Airport Commissioners (BOAC) approved the largest Public-Private Partnership (PPP) procurement in the history of California, involving the $5-billion Landside Access Modernization Program (LAMP) at LAX.\(^{43}\) Central to the Modernization Program is a 2.2-mile Automated People Mover (APM) with 6 stops, connecting the Central Terminal Area (CTA) with stops at new LAX parking facilities, a new Consolidated Rent-a-Car Center (CONRAC), and a new LA Metro Crenshaw/LAX station, already mentioned in prior chapters. Chapter I.4 has a photo of the proposed APM.

Efficient and effective capital planning, budgeting, and project management processes are critical in delivering the next round of projects. LAWA has begun the environmental review and clearance process for LAMP and is collaborating with key agency and community stakeholders. LAWA will be using a Design-Build-Finance-Operate-Maintain (DBFOM) approach for the APM and CONRAC.

According to the U. S. Department of Transportation (LADOT), Federal Highway Administration (FHA):

“The design-build-operate-maintain (DBOM) model is an integrated partnership that combines the design and construction responsibilities of design-build procurements with operations and maintenance. These project components are procured from the private sector in a single contract with financing secured by the public sector. This project delivery approach is also known by a number of different names, including “turnkey” procurement and build-operate-transfer (BOT).”\(^{44}\)

Chapter II.5 delves more deeply into the Balanced Scorecards (BSCs) developed for administrative support areas of the capital improvement process (e. g., Finance, Procurement, and Human Resources) during this Industrial, Economic, & Administrative (IEA) Survey.

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RECOMMENDATION I.5.1: LAWA SHOULD ENHANCE ITS SAP SYSTEM TO BETTER SUPPORT CAPITAL PROJECTS.

Finding. SAP was designed to manage financial operations, which is significantly different from managing the financial aspect of capital projects.

SAP is LAWA’s enterprise financial system and was installed more than 15 years ago, before the start of the major rebuilding and renovation efforts at LAX. Recently, LAWA has updated SAP’s system software with limited application functionality improvements. Since acquiring SAP, LAWA has implemented new software systems, including Prolog (LAWA’s construction management application) and Maximo (LAWA’s maintenance control system).

LAWA is now engaged in the largest public works improvement program in the City. Managing the financial elements of capital projects is significantly different than managing the financial aspects of operations. Capital projects require multi-year budgets and multi-year contracts. As a result, Finance and other units involved with capital projects maintain many “shadow systems,” as discussed in Chapter I.2. As an example, the capital budget shows data for two Fiscal Years (FYs), but many projects take longer. Budgets for the project duration beyond the two-year window are kept on Excel spreadsheets to reflect total project costs, since they cannot be kept in SAP.

Proposed Actions. LAWA should take advantage of SAP functionality more fully for financially managing capital projects.

LAWA should build on its investments in SAP, Prolog, and Maximo for more integrated solutions.

PROPOSED ACTION STEPS

1. LAWA’s Chief Financial Officer (CFO), City Controller, and Information Management & Technology Group (IMTG) should work together in a business process review of SAP and Prolog to take advantage of SAP functionality more fully. This collaborative effort will entail:
   1.1. Examining SAP and Prolog functionality in light of current LAWA business needs, especially capital projects for better integration
   1.2. Adapting or eliminating manual processes that can be handled by SAP or Prolog
   1.3. Exploring how Maximo capabilities and functions might also be tied in better to SAP

2. LAWA should explore if it can use SAP as a financial data warehouse to:
   2.1. Ensure that all transactions are consistently subjected to LAWA internal controls
   2.2. Provide a central repository for all units within LAWA to have access to the same data (i.e., “one version of the truth”)
   2.3. Facilitate consistency of reporting
A caveat is that LAWA does not want to become so tied to SAP that it cannot explore other financial system options in future years. Therefore, it should be tactical in deciding what modules are best to integrate with SAP and Prolog.

**RECOMMENDATION I.5.2: LAW A SHOULD ESTABLISH AT LEAST 5-YEAR AND 10-YEAR CAPITAL IMPROVEMENT PLANS (CIP).**

Finding. LAWA’s capital planning process is insufficiently robust for the organization’s ongoing needs.

The current Capital Improvement Plan (CIP) is updated every two years; LAWA has a “capital call” process to elicit new projects from its organizations. Senior executive and financial managers review the recommended capital projects, and determine which should be included. The guidelines for determining which proposed projects go forward are not clear to many of the divisions or other executives.

Most of the focus of the current capital planning process is on current or upcoming project planning; however, divisions are limited in their ability to access planning information details. Long-term project planning is even more limited. LAWA lacks a 15-year, 10-year or even a 5-year capital plan for future project planning purposes. There are also limited metrics to determine:

- Whether the life-cycle costs of proposed projects are justified by their anticipated benefits
- The comparative values of proposed projects

**Proposed Actions.** LAWA should adopt a 5- to 10-year capital plan that reflects the life cycle of major capital projects and capital maintenance needs of existing facilities.

LAWA would benefit from at least a 5- to 10-year CIP that reflects multi-year capital projects and maintenance of existing and planned facilities.

**PROPOSED ACTION STEPS**

1. LAWA’s current needs and strategic vision should shape the development of the CIP.
   1.1. BOAC’s policy directives should be included in the capital plan.
2. LAWA should continue an annual- or bi-annual call for projects; the call for projects should include criteria for capital project proposals, capital project priorities, and capital project decisions.
3. LAWA should include both capital maintenance and modernization improvements in the CIP.
   3.1. Note: Major maintenance items are typically highly predictable and required on a scheduled basis.
4. The CIP should include input from both internal and external stakeholders.
5. LAWA should provide opportunities for divisions to discuss and defend their projects, combined with feedback regarding the final decisions.
6. LAWAN should establish an inter-divisional review process so that:
   6.1. Asset management tools are used in capital planning
   6.2. Multiple perspectives are considered before deciding what should be included or excluded in the plan
   6.3. Capital maintenance, modernization improvements, and new capacity investment are balanced in ways that match LAWAN’s strategic vision

7. LAWAN should project a longer “window” for capital expenditures to permit fewer peaks and valleys in capital maintenance and construction.

8. The CIP should optimize LAWAN’s financial resources (grants/pay-go/borrowing).

9. LAWAN should communicate the contents of the longer-term CIP, emphasizing that the CIP is a plan and not a final commitment until planned projects are funded and formally approved.

A more robust process would include:

- A longer-term perspective for capital expenditures
- Improved communications regarding criteria for capital project proposals, capital project priorities, and capital project decisions
- Policy guidance from BOAC’s directives
- Input from LAWA stakeholders
- Greater transparency and clarity regarding what projects are in the “pipeline” so all involved can plan accordingly

**Capital Project Management**

The City of Los Angeles, Office the Controller, commissioned a study\(^45\) that sampled 30 capital projects, totaling $4.9 billion in construction contracts between July 2011 and June 2014, which were being built by different City departments.\(^46\)

In the quest to begin and complete the Tom Bradley International Terminal (TBIT) construction project expeditiously, the specifications were not fully defined at the onset. As a result, contractors ran into unforeseen problems, complications, and additions (e.g., the four-level structure connecting Terminal 4 and TBIT), resulting in revisions to the initial TBIT plans.

LAWAN delivered the TBIT project under two Construction Manager at Risk (CMAR) contracts, which had a combined original contract value of approximately $1.4 billion. When the first contract was awarded, LAWAN had not completed the Environmental Impact Report (EIR) for the project, so BOAC could not

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46 Note: LAWA reviews a contractor’s request and must either approve or reject it.
award the construction services portion of the contract. Instead, BOAC awarded the contract for the full amount, but only appropriated funds for “Preconstruction Services” with a clear statement that the construction services tasks and funding would be awarded upon adoption of a final EIR. When the EIR was completed, the construction services portion was awarded.

TBIT cost LAWA $2 billion, $600 million more than the original estimate of $1.4 billion in 2009 – a 43.9% cost overrun. The City Controller’s audit noted that cost overruns typically run 5% to 10% above the original contracted amount. When TBIT was removed from the LAWA sample, LAWA averaged 7.2% and LA City departments averaged about 4.3% for cost overruns.)

In response, LAWA has begun to implement the recommendations in the City Controller’s audit, particularly in monitoring and improving the change order process. In moving forward, LAWA management understands that it must be ready for the next round of construction projects because there will be less tolerance for cost overruns. The next recommendations explore ways to strengthen project management and contain costs.

**RECOMMENDATION I.5.3: LAWA CAN IMPROVE CAPITAL PROGRAM IMPLEMENTATION THROUGH STRONGER MANAGEMENT READINESS AND COORDINATED PROCESSES.**

Finding. LAWA has the Second Modernization Project in the pipeline, but lacks management readiness and streamlined processes to deliver them efficiently and cost-effectively.

Now that LAWA is embarking on a $5-billion Second Modernization Program, it will need to ensure its capital program is efficient and can deliver projects in a timely and cost-effective manner.

*The Airports Development Group (ADG) is currently documenting 80 to 90 identified processes,* as directed by the City Controller. ADG has followed standard project management processes within its group for delivering capital projects at LAWA. These processes were captured in various flow charts with summary directions. ADG is currently memorializing these processing as it finalizes its Program Delivery Manual.

*Processes that involve two or more divisions frequently experience difficulties in coordination.* The lack of integration between planning and development has been an ongoing issue. LAWA is not including the upstream processes (e.g., finance, capital programming planning, engineering, or environmental processes) in this process documentation initiative for capital projects. This situation jeopardizes effective and efficient execution and coordination.

*There are many handoffs from one division to another,* referred to by KH as inter-divisional project management. These handoffs can be service providers, such as IMTG, or divisions linked in a process, such as the transition of capital project development from CPPEG to ADG. Interviewees cited deficiencies in communications between CPPEG and ADG, resulting in less efficient “hand-offs” between organizational units. There are also processes that enable users to request services or products from providers. As a result, KH interviews uncovered instances where the receiving division (user) is dissatisfied with products or services from the originating division (provider).
As already discussed in Recommendation I.5.1, opportunities exist to leverage technology further.
Although LAWA appears to be aware of and interested in using new technology, up to now it may have missed opportunities to improve its effectiveness and efficiency by rigorously reexamining the rules and processes that govern its activities.

Management and staff lack readiness for the next cycle of capital projects. Newly documented processes are not fully implemented; training is still needed; and modifications will be necessary. While the next wave of projects is in the process of review and approval, there is an opportunity to plan how new programs and projects will be managed.

Proposed Actions. LAWA should strengthen its management readiness for building LAMP, APM, CONRAC, and other infrastructures.

Capital program management would be enhanced with process improvements and better management and staff readiness in these processes. The Project Management Institute international established the Organizational Project Management Maturity Model (OPM3) standards. OPM3 pertains to all stages of project status, including early advance, impending, projects in construction, and close-out processes. OPM3 is a best practice standard for CIP planning processes, involving:

- A robust long-term planning process that takes into consideration future changes
- Review of processes for long-term planning, including whether these processes are written and followed
- Four levels of evaluation of project management (ANSI certified): Standardize, Measure, Control, and Improve (SMCI)
- A fair, efficient, and effective procurement process for construction-related services, including design, project management, construction, and removal
- Processes in compliance with regulations and standards (e.g., Project Management Institute (PMI) and Federal Aviation Administration (FAA) requirements)
- Processes in compliance with the City of Los Angeles and LAWA’s policies, procedures, rules, and regulations
- Rigorous and analytical evaluation of project plans and budgets and timely delivery of projects within budget by documenting their cost, schedule, and quality performance to identify the size of any problems in planning, budgeting, and execution
- A “fixed” baseline for the life of the project to assess progress against targets

LAWA should establish a central function for process design and information technology implementation for cross-functional processes to close existing gaps. LAWA conducts and oversees processes that can be improved by continuous improvement strategies, operations research, and industrial engineering. Other government agencies have found the use of a Business Solutions Group that can quickly address divisions’ IT and process needs with quick solutions as a useful addition to their IT solutions capabilities.
**PROPOSED ACTION STEPS**

To help close IT gaps in cross-functional processes:

1. LAWA should establish a Business Solutions Group with the business analysis capabilities to focus on the quality of process and information systems design. This group can facilitate:
   1.1. Processes that include hand-offs and sign-offs to ensure that the expectations of the provider and user are aligned and satisfied
   1.2. Increased collaboration and cooperation between divisions
   1.3. Improved interfaces that can reduce costs and delays resulting from the mismatched expectations

**LAWA should improve management and staff readiness for the next wave of capital projects.** LAWA should strengthen its capacity to implement LAMP.

**PROPOSED ACTION STEPS**

To improve management and staff readiness:

1. LAWA executives should review the readiness of process participants to manage the programs and their projects.
2. LAWA executives should identify priorities for process improvements that will support or ease the implementation of LAMP.
3. LAWA executives should work with division management to develop implementation options to mitigate risk with a focus on ensuring LAWA can meet cost, quality, and schedule goals.
4. LAWA’s ADG should include the roles and number of LAWA staff, roles and number of augmentation contractors, and contracting options (DBB, DB, CMAR, etc.) for LAMP programs and projects.
5. LAWA CPPEG and ADG should recommend a strategy for handling each program or project.
6. LAWA should provide BOAC with an economic justification for the recommended course.

**RECOMMENDATION I.5.4: BETTER MANAGEMENT OF THE AUGMENTATION STAFF MAY LOWER CAPITAL PROGRAM AND PROJECT COSTS.**

**Finding.** LAWA should better manage its “soft costs” to reduce capital program costs.

LAWA has large projects, dependent on outside contractors. For example, LAWA entered into a contract with Parsons for Construction Management services (Contract DA-4835, initiated 8/20/2013); Parsons had spent approximately $20 million of the contracted $87.5 million as of mid-June 2015.

LAWA has considerable internal and contractor capacity available and must manage these soft costs carefully to avoid potential overstaffing. Interviewees identified “soft costs” as an opportunity for capital program cost reduction.

The Construction Association of America provides standards for soft costs. At LAWA, these soft costs include:

47 Design not included in CMAA data.
LAWA soft costs are higher than desired and higher than industry benchmark comparisons. This higher rate can be attributed to many factors, such as delivery of more than $4 million per day of capital construction at a size-constrained facility. LAWA acknowledges that such soft costs are higher and provides three key reasons:

- **The complexity of building in an operating airport of the size and magnitude of LAX makes construction support and oversight more costly.** In layman’s terms, construction of a new home on an empty lot is typically cheaper than rebuilding an existing home with a family living in it. At LAX, LAWA rebuilt TBIT while ensuring that airport operations were not unacceptably disrupted by requiring more planning, coordination, and construction phasing. In response, as discussed in Chapter I.1 on “Strengths and Accomplishments,” ADG formed the CALM group, utility shutdown coordination, site access control, and the construction communications programs (including construction signage and temporary wayfinding) to address airport operational priorities during construction.

- **LAWA reports that the Finance Division capitalizes the costs related to delivery of capital projects,** which causes soft costs to be higher than at other entities.

- **LAWA has relied on contractors to supplement its staffing.** For some programs/projects, contractors assisted in the analysis and recommended the augmentation staffing levels. ADG staff reviewed and approved these staffing plans. LAWA plans to develop procedures for setting augmentation staffing levels, as part of its new Program Delivery Manual, already discussed.

LAWA is keenly aware of its need to continuously work on controlling soft costs.

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**Proposed Actions.** LAWA should expeditiously develop tools to contain staff augmentation costs for the next generation of capital projects.

ADG would benefit from additional tools for more effectively estimating the additional staff and contractors required during the Second Modernization Program.

**PROPOSED ACTION STEPS**

1. ADG should focus on an early completion of the augmentation staff guidelines in the Program Delivery Manual, which could generate cost savings.

2. ADG should develop a process for calculating augmentation levels that includes such approaches as staffing tables, showing project parameters that drive costs and permit more informed decisions about the associated level of augmentation needed beyond LAWA staff.

   2.1. LAWA and ADG should distinguish between ongoing, routine projects that may warrant permanent LAWA staffing and unique projects that require specialized expertise or staffing levels not needed once implemented.

3. ADG should identify and incorporate any current efforts to improve efficiency and effectiveness.
3.1. ADG should test the procedure on existing and planned projects, and evaluate and modify the process as needed.
3.2. ADG should adjust LAWA and consultant staff levels based on process improvements.

Human Resources

RECOMMENDATION I.5.5: LAWA WILL NEED A FULL COMPLEMENT OF CAPABLE STAFF TO IMPLEMENT ITS AGGRESSIVE CAPITAL PROGRAM.

Finding. The ability of LAWA managers to implement the capital program is impaired with the long lead-time to promote, discipline, and hire authorized positions.

The process to fill positions is highly regulated, complex, and lengthy process, involving LAWA’s Human Resources Services Division (HR), Civil Service rules, Civil Service Commission, and the City of Los Angeles Personnel Department. LAWA’s HR does not currently track cycle times and analyze all the required steps to determine whether improvements are possible, as discussed in Chapter II.5. Delays in the hiring and promotion processes are frequently cited as issues by HR’s internal clients.

Proposed Actions. LAWA Human Resources should improve its internal processes to meet the demands for staff for the next cycle of capital programs.

Hiring and retaining qualified employees and implementing appropriate discipline are all key steps to ensuring that staff members directly involved in the capital plan implementation, as well as all the support functions, can operate effectively.

PROPOSED ACTION STEPS

1. LAWA’s HR should apply process improvement approaches to the hiring, promotion and discipline process to identify opportunities where LAWA can streamline or shorten the overall cycle time.
2. HR should consider using such tools as flow charting, simultaneous reviews, automation, advance planning, and benchmarking best practices used in other Los Angeles City departments and elsewhere.
3. HR should explore with the City’s Personnel Department the possibility of expediting lists, recognizing that aviation industry knowledge is important for key positions and may have to be recruited from outside of the City of Los Angeles.
4. HR should consider establishing dual tracks – one that is expertise-focused and the other that is leadership-focused – for some positions.

Streamlining the process could:
- Reduce overtime associated with vacant positions
- Improve transitions when staff leave or retire
- Improve LAWA’s ability to deliver services and projects on-time and on-budget
Procurement

The mission of the Procurement Division is to assist LAWA divisions with the economical, efficient, and effective procurement of Goods, Equipment and Non-professional Services (GENPS). Procurement also serves as a gatekeeper to ensure:

- Transparency in the public procurement of such goods and services
- Compliance with established procurement policies, procedures, and guidelines, as set forth in applicable sections of the Los Angeles City Charter, Los Angeles Administrative Code, BOAC Resolutions, and Mayoral Directives

Procurement is a major business function at LAWA, awarding $593 million in contracts last year alone. These awards include multi-year contracts that are spent down over 3 to 5 years.

**RECOMMENDATION I.5.6: CHANGES IN PROCUREMENT CAN REINFORCE LAW A’S COMMITMENT TO A FAIR AND IMPARTIAL REQUESTS FOR PROPOSAL (RFP) PROCESS.**

Finding. LAWA’s divisions typically perform the processes related to RFPs.

Given the dollars involved in procurement, LAWA needs to be diligent in ensuring that it is following governmental best practices, monitoring performance, and soliciting solid vendor pools.

*Government best practices.* Governmental best practices, at both the State and Federal levels, call for an independent organization to manage large procurements. In its RFP guidelines, the National Institute of Government Purchasing (NIGP) specifies: “The procurement department representative serving as Chair of the Evaluation Committee is charged with the responsibility of assuring that the Committee’s actions are in accordance with good, sound procurement policies and applicable guidelines.”

*LAWA’s distributed model for procurement.* LAWA has adopted a distributed model for procurements. The Procurement Services Division acquires GENPS for LAWA. For GENPS items common to all of LAWA, such as office supplies, copiers, etc., Procurement Services is responsible for developing specifications, scope, gaining approval to solicit, analyzing vendor responses, and arranging for the award. For products required by a specific division within LAWA (e.g., custodial cleaning supplies or runway lighting), the requesting division performs those steps.

Procurement Services offers Designated Contract Administrator (DCA) training to LAWA staff members to increase their understanding of the contract award process and improve their effectiveness in managing contracts. In 2015, 88 staff members attended these trainings sessions. In most LAWA groups, the Lead DCA is the Section Manager for Procurement and Contracting, who has several trained DCAs working with Project and Contract Managers in the respective divisions under the group. In 2015, LAWA had 45 Lead DCAs. In divisions with limited contracting, the Lead DCA is the only one trained.

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48 Khi V. Thai, Ph.D., *Developing and Managing Requests for Proposals in the Public Sector*, NIGP, 2004 p. 120.
Procurement maintains a roster of Lead DCAs, and keeps them informed of any changes in procurement policies and procedures, with the expectation that the Lead DCAs will, in turn, communicate the changes to all staff responsible for developing and managing contracts in their groups or divisions. Contract managers are responsible for ensuring that all provisions of the contract are met, including Small Business Enterprise (SBE) pledges (if any), insurance requirements, and performance against scope.

By far, the largest procurements undertaken by LAWA are Professional Services and Construction. In these acquisitions, which typically involve RFPs, Procurement Services largely acts as a support function. The requesting organization is responsible for drafting the scope of work, determining the evaluation criteria, and handling all other major elements of the solicitation, including specifying membership and running the evaluation process. Procurement ensures that all administrative requirements and Business Enterprise programs (e.g., SBE, SLBE, LBE, DBE, and ACDBE inclusion and applicable Federal guidelines) are followed.

Procurement does not participate in RFP evaluation panels, although it does verify the proposers’ administrative compliance and that rating sheets were filled out after the panels are completed.

**Procurement cycle times.**

There is inconsistency in documenting when the complete procurement cycle starts due to this approach. In addition, because there is no common identifier between the SAP system and the City’s BAVN system, tracking a purchase from requisition in SAP through BAVN bidding through contract award through expenditure against that award is a difficult, time-consuming, and manual process.

**Procurement performance measurements.** Tracking procurement performance measurements is complex because:

- Much of the procurement work effort at LAWA is decentralized.
- When the Procurement Services Division creates an Outline Agreement (OA) or DA Agreement (BOAC awarded) authority in SAP, the Division attaches the actual Bid Response and other supporting Request for Bid (RFB) information to the authority into SAP.
- This process is not normally the case for RFPs since most divisions do not provide the actual proposal when requesting the SAP authority.
- It is not currently feasible to link the award information on LAWA’s SAP system with the bid information on the City’s BAVN system because the two systems lack common identifiers, as already mentioned.

LAWA indicated that it could not compile cycle times, by organizational unit, given their current databases and information systems. Therefore, it is not easy to compare divisional differences. LAWA speculated that approximately 90% of GENPS RFBs are for two functional Groups: Operations, Maintenance, & Emergency Group (OMEG) and CPPEG. These Groups tend to require similar material groups and share some contracts.

**Optimal vendor pools.** Procurement has challenges in knowing whether LAWA is getting the optimal pool of potential vendors and contractors to respond to RFBs, as is further discussed in Chapter II.5. In 2014-2015, 28% of the solicitations received only 2 bids; 30% of the solicitations had only 1 bid. In some situations, LAWA is limited in its ability to ensure competition because the FAA only approves one vendor to provide specific products (e.g., runway lights). Those situations are exceptions; most solicitations are designed to encourage participation by multiple vendors and do not have such limits.

LAWA has identified a number of potential barriers:
- Potential bidders may not submit bids due to:
  - Concern about City required contract terms
  - Difficulty in addressing insurance and bonding requirements
  - Concerns about lack of prompt payments at LAWA
  - Lack of understanding about how to do business with LAWA and respond to bids
- Potential bidders may not be registered on BAVN and, thus, do not know about the RFPs and RFBs.
- Specifications are too narrowly drawn for potential bidders to compete.
In December 2015, LAWA launched a LAMP Business Opportunities campaign to encourage participation and provide information. LAWA hosted an Industry Forum and Small Business networking session on February 4, 2016, to share information about the program and give industry representatives the opportunity to provide feedback prior to release of the Requests for Qualifications (RFQs) or RFPs. Although Procurement Services is a small portion of the agenda, it is an example of LAX’s outreach efforts regarding LAMP to the public and potential contractors.

Proposed Actions. LAWA should engage Procurement more actively in larger RFPs to ensure greater consistency and transparency in the process.

The challenge for a proprietary department, such as LAWA, is the need to abide by governmental regulations that may be time-consuming and not imposed on private sector enterprises, while being nimble enough to respond to market changes and business opportunities. Time is money and prolonged vendor selection and contract negotiations can result in lost revenues.

For example, LAWA launched an advertising programs at LAX in 2008. In July 2013, LAWA selected JCDecaux North America. The advertising contract is worth more than $180 million through advertising, sponsorships, and other media opportunities at LAX. BOAC approved the JCDecaux contract in December 2013. The agreement is to run until December 31, 2020, with options to extend it for three future years. The opportunity cost for each month delayed was projected to be $1.9 million.

Therefore, procurement processes must be streamlined, while simultaneously ensuring the public that the bidding process is fair, competitive, and optimal in garnering the best services for the dollars.

**PROPOSED ACTION STEPS**

1. LAWA should assign a more active role to Procurement, especially for larger RFPs or for divisions with less experience in the procurement process, to:
   1.1. Abide by the principles set forth by the Federal Transportation Administration (FTA), regarding the organization of procurement functions
   1.2. Ensure that the RFPs permit fair competition (e.g., the scope of work can elicit a responsive proposal; may not create undue barriers that would limit the number of potential proposers to three or fewer proposers; etc.)
   1.3. Confirm evaluation criteria for award, including fair weighting of the most important elements

1.4. Review responses to proposers' questions to make sure all questions are answered completely and disseminated to all potential responders
   1.4.1. Coordinate membership on the evaluation panels to ensure the fact and perception of impartiality
   1.4.2. Convene and chair evaluation panel meetings; serve as a non-voting member of the evaluation panel to:
      1.4.2.1. Verify proposers interviewed are treated fairly and equally
      1.4.2.2. Manage the review discussion according to standard guidelines
      1.4.2.3. Gather scores of reviewers
      1.4.2.4. Document the outcome of the scoring
   1.5. Formally validate the integrity of the proposal process to the approving authority

2. Procurement should continue to identify areas for improving/streamlining the procurement process, including:
   2.1. Outreach to small businesses through workshops, business inclusion events, and industry conferences
   2.2. Procurement training to DCAs and contract/project managers
   2.3. Development and monitoring of performance measurements, as discussed in Chapter II.5

3. As part of its reorganization, LAWA has the opportunity to:
   3.1. Redefine the procurement function to embrace supply chain approaches
   3.2. Elevate the function so that it moves from a compliance review and service orientation to a partner in ensuring LAWA procures all the goods and services it needs in a timely and cost-effective manner.

Proposed Actions. Procurement Services should evaluate the underlying causes for single and two-bid responses to RFBs, and take appropriate steps to increase the numbers of bidders.

City goals, reinforced by the BOAC, call for a minimum of 3 bidders for each solicitation. In almost 60% of the cases, LAWA RFBs do not meet those goals. Because of concerns that the FAA restrictions might make it more challenging for airports to obtain 3 or more bids, KH evaluated limited data from the Port Authority of New York and New Jersey (PANYNJ), which manages JFK, LGA, EWR, and Teterboro, a general aviation airport. KH’s data analysis revealed that the number of administrative and airport-related bids received for procurements of goods and services differed somewhat from those of LAWA. Of the 18 bids reviewed, 17% received only 1 bid, 28% received 2 bids, and 55% received 3 or more bids.

PROPOSED ACTION STEPS

1. The LAWA Chief Executive Officer (CEO) should arrange to have an audit or forensic review of procurement activities to:
   1.1. Understand the causes for and prevalence of divisions relying on only 1 or 2 vendors
   1.2. Assess the degree to which FAA or other requirements limit competition for selected aviation-related items
1.3. Benchmark LAWA’s procurement metrics with other City departments and other large international U. S. airports, such as ATL, O’Hare, SFO, and PANYNJ.

2. LAWA’s Procurement Services Division should:
   2.1. Address the issues identified in the audit or forensic review
   2.2. Continue to identify piggyback opportunities to take advantage of economies of scale, especially when a low bidder turnout is eminent
   2.3. Undertake programs to address those causes (e.g., encouraging the FAA to approve multiple local vendors for aviation-related products subject to FAA approval)
   2.4. Coordinate with other procurement professionals to conduct surveys of potential vendors to determine why they are not competing for City work

3. Procurement Services should partner with other procurement professionals in the City to research the root causes of the dearth of bidders and propose solutions to the issue.

Parking Revenues

RECOMMENDATION I.5.7: LAWA SHOULD CONDUCT A FISCAL AND OPERATIONAL AUDIT OF PARKING OPERATIONS.

While LAWA’s recent studies have covered how the new APM construction will affect certain existing parking structures or facilities, they have not reviewed or audited in any detail the effectiveness and needs of the overall parking operations that service LAX. These operations include the parking garages on the LAX premises and the lots for the FlyAway bus services.\(^{50}\) There are many other privately-owned parking lots near LAX.

Parking revenues are significant at LAWA. In 2014, LAX generated $85.6 million and VNY $2.0 million in revenue, reflecting steady increases year-to-year since 2011, as shown in Table I.5a.

| Table I.5a: LAWA Parking Revenues (2011 through 2014) |
|-----------------|-----------------|-----------------|-----------------|-----------------|
| Parking Revenues | 2011            | 2012            | 2013            | 2014            |
| $ – LAX          | $71,307,912     | $74,854,720     | $78,870,767     | $85,630,257     |
| % change         | 3%              | 5%              | 5%              | 8%              |
| $ - VNY          | $1,788,661      | $1,888,983      | $1,966,100      | $2,040,982      |
| % change         | 4%              | 5%              | 4%              | 4%              |

Parking is a major business enterprise. LAX generated $85.6 million in parking revenue in 2014.

50 Note: FlyAway is not primarily a Park ‘n Ride system, except at VNY.
Finding. LAWA parking revenues are significant, but parking operations lack basic measurements for managing their operations.

**LAWA’s parking revenues are not properly audited.** At LAX, industry-standard methods for auditing parking revenues are not followed. Parking tickets issued are not matched against cash collected, ticket inventory, and loop detector counts. Parking auditors are located adjacent to parking administrators, potentially reducing confidence in their independence. Finally, Internal Audit does not routinely audit parking operations. Although LAWA is currently issuing an RFP to update and automate parking payments to allow for pre-payment, these automated payment systems will not replace the need for auditing parking revenues.

**LAWA cannot measure and monitor parking lot operations and occupancy rates.** Because of the lack of automated systems for monitoring entries and exits to the parking lots, LAWA cannot on a real-time basis determine when parking lots reach capacity, or measure exit lane wait times. These shortcomings make it hard to assess the quality of parking activities, and they detract from guest experiences because of the inability to alert drivers to available parking spots in LAX lots. This situation is of significant concern because the availability of parking will become a bigger issue during APM construction.

**Proposed Actions.** LAWA should perform a fiscal and operations audit of its parking operations.

Parking revenue audits should be included in the Internal Audit Plan, consistent with the risk appropriate to an $85-million operation.

Apart from the benefits of a financial audit, LAWA may also improve its financial performance by improving its parking operational efficiency. This review, however, should wait until the new parking operations contract has been put in place and new technology has been installed.

**PROPOSED ACTION STEPS**

1. As part of the Guest Experience initiative, LAWA should expedite its RFP plans to improve the overall parking experience at LAX, including wayfinding, ease of access, safety, and parking innovations (e.g., parking control equipment), signage indicating number of empty spaces by floor, or red-green lights to identify available spaces.
2. LAWA should re-establish a landside transportation management position to focus on overall CTA ground operations, including flow into/out of parking, as also proposed in Recommendation I.4.4.
   2.1. This transportation management position should perform ongoing analysis of parking operations, particularly during APM construction, including:
      2.1.1. Parking operations
          2.1.1.1. Ease of access and saturation frequency
          2.1.1.2. Hours of operations per parking garage
          2.1.1.3. Parking capacity and turnover rate
          2.1.1.4. Efficient use of parking spaces
          2.1.1.5. Efficient and effective use of energy, such as lights, fans, etc.
2.1.6. Operating elevators in parking structures
2.1.7. Number of staff and staff hours

2.1.2. Parking financials
   2.1.2.1. Parking rate structure
   2.1.2.2. Revenue and net revenue per parking garage per month and per year
   2.1.2.3. Internal parking controls and reporting systems
   2.1.2.4. Routine audits to avoid cash leaks and incidents
   2.1.2.5. Claims and issues

2.1.3. Effective results through internal training on new procedures

3. Through LAWA’s Internal Audit, LAWA should:
   3.1. Schedule regular audits of parking in accordance with the Audit Plan risk analysis
   3.2. Regularly perform honor-checking operational and financial audits on an “as-needed” basis without notice
   3.3. Review its current processes for performing and preparing a Revenue Report Audit, using best practices, such as tallying parking tickets to cash collections and vehicular counts

4. After the new parking technology contract is awarded and implemented, LAWA should have a fiscal and operations audit performed to identify further opportunities for improving parking operations, processes, revenue collection reporting and controls, management efficiencies and effectiveness, and overall guest experiences.

A fiscal audit and an operation audit are inter-related. LAWA has opportunities for improving its financial performance by improving its parking operations. By improving its parking operations, parking’s financial performance will increase. To not do both would be remiss once the new parking contract is in place.

The Joint Administrators requested some cost estimates for conducting such parking audits. LAWA will probably need an external consultant with parking expertise to supplement its Internal Audit staff. The audits will take approximately six months to complete, including the time taken to hire a firm. LAWA can realize some cost savings by combining the inter-related audits; the estimated audit cost are between $100,000 and $150,000 to perform. This kind of an investment should have a return-on-investment (ROI) within the first 6 to 12 months of LAWA implementing the recommendations. (Note: A 10% improvement at LAX is $850,000.)

LAWA can realize a faster ROI by having the external consultant develop new parking reports and assist with oversight of the implementation of the new procedures as they are developed. This implementation assistance would require an additional 3 to 6 months, depending on the changes to be implemented. Such changes would:

- Improve financial controls and audits
- Improve operational controls and audits
- Increase parking revenues
- Improve coordination and controls among Commercial Development Group (CDG), Internal Audit, operations, accounting, and parking
I.6: PMD AND ONT AIRPORTS

INTRODUCTION

Los Angeles World Airports (LAWA) at one time managed the Palmdale Regional Airport (PMD), located in the Antelope Valley at U. S. Air Force Plant 42, approximately 60 miles from downtown Los Angeles. At the end of 2013, responsibility for the facility was transferred to the City of Palmdale’s Palmdale Airport Authority under an MOU with LAWA. PMD’s future may change because of a potential connection with the Las Vegas high-speed rail project and the prospect of an Antelope Valley stop for the California High Speed Rail. LAWA owns approximately 17,750 acres near PMD, land that is dedicated to airport purposes. Given these circumstances, the Joint Administrators requested that KH not focus on PMD. Interest in this land may be renewed as development of supporting transportation infrastructure goes forward.

Ontario International Airport (ONT) is classified as a regional airport that serves primarily domestic cities and some international destinations. Located in the Inland Empire, 35 miles east of downtown Los Angeles, ONT serves primarily the people residing in San Bernardino and Riverside Counties and portions of North Orange and east Los Angeles Counties.

FINDING AND RECOMMENDATION

RECOMMENDATION I.6.1: EFFECTIVE PLANNING WILL BE KEY TO A SUCCESSFUL TRANSITION OF ONT TO ANOTHER AIRPORT AUTHORITY (OIAA).

Finding. LA City and LAWA have reached an agreement to transfer ONT ownership to Ontario International Airport Authority (OIAA).

In 2008, ONT was developing a freight movement system that would include the airport, two rail-lines, four major freeways, and a network of freight forwarders. ONT experienced a decline from 2008 through 2013, which was typical of other U. S. regional airports. This downward trend is shifting at ONT. In 2013, 3.9 million passengers used ONT.

In the first eight months of 2014, 84,345 more passengers had used ONT in comparison to the first eight months of 2013 – a 3.2% increase. This increase is attributed to the three flights per week to Guadalajara by the low-cost carrier Volaris. During the first 10 months of 2015 (as of October 2015), ONT’s passenger traffic was up 5.64%.51 The airport handled 380,584 passengers in October 2015, compared to the 360,256 passengers in October 2014.

Prior to the start of the 2016 IEA Survey and because of ONT’s declining usage, public officials and community groups called for changes in the management of ONT, including transfer of the airport to local control, and related lawsuits were filed.

During Phase I of this IEA Survey, LAWA and the City of Los Angeles decided to transition ONT to a new airport authority. In December 2015, the Los Angeles City Council unanimously approved a $250-million agreement to settle the lawsuit, transferring responsibility for ONT to OIAA. If the Federal Aviation Administration (FAA) approves the transfer, the City of Ontario will reimburse LAWA for all outstanding Ontario bonds, approximately $60 million. The balance will be paid in a series of payments to the City of Los Angeles over the decade by using ONT’s unrestricted cash accounts. These payments are to reimburse LAWA for ONT improvements made over the decades that it operated the airport.\(^5^2\)

Los Angeles Mayor Eric Garcetti observed, “We are now one step closer to finalizing a historic settlement that will improve air travel throughout Southern California and benefit residents and airport employees in both Los Angeles and Ontario.”\(^5^3\)

As a result, the Joint Administrators requested that the KH team not to focus on ONT.

**Proposed Actions.** Effective joint planning will be required to transfer ONT ownership.

Execution of an effective plan is critical for a successful transition of ONT. LAWA should continue its joint-planning efforts to ensure the smooth transition of:

- ONT ownership from the City of Los Angeles to OIAA
- LAWA’s 200+ employees working there

Careful implementation of the transition can allow optimum staff retention, reducing redundancy and related staff costs to LAWA and OIAA. An effective transition is important to maintain guest service levels, security, and operational effectiveness. The change will have strategic implications to LAWA because LAX will ultimately not be able to accommodate forecasted passenger demand in the Los Angeles region.


Part II: Measuring and Improving
II.1: BSC IMPLEMENTATION

According to the U.S. Government Accountability Office (GAO):¹

“Performance measurement is the ongoing monitoring and reporting of program accomplishments, particularly progress toward pre-established goals. It is typically conducted by program or agency management.”

“Performance measures may address the type or level of program activities conducted (process), the direct products and services delivered by a program (outputs), or the results of those products and services (outcomes).”

“A ‘program’ may be any activity, project, function, or policy that has an identifiable purpose or set of objectives.”

Part II of the Industrial, Economic, & Administrative (IEA) Survey Report focuses on measuring and improving LAWA’s performance. Although different LAWA divisions maintain extensive data for their own internal uses, LAWA lacks an integrated performance measurement system. This chapter presents:

- An overview of the Balanced Scorecard (BSC) model, a strategic approach to performance measurement
- The foundation for LAWA to develop a robust performance measurement system
- An overview of what is contained in the BSC prototypes
- A framework for implementing the BSC approach

Chapter II.2 through Chapter II.5 contain the BSC prototypes that KH Consulting Group (KH) in collaboration with Los Angeles World Airports (LAWA).

FINDINGS AND RECOMMENDATIONS

KH identified four types of measurements, shown in Table II.1a, that are needed at LAWA.

Table II.1a: Types and Examples of Measurements

<table>
<thead>
<tr>
<th>Types of Measurements</th>
<th>Examples</th>
</tr>
</thead>
</table>
| **System-wide**: Numbers that represent the size and operational reach of the airport. Some of these are relatively unchanging, and some are fluid. LAWA staff should collectively work to influence those metrics that they can, recognizing that external factors (e.g., world economy, airline economy, fuel prices, etc.) are also key influencers that may have as much or more to do with the metrics as LAWA does. | Year-end data on:  
- # of million annual passengers (MAP)  
- # cargo tonnage  
- # airport operations (take-off/landings)  
- $ gross revenues  
- $ total tax revenues (e.g., sales, parking occupancy, and possessory interest taxes)  
- # LAWA employees on payroll – full-time and FTE  
- $ LAWA payroll  
- # contractors full-time  
- # LAX acreage  
- # square footage by terminal |
| **Common**: Numbers that are typically reported by a central organization (e.g., Human Resources (HR), Finance) to all managers, who are held accountable for keeping track of and managing in collaboration with the administrative units. | Financial  
- $ budget performance against plan  
- $ overtime expended against plan  

**Human Resources**  
- # position vacancy rates  
- # staff out of compliance with mandatory training requirements  

**Risk**  
- # Injuries on Duty (IODs) reported  
- # days lost to IODs  
- # Workers’ Compensation claims  
- $ Workers’ Compensation claims  

**Procurement**  
- # contracts under management due to expire  
- % SBE pledge/participation rates  
- % SLBE pledge/participation rates |
### Types of Measurements

<table>
<thead>
<tr>
<th>Strategic: Linked to a strategic plan, strategic priorities, or a Strategy Map, such as:</th>
</tr>
</thead>
<tbody>
<tr>
<td>- Improve management of landside in face of anticipated construction disruptions</td>
</tr>
<tr>
<td>- Improve management of capital construction</td>
</tr>
<tr>
<td>- Strengthen strategic, evidence-based management and accountability</td>
</tr>
<tr>
<td>- Increase economic development impact</td>
</tr>
<tr>
<td>- Expand LAX airside capacity</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>- % completion of the Consolidated Rent-A-Car Center (CONRAC)</td>
</tr>
<tr>
<td>- % completion of Airport People Mover (APM)</td>
</tr>
<tr>
<td>- % completion of major projects or project elements compared to % project budget spent</td>
</tr>
<tr>
<td>- % passengers and airport workers using public transit to travel to and from the airport</td>
</tr>
<tr>
<td>- % total capital project costs representing soft costs</td>
</tr>
<tr>
<td>- % high-risk audits completed in the planning period</td>
</tr>
<tr>
<td>- LAX airside capacity metrics (plane size, gate usage, etc.)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Business: Measurements that are largely managed by one or a small group of units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revenue Generated</td>
</tr>
<tr>
<td>- $ parking lot revenues ($ average per month)</td>
</tr>
<tr>
<td>- $ capital program expenses versus plan</td>
</tr>
<tr>
<td>- $ capital program expense forecast versus plan</td>
</tr>
<tr>
<td>Traffic Congestion and Efficient Access</td>
</tr>
<tr>
<td>- # vehicles entering LAX CTA</td>
</tr>
<tr>
<td>- # vehicles entering parking lots</td>
</tr>
<tr>
<td>- #/% parking lots closed because at capacity</td>
</tr>
<tr>
<td>- % parking spaces unavailable due to construction by lot</td>
</tr>
<tr>
<td>- # average minutes of wait time for a taxi by terminal</td>
</tr>
<tr>
<td>Processes Improvements</td>
</tr>
<tr>
<td>- # days cycle time for Badging reviews</td>
</tr>
<tr>
<td>- # days cycle-time for filling position vacancies</td>
</tr>
<tr>
<td>Safety</td>
</tr>
<tr>
<td>- # airside traffic accidents</td>
</tr>
<tr>
<td>- # airside traffic violations</td>
</tr>
<tr>
<td>- # runway incursions</td>
</tr>
</tbody>
</table>

### RECOMMENDATION II.1.1: LAWA SHOULD DEVELOP BSCS AND A PERFORMANCE MEASUREMENT SYSTEM.

Finding. LAWA is currently limited in its ability to extract and monitor performance measurements in an integrated manner.

As mentioned in Chapter I.2, LAWA has neither identified its strategic priorities nor established goals, objectives, and targets to measure, benchmark, and monitor progress against its program and services, except for its Modernization Programs. LAWA has some additional challenges in developing an
integrated performance measurement system. These challenges include: data limitations, lack of software for compiling enterprise-wide statistical reports, data sharing constraints, lack of common core measurements, and enormous databases to mine.

**Some data collection efforts are labor intensive or the data are unavailable.** As already discussed in Chapter I.1 and Chapter I.2, each division develops its own systems and measurements for monitoring operations, activities, and outcomes. Some are better than others. Many are shadow systems (e.g., Excel spreadsheets or MS Word documents) with no central repository of information. Other divisions just do not have the data. Thus, a number of metrics on the BSCs developed with KH are marked as “NA.”

**LAWA will need to work with other business partners and other governmental agencies to obtain data.** For some metrics, LAWA must rely on its partners to provide the data. In these instances, KH has color-coded those items; this situation is most prevalent on the Guest Experience BSC, where metrics are needed from air carriers or private-sector partners (e.g., private shuttle services, private parking lots, and concessionaires – coded in peach) and other governmental agencies (e.g., TSA, CBP, FAA, CBP, LADOT – coded in yellow).

**LAWA has not tracked some data needed to drive evidence-based decision-making.** LAWA does not track some data that is useful for decision-making; for example:

- LAWA has not tracked the reliability of its major building systems (elevators, escalators, HVAC) and yet such data are critical. With the new Maximo system, LAWA will be able to track downtime data in the future.
- Custodial Services are not tracked in a database format, such as Maximo.
- Basic parking statistics are unavailable, regarding parking occupancy rates (e.g., % hours a given parking lot is 100% full or # exit gates open in each parking lot). This shortcoming is one result of obsolete parking lot management technology. LAWA has plans in place to improve its lot management technology during the next several years.

**Divisions do not routinely share data.** LAWA does not share data across internal divisional lines that could support more effective planning, monitoring, and evaluation:

- LAWA lacks technology that would facilitate internal technology data sharing.
- Divisions have limited capabilities to digitally report real-time field data so it can be shared (i.e., parking, traffic, or site reviews).
- Several divisions would benefit from increased data sharing (e.g., Commercial Development Group (CDG), Capital Programming, Planning & Engineering (CPPEG), and Airports Development Group (ADG)).

ARCC provides real-time data that are available to a cross-section of LAX and partner agencies (e.g., LAPD, TSA, FAA) and have become central to smooth operations at LAX. Within ARCC, the operation data are shared through advanced technology, but much of it is manually entered into Excel (spreadsheets). These data, however, are not readily available to staff members outside of ARCC.
Reports about the data for other staff, including executives, are prepared manually (in Excel and some are even in MS Word), limiting the analytical usefulness of those data.

_The number of measurements that LAWA could track is large._ LAWA has an enormous quantity of data that it does and could monitor. Because of this quantity, careful consideration of what is important to monitor is critical.

Some LAWA divisions monitor key performance indicators (KPIs) regularly. Some are monthly (e.g., concessions revenues); others hourly or several times a day (traffic congestion); and some even more frequently (real-time for airside metrics). These indicators are central to addressing developing operational problems and contingencies.

Next are some examples to demonstrate the enormity of the situation.

**Example 1 – Time to park at LAX.** Many apps let drivers know how long it will take for them to reach LAX from their point of origin. Once inside LAX Central Terminal Area (CTA), however, the apps are not precise in pinpointing the time needed to reach parking garages or terminals for drop-offs or pick-ups. LAWA currently cannot measure how long it takes private cars to park once they enter the CTA.

Moreover, once collected, this measurement can split into more than 168 measurements (8 terminals x 3 peak periods x 7 days per week) — clearly more if done hourly or on a real-time basis. This level of detail goes well beyond what LAX Operations staff members can affect, at least in the short term. What is needed is a limited set of measures that provide a general understanding of CTA congestion.

**Multiplier Effect of 1 Airport Measurement: Time to Park Once a Car Enters the CTA**

- By 8 Terminals
- By 3 Peak Periods
- By 7 Days of Week
- 168 Measurements
Example 2 – Shuttle services frequency and load factors. Approximately 40 shuttle companies (e.g., car rental and hotel vans) provide shuttle services at LAX (not including LAWA’s own busses and shuttles). LAWA currently tracks data (e.g., number of shuttles that enter/leave CTA) on an hourly basis by company, and then rolls up that data, by industry, and then into an overall total.

At this time, there is no tracking of shuttle activity at the terminal level, only inbound/outbound to the CTA, but this does result in 350,000 data points: 365 days x 24 hours x 40 individual companies = 350,000. Private shuttle companies do not report load factors.

LAWA does not aggregate frequency data that would provide the average wait times for each shuttle service, by terminal, which would be of interest to travelers. LAX-operated shuttles run on a pre-set schedule and do not track load factors routinely. This measurement could result in at least 672 measurements, and even more if done by hour versus the 3 peak times each day. The LAX shuttles rely on standard transit industry measures that LAWA uses.

In contrast, private parking lots, hotels, and rental car companies primarily provide on-demand services with no set schedules. Some companies send shuttles only when travelers place a phone call; others run shuttles according to a schedule, that stretch as long as 30-minutes wait period during off-peak periods. Therefore, metrics for shuttles services is a mixed bag, and “waiting time” measurements are less meaningful.

While many of the detailed KPIs are critical to operational staff, executive and managerial staff members do not need to monitor the metrics at that level of detail. With so many data points and indicators, it is easy to miss the forest for the trees, getting lost in minutia without focusing on the longer-term strategic or operational implications.

A strategy to address this issue is to develop a “data mining” capacity that can produce intelligible and user-friendly reports for managers to use regarding their operations, projects, and strategic priorities. LAWA does not yet have that capacity.

2 The KH team used the following definitions for shuttle services:
- Headway: time in minutes between buses on the same route over the period measured (can be an hour or day or other, usually a peak hour)
- Throughput: Number of buses passing a designated point, usually in a peak hour
- Passenger counts: Average number of passengers aboard buses at a designated point. Where fares are collected, passengers are usually defined as the number of fares.
Proposed Actions. LAWA should establish a BSC Office to work with IMTG, Finance, and other divisions to develop BSCs and streamline the efforts.

During the IEA Survey, KH’s focus was to help sort through available data, identifying what data might be most useful to managers, executives, guests, and the public about operations and service issues. LAWA should use these initial BSCs to refine what it needs to monitor going forward. The proposed actions outline next steps to develop a robust performance measurement system.

**PROPOSED ACTION STEPS**

1. To start, the LAWA CEO should establish a BSC Office to manage the performance measurement initiative. The BSC Office should:
   1.1. Develop BSC templates for:
      1.1.1. Consistency of reporting
      1.1.2. Monitoring of BSCs developed to date
      1.1.3. Monitoring of common metrics across organizational units
      1.1.4. Data that should be reported at different frequencies (hourly, daily, weekly, monthly, quarterly, semi-annually, or annually)
   1.2. Assist with the implementation of the other proposed actions in collaboration with other divisions (LAWA executives, IMTG, Finance, and others), discussed in this chapter
   1.3. Prepare a LAWA Fact Book that contains system-wide data points that should be used internally for preparing BSCs and calculating efficiency ratios (e.g., $ revenues generated per EPAX, $ revenues generated per LAWA employee)
   1.4. Increase the sharing of operational data across divisions to enable better planning and reduce reactive responses
      1.4.1. Building the capability for such data sharing will require close coordination with IMTG.
2. The LAWA CEO should promote development of a complete performance measurement system by:
   2.1. Rolling out the BSC approach to areas not covered in the IEA Survey, using the IEA Survey BSC prototypes, in such areas as IMTG, ADG, CDG, and CPPEG
   2.2. Having future BSCs tied to goals, objectives, operational and financial targets, and planned initiatives, discussed next
3. LAWA should expand on the information currently shared on the LAWA website ([http://www.lawa.org/welcome_lax.aspx?id=1106](http://www.lawa.org/welcome_lax.aspx?id=1106)) with additional information of interest to the public, including “Fun Facts” about LAWA (e.g., # pets flown through LAWA annually, largest animal ever transported, # air operations per square mile of airport property, # passengers per week, films shot at VNY, or the year the first jet took off from LAX)
Proposed Actions. LAWA should develop the technology to mine data, prepare BSCs and dashboards, and analyze statistical trends and ratios for its managers, BOAC, and the public.

Some of the basic components that LAWA needs for a performance management system are discussed next. To develop these components will require the BSC Office, IMTG, and the other LAWA divisions to collaborate effectively.

**Design and implement dashboards.** LAWA should translate BSCs into user-friendly dashboards. While there are many different types of dashboards, most use visual elements—pie charts, bar graphs, and rating scales—to indicate whether metrics fall within acceptable parameters. As the BSC model is implemented across the organization, executives should establish acceptable thresholds so that metrics can be color-coded as:

- **Green** for meets or exceeds standards
- **Yellow** for areas of concern
- **Red** where immediate attention is called for

**Use automation to produce user-friendly dashboard and reports.** LAWA should use data mining and statistical analytics to produce user-friendly reports for managers regarding their operations, projects, and strategic priorities. Without such technology, the ability to compile statistics in a timely way is too labor intensive for LAWA to undertake. The frequency of the production of these reports will vary: some daily, some weekly, some monthly, some quarterly, and some annually.

**Incorporate common measurements that all division monitor and manage in the dashboards.** There is an old saying—“What gets measured gets done.” For organization-wide goals, that is especially true. Top leadership attention to a handful of operational topics can be efficiently handled by managing common metrics. Potential metrics that should be monitored by every major organizational unit are outlined in Table II.1a on “Types and Examples of Measurements.” LAWA leadership should identify measurements, whether these or others, that should be part of decision-making and monitoring in all major organizational units.

**Improve divisions’ capabilities to analyze and share data across divisions.** Data-sharing is critical for a meaningful and effective performance management system, especially for such strategic BSCs as Guest Experience. LAWA should buy or build data systems and software that will enable sharing and common use of data. Common goals and outcome targets are essential to reduce the tendency in any government organization for units that indirectly support the accomplishment of outcomes (e.g., budget, finance, procurement, and HR) to lose sight of major operating initiatives in the face of pressure to adhere to process requirements, becoming at times impediments to success.
Develop performance ratios. Once LAWA has developed a performance management system, it will want to develop ratios to understand performance better (e.g., per unit costs or performance against other airport benchmarks). Such ratios are useful to assess efficiency, as contrasted with effectiveness. If LAWA does engage in benchmarking against other airports, it should remember that differences do not confirm that one airport is better than another. Rather, the differences should be the source of curiosity, investigation, and questions to determine why they exist and whether LAWA wishes to work toward different outcomes. LAWA should also focus on efficiency measures where they have some ability to influence or control the numerator or the denominator.

In developing ratios, LAWA will need to consider what should be the best denominator to use; for example, the denominator for passengers (PAX) can be either Million Annual Passengers (MAP) or Enplaned Passengers (EPAX) per year. The factors that determine which denominator to use can depend on different criteria: whether LAWA cares more about how many people pass through the airport in both directions, including transfers (MAP), or whether LAWA is more interested in the traffic generated in the region (EPAX).

Financial metrics vary significantly, depending on what is being reported. LAWA Finance tracks terminal and concession revenues by EPAX, because passengers disembarking from planes generally do not stay (and spend) in the terminals. These passengers typically head straight for baggage claim or curbsides. LAWA Finance also monitors ratios as well (e.g., debt per EPAX [standard industry], headcount per MAP, LAX cost per EPAX, and LAX national rating on EPAXs). Not all denominators have to be consistent, but do need to be clearly identified, and LAWA should use an agreed-upon source for each number.

Table II.1b outlines when MAP versus EPAX may be better denominators for developing ratios.

<table>
<thead>
<tr>
<th>Number of Passengers Per Year</th>
<th>Examples of When to Use Different Passenger Counts for Ratios</th>
</tr>
</thead>
<tbody>
<tr>
<td>Million Annual Passengers (MAP)$</td>
<td>$ economic impact</td>
</tr>
<tr>
<td></td>
<td># Origin &amp; Destination rankings</td>
</tr>
<tr>
<td></td>
<td># environmental impact</td>
</tr>
<tr>
<td></td>
<td># LAWA employee headcount</td>
</tr>
<tr>
<td></td>
<td>$ aeronautical revenue</td>
</tr>
<tr>
<td></td>
<td># national or worldwide rankings</td>
</tr>
<tr>
<td></td>
<td># Part 1 Crimes</td>
</tr>
<tr>
<td>Enplaned Passengers (EPAX)$4</td>
<td>$ concession revenue</td>
</tr>
<tr>
<td></td>
<td>$ other terminal revenue</td>
</tr>
<tr>
<td></td>
<td>$ parking revenue</td>
</tr>
<tr>
<td></td>
<td>$ non-aeronautical revenue</td>
</tr>
<tr>
<td></td>
<td>$ debt</td>
</tr>
<tr>
<td></td>
<td># national or worldwide rankings</td>
</tr>
</tbody>
</table>

3 Chapter II.6 on “BSC – Financial Performance” presents MAP rankings and aircraft movements.
4 Chapter II.4 on “BSC – LAX Guest Experience” presents enplanement passenger trends at LAX.
MAP and EPAX numbers diverge significantly at some airports — Dallas (DFW), Chicago O’Hare (ORD), and Atlanta (ATL) among them; they are hub airports, and millions of passengers get off one airplane and onto another. LAX has an unusually large number of Origin & Destination (O&D) traffic – passengers who are NOT transfers. Therefore, LAX may prefer to use MAP when looking at ratios involving the economic impact on the region.

The kinds of system-wide data that may be useful for developing ratios are listed in Table II.1c.

<table>
<thead>
<tr>
<th>Data Label</th>
<th>Examples of System-wide Measurement</th>
<th>Data Label</th>
<th>Examples of System-wide Measurement</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Passengers (PAX)</strong></td>
<td># of domestic PAX - Total</td>
<td>Air Cargo</td>
<td># tons of cargo landed</td>
</tr>
<tr>
<td></td>
<td># of domestic PAX - LAX</td>
<td></td>
<td># tons of cargo embarked</td>
</tr>
<tr>
<td></td>
<td># of domestic PAX - ONT</td>
<td></td>
<td># cargo tonnage - LAWA</td>
</tr>
<tr>
<td></td>
<td># of international PAX - Total</td>
<td>$ cargo value - LAWA</td>
<td></td>
</tr>
<tr>
<td></td>
<td># of international PAX - LAX</td>
<td># cargo tonnage - LAX</td>
<td></td>
</tr>
<tr>
<td></td>
<td># of international PAX - ONT</td>
<td>$ cargo value - LAX</td>
<td></td>
</tr>
<tr>
<td></td>
<td># of PAX - Total</td>
<td># cargo tonnage - ONT</td>
<td></td>
</tr>
<tr>
<td></td>
<td># of PAX - LAX</td>
<td>$ cargo value - ONT</td>
<td></td>
</tr>
<tr>
<td></td>
<td># of PAX - ONT</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># of PAX - VNY</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># departing PAXs</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># inbound PAXs</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># arriving international PAXs, by terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># departing international PAXs, by terminal</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Terminal Space</strong></td>
<td># square footage by terminal - LAX T1</td>
<td>Acreage</td>
<td># acres - LAX</td>
</tr>
<tr>
<td></td>
<td># square footage by terminal - LAX T2</td>
<td></td>
<td># acres - ONT</td>
</tr>
<tr>
<td></td>
<td># square footage by terminal - LAX T3</td>
<td></td>
<td># acres - VNY</td>
</tr>
<tr>
<td></td>
<td># square footage by terminal - LAX T4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># square footage by terminal - LAX T5</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># square footage by terminal - LAX T6</td>
<td></td>
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<td></td>
<td># square footage by terminal - LAX T7</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># square footage by terminal - LAX T8</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># square footage by terminal - LAX TBIT</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># square footage by terminal - ONT T1USO</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># square footage by terminal - ONT T2</td>
<td></td>
<td></td>
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<tr>
<td></td>
<td># square footage by terminal - ONT T4</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td># square footage by terminal - VNY</td>
<td></td>
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</tr>
</tbody>
</table>
Build on IMTG’s expertise to mine and compile data from LAWA’s various major systems and build dashboards. As shown in IMTG’s diagram, “Major LAWA Applications & Data Interfaces by Line-of-Business Units,” IMTG has begun to identify the interconnectivity of different databases and systems. This analysis will be useful in future compilation of needed data by mining existing LAWA data bases.

**PROPOSED ACTION STEPS**

1. The BSC Office and IMTG should work with LAWA divisions to develop data-collecting, dashboards, and data-sharing tools, tied to the BSCs and other LAWA project planning and operational initiatives.
2. The BSC Office should ensure that dashboards contain common measurements that all divisions monitor and manage.
3. The BSC Office, with ITMG support, should disseminate system-wide data points that all divisions use for preparing ratios.

4. IMTG should work with operating divisions to expand access to real-time data needed to support operational decision-making.
   4.1. The real-time data availability at ARCC is an excellent model; unfortunately, data are only available to staff physically located at ARCC.
   4.2. IMTG should develop systems to share data as appropriate across or among LAWA divisions.
   4.3. IMTG can build programs to calculate the ongoing ratios that are useful for trend and comparative purposes.

5. The BSC Office should work with IMTG and LAWA executives to generate dashboards for policymakers (BOAC and City officials) and other external stakeholders.

Proposed Action: LAWA should identify high-level metrics that the executives should focus on.

LAWA executives should have access to BSC reports that focus on high-priority areas, display aggregated metrics, and highlight deviations from the target.

LAWA executives should rely on their managers and staff to make day-to-day operational decisions and execute the medium- and long-term strategies of the airports. Executive team members should not need or want to involve themselves in detailed metrics about daily, weekly, or even monthly operations, unless a specific incident occurs or one of the metrics is significantly beyond normal thresholds. Metrics tracked by the executive team should:

- Focus on progress toward departmental goal accomplishment
- Highlight difficulties or problems that have arisen that the executives can help address or focus attention on

So while it is often necessary for supervisors to have a good handle on hourly or daily indicators, (e.g., parking lot closures), LAWA executives might request exception reports that inform them when expected service levels are not regularly being met, or when a one-time significant disruption in service is causing airport-wide impacts. For example, LAWA executives might receive exception reports if the average rises above 10%, or if something is taking longer than 90 days – the exception reports would be tied to some threshold of tolerance.

The value in developing exception reports is three-fold:

- The establishment of what threshold levels are expected provides an opportunity during the development of the reports for fruitful discussions between the executives and staff about operational levels, barriers, and expectations.
- The managers and supervisors can focus on achieving and maintaining service levels with the freedom to learn, make mistakes, improve processes, and develop their teams free from hour-to-hour oversight of the executive team about changes in individual indicators.
The executives, confident that they will hear about immediate problems that they need to pay attention to, can take a longer view, planning for a multi-year time horizon in their areas. They can assess what is needed to “take new ground” for their divisions, the airports, the City, or the region as contrasted with fighting existing fires in their areas of expertise.

These reports can be supplemented with more detailed, regular metrics on areas of strategic importance, or significant executive concern, discussed next.

**PROPOSED ACTION STEPS**

1. The BSC Office should delineate the kind of BSC information that is needed by LAWA middle management (division and section levels), LAWA executives, and the public (discussed further in Chapter II.6 under “Informed Public”)

   1.1. The BSC Office should ensure that the divisions focus on metrics (and the activities that drive them) that require attention. The focus should be on key areas of LAWA business that will improve with attention and worsen without it.

   1.2. Working with the divisions, the BSC Office should identify the frequency for monitoring different metrics, by division and other organizational levels.

   1.2.1. The BSC Office and executive team should monitor less frequently those metrics that are unlikely to change over a multi-year period (e.g., LA-themed concessions, which have 10-year agreements at a minimum).

2. All BSCs should have established targets for almost all metrics.

3. The BSC Office should use the targets to establish thresholds for issuing exception reports.

The spreadsheet is a sample BSC that shows the kinds of metrics that a LAWA executive might track.
## BSC Framework for LAWA Executives

<table>
<thead>
<tr>
<th>Performance Metrics</th>
<th>Org/ Div</th>
<th>Prior Years</th>
<th>Base Year</th>
<th>Target</th>
<th>Frequency Monitored</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Corporate Social Responsibility</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td># noise complaints per 10,000 departures</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ awarded to certified Local Small Businesses (LSBEs)</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$ contribution to City General fund through property taxes, possessory interest taxes, TOT, POT, and sales taxes in or adjacent to LAX</td>
<td></td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td># Air Quality Index level at LAX</td>
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<tr>
<td><strong>Customer/Guest Services</strong></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$ concession revenue per EPAX</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$ terminal concession revenue per sq. ft.</td>
<td></td>
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</tr>
<tr>
<td># incidents of TSA and CBP wait times exceeding target (20 minutes)</td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td># incidents of CTA roadway congestion exceeding targets (adjusted for time of day)</td>
<td></td>
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</tr>
<tr>
<td># emergency requests for repairs in public areas of the terminals</td>
<td></td>
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</tr>
<tr>
<td><strong>Airport Infrastructure/Operations</strong></td>
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<tr>
<td>Safety</td>
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<tr>
<td># runway incursion per 1,000 operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% hours Injury On Duty (IOD) of total hours paid</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>$ Workers’ Compensations costs per FTE</td>
<td></td>
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<tr>
<td>Capital</td>
<td></td>
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<tr>
<td># construction projects exceeding 10% over contract award</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>$ capital projects currently under construction</td>
<td></td>
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<td></td>
<td></td>
<td></td>
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<tr>
<td>$ deferred maintenance</td>
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<tr>
<td><strong>Internal Organization/Technology</strong></td>
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<tr>
<td>Productivity</td>
<td></td>
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<td></td>
<td></td>
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<tr>
<td>% hours overtime of total paid hours</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>% sick time of total paid hours</td>
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<td></td>
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<tr>
<td>$ total operating revenue per FTE</td>
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<tr>
<td><strong>Learning/ Employee</strong></td>
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<tr>
<td>Development</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>% compliance with mandated trainings</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>% supervisors trained in Supervisors Tool Kit</td>
<td></td>
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<tr>
<td><strong>Financial</strong></td>
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<tr>
<td>Income</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>$ revenue from landing fees</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ revenue from terminal concessions</td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ revenue from non-terminal concessions</td>
<td></td>
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<tr>
<td>Expense</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$ LAX operating expense per enplaned PAX (EPAX)</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>$ airline cost per enplanement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>$ debt per EPAX</td>
<td></td>
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</tbody>
</table>
Proposed Action: LAWA should develop performance measurements for other strategic or critical areas.

In Chapter I.2, KH discussed the need for strategic planning and the development of strategic priorities at LAWA. The CSR and Guest Experience BSCs are prototypes of strategic BSCs that require the involvement of multiple divisions and address high-priority issues at LAWA. LAWA has other high-priority areas that would benefit from the development of Strategy Maps and BSCs.

Examples of strategic priorities that might benefit from dedicated BSCs are:

- Improvement of management of capital construction (capital planning/budgeting, SAP, project management, ADG augmentation staff)
- Improvement of management of landside operations, facilities maintenance, commercial development, and technology development, particularly in face of anticipated disruptions
- Strengthening strategic, evidence-based management and accountability (performance budgeting, Internal Audit, Procurement)

LAWA managers and supervisors might also track such tactical or critical areas as:

- **Total number of shuttles entering the CTA, by industry**, which would show changes due to big projects, such as the APM construction, and smaller tactical changes in agreements with the shuttle operators. By aggregating the numbers to show the average of all shuttles entering the CTA per day and monthly, LAWA can begin to see changes day-to-day and month-to-month.

- **Exception reporting so that when a threshold level is surpassed, actions can be taken**. If LAWA starts to lose throughput, the relevant supervisors and managers can be alerted for immediate action. As discussed in the executive reporting section, if the threshold is exceeded regularly (e.g., more than 3 times a week for a period of 1 month,) then the CEO or COO would be informed.

- **Average headways**. LAWA should monitor the headways LAWA for airline connection buses — the buses that serve the terminals, the ones that serve LAX remote parking lots, the Green Line Connection Bus, and the employee shuttles. LAWA will have a good starting point if they can obtain those data points.

- **Throughput (the number of buses that pass a given point in a particular hour) — usually but not always at peak hours**. This information should be available from the AVI system in use at LAX. It measures the volume of transport capacity provided in peak periods. It is especially important, given the difficulty in accurately estimating the passenger loads on buses that do not impose passenger fares. It may be that headways and throughput can be gathered in a single analysis of AVI data.

- **Overall carbon emission impact** of vehicles in and approaching the CTA
**PROPOSED ACTION STEPS**

1. LAWA executives should identify 3 to 5 high-priority issues, based on the adopted Strategy Map, that would benefit from dedicated BSCs.
2. LAWA executives should form working groups of involved divisions to develop new strategic and tactical BSCs, including metrics need for operational monitoring as well as executive review.

**RECOMMENDATION II.1.2: LAWA SHOULD DESIGNATE FINANCE TO MANAGE FINANCIAL METRICS REPORTED IN ALL BALANCED SCORECARDS (BSC).**

Finding. Financial metrics have been developed, monitored, and presented by units throughout LAWA, not just by Finance.

Each LAWA division has identified what is important for them as financial indicators of performance; they each prepare their own means for developing, monitoring, and presenting financial metrics. This situation leads to reports that ostensibly show different numbers for the same purpose due to:

- Similarly titled metrics using different definitions of the data elements being monitored
- Differing time horizons for the data being presented
- No independent control or verification over data elements

Proposed Actions. LAWA should consolidate responsibility for financial metrics under Finance to prepare a LAWA-wide Financial BSC.

During the course of the IEA Survey, the KH team worked with Finance staff members and developed BSCs for finance and accounting, as well as common financial measurements for all LAWA divisions, already discussed in Recommendation II.1.1. The BSCs are important to Finance because they provide clear, concise metrics to demonstrate LAWA’s performance in:

- Meeting its strategic financial goals
- Managing its financial risks, including revenue and cost exposures
- Reporting that it is fiscally responsible
- Ensuring that this information is available to LAWA executives and other stakeholders in a consistent and timely fashion for effective decision-making

Moreover, Finance must be responsible for responding to BOAC and executive requests for specific financial information. As the unit in charge of SAP data, Finance is best positioned to query the financial database to ensure that accurate and complete information is reported.
1. In addition to defining and producing metrics for the Financial BSCs, Finance should define and gather financial metrics/ratios reported in other BSCs. This action will ensure the accuracy and consistency of financial and operational data being presented.

2. To simplify managerial use of financial data, Finance and IMTG should look into technology options for making all metrics, not just financial, available on dashboards (as discussed in Recommendation II.1.1). This financial information should be:
   2.1. Easily customized and accessed by all units within LAWA up to the CEO
   2.2. Readily converted into dashboards for policymakers (BOAC and City officials) and other external stakeholders

Consolidating responsibility for financial information within Finance will:
- Provide independent oversight over financial data being presented
- Ensure that all BSC information is presented in a timely and consistent manner
- Identify the central point of contact for all financial BSC inquiries
- Improve transparency in reporting LAWA’s progress toward meeting its financial goals and objectives

**BSCS DEVELOPED**

**RECOMMENDATION II.1.3: LAWA SHOULD REVIEW, REFINE, ADOPT, AND MONITOR THE BALANCED SCORECARDS (BSC) DEVELOPED DURING THE IEA SURVEY.**

Finding. The BSCs developed during the IEA Survey are a first step in designing and implementing a performance management system.

KH prepared the BSCs, contained in Chapter II.2 through Chapter II.5, as prototypes for LAWA to use to develop a performance management system. The developed BSC prototypes focus on:
- Corporate Social Responsibility
- LAX Guest Experience, including core services and world-class services
- Administrative support areas (Human Resources, Procurement, and Internal Audit)
- Finance, risk management, accounting, and budgeting

Proposed Actions. LAWA should build on the BSCs prototypes and monitor and enhance them in the coming years.

LAWA should build on KH’s initial work to develop a performance management system, tied to objectives, targets, and initiatives. The BSCs should help to identify trends and establish targets.

**Identifying trends.** As much as possible, the KH team obtained data for the last three years so that trends could be analyzed. As already mentioned, in some areas, multi-year data were not available because LAWA staff had not compiled performance measurements in the past and found the request to search historical data to be either not possible or too labor intensive. In those instances, we have
furnished current data (mostly FY 2014-2015), which can be used as a baseline for compiling data in future years.

In areas where the data are not available, KH has entered “NA.” There are some measurements that would be great to have and should eventually be compiled but, with the current LAWA capabilities, are not feasible to compile at this juncture.

**Benchmarking.** During the 1999 and 2008 IEA Surveys, the City requested the KH team to gather extensive information on best practices and benchmarks at other comparable airports around the world. This was not the request in the 2016 IEA Survey. Therefore, given LAWA’s commitment to improve the guest experience, LAWA should start collecting more benchmark information. In early 2016, LAWA will conduct guest surveys to better understand the guest experience; such surveys will require further analysis to derive meaningful metrics from the findings (e.g., # delayed/missed flights due to transportation delays). In analyzing trends and collecting information to establish objectives and targets, discussed next, LAWA should seek out best practices, not just prevailing practices, at other airports.

**Goals and objectives.** As discussed in Recommendation I.1.2, LAWA should use the goals and BSCs as a starting for developing objectives and setting targets. The goals are general and aspirational. In contrast, the objectives should be **Specific, Measurable, Achievable, and Relevant with Time lines (SMART objectives).** For example, in the area of economic impact, the goal might be that “LAWA’s airports are a trade gateway between the LA region and the world.” The specific objective for cargo trade, however, might be more specific, such as: “Increase trans-Pacific cargo volumes by 10% by December 2017.” This objective is meets the SMART criteria.

**Targets.** Some targets are already established at LAWA; others are mandated by Federal or State regulations (e.g., environmental requirements) or City policies (e.g., Local Small Business Enterprise (LSBE) participation rates). Establishing targets is difficult if neither baseline or prior trend data are available nor best practices/benchmarks at comparable airports are known. Where reference points are lacking, LAWA will need to use 2014-2015 as a baseline year and develop targets in subsequent years. Targets should reflect the reality that LAWA controls some factors, influences others, and has no leverage on still other factors that influence its business. These external factors include:

- The growth plans of the airline industry at LAX
- The growth plans and development of local businesses, including types of businesses that may or may not be dependent on air traffic
- The availability of parking within the area or changes in parking capacity affected by improvements or relocations
- The traffic flow of adjacent streets and highways
- Planned road improvements
- Passenger and worker interest in using rail/people mover options
- The impact of rail options on travel times and street congestion
- Potential economic impact for airport tenants (e.g., rental car agencies and parking facilities)
**BSC framework for goals, objectives, targets, and initiatives.** LAWA should use the BSC framework to display linkages among goals, objectives, measurements, targets, and initiatives. This framework increases the likelihood of ensuring a coordinated, concerted effort toward reaching LAWA’s overall goals.

### Sample BSC Tied to Targets and Initiatives

<table>
<thead>
<tr>
<th><strong>Economic &amp; Fiscal Impact</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> LAWA’s airports are a trade gateway between the LA region and the world.</td>
</tr>
<tr>
<td><strong>Priority Area:</strong> Cargo Trade</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Objectives</strong></th>
<th><strong>Measurements</strong></th>
<th><strong>Targets</strong></th>
<th><strong>Initiatives</strong></th>
</tr>
</thead>
</table>
| Increase trans-Pacific cargo volumes by 10% by December 2017 | - $ annual value of cargo, by country  
- % trade moving through LAX  
- $ air cargo value  
- # total tons air cargo  
- # tons landed  
- # tons departed | +10% increase in $ annual value of cargo  
+10% increase in market share | Targeted marketing campaigns to countries with greatest air cargo levels  
Incentive program for freight forwarders to use LAX |

The measurements are good indicators of performance.  
The targets should be based on measurements and build toward the achievement of the objective.  
The initiatives position LAWA to achieve its targets.

In the sample, a 10% increase in cargo is a stretch goal, given that almost 2 million tons of cargo came through LAX last year and LAWA’s limited ability to impact the number of tons of air cargo coming to LAX.

KH also considered data collection concerns:

**Frequency of data collection.** The KH team has prepared initial suggestions on frequency for collecting data, based on current practices at LAWA, prevailing practices at other entities, criticality of timing of data (airfield), ease in collecting data, and other criteria. The following abbreviations are used to indicate:
There are two questions about frequency of data collection that need to be answered:

1. **How frequently are the data collected?** This frequency can range from quarterly counting of paper requisitions, to daily maintenance of manual logs, to instantaneous electronic storage of AVI data.

2. **How frequently are the data compiled, reported, analyzed or used?** Decisions about this frequency will depend on who is using the data, and what they are using the data for. Once collected, data must then be aggregated, analyzed, and reported at different times to different organizational levels, based on need. For example, traffic officers at LAX may need to know hourly or daily traffic data, but the executive team does not and should not be micro-managing that level of data. Although process cycle time data must be monitored, it need not be monitored daily, weekly, or even monthly in some cases because the performance levels may not change. Cycle times are typically stable and do not change quickly.

**Data sources.** KH has documented and can provide the data sources of the BSC indicators so LAWA can make annual updates in subsequent years. Some of these data sources are specific LAWA divisions; others are websites in the public domain (e.g., FAA National Air Space System Status reports, www.fly.faa.gov/ois/jsp/summary_sys.jsp, or www.transtats.bts.gov).

**PROPOSED ACTION STEPS**

Implementing the BSC prototypes is the first step toward building a comprehensive performance measurement system, which LAWA will continually need to refine and improve. Other proposed action steps are outlined next.

1. LAWA should review, refine, adopt, and monitor the developed BSCs in Chapters II.2 through II.6.
2. As also discussed in Recommendation I.2.1, LAWA executives and BOAC should:
   2.1. Review, refine, expand on, and adopt the goals initially developed by KH
   2.2. Establish objectives that are specific, measurable, achievable, and relevant with time lines (SMART objectives).
   2.3. Establish targets for individual indicators linked to these measurable objectives
3. All LAWA division managers should have BSCs, focusing on the top 5 to 15 overall performance metrics in their areas.
   3.1. Additional operational metrics may be tracked as well and separate from BSCs.
4. LAWA divisions and cross-functional working groups should define targets by:
   4.1. Analyzing internal and external trends
   4.2. Conducting benchmarking studies
4.3. Assessing best practices at comparable airports

4.3.1. Given LAWA’s position in the industry, best practice assessments should keep in mind that the best practice may be the one(s) currently in use at LAWA. (ARCC would be one example of such a best practice.)

5. LAWA executives should review the developed BSCs’ trends, targets, and outcomes for each division at least once a year.

5.1. Some BSC metrics should be reviewed quarterly or monthly.

6. The BSC Office should:

6.1. Collect and monitor data on a pre-set schedule

6.2. Work with LAWA management to refine the BSCs based on each year’s experience and extend BSC target forecasts for at least two years

6.3. Communicate BSC trends, targets, and outcomes with involved LAWA divisions and executives

7. The BSC Office should collaborate with Finance during the budgeting process to ensure linkages between planned, measurable outcomes and budget expenditures

8. LAWA should share BSC outcomes with the public, as discussed regarding an “Informed Public” in Chapter II.6.

The general benefits of such a system are:

- Improved coordination and achievement of desired outcomes
- Improved efficiency, effectiveness, response, and planning
- Reduced risks and overall costs
- Increased transparency into LAWA’s ongoing progress in accomplishing its goals

When the BSCs contain metrics focused on specific strategic goals, the BSC benefits are greater.

Examples of benefits might involve LAWA’s ability to:

- Mitigate traffic congestion by understanding what actions and notifications to incoming guests work best to gain the best use of limited CTA capacity
- Maximize parking use by determining effective ways to notify inbound guests about the availability of CTA parking and alternatives when CTA parking capacity is saturated
- Identify actions that reduce airside accidents and incursions
- Reduce Cap & Trade charges by devising strategies to lower carbon emissions or create offsets
- Measure the effects of preventive maintenance and capital maintenance strategies to realize an optimum financial return on capital assets, as well as high levels of guest service
II.2: BSC – CORPORATE SOCIAL RESPONSIBILITY

OVERVIEW

Corporate Social Responsibility (CSR) is discussed in greater detail in Chapter I.3 and includes Economic & Fiscal, Environmental, Community Impact, and Governmental Relationships. Economic & fiscal and environmental issues are of great interest to the neighboring communities, as well as the entire SCAG region; therefore, KH focused on developing BSCs prototypes in those two areas.

LAWA has produced bi-annual reports on the environment since 2008, but had not developed any routine approach to economic impact data.

Because LAWA does not routinely compile CSR data, KH had to focus on compiling the latest Calendar Year (CY) or Fiscal Year (FY) data as a starting point. In most cases, the CY is for 2014 and the FY is for 2013-2014. These base years can form a foundation for subsequent updates.

ECONOMIC & FISCAL IMPACT

Chapter I.3 discusses the goals for LAWA’s Economic & Fiscal Impact. To gain an understanding of the economic impact, the KH team used a broad variety of primary data sources, ranging from the County of Los Angeles Office of the Assessor’s data, State of California databases, and U.S. Bureau of Labor Statistics records that were available through the Labor Market Information Division. The City of Los Angeles has General Plans, Specific Plans, and regional and local Transportation Plans that also helped to identify the potential for coordinated economic development opportunities, resulting from LAWA’s land use plans in place.

Alignment of Measurements with Goals

Table II.2a aligns these goals with suggested measurements. LAWA will still need to confirm these goals and establish objectives and targets. For example, for guest experience, an objective might be “increase guest satisfaction ratings from an overall average of 3.5 to 4.0 on a scale of 1-5 by December 2020.”
## Table II.2a: Sample Economic Impact Goals and Potential Measurements

<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>Sample LAWA Economic/Fiscal Impact Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal – Overall Economic Impact:</strong></td>
<td>Facilities operated by LAWA support the economic health of the region, as well as surrounding communities.</td>
</tr>
<tr>
<td><strong>Trade (Passengers and Cargo)</strong></td>
<td><strong>Goal:</strong> LAWA’s airports are a trade gateway between the LA region and the world.</td>
</tr>
<tr>
<td>Ranking</td>
<td>See performance metrics in Chapter II.6 on “BSC – Financial Performance” for rankings and aircraft movements.</td>
</tr>
<tr>
<td>Passengers</td>
<td></td>
</tr>
<tr>
<td># ranking in world airports</td>
<td></td>
</tr>
<tr>
<td># average aircraft movements per day</td>
<td></td>
</tr>
<tr>
<td># guest satisfaction rating</td>
<td></td>
</tr>
<tr>
<td>Trade</td>
<td></td>
</tr>
<tr>
<td>$ annual value of cargo</td>
<td></td>
</tr>
<tr>
<td># tons of cargo</td>
<td></td>
</tr>
<tr>
<td>% cargo trade moving through LAX</td>
<td></td>
</tr>
<tr>
<td>Cargo</td>
<td></td>
</tr>
<tr>
<td>$ air cargo value</td>
<td></td>
</tr>
<tr>
<td># total tons air cargo</td>
<td></td>
</tr>
<tr>
<td># tons landed</td>
<td></td>
</tr>
<tr>
<td># tons departed</td>
<td></td>
</tr>
</tbody>
</table>

### Jobs: Employment and Payroll

**Goal:** LAWA facilities are an important source of jobs to the residents of Los Angeles County and the Southern California Association of Governments (SCAG) region.
### Potential Measurements

<table>
<thead>
<tr>
<th>Sample LAWA Economic/Fiscal Impact Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td># total workers employed at airport</td>
</tr>
<tr>
<td># LA County residents employed by LAWA</td>
</tr>
<tr>
<td>- # LAWA employees by zip code</td>
</tr>
<tr>
<td>- # LAWA employees in LA City zip codes</td>
</tr>
<tr>
<td>- # LAWA employees in adjacent zip codes (not LA)</td>
</tr>
<tr>
<td># LA County residents employed at LAWA facilities (badged workers) other than LAWA employees</td>
</tr>
<tr>
<td>- # LAX/VNY workers by zip code</td>
</tr>
<tr>
<td>- # LAX/VNY workers in LA City zip codes</td>
</tr>
<tr>
<td>- # LAX/VNY workers in adjacent zip codes (not LA)</td>
</tr>
<tr>
<td># jobs to LA County at LAWA facilities by residents by others, direct employees and badged workers</td>
</tr>
<tr>
<td>$ labor force occupation and income data for each airport and surrounding markets</td>
</tr>
<tr>
<td>- $ LAX estimated payroll by zip code</td>
</tr>
<tr>
<td>- $ estimated payroll in LA City by zip code</td>
</tr>
<tr>
<td>- $ estimated payroll in adjacent city zip codes (not LA)</td>
</tr>
<tr>
<td># construction jobs at LAX (full-time equivalents (FTEs))</td>
</tr>
<tr>
<td># badged employees at LAX</td>
</tr>
<tr>
<td># net new jobs at LAX after construction</td>
</tr>
<tr>
<td># total workers employed in adjacent businesses (e.g., hotels, car rentals, parking operations, or restaurants within a 5-mile radius)</td>
</tr>
<tr>
<td># jobs in visitor serving sectors (e.g., hotels, tourist attractions, etc.)</td>
</tr>
<tr>
<td>39,381 badged employees and workers at LAWA (direct employment)</td>
</tr>
<tr>
<td>At least $1.2 billion in wages of the 39,381 badged employees and workers at LAWA (direct employment)</td>
</tr>
<tr>
<td>$153.1 million in LAWA payroll</td>
</tr>
<tr>
<td>See Chapter I.3 for an explanation of the GIS maps and the GIS maps for Los Angeles County. Appendix B contains the GIS maps for City of Los Angeles and the SCAG region.</td>
</tr>
</tbody>
</table>

### Businesses

**Goal:** LAWA facilities are an important source of opportunity for businesses in Los Angeles County and the SCAG region.

- $ business volumes
- # businesses benefiting LAWA’s business and job resources, programs, and efforts
- $1.2 billion in procurement activities to the regional economy
- $62 billion to local businesses
Potential Measurements

- # certified Small Businesses Enterprises (SBEs) doing business at LAWA
- $ awarded to certified SBEs
- % change from prior year of certified SBEs doing business at LAWA
- # certified Small Local Businesses Enterprises (SLBEs) doing business at LAWA
- $ awarded to certified SLBEs
- % change from prior year of certified SLBEs doing business at LAWA

See Chapter I.3 for an explanation of the GIS maps and the GIS maps for Los Angeles County. Appendix B contains the GIS maps for City of Los Angeles and the SCAG region.

Taxes

**Goal:** LAWA is an important source of tax revenue to the City of Los Angeles, Los Angeles County, and the rest of the State.

- $ retail sales tax generated at airports
- $ Transient Occupancy Tax (TOT) generated by adjacent hotels
- $ Parking Occupancy Tax (POT) generated at LAWA
- $ POT generated at airport-related parking
- $92.7 million to the County of Los Angeles annually in possessory & secured property taxes and sales taxes from retail, food, and beverages sold (another $33.4 million in sales taxes goes to the State of California)
- $876,000 in Parking Occupancy Tax (POT) generated by LAWA
## Potential Measurements

<table>
<thead>
<tr>
<th>Sample LAWA Economic/Fiscal Impact Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lots • $ secured property taxes or possessory interest taxes</td>
</tr>
<tr>
<td>• $ unsecured property taxes</td>
</tr>
<tr>
<td>• $ local payroll taxes</td>
</tr>
</tbody>
</table>

## Tourism

**Goal:** LAWA airports are key partners and stakeholders in the Los Angeles regional tourism industry.

- # estimated annual tourists arriving at LAX
- % of total Los Angeles tourists arriving at LAX
- $ revenue that tourism of LAWA passengers contributes to economy of Los Angeles region
- $ expended via tourism, based on surveys or estimates of PAX through LAX for business, leisure, and transit to analyze spending patterns for each category
- % revenue that tourism from LAWA passengers contributes to the local economy

See performance metrics in Chapter II.3 on “BSC – LAX Guest Experience.”

## Land Use

**Goal:** LAWA plans prudently and seeks to use the land it needs in ways that improve the environment and aesthetics of airport properties.
Potential Measurements

- $ increases in assessed valuation in a 5-mile radius around LAX and VNY
- # land use and development opportunity sites around LAX and VNY
- $ investments and land acquisitions adjacent to LAWA airports, made by LAWA
- $ impact of LAWA’s property management and leasing policies and procedures with respect to development, financing, and leasing of airport buildings and grounds to aviation and non-aviation tenants

Sample LAWA Economic/Fiscal Impact Performance Indicators

<table>
<thead>
<tr>
<th>CSR-Fiscal and Economic Impact Indicators</th>
<th>Land Use</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWA Sq. Ft. Enclosed Space</td>
<td>$1,065,765</td>
</tr>
<tr>
<td>Enclosed Space</td>
<td>$1,065,765</td>
</tr>
<tr>
<td>Total Sq. Ft.</td>
<td>11,094,066</td>
</tr>
</tbody>
</table>

Fiscal Viability

**Goal**: LAWA operates facilities in a fiscally responsible manner, ensuring the long-term sustainability of its assets.

- LAWA bond rating
- $ Annual net revenue (increase or decrease in reserves)
- $ debt per EPAX
- $ cost per enplanement
- $ cost per enplanement in comparison to ranking among top 20 US airports
- $ revenues generated – total and landing fees

Environmental Fines/Trade

**Goal**: LAWA’s consistently reduces its carbon-emission fines. In the long term, LAWA envisions the Carbon Cap-and-Trade system as a possible potential revenue opportunity.

- $ fines for Central Utility Plant (CUP) and fuel throughput
- # Green House Gas (GHG) emission levels
- $ invested in reducing carbon emissions

See next section in Chapter II.2 for greater details on Environmental Responsibility.

Balanced Scorecard – CSR for Economic & Fiscal Impact

The next pages display the initial CSR BSC for Economic & Fiscal Impact that KH developed as a starting point for LAWA.
## CSR Measurement Description

<table>
<thead>
<tr>
<th>#</th>
<th>ECONOMIC &amp; FISCAL IMPACT</th>
<th>FY 2013-2014 or CY 2014</th>
<th>Target 2020</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Local Suppliers</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>$ total purchased from local suppliers</td>
<td>$1,247,358,286</td>
<td>SCAG Q</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>$ total awarded to firms in LA City</td>
<td>$831,366,327</td>
<td>TBD SA</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>$ total awarded to firms in LA County</td>
<td>$963,524,793</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>$ total awarded to firms surrounding LAX (El Segundo, Inglewood, etc.)</td>
<td>$62,358,711</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>$ total awarded to firms in California</td>
<td>$1,502,671,401</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td># new local suppliers identified</td>
<td>NA</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Employment &amp; Household Income</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td># jobs supported directly by LAWA</td>
<td>39,381</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>$ (estimated) earned by local households in LA County due to LAWA</td>
<td>$150,014,413</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>$ (estimated) earned by local households in LA City due to LAWA</td>
<td>$45,563,335</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>$ (MM) labor income in City of LA - LAWA</td>
<td>$150,014,413</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>$ (MM) labor income in adjacent zip codes - LAWA</td>
<td>$11,336,981</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>LAWA's Local Expenditures</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>$ expenditures in LA County</td>
<td>$963,524,793</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>3.2</td>
<td>$ expenditures in LA City</td>
<td>$831,366,327</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Tax Revenues</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1</td>
<td>$ estimated sales tax generated by airport-related businesses</td>
<td>$4,163,960</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>4.2</td>
<td>$ Parking Occupancy Tax (POT) - LAWA</td>
<td>$876,000</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>4.3</td>
<td>$ Possessory Interest Tax Revenue - LAX</td>
<td>$39,911,248</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>4.4</td>
<td>$ Secured Property Tax Revenue - LAX</td>
<td>$13,708,686</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>4.5</td>
<td>$ Possessory Interest Tax Revenue - VNY</td>
<td>$16,941,663</td>
<td>TBD A</td>
<td></td>
</tr>
<tr>
<td>4.6</td>
<td>$ Secured Property Tax Revenue - VNY</td>
<td>$581,067</td>
<td>TBD</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Economic Output</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1</td>
<td>$ economic output - LAWA</td>
<td>$963,524,793</td>
<td>TBD A</td>
<td></td>
</tr>
</tbody>
</table>
ENVIRONMENTAL RESPONSIBILITY

Chapter I.3 discusses the goals for LAWA’s environmental responsibility.

Alignment of Measurements with Goals

Table II.2b aligns these goals with suggested measurements. LAWA will still need to confirm these goals and establish objectives and targets. For example, for green buying, an objective might be “increase consumable building supplies that meet IFMA environmental standards or equivalent by 30% by June 2018” or something similar.

Table II.2b: Sample Environmental Responsibility Goals and Potential Measurements

<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>Sample LAWA Environmental Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Buying</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Goal:</strong> Sustainability is a priority in purchasing decisions regarding sources and materials purchased.</td>
<td></td>
</tr>
<tr>
<td>- % consumable building supplies purchased that meet IFMA environmental standards or equivalent</td>
<td>- #/$/% consumable products meeting IFMA environmental standards or equivalent</td>
</tr>
<tr>
<td>- % non-recyclable products</td>
<td>- #/$/% consumable building supplies purchased that meet IFMA environmental standards or equivalent</td>
</tr>
<tr>
<td>- #/$/% suppliers engaged in Extended Producer Responsibility (EPR) and resource recovery</td>
<td></td>
</tr>
<tr>
<td><strong>Water Conservation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Goal:</strong> Water is conserved to the extent feasible.</td>
<td></td>
</tr>
<tr>
<td>- % overall reduction in water usage compared to base year, using California water reduction standards</td>
<td>- Gallons Potable Water consumed: 501,786,824</td>
</tr>
<tr>
<td></td>
<td>o Goal: 20% reduction by 2017</td>
</tr>
<tr>
<td>- # million gallons water consumed</td>
<td>- Gallons reclaimed water consumed: 57,411,992</td>
</tr>
<tr>
<td>- % of target market</td>
<td>- Landscaped area using reclaimed water: 63% (51 acres)</td>
</tr>
<tr>
<td>- # gallons total potable water consumed LAX</td>
<td>- Landscaped areas using computerized, Internet-based, controlled irrigation: 95%</td>
</tr>
<tr>
<td>- # gallons runoff water exceeding pollution standards</td>
<td>To be gathered:</td>
</tr>
<tr>
<td>- % drought-related goals achieved</td>
<td>- Locally sourced water – Goal: 50% by 2035</td>
</tr>
<tr>
<td>- # gallons in reduced water usage per 100,000 PAX^5</td>
<td>- Recycled water</td>
</tr>
<tr>
<td></td>
<td>- Storm water captured</td>
</tr>
</tbody>
</table>

**Noise**

**Goal:** LAWA encourages and promotes aircraft operations that minimize community noise impact. LAWA takes steps to mitigate traffic and aircraft noise impact on surrounding communities.

<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>Sample LAWA Environmental Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td>- # aircraft exceeding Federal noise limits per month</td>
<td>- Sound insulation completed:</td>
</tr>
<tr>
<td></td>
<td>- Total LAWA: 2,211</td>
</tr>
</tbody>
</table>

---

5 Based on Million Annual Passengers (MAP).
<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>Sample LAWA Environmental Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td># noise complaints per 10,000 departures</td>
<td>El Segundo 39% of eligible structures</td>
</tr>
<tr>
<td>% change noise complaints per 100,000 PAX</td>
<td>County of LA: 56% of eligible structures</td>
</tr>
<tr>
<td># aircraft exceeding Federal limits</td>
<td>Inglewood 61% of eligible structures</td>
</tr>
</tbody>
</table>

To be reported:
- Noise complaints at LAX
- Noise complaints at VNY
- Noise complaints per 1,000 departures at LAX
- Noise complaints per 100 departures at VNY
- Noise exceeding threshold by aircraft type at LAX
- Noise exceeding threshold by aircraft type at VNY
- Noise exceeding threshold by direction of departure at LAX
- Noise exceeding threshold by direction of departure at VNY

**Energy Stewardship**

**Goal:** LAWA takes consistent steps to use its energy resources more efficiently.

- % renewable energy generated on-site
- % green power purchased of total electricity used
- $ cost of vehicle energy at LAX
- % change of cost of vehicle energy at LAX per 100,000 PAX
- # jet fuel throughput
- # EV charging stations: 47
- $ green power purchase: 20,917,626 kWh
- % of total power purchase from green sources: 9.8%
- # tons California Cap and Trade Total offset emissions (GHG and AQ): 36,230 tons

**Greenhouse House Gas/Vehicular Miles Traveled (GHG/VMT)**

**Goal:** LAWA takes steps to reduce GHG and VMT where feasible.

- # tons LAX CA Cap & Trade total offset emissions (GHG and AQ) in tons
- # GHG buildings LAWA
- # VMT LAX goods movement
- % change GHG per 100,000 PAX
- % change VMT per 100,000 PAX
- # VMT of employees at LAWA facilities
- # vehicles entering CTA (average per day)
- # VMT associated with trips in and out of LAX

See Chapter I.3 for an explanation of the GIS maps and the GIS maps for Los Angeles County. Appendix B contains the GIS maps for City of Los Angeles and the SCAG region.
### Potential Measurements

**Sample LAWA Environmental Performance Indicators**

<table>
<thead>
<tr>
<th>2025</th>
<th>2035</th>
<th>2050</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall</td>
<td>Buildings</td>
<td>Goods Movement</td>
</tr>
<tr>
<td><img src="image.jpg" alt="Graph" /></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### LAX Goals for Vehicle Miles Traveled Reduction

- LAX Cars
- LAX Goods Movement

<table>
<thead>
<tr>
<th>2025</th>
<th>2035</th>
</tr>
</thead>
<tbody>
<tr>
<td><img src="image.jpg" alt="Graph" /></td>
<td></td>
</tr>
</tbody>
</table>

### Air Quality

**Goal:** LAWA takes steps to minimize and diminish negative impacts on air quality.

- # vehicles entering CTA (average per day)
- # Carbon Dioxide LAX emissions at stationary sources (buildings) MTCO2
- # Carbon Dioxide at LAX in LAWA owned vehicles MTCO2
- # Carbon Dioxide at LAX in non-LAWA-owned vehicles MTCO2
- % change CO2 of LAWA owned vehicles per 100,000 PAX
- % change CO2 of non-LAWA-owned vehicles per 100,000 PAX
- % improvement in air quality (by pollutant)
- % change in GHG
- % change per 100,000 PAX

- CO2 emissions from LAX buildings: 9,339 MT
- FlyAway passengers: 1,576,945
- CO2 rideshare emission reduction: 5,700 MT

### LAX Alternate Fuel Vehicles 2014

![Pie Chart](image.jpg)
### Potential Measurements

<table>
<thead>
<tr>
<th>Materials and Resources</th>
<th>Sample LAWA Environmental Performance Indicators</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> LAWA conserves materials and natural resources and uses renewable materials whenever possible.</td>
<td></td>
</tr>
<tr>
<td>- % solid waste diverted through recycling</td>
<td>Solid waste generated by LAWA and all tenants that is recycled: 50%</td>
</tr>
<tr>
<td>- % tenant recycling – LAX</td>
<td>Recycled cardboard: 8,206 tons</td>
</tr>
<tr>
<td>- % tenant recycling – VNY</td>
<td>Municipal solid waste sent to landfill/incinerator: 38,133 tons</td>
</tr>
<tr>
<td>- % waste stays in LA County</td>
<td>Recycled municipal solid waste at LAX, excluding construction concrete: 25,459 tons</td>
</tr>
<tr>
<td></td>
<td>Recycled construction and demolition debris: 13,282 tons</td>
</tr>
<tr>
<td></td>
<td>Diverted hazardous waste: 285.7 tons</td>
</tr>
<tr>
<td></td>
<td>Green custodial supplies: LAX 460 items</td>
</tr>
</tbody>
</table>

#### Tons Recycled Material

**LAX**

![Bar chart showing tons of recycled material by category](chart.png)

#### Green Construction

| Goal: LAWA uses best practices of green construction. |  |
|-----------------------------------------------------|  |
| - % of total square footage LEED certified buildings | TBIT: LEED Gold certification  |
|  | Central Utility Plant (CUP): Leed Gold certification  |
|  | Square Feet Permeable Paving: 42,957  |
| To be gathered: |  |
|  | # square footage LEED certified buildings  |
|  | # LEED certified buildings  |
|  | # square footage of LAGBC Tier 1 projects  |
|  | # LAGBC Tier 1 Projects  |

#### Natural Resources

| Goal: LAWA conserves natural resources where feasible. |  |
|-----------------------------------------------------|  |
Potential Measurements | Sample LAWA Environmental Performance Indicators
--- | ---
% storm water capture LAX | Acres El Segundo Blue Butterfly Habitat conserved: 202.8
# (temperature) heat from LAX asphalt | Average number of El Segundo Blue Butterflies: 26,881
# natural gas consumption per cubic feet | Acacia & Ficus trees donated to zoo program: 130
# electricity used (KW hours) | Tarplants: 138
% solid waste recycled, tons | Dune volunteers: 272
% change for each from last month, this month last year | Water (see water measurements above)
% change per 100,000 PAX |
# acres preserved habitat (El Segundo blue butterfly) |

**Balanced Scorecard – CSR for Environmental Responsibility**

KH identified more than 350 metrics for Environmental Responsibility, listed in Appendix D. The next pages display the Environmental Responsibility BSC prototype at LAWA. This BSC reflects the top 50+ metrics for Environmental Responsibility, reflecting data available at LAWA and the metrics that LAWA should begin to monitor. As LAWA becomes more sophisticated in performance measurement management, it will build on and expand on this BSC prototype.
<table>
<thead>
<tr>
<th>#</th>
<th>CSR Measurement Description</th>
<th>FY 2013-2014 or CY 2014</th>
<th>Target 2020</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>ENVIRONMENTAL RESPONSIBILITY</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Green Buying</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.1</td>
<td>$ consumable products purchased that meet IFMA environmental standards or equivalent</td>
<td>NA</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2.1.2</td>
<td>% consumable building supplies purchased that meet IFMA environmental standards or equivalent</td>
<td>NA</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2.1.3</td>
<td># environmental compliance audits completed</td>
<td>NA</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.2</td>
<td>Water Conservation</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.2.1</td>
<td># gallons total Potable Water consumed LAX</td>
<td>501,786,824 M</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>2.2.2</td>
<td># gallons total Potable Water consumed VNY</td>
<td>15,526,236 M</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>2.2.3</td>
<td># gallons Reclaimed water consumed LAX</td>
<td>57,411,992 M</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>2.2.4</td>
<td># acres Drought tolerant area LAX</td>
<td>1.2</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.2.5</td>
<td># landscaped area using reclaimed water LAX</td>
<td>51</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.3</td>
<td>Noise</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3.1</td>
<td># sound insulation completed Total LAWA</td>
<td>2,211</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.3.2</td>
<td>$ awarded for Sound Insulation Grant (SIG) program</td>
<td>$ 90,345,000</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2.3.3</td>
<td># LAX noise complaints/10,000 departures</td>
<td>NA</td>
<td>0 AH</td>
<td></td>
</tr>
<tr>
<td>2.3.4</td>
<td># noise complaints LAX</td>
<td>NA</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>2.3.5</td>
<td># noise complaints VNY</td>
<td>NA</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>2.4</td>
<td>Energy Stewardship</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4.1</td>
<td># Total EV charging stations</td>
<td>47</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.4.2</td>
<td># kWh Green power purchase</td>
<td>20,917,626 Q</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4.3</td>
<td>$ Green power purchase</td>
<td>$ 627,529 Q</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2.4.4</td>
<td>% Green power purchase total electricity</td>
<td>9.8%</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2.4.5</td>
<td># sf Building automation systems at admin &amp; safety base retrofit</td>
<td>64,500</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.4.6</td>
<td>% retrofit to LED 851 taxiway edge lights; 20% of 344 in-pavement runway guard lights; and,</td>
<td>35</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.4.7</td>
<td>% retrofit to LED 344 in pavement runway guard lights;</td>
<td>20</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.4.8</td>
<td>% retrofit to LED of 192 airfield signs.</td>
<td>5</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.5</td>
<td>Greenhouse Gas/Vehicle Miles Traveled (GHG/VMT)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.5.1</td>
<td># average vehicle minutes curb dwell time X average greenhouse gas emissions per car per minute</td>
<td>NA</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>2.5.2</td>
<td># GHG Buildings LAWA</td>
<td>NA</td>
<td>Reduction of 45% by 2025; 60% by 2035; 80% by 2050 from 1990 levels. 55% from 2010 levels.</td>
<td>A</td>
</tr>
<tr>
<td>2.5.3</td>
<td># GHG Buildings LAX</td>
<td>NA</td>
<td>See target above</td>
<td>A</td>
</tr>
<tr>
<td>#</td>
<td>CSR Measurement Description</td>
<td>FY 2013-2014 or CY 2014</td>
<td>Target 2020</td>
<td>Freq</td>
</tr>
<tr>
<td>-----</td>
<td>-------------------------------------------------------------------------------------------</td>
<td>--------------------------</td>
<td>-------------</td>
<td>------</td>
</tr>
<tr>
<td>2.5.4</td>
<td># GHG Buildings ONT</td>
<td>NA</td>
<td>See target above</td>
<td>A</td>
</tr>
<tr>
<td>2.5.5</td>
<td># GHG Buildings VNY</td>
<td>NA</td>
<td>See target above</td>
<td>A</td>
</tr>
<tr>
<td>2.6</td>
<td><strong>Air Quality</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.6.1</td>
<td># LAWA autos</td>
<td>544</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.2</td>
<td># LAWA buses</td>
<td>81</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.3</td>
<td># LAWA pickups</td>
<td>243</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.4</td>
<td># alternate fuel vehicle total-LAWA</td>
<td>599</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.5</td>
<td>% total fleet using alternative fuels-LAWA</td>
<td>59%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.6</td>
<td># LAX Single Occupancy Vehicle (SOV) trips per day</td>
<td>825</td>
<td>SA</td>
<td></td>
</tr>
<tr>
<td>2.6.7</td>
<td># alternate fuel VNY vehicles</td>
<td>18</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.8</td>
<td># carbon dioxide LAX emissions - stationary sources (buildings) MTCO2</td>
<td>9,339</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.6.9</td>
<td># Flyway average daily ridership</td>
<td>4,320</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>2.6.10</td>
<td># FlyAway emissions reduced per day</td>
<td>38,758</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>2.7</td>
<td><strong>Materials &amp; Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.7.1</td>
<td>% total solid waste generated by LAWA and all tenants that is recycled</td>
<td>50%</td>
<td>70%</td>
<td>Q</td>
</tr>
<tr>
<td>2.7.2</td>
<td># tons plastic recycled LAX</td>
<td>859</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.3</td>
<td># tons glass recycled LAX</td>
<td>11</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.4</td>
<td># tons metal recycled LAX</td>
<td>454</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.5</td>
<td>% Total Waste Diversion Rate</td>
<td>67%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.6</td>
<td># Municipal Solid Waste Total tons to landfill/incinerator LAX</td>
<td>38,133</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.7</td>
<td># tons diverted Hazardous Waste, including Universal waste</td>
<td>285.7</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.8</td>
<td># tons recycled Construction and demolition debris</td>
<td>13,282</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.7.9</td>
<td># tons recycled Master Plan Construction Concrete Recycling LAX (includes rock, concrete, and asphalt)</td>
<td>155,383</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.8</td>
<td><strong>Green Construction</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.8.1</td>
<td># LEED certified buildings (CUP)</td>
<td>1</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.8.2</td>
<td>% total square footage LEED certified buildings</td>
<td>NA</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.8.3</td>
<td># sf area permeable pavement LAX</td>
<td>42,957</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.9</td>
<td><strong>Natural Resources</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.9.1</td>
<td># acres El Segundo Blue Butterfly Habitat conserved (Buckwheat)</td>
<td>202.8</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.9.2</td>
<td>% storm water capture LAWA</td>
<td>NA</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.9.3</td>
<td>% storm water capture LAX</td>
<td>NA</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.10</td>
<td><strong>Awards</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.10.1</td>
<td># LA Green Business Certification awards non-LAWA</td>
<td>2</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.10.2</td>
<td># LA Green Business Certification awards LAW A</td>
<td>3</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.11</td>
<td><strong>Reports &amp; Clearances</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.11.1</td>
<td># Level 3 Airport Carbon Accreditation Achieved</td>
<td>In Progress</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>
## STAKEHOLDER IMPACT

Chapter I.3 discusses the goals for LAWA’s community impact with its neighbors, Los Angeles, and the Southern California region. Table II.2c shows the linkages between community impact goals and potential measurements.

### Table II.2c: Sample Community Impact Goals and Potential Measurements

<table>
<thead>
<tr>
<th>Community Impact Goals</th>
<th>Potential Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Local Communities and Neighbors</strong></td>
<td></td>
</tr>
</tbody>
</table>
| LAWA maintains good relationships with its local neighbors by mitigating and minimizing the environmental impact (noise, air quality, and traffic) on local communities. | ▪ Economic and fiscal impact measurements (see Table II.2a)  
▪ Environmental responsibility measurements (see Table II.2b)  
▪ % local residents’ satisfaction ratings on community surveys |
| Simultaneously, it contributes to the economy of its neighbors. LAWA plans inclusively with its local neighbors. | |
| **City of Los Angeles’s Image** | |
| LAWA is an asset to the City of Los Angeles by welcoming visitors from the U.S. and around the world to a modern, efficiently-run airport. | ▪ Economic and fiscal impact measurements (see Table II.2a)  
▪ Environmental responsibility measurements (see Table II.2b)  
▪ Governmental relations goals (see Table II.2d)  
▪ # international passengers  
▪ # domestic passengers  
▪ % guest satisfaction ratings (ACI/ASQ survey, discussed in Chapter II.3 on “BSC – LAX Guest Experience”) |
| **Southern California Region (County of Los Angeles, public agencies)** | |
| LAWA cooperates with County of Los Angeles departments and other agencies, such as LA Metro, to improve the value of the airports as Southern California assets. | ▪ Economic and fiscal impact measurements (see Table II.2a)  
▪ Environmental responsibility measurements (see Table II.2b)  
▪ Governmental relations goals (see Table II.2d)  
▪ County of Los Angeles Department of Regional Planning (DRP) satisfaction with LAWA’s support of local plans  
▪ Successful completion of LAMP  
▪ Successful implementation of development around LAMP project elements |
**GOVERNMENT RELATIONS**

Chapter I.3 discusses the goals for LAWA’s governmental relations. Table II.2d aligns these goals with suggested measurements.

<table>
<thead>
<tr>
<th>Governmental Relations Goals</th>
<th>Potential Measurements</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Supporting LA City’s Interests</strong></td>
<td></td>
</tr>
</tbody>
</table>
| LAWA supports the fiscal well-being of LA City by operating fiscally sound, welcoming and safe airports that contribute to the economic growth of the region through jobs, tax revenue, trade, and other factors. LAWA furthers the successful implementation of LA City goals, including the Mayor’s Sustainable City pLAn. | ▪ Economic and fiscal impact measurements (see Table II.2a)  
▪ Environmental responsibility measurements (see Table II.2b)  
▪ % Mayor’s goals and pLAn initiatives adopted/reflected at LAWA  
▪ % City goals adopted/reflected at LAWA |
| **Supporting LAWA’s Interests** | |
| LAWA advances its informed interests, as defined by its mission and validated by BOAC, with government and public agencies at all levels, as well as with industry, unions, and the public. | ▪ Report on activities of Governmental Affairs (GA) office  
▪ $ spent on Federal, State, and local activities  
▪ $ spent on GA lobbying and advocacy  
▪ Report on activities of GA office  
▪ $ spent on GA lobbying and advocacy  
▪ $ legal defense  
▪ $ spent for suits  
▪ $ saved by winning suits  
▪ % success in lawsuits |
| **Mechanisms and Systems** | |
| LAWA ensures that systems are in place to advocate for its mission as it relates to governmental action at all levels. Advocacy mechanisms are assessed, on the basis of the level of support LAWA garners for its initiatives. | ▪ Survey of LAWA management regarding successful advocacy channels and mechanism |
| **Communication** | |
| LAWA Government Relations communicates in a timely fashion to relevant entities inside and outside of the organization on matters that could impact LAWA. This process is supported within LAWA by swift and accurate communication of needed information to Government Relations. | ▪ # separate issues reported outside LAWA  
▪ # separate issues reported inside LAWA  
▪ % led to legal action  
▪ % satisfaction within LAWA timeliness and substance of reporting  
▪ # separate issue reported to GA  
▪ % satisfaction of GA with timeliness and substance of reporting  
▪ % satisfaction of Joint Administrators with timeliness and substance of reporting  
▪ % satisfaction of City officials with timeliness and substance of reporting |
II.3: BSC – LAX GUEST EXPERIENCE

OVERVIEW

This chapter builds on the concepts outlined in “LAX Guest Experience” in Chapter I.4. LAWA developed the following “mind map” diagram to depict the many of the factors that contribute to the guest experience.

LAWA Guest Experience
BSC Guest Experience Framework

To simplify the “Mind Map,” KH focused on two key aspects of the Guest Experience initiative, as discussed in Chapter I.4 on “LAX Guest Experience:”

- **Core services.** Core services are necessary for operating an airport. They are “must have” services, which will result in negative consequences if they do not exist or are done poorly.

- **World-class services.** World-class services are value-added services that make an airport stand out. Such world-class services also position airports to rank among the world’s best in its class and exceed guests’ expectations.

### Proposed LAWA Guest Experience Priorities

**Core Services:**
- Safe & Secure
- Access: Time/ Efficiency
- Air Services Development
- Maintained & Clean

**World-Class Services:**
- Ambiance & LA Sense of Place
- Services, Concessions, Amenities, & Technology
- Hospitality (Informed & Friendly Staff)
- Informed Guests

---

**ACI Survey**

*LAWA’s planned survey will provide greater insights into the guest experience at LAX.* As also discussed in Chapter I.4, LAWA’s Guest Experience Working Group has retained Airport Council International—North (ACI-NA) to conduct a guest survey in early 2016, which will provide greater insights into LAX’s performance. This ACI/ASQ survey will reach guests actually using LAX; the results will be complemented with a separate LAWA contract with another survey company (Unison) early next year.

**LAWA Collaboration with Partners**

*LAWA lacks access to data that affect the guest experience but are maintained and monitored by its partners,* such as the airlines, TSA, etc., KH has color-coded those metrics:

- Private companies (airlines, private shuttle services, private parking lots, concessionaires, etc.) in peach
- Other governmental agencies (TSA, CBP, FAA, CBP) in yellow

As an example of these data challenges:

- In recent years, the LAX Airline Connection and the remote lot shuttles have been under one operator, but the ground transportation system cannot distinguish the routes since the operator rotates the fleet among the various routes. The reliability of data also has some limitations because vehicle transponders do not always work.

- LAWA has raw data on rental car, parking, and hotel shuttles that it can analyze for vehicle
headways, but it would take numerous, dedicated days to distill the information to track peak hours annually. LAWA can distill the data to prepare snapshots of specific peak periods/peak days if needed.

**Leading and Lagging Indicators**

*Finding.* Many improvements in aggregate will improve guest experiences and ratings.

Developing strategic measurements for the guest experience is a new way of thinking at LAWA and consists of both leading and lagging indicators. Outcomes or “lagging” indicators are driven by daily efforts and activities that produce supportive results, measured by “leading” indicators. For example, the lagging indicator of guest satisfaction is influenced by such leading indicators as preventive maintenance of elevators and escalators, frequency of terminal custodial inspections, great concessions that are open and accessible, etc.

There are some changes LAWA can make in the short term that in aggregate will have an overall positive impact on the guest experience. For example, improved preventive maintenance and working elevators help guests to be satisfied with the facilities. To improve guest satisfaction with efficient movement through the terminals to their gates requires many components. Airline ticket counters need to efficiently check in passengers and their baggage. TSA requires sufficient staffing and equipment to achieve acceptable wait times. Restrooms need to be clean and operational with minimal lines and wait times. These are just a few of the components that can affect efficient movement through the terminals.

It will likely take many improvements in leading indicators (LAWA’s infrastructure, operations, and people/work culture) to achieve higher levels of satisfaction with the lagging indicator – overall guest satisfaction.
CORE SERVICES

Finding. LAWA’s efforts to improve some of its leading indicators for core services, in aggregate, will improve the guest experience.

**Core services are those fundamental airport operations that must be done well**, such as safe & secure, easy access, and maintained & clean facilities. Core services also entail an expectation that air services from an airport offer convenient flight schedules that go where travelers want to fly.

As already mentioned, improvement in the overall guest experience requires enhancements in many areas that in combination result in better outcomes. KH worked with LAWA’s Guest Experience Working Group to identify these assumed linkages and develop metrics for those that were deemed to be most critical. Table II.3a displays examples of leading and lagging indicators that might be helpful in ensuring LAX delivers its core services effectively and efficiently.

### Table II.3a: Sample Lagging and Leading Indicators for Core Services

<table>
<thead>
<tr>
<th>Focus</th>
<th>Potential &quot;Lagging&quot; Guest Goals or Measures</th>
<th>Potential &quot;Leading&quot; Measures: People, Operations, Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority area for continuous improvements</td>
<td>The lagging indicator is the ultimate goal or measurement for a desired strategic outcome.</td>
<td>To achieve desired strategic outcomes requires many tactical initiatives that together will help achieve the lagging indicator(s).</td>
</tr>
</tbody>
</table>

**SAFE AND SECURE**

| Personal Safety | Travelers and guests, using LAWA’s airports, have personal safety in and around all LAWA facilities, including the airport environments, in the LAX Central Terminal Area, at VNY, in the terminals, and on airplanes. | **Serious crimes** against persons reported at LAX arrayed by location and type of crime (homicide, rape, robbery, felony assault, felony larceny, arson)  
- # criminal complaints - terminals  
- # criminal complaints - parking  
**Traffic and pedestrian safety**  
- # traffic accidents  
- # pedestrian-involved accidents  
**Visible law enforcement presence**  
- # posts staffed  
- # uniformed officers per 100,000 PAX  
**Safe facilities**  
- # reported injuries, by terminal  
**Emergency preparedness**  
- # emergency response drills, by terminal  
**Air safety** (which is not under LAWA’s direct jurisdiction)  
- # incidents on planes when LAX is called in to assist Federal law enforcement |

| Property Security | Travelers and guests, using LAWA’s airports, have security of property in and around all LAWA facilities, including the airport environment, |  
|-------------------|-----------------------------------------------------------------|------------------------------------------------|
|                   |                                                                 | **# reported major property thefts, by location**  
|                   |                                                                 | **# reported incidents of vandalism, by location** |

6 Available through LAPD’s West Traffic Division

7 Available through LAPD’s West Traffic Division
<table>
<thead>
<tr>
<th>Focus</th>
<th>Potential &quot;Lagging&quot; Guest Goals or Measures</th>
<th>Potential &quot;Leading&quot; Measures: People, Operations, Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Potential &quot;Lagging&quot; Guest Goals or Measures</td>
<td>in the LAX Central Terminal Area, at VNY, in the terminals, and on airplanes.</td>
<td></td>
</tr>
</tbody>
</table>

**ACCESS: TIME AND EFFICIENCY**

**Efficient Access - Ground Transport**

| Transport, Roadway, and Parking Sufficiency                           | # minutes CTA transit time                                                                                   | • # vehicles entering CTA                                                                                                 |
|                                                                      |                                                                                                               | • # maximum minutes to complete CTA orbit – upper                                                                          |
|                                                                      |                                                                                                               | • # maximum minutes to complete CTA orbit - Lower                                                                            |
|                                                                      |                                                                                                               | • # average minutes from remote commercial parking operations (e.g., bus terminal by Lot C) to terminal during peak times |
|                                                                      |                                                                                                               | • # roadway area shutdown requests approved by calm                                                                         |
|                                                                      |                                                                                                               | • # lane closures exceeding 10 minutes in CTA                                                                               |
|                                                                      |                                                                                                               | • # vehicles in CTA at peak times                                                                                           |
|                                                                      |                                                                                                               | • # FlyAway passengers by route                                                                                            |
|                                                                      |                                                                                                               | • # passengers using public transit, taxis, limo services, or ride-sharing (Uber, Lyft) to /from LAX per 1,000 PAX       |

| # complaints about delays/missed flights due to parking availability, entry delays, or parking lot-CTA transport problems | • # days where parking lots are closed at least once                                                        |
|                                                                      | • # parking lots closed at least once during a month                                                       |
|                                                                      | • # lots >90% full/day                                                                                      |

**Information and Communications**

| # passengers accessing roadway information via twitter, applications, or web-hits | • # minutes (length of time) from identification of issue (e.g., upper level congestion, parking lot closures) to notification in each media channel |
|                                                                                    | • # daily tweets on roadway congestion issued by Law Enforcement & Homeland Security Division               |
|                                                                                    | • # bulletins released to media regarding traffic conditions                                               |
|                                                                                    | • # notification channels regarding traffic issues within the CTA                                           |

**Efficient Access to and from Planes**

<table>
<thead>
<tr>
<th>TSA Wait Times</th>
<th># incidents of passenger wait times exceeding 20 minutes</th>
<th>• # TSA lanes staffed at peak hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rapid Plane-to-Roadside Arrival</td>
<td># satisfaction ratings with time it takes to deplane and reach the curb</td>
<td>• # international passengers arriving at remote gates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # domestic passengers arriving at remote gates</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # minutes baggage carousel wait times</td>
</tr>
</tbody>
</table>
## Potential "Lagging" Guest Goals or Measures

### Customs/Immigration Wait Times
- % of peak hours where incoming American passengers wait fewer than 15 minutes and more than 30 minutes to transit immigration
- % of peak hours where incoming international passengers wait fewer than 15 minutes and more than 30 minutes to transit immigration

## Potential "Leading" Measures: People, Operations, Culture
- # Immigration lanes staffed at peak hours

### AIRPORT SERVICES DEVELOPMENT

## Convenient and Reliable Air Services for Desired Destinations
- % passengers satisfied with airline schedule (available flights, times, city pairs, etc.)

## MAINTAINED AND CLEAN

### Well-Maintained Terminals and Parking Structures

<table>
<thead>
<tr>
<th>Focus</th>
<th>Potential &quot;Lagging&quot; Guest Goals or Measures</th>
<th>Potential &quot;Leading&quot; Measures: People, Operations, Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Systems Operational</td>
<td># hours down time of any major system: HVAC, elevators/escalator; etc.</td>
<td>% recommended preventative maintenance scheduled by major system</td>
</tr>
<tr>
<td>Rapid Response</td>
<td># average time between reported outage and completed repair</td>
<td># incidents for HVAC, elevators, escalators by terminal</td>
</tr>
<tr>
<td>Consistency</td>
<td># satisfaction ratings on cleanliness and maintenance</td>
<td># custodial workers per terminal</td>
</tr>
<tr>
<td>Clean Terminals and Parking Structures</td>
<td># terminals maintained by airlines that meet LAWA standards</td>
<td># square feet per custodial worker, by terminal</td>
</tr>
<tr>
<td>Continuous Monitoring</td>
<td># cleanliness/terminal facilities complaints in LAWA maintained terminals</td>
<td># vacancies in custodial staff positions</td>
</tr>
<tr>
<td>Rapid Response</td>
<td># elapsed minutes between reported janitorial issue and clean facility</td>
<td></td>
</tr>
<tr>
<td>Consistency</td>
<td># cleanliness/terminal facilities complaints in airline-maintained terminals</td>
<td></td>
</tr>
</tbody>
</table>
Although the Guest Experience Working Group agreed to these measurements as optimal for evaluating the core services’ impact on the guest experiences, **LAWA lacks some data internally that would be useful to assess and monitor guest experiences.** The reasons and causes vary, discussed next.

**Core Service — Safe and Secure**

Finding. Airport law enforcement reports crimes through the FBI’s Uniform Crime Reporting (UCR) program

Airports must be foremost safe and secure. The Law Enforcement & Homeland Security Division is concerned with maintaining confidentiality of certain information, particularly in light of potential misuse by terrorists or others that could endanger safety and security at the airport.

- Because of these valid concerns of potential airport threats, KH has compiled a list of goals and potential measurements that might be considered in the future that would likely not pose a risk to the airports.
- In some instances, KH has prepared aggregated data to indicate adequate coverage, but have avoided providing details that could be used inappropriately by others.
- In other instances, LAWA opted not to share certain data on injuries because of the City Attorney’s need to manage those cases confidentially.

The Law Enforcement & Homeland Security Division uses the FBI’s Uniform Crime Reporting (UCR) program to report crimes. Part I Crime offenses are more serious and violent crimes against people and property, such as criminal homicide, forcible rape, robbery, aggravated assault, burglary (breaking or entering), larceny, motor vehicle theft, and arson.

The number of Part I Crimes per 1 Million Annual Passenger (MAP) is a reasonable measure of personal safety at LAX, as discussed in Chapter I.4. Table II.3b displays LAX’s Part I Crimes between 2013 and 2015.

<table>
<thead>
<tr>
<th>LAX Part I Crimes</th>
<th>2013</th>
<th>2014</th>
<th>2015</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aggravated Assault</td>
<td>10</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Homicide</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Rape</td>
<td>1</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Robbery</td>
<td>2</td>
<td>2</td>
<td>0</td>
</tr>
<tr>
<td><strong>Total Violent Crimes</strong></td>
<td><strong>14</strong></td>
<td><strong>9</strong></td>
<td><strong>3</strong></td>
</tr>
<tr>
<td>Burglary</td>
<td>11</td>
<td>8</td>
<td>10</td>
</tr>
<tr>
<td>Theft (includes theft from person, petty theft, and grand theft)</td>
<td>461</td>
<td>473</td>
<td>499</td>
</tr>
<tr>
<td>Auto Theft</td>
<td>7</td>
<td>5</td>
<td>10</td>
</tr>
</tbody>
</table>
Overall, the total number of violent crimes (aggravated assault, homicide, rape, and robbery) has steadily declined from 14 in CY 2013, to 9 in CY 2014, to 3 in CY 2015 (year-end estimate). Most of the crimes are property crimes (e.g., burglary, theft, auto theft), which range between 523 and 580 per year for the last 3 years. When analyzing the frequency of Part 1 Crimes, KH calculated ratios to account for passenger traffic increases. LAX averages between 7.5 and 8.1 Part 1 Crimes per 1 Million Annual Passengers (MAP) per year (2013, 2014, and 2015). If the number of badged workers and meeters and greeters were included, the ratio would drop further.

### Table II.3c: Proposed Safety & Security Goals and Part I Crime Trends

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal 1 – Personal Safety:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travelers and guests, using LAWA’s airports, are and feel safe in and around all LAWA facilities, including parking lots and access routes, in the terminals, aboard aircraft, in the LAX Central Terminal Area, and at VNY.</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Goal 2 – Property security:</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Travelers and guests, using LAWA’s airports, have confidence that their property is secure in and around all LAWA facilities, including parking lots and access routes, in the terminals, aboard aircraft, in the LAX Central Terminal Area, and at VNY.</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

In addition, the Law Enforcement & Homeland Security Division produces regular patrol reports, including contact reports describing individuals who may present crime or security threats, which are...
distributed to all patrol officers. LAWA Law Enforcement & Homeland Security also collaborates actively with other agencies to assist LAXPD in deploying its resources most effectively.

**Core Service – Access: Time and Efficiency**

Finding. Access to LAX will continue to be a challenge in the years ahead.

Guests have a variety of means for accessing LAX today: cars, buses, taxis, FlyAway buses, Airline Connection buses, and most recently LYFT and UBER. LAWA offers FlyAway bus services at four locations.

The number of vehicles entering the Central Terminal Area (CTA) within LAX has been steadily increasing in the last few years as the number of passengers has increased. Accessing LAX has been a long-standing problem, which will only be made worse in the coming years during the next phase of construction activities. The new LA Metro Crenshaw/LAX station and LAWA’s Automated People Mover (APM) are both initiatives to improve access to LAX. Ironically, especially during the construction period, building the APM connection may make access to LAX noticeably more difficult. Chapter I.4 on “LAX Guest Experience” emphasized the importance of LAWA needing to proactively manage CTA congestion during and after construction (Recommendation I.4.3).

LAWA lacks some of the data that would be useful regarding CTA congestion, such as minutes it takes to reach specific parking lots or terminals once entering the CTA, the number of people using Airline Connection buses, indicators for automatic re-rerouting of cars to upper or lower CTA roadways during peak periods, etc.

**Table II.3d: Proposed LAX Access Goals and Performance**

<table>
<thead>
<tr>
<th>Goal: Efficient Access - Ground Transport (i.e., Quick, Efficient, and Easy Flow of Transportation and Roadways through the CTA, Combined with Information and Communications)</th>
</tr>
</thead>
<tbody>
<tr>
<td># daily vehicles entering CTA</td>
</tr>
<tr>
<td># minutes to park, by parking lot, once in the CTA</td>
</tr>
<tr>
<td># minutes to terminal, by terminal, once in the CTA</td>
</tr>
<tr>
<td># Airline Connection bus headways</td>
</tr>
<tr>
<td># PAX using Airline Connection Buses</td>
</tr>
<tr>
<td># PAX using taxis</td>
</tr>
<tr>
<td># minutes PAX wait for taxis, by terminal</td>
</tr>
<tr>
<td># PAX using LYFT, UBER, or other private car services</td>
</tr>
</tbody>
</table>

**Daily Vehicles Entering CTA**

<table>
<thead>
<tr>
<th>Year</th>
<th>Vehicles (daily)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011-2012</td>
<td>62,000</td>
</tr>
<tr>
<td>2012-2013</td>
<td>64,000</td>
</tr>
<tr>
<td>2013-2014</td>
<td>68,000</td>
</tr>
<tr>
<td>2014-2015</td>
<td>70,000</td>
</tr>
<tr>
<td>2015-2016</td>
<td>72,000</td>
</tr>
<tr>
<td>2016-2017</td>
<td>74,000</td>
</tr>
<tr>
<td>2017-2018</td>
<td>76,000</td>
</tr>
<tr>
<td>2018-2019</td>
<td>78,000</td>
</tr>
</tbody>
</table>
Sample Performance Measurements | LAX Access (Time and Efficiency) Performance: CTA
---|---
- # FlyAway PAX, by route and time of day
- $ FlyAway net revenue, by route
- % satisfaction rating at 4 or 5 (on a 5-point scale)
- % FlyAway on schedule

FlyAway operating according to schedule: 95% of the time

FlyAway Guest Satisfaction
% Rating 4 or 5 on a 5-Point Scale

Van Nuys | Downtown | Westwood | Hollywood
---|---|---|---
70% | 60% | 50% | 40%

Finding. Parking operations lacked data that would be useful for evaluating and improving the guest experience.

Parking capacity within LAX’s CTA is constrained, as indicated by the number and length of parking lots closures. LAWA does not have 21st-century, parking lot management technology that enables guests to self-pay for parking, indicates the number of available parking spaces by level, or uses red/green light indicators to pinpoint available parking spaces.

Table II.3e Proposed LAX Parking Lot Goals and Performance

<table>
<thead>
<tr>
<th>Sample Performance Measurements</th>
<th>LAX Parking Lot Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal</strong>: Efficient Access - Ground Transport (i.e., Quick, Efficient, and Easy Flow into/out of Parking Structures, Combined with Parking Sufficiency and Information and Communications)</td>
<td></td>
</tr>
</tbody>
</table>
- # parking lot closures, by lot
- # average minutes per closure
- # days where parking lots are closed at least once
- # parking lots closed at least once during a month
- # lots >90% full/day # spaces available, by lot and by floor
- $ generate by lot per parking space

Parking Lot Availability

<table>
<thead>
<tr>
<th>Lot 3</th>
<th>Lot 4</th>
<th>Lot 5</th>
<th>Lot 6</th>
</tr>
</thead>
<tbody>
<tr>
<td>Closures per month</td>
<td>Average Minutes per Closure</td>
<td></td>
<td></td>
</tr>
<tr>
<td>100</td>
<td>150</td>
<td>200</td>
<td>250</td>
</tr>
<tr>
<td>50</td>
<td>100</td>
<td>150</td>
<td>200</td>
</tr>
</tbody>
</table>

LAWA is in the process of issuing a Request for Proposal (RFP) for new parking technology that, once acquired and implemented, will allow LAWA to track many of the performance measurements identified in the BSC.
Finding. Time efficient processing of passengers once within the terminals warrants monitoring.

Once guests maneuver the CTA and are in the terminal, their next quest is to navigate the airline ticket counters (operated by the individual airlines) and go through TSA check points. International passengers also must clear Customs Border Patrol (CBP) when returning to the United States.

LAWA does not control these operations, which are all performed by either private companies or other governmental agencies. Nonetheless, these services are critical to guest satisfaction and the overall perception of the quality of the airport.

According to Condé Nast Traveler magazine’s analysis of TSA statistics, TSA screened 708 million passengers at U.S. airports in 2015 (a 5.8% increase over 2014). TSA’s reported national average is that only 2% of the passengers had to wait more than 20 minutes to clear airport security. This average is skewed because 44% of the passengers are screened through expedited lines and 2 million passengers have signed up for TSA pre-check (https://www.tsa.gov); other passengers obtain entry into the TSA pre-check program as privileged given them by their airlines.

In J.D. Power’s 2015 North American Airport survey, travelers’ perceptions of satisfaction levels with security had improved by 66% since its last survey in 2010; however, those passengers without special privileges had lower satisfaction ratings. Table II.3f lists the “Best Wait Times at Large U.S. Airports.”

<table>
<thead>
<tr>
<th>U.S. Large Airport</th>
<th>TSA Wait Times (Minutes)</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Best Wait Times</strong></td>
<td></td>
</tr>
<tr>
<td>1. Tampa</td>
<td>11.4</td>
</tr>
<tr>
<td>2. Fort Lauderdale</td>
<td>12.3</td>
</tr>
<tr>
<td>3. San Diego</td>
<td>12.5</td>
</tr>
<tr>
<td>4. Detroit</td>
<td>12.6</td>
</tr>
<tr>
<td>5. Portland</td>
<td>12.8</td>
</tr>
<tr>
<td><strong>Worst Wait Times</strong></td>
<td></td>
</tr>
<tr>
<td>1. JFK</td>
<td>16.8</td>
</tr>
<tr>
<td>2. Newark</td>
<td>16.5</td>
</tr>
<tr>
<td>3. LAX</td>
<td>16.0</td>
</tr>
<tr>
<td>4. Philadelphia</td>
<td>15.6 (tie)</td>
</tr>
<tr>
<td>5. Seattle/Tacoma</td>
<td>15.6 (tie)</td>
</tr>
<tr>
<td>6. Chicago O’Hare</td>
<td>15.6</td>
</tr>
<tr>
<td>7. LaGuardia</td>
<td>15.6</td>
</tr>
<tr>
<td>8. Washington Dulles</td>
<td>15.5</td>
</tr>
</tbody>
</table>

LAX’s TSA wait time is among the top 3 worst wait times among U.S. airports. Mid-sized airports tend to have shorter wait times. TSA no longer posts average wait times, by airport; however, it offers a crowd-
sourced app where passengers can post how long it took them to complete security. Fewer passengers either know of the app or are willing to take the time to use the app because it is not heavily used.

Table II.3g displays metrics available for TSA and CBP at LAX.

<table>
<thead>
<tr>
<th>Sample Performance Measurements</th>
<th>LAX Access (Time and Efficiency) Performance: Terminals</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> Efficient Access to and from Planes (i.e., Quick, Efficient, and Efficient Flow Through Terminals (TSA Wait Times, Rapid Plane-to-Roadside Arrival, Customs/ Immigration Wait Times))</td>
<td></td>
</tr>
</tbody>
</table>

**Transportation Security Administration (TSA), U.S. Department of Homeland Security**
- # people screened/processed through TSA check points
- # average minutes for screening PAX through TSA check points
- # times average wait time exceeded 20 minutes for TSA check points

**Customs Border Patrol (CBP), U.S. Department of Homeland Security**
- # people screened/processed through CBP
- # average minutes for screening PAX through CBP
- # times average wait time exceeded 30 minutes for CBP screening

Note: These data are not available at this time for LAX.
Core Service – Air Services

Finding. LAWA has been expanding its non-stop destinations internationally.

As discussed in Chapter I.1 under “Strengths and Accomplishments,” LAWA has added 17 non-stop international destinations and 5 new airlines at LAX in the last 2 years. As discussed further in Chapter II.3 on “LAX Guest Experience” and Chapter II.4 on “Financial Performance,” the increased number of passengers is an indicator that LAX is a well-used airport, providing air services to destinations that some 35.1 million enplaned passengers wanted to go to last year. For the airlines, load factors are also critical indicators.

Table II.3h: Proposed LAX Air Services Development Goals and Performance

<table>
<thead>
<tr>
<th>Sample Performance Measurements</th>
<th>LAX Air Services Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> Convenient and Reliable Air Services for Desired Destinations</td>
<td></td>
</tr>
<tr>
<td># non-stop cities – domestic</td>
<td></td>
</tr>
<tr>
<td># non-stop cities – international</td>
<td></td>
</tr>
<tr>
<td># non-stop countries served</td>
<td></td>
</tr>
<tr>
<td># airlines operating out of LAX</td>
<td></td>
</tr>
<tr>
<td>% load factor, by non-stop city</td>
<td></td>
</tr>
<tr>
<td>% PAX satisfied with airline schedule (available flights, times, city pairs, etc.)</td>
<td></td>
</tr>
</tbody>
</table>

**All Destinations Available from LAX**

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-stop domestic cities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Non-stop or 1-stop international cities</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Countries served with non-stop or 1-stop services</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**New Destinations Available from LAX**

<table>
<thead>
<tr>
<th></th>
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</thead>
<tbody>
<tr>
<td>International</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Domestic</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Core Service – Clean & Maintained

Finding. LAWA’s new Maximo system will enable Maintenance to collect and identify preventive and corrective maintenance trends, but will not track custodial data.

At the time of the 2008 IEA Survey, Maintenance was tracking its work orders and requirements manually. In 2010, Maintenance implemented Issue Track, its first automated service request system. In 2014, it upgraded to Maximo and will now have more robust capability to track service requests (emergency versus regular work orders) and other information. With Maximo, the way information is classified has changed, so presenting historical data is less useful.

At LAX, the guest experience varies based on what terminal(s) the guests use. Some of the terminals are maintained and cleaned mostly by LAWA and others mostly by the airlines or, more specifically, contractors who work for the airlines. In 2015, the most maintenance incidents (HVAC, elevators, and escalators) were in TBIT.

It should be noted that work orders – which is what KH is measuring here – are required to reverse escalators at TBIT. This situation is not a service problem, but rather reflects LAWA’s efforts to meet guest needs. It happens frequently, depending on the direction of traffic, and LAWA believes that the high number of work orders for TBIT is related to this requirement. As the metric is introduced, requests generated only to reverse and escalator will need to be “teased out” of the overall data set if it is to be used with precision.

During the four heavy travel periods each year, the Facilities Maintenance & Utilities Group (FMUG) has every shift report on conveyances out of service and anticipated time to return to service for terminal operations.9

9 FMUG reports that level of working elevators is fairly consistent during a busy month. In December 2015, a typical shift reported that 3.3% of LAX’s total terminal elevators and 2.8% of LAX’s total terminal vertical conveyances were out of service. These percentages do not include conveyances that can be returned, or were returned, to service within 45 minutes.
## Table II.3i: Proposed LAX Maintenance and Cleanliness Goals and Performance

<table>
<thead>
<tr>
<th>Sample Performance Measurements</th>
<th>LAX Clean &amp; Maintained Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> Well-Maintained and Clean Terminals and Parking Structures (All Systems Operational, Rapid Response, Consistency, and Continuous Monitoring) In going forward, LAWA will need to also collect information (at a minimum) on:</td>
<td><strong>2015 Maintenance Incidents (HVAC, Elevators, Escalators)</strong></td>
</tr>
<tr>
<td>- # incidents for HVAC, elevators, escalators by terminal</td>
<td><img src="image" alt="2015 Maintenance Incidents" /></td>
</tr>
<tr>
<td>- # hours down time of any major system: HVAC, elevators/escalator; etc.</td>
<td>Note: These data are not tracked through a data-base management system so are not readily available for LAX.</td>
</tr>
<tr>
<td>- % preventive maintenance completed for major systems</td>
<td></td>
</tr>
<tr>
<td>- % recommended preventive maintenance scheduled by major system</td>
<td></td>
</tr>
<tr>
<td>- # scheduled maintenance work orders deferred or delayed</td>
<td></td>
</tr>
<tr>
<td>- # average time between reported outage and completed repair</td>
<td></td>
</tr>
<tr>
<td>- # guest satisfaction ratings on maintenance</td>
<td></td>
</tr>
<tr>
<td>- # terminals maintained by airlines that meet LAWA standards</td>
<td></td>
</tr>
<tr>
<td>- # cleanliness/terminal facilities complaints in LAWA maintained terminals</td>
<td></td>
</tr>
<tr>
<td>- # elapsed minutes between reported janitorial issue and clean facility</td>
<td></td>
</tr>
<tr>
<td>- # terminals cleaned by airlines that meet LAWA standards</td>
<td></td>
</tr>
<tr>
<td>- # guest satisfaction ratings on cleanliness</td>
<td></td>
</tr>
<tr>
<td>- # cleanliness/terminal facilities complaints in airline-maintained terminals</td>
<td></td>
</tr>
<tr>
<td>- # custodial workers per terminal</td>
<td></td>
</tr>
<tr>
<td>- # square feet per custodial worker, by terminal</td>
<td></td>
</tr>
</tbody>
</table>
Sample Performance Measurements

<table>
<thead>
<tr>
<th>LAX Clean &amp; Maintained Performance</th>
</tr>
</thead>
</table>

Note: The number of Infoline complaints regarding cleanliness and the facilities in LAWA-maintained terminals (T1, T2, T3, and TBIT) has been erratic but under 20 complaints per year

- # complaints regarding LAWA-maintained terminals (including Infoline and sources other than Infoline)
- # complaints for all terminals (including Infoline and sources other than Infoline)
- # rating on ACI-ASQ survey regarding guest satisfaction with cleanliness and maintenance

Balanced Scorecard – Guest Experience: Core Services

In total, KH and the Guest Experience Working Group identified more than 500 metrics for Guest Experiences, listed in Appendix D. The next pages display the Guest Experience BSC prototype for core services at LAX. This BSC reflects the top 60+ metrics for core services, reflecting data available at LAWA and the metrics that LAX should begin to monitor. As LAWA becomes more sophisticated in performance measurement management, it will build on and expand on this BSC prototype.
<table>
<thead>
<tr>
<th></th>
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<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td><strong>CORE SERVICES</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td><strong>ACCESS - TIME/EFFICIENCY</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.1</td>
<td><em>Vehicular</em></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.1.1</td>
<td>CTA - # Vehicles/Day</td>
<td># vehicles entering the CTA each day</td>
<td>68,198</td>
<td>66,774</td>
<td>70,870</td>
<td>75,690</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.1.1.2</td>
<td>CTA - UL Drive Time</td>
<td># mins to complete CTA orbit - Upper</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>12</td>
<td>Q</td>
</tr>
<tr>
<td>1.1.1.3</td>
<td>CTA - LL Drive Time</td>
<td># mins to complete CTA orbit - Lower</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>12</td>
<td>Q</td>
</tr>
<tr>
<td>1.1.1.9</td>
<td>Shuttles - Throughput - Total</td>
<td># total shuttles entering CTA (CY)</td>
<td>269,614</td>
<td>447,569</td>
<td>460,591</td>
<td>462,312</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.1.1.13</td>
<td>Shuttles - Throughput - Airline</td>
<td># total airline connection buses entering CTA (CY) Connection Buses</td>
<td>269,614</td>
<td>447,569</td>
<td>460,591</td>
<td>462,312</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>1.1.1.26</td>
<td>Parking - Closures</td>
<td># closures - Lot 3</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>104</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.1.1.28</td>
<td>Parking - Closures</td>
<td># closures - Lot 4</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>284</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.1.1.30</td>
<td>Parking - Closures</td>
<td># closures - Lot 5</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>48</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.1.1.32</td>
<td>Parking - Closures</td>
<td># closures - Lot 6</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>58</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.1.1.40</td>
<td>Parking-Cell-Phone Lot</td>
<td># using cell phone lot</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.1.1.47</td>
<td>ADA Vans - PAX</td>
<td># disabled PAX served by ADA vans</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>33,105</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.1.2</td>
<td><strong>Pedestrian</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.2.21</td>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - total LAX</td>
<td>NA</td>
<td>30,050,791</td>
<td>31,760,308</td>
<td>32,524,404</td>
<td>NA</td>
<td>M</td>
</tr>
<tr>
<td>1.1.2.33</td>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - total LAX</td>
<td>NA</td>
<td>58</td>
<td>43</td>
<td>NA</td>
<td>TSA Determined</td>
<td>M</td>
</tr>
<tr>
<td>1.1.2.42</td>
<td>CBP PAX Clearance Time</td>
<td># average minutes for PAX to clear CBP checkpoints</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>18</td>
<td>M</td>
</tr>
<tr>
<td>1.1.2.43</td>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 15 minutes - LAX</td>
<td>NA</td>
<td>44%</td>
<td>42%</td>
<td>51%</td>
<td>CBP Determined</td>
<td>H</td>
</tr>
<tr>
<td>1.1.2.44</td>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 30 minutes - LAX</td>
<td>NA</td>
<td>32%</td>
<td>32%</td>
<td>28%</td>
<td>CBP Determined</td>
<td>H</td>
</tr>
<tr>
<td>1.1.2.45</td>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 45 minutes - LAX</td>
<td>NA</td>
<td>15%</td>
<td>16%</td>
<td>12%</td>
<td>CBP Determined</td>
<td>H</td>
</tr>
<tr>
<td>1.1.3</td>
<td><strong>Airside</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1.3.1</td>
<td>Flight Delays</td>
<td>% departing flights delayed more than 15 mins - total</td>
<td>NA</td>
<td>NA</td>
<td>3,971</td>
<td>8,215</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>1.1.3.4</td>
<td>Flight Delays</td>
<td>% arriving flights delayed more than 15 mins</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>D</td>
<td></td>
</tr>
<tr>
<td>1.1.3.5</td>
<td>Flight Delays</td>
<td>% delayed gate departures</td>
<td>15%</td>
<td>17%</td>
<td>17%</td>
<td>19%</td>
<td>19%</td>
<td>D</td>
</tr>
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<tr>
<td>1.2</td>
<td><strong>AIRPORT SERVICES</strong></td>
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<td></td>
<td></td>
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<tr>
<td>1.2.1</td>
<td>New Service</td>
<td># new nonstop or 1-stop destinations (intl) - LAX</td>
<td>4</td>
<td>3</td>
<td>8</td>
<td>6</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.2.2</td>
<td>New Service</td>
<td># new nonstop destinations (US) - LAX</td>
<td>2</td>
<td>1</td>
<td>9</td>
<td>4</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.2.5</td>
<td>Service - US Cities LAX</td>
<td># non-stop cities (US) - LAX</td>
<td>96</td>
<td>83</td>
<td>102</td>
<td>98</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.2.7</td>
<td>Service - Intl Cities LAX</td>
<td># non-stop or 1-stop cities (int'l) - LAX</td>
<td>59</td>
<td>63</td>
<td>67</td>
<td>72</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.2.9</td>
<td>Service - Foreign Countries LAX</td>
<td># foreign countries served with non-stop or 1-stop services - LAX</td>
<td>32</td>
<td>32</td>
<td>37</td>
<td>40</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td><strong>SAFE &amp; SECURE</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3.1</td>
<td>Visible Law Enforcement</td>
<td># high-visibility patrols</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
</tr>
<tr>
<td>1.3.4</td>
<td>Incidence of Crime</td>
<td># Part 1 violent crimes per million PAX (aggravated assault, homicide, rape, robbery) - LAX (CY)</td>
<td>NA</td>
<td>0.2</td>
<td>0.1</td>
<td>0.0</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.3.6</td>
<td>Incidence of Crime</td>
<td># Part 1 property crimes per million PAX (burglary, theft, auto theft, burglary of motor vehicle, theft from motor vehicle) - LAX (CY)</td>
<td>NA</td>
<td>7.9</td>
<td>7.4</td>
<td>7.8</td>
<td>M</td>
<td></td>
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<tr>
<td>1.3.7</td>
<td>Safe Facilities</td>
<td># reported injuries by PAX in terminals</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
</tr>
<tr>
<td>1.3.8</td>
<td>Pedestrian Safety</td>
<td># pedestrian-involved vehicular accidents</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
</tr>
<tr>
<td>1.3.10</td>
<td>Pedestrian Safety</td>
<td># injuries on elevators, escalators - LAX</td>
<td>NA</td>
<td>207</td>
<td>280</td>
<td>337</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.3.11</td>
<td>ADA Facilities</td>
<td># disability services complaints on Infoline</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3.12</td>
<td>First Aid Facilities</td>
<td># first aid facilities</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1</td>
<td>A</td>
<td></td>
</tr>
</tbody>
</table>
---|---|---|---|---|---|---|---
1.4 MAINTAINED & CLEAN | | | | | | | 
1.4.1 LAX ACI/ASQ Survey | % LAX ACI/ASQ Survey satisfaction rating | NA | NA | NA | NA | TBD 2016 | Q/A
1.4.2 LAX ACI/ASQ Survey | % LAX ACI/ASQ Survey satisfaction rating | NA | NA | NA | NA | TBD 2016 | Q/A
1.4.3 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T1 | NA | NA | NA | 1,856 | TBD 2016 | Q
1.4.4 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T2 | NA | NA | NA | 3,411 | TBD 2016 | Q
1.4.5 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T3 | NA | NA | NA | 2,135 | TBD 2016 | Q
1.4.6 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T4 | NA | NA | NA | 3,259 | TBD 2016 | Q
1.4.7 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T5 | NA | NA | NA | 2,494 | TBD 2016 | Q
1.4.8 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T6 | NA | NA | NA | 3,077 | TBD 2016 | Q
1.4.9 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T7 | NA | NA | NA | 2,916 | TBD 2016 | Q
1.4.10 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T8 | NA | NA | NA | 527 | TBD 2016 | Q
1.4.11 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - TBIT | NA | NA | NA | 6,691 | TBD 2016 | Q
1.4.12 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - Airfield | NA | NA | NA | 1,174 | TBD 2016 | Q
1.4.13 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - CTA | NA | NA | NA | 901 | TBD 2016 | Q
1.4.14 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - Outlying | NA | NA | NA | 1,547 | TBD 2016 | Q
1.4.15 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - Remote Gates | NA | NA | NA | 46 | TBD 2016 | Q
1.4.16 Major System Incidents | # maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - VNY | NA | NA | NA | 49 | TBD 2016 | Q
1.4.20 Major System Maintenance | % recommended preventive maintenance | NA | NA | NA | NA | TBD 2016 | Q
1.4.26 Maintenance Consistency | # cleanliness/terminal facilities complaints in | 6 | 17 | 5 | 11 | A
1.4.27 Maintenance Consistency | # cleanliness/terminal facilities complaints in | 0 | 0 | 0 | 0 | A
1.4.30 Cleaning Frequency | # hours interval between bathroom cleaning/inspection | NA | NA | NA | NA | 0.7 | Q/A
## Los Angeles World Airports (LAWA)
### Industrial, Economic, & Administrative (IEA) Survey
### Balanced Scorecard: GUEST EXPERIENCE - Core Services

<table>
<thead>
<tr>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.31</td>
<td>Cleaning Frequency</td>
<td># hours interval between lactation room cleaning/inspection</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.4.32</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T1</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>16,800</td>
<td>A</td>
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<td>1.4.33</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T2</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>31,174</td>
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<td>1.4.34</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T3</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>30,000</td>
<td>A</td>
<td></td>
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<td>1.4.35</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T4</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>17,375</td>
<td>A</td>
<td></td>
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<td>1.4.36</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T5</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>16,947</td>
<td>A</td>
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<tr>
<td>1.4.37</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T6</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>17,250</td>
<td>A</td>
<td></td>
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<tr>
<td>1.4.38</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T7 and T8</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>20,760</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.4.39</td>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - TBIT</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>20,724</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.4.48</td>
<td>Power Reliability</td>
<td># power outages and surges - power grid</td>
<td>NA</td>
<td>NA</td>
<td>11</td>
<td>23</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.4.49</td>
<td>Power Reliability</td>
<td># power outages and surges - LAX system</td>
<td>NA</td>
<td>NA</td>
<td>1</td>
<td>4</td>
<td>Q</td>
<td></td>
</tr>
</tbody>
</table>

Chapter II.3, BSC-Guest Experience - Core Services
### WORLD-CLASS FEATURES AND SERVICES

Finding. LAWA’s efforts to improve some of its leading indicators for becoming world class will, in aggregate, position LAWA to be ranked higher among international airports.

World-class services focus on an airport’s ambience, services, concessions, hospitality, and informed guests. Table II.3j displays examples of leading and lagging indicators that might be helpful in positioning LAX to be ranked among the top “world-class” airports.

<table>
<thead>
<tr>
<th>Focus</th>
<th>Potential &quot;Lagging&quot; Guest Goals or Measures</th>
<th>Potential &quot;Leading&quot; Measures: People, Operations, Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>Priority area for continuous improvements</td>
<td>The lagging indicator is the ultimate goal or measurement for a desired strategic outcome.</td>
<td>To achieve desired strategic outcomes requires many tactical initiatives that together will help achieve the lagging indicator(s).</td>
</tr>
</tbody>
</table>

#### AMBIANCE & LA SENSE OF PLACE

**LA Sense of Place**

- **LA Themed**
  - # ratings on guest satisfaction surveys regarding ambience
  - # LA-themed concessions by terminal
  - # LA-themed artworks by terminal

#### SERVICES, CONCESSIONS, AMENITIES, & TECHNOLOGY

**Concessions & Amenities**

- **Desired Services Open and Available**
  - # ratings on guest satisfaction surveys
  - % concessions open for business 1 hour before 1st flight, by terminal
  - % concessions open for business 30 minutes after last flight, by terminal

- **Desired Amenities That are Free are Available**
  - # ratings on guest satisfaction surveys
  - # amenities, by type, available that are free to guests

**Terminals**

- **Desired Technology Available and Reliable**
  - # ratings on guest satisfaction surveys
  - # cell phone charging stations available per 1,000 EPAX by terminal
  - Mbps connection speed of Wi-Fi by terminal
  - % terminal space offering free Wi-Fi

#### HOSPITALITY (Informed & Friendly Staff)

**Informed Staff**

- **Access to Information - LAWA Staff**
  - # LAWA staff members escalating to supervisors and others because of lack of information
  - % staff members in terminals trained in airport FAQ responses
  - % staff members in terminals with access to FAQ information

- **Access to Information - Partner Staff (e.g., TSA, Airlines, Concessionaire staff members)**
  - # partner staff members escalating to supervisors and others because of lack of information
  - % partner staff members in terminals trained in airport FAQ responses
  - % partner staff members in terminals with access to FAQ information
<table>
<thead>
<tr>
<th>Focus</th>
<th>Potential &quot;Lagging&quot; Guest Goals or Measures</th>
<th>Potential &quot;Leading&quot; Measures: People, Operations, Culture</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;Shopped Success&quot; - LAWA Staff</td>
<td>% &quot;shopped&quot; questions responded to accurately</td>
<td>▪ % staff members in terminals trained in airport FAQ responses&lt;br&gt;▪ % staff members in terminals with access to FAQ information</td>
</tr>
<tr>
<td></td>
<td>% &quot;shopped&quot; questions where staff member escalated quickly and properly when he/she did not know the answer</td>
<td></td>
</tr>
<tr>
<td>&quot;Shopped Success&quot; - Partner Staff (e.g., TSA, Airlines, Concessionaire staff members)</td>
<td>% &quot;shopped&quot; questions responded to accurately</td>
<td>▪ % partner staff members in terminals trained in airport FAQ responses&lt;br&gt;▪ % partner staff members in terminals with access to FAQ information</td>
</tr>
<tr>
<td></td>
<td>% &quot;shopped&quot; questions where staff member escalated quickly and properly when he/she did not know the answer</td>
<td></td>
</tr>
<tr>
<td>Friendly Staff</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shopped Success</td>
<td># LAWA staff rated excellent in friendliness by shoppers&lt;br&gt;# complaints about LAWA staff&lt;br&gt;# commendations about LAWA staff</td>
<td>▪ # LAWA staff trained in Guest Experience and airport information&lt;br&gt;▪ % LAWA staff trained in Guest Experience and airport information</td>
</tr>
<tr>
<td></td>
<td># partner staff rated excellent in friendliness by shoppers&lt;br&gt;# complaints about partner staff</td>
<td>▪ # partner staff trained in Guest Experience and airport information&lt;br&gt;▪ % partner staff trained in Guest Experience and airport information</td>
</tr>
<tr>
<td>INFORMED GUESTS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Informed Guests</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Wayfinding/ Information</td>
<td># information desk inquiries</td>
<td>▪ # visible signs for parking lots, traffic routes, terminals, gates, restaurants, rest rooms&lt;br&gt;▪ # unstaffed information booths in peak hours&lt;br&gt;▪ # media options for information</td>
</tr>
</tbody>
</table>
World Class – Ambiance & LA Sense of Place

Finding. LAWA has been striving to incorporate more of a LA Ambience into its concessions and art displays at LAX.

The graph displays the number of concessions and exhibits that reflect Los Angeles, by terminal. Although LAWA has diversified its concessions with LA themes and local restaurants and stores, this number is unlikely to change much because concessions have 10-year agreements at a minimum. The City of Los Angeles, Department of Cultural Affairs, puts on art exhibits in the terminals; in recent years, some of the terminals have not been able to have such exhibits while under construction. LAWA is also beginning to post more signs that depict Los Angeles.

Given the size of LAX, particularly in terms of wall space, LAWA has lots of opportunities to promote Los Angeles images – the beaches, downtown skyline, Hollywood, etc., as discussed in Chapter I.4 on “LAX Guest Experience.”

Table II.3k: Proposed LAX Ambience/LA Sense of Place Goals and Performance

<table>
<thead>
<tr>
<th>Sample Performance Measurements</th>
<th>LAX’s LA Sense of Place Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Goal: Create a Great Ambiance and LA Sense of Place for Guests</td>
<td></td>
</tr>
<tr>
<td># ratings on guest satisfaction surveys regarding ambience</td>
<td></td>
</tr>
<tr>
<td># LA-themed concessions by terminal</td>
<td></td>
</tr>
<tr>
<td># LA-themed artworks by terminal</td>
<td></td>
</tr>
</tbody>
</table>

World Class – Services, Concessions, Amenities, & Technology

Finding. LAX has enhanced and diversified its concessions, but still lags in terms of amenities and technology that are available at other world-class airports.

A key component of being world class is the kinds of services, concessions, amenities, and technological conveniences available for guests. Through this IEA Survey, LAWA has begun the process of compiling Guest Experience measurements in this area.
## Table II.3l: Proposed LAX Concession, Amenities, & Technology Goals and Performance

### Sample Performance Measurements

<table>
<thead>
<tr>
<th>Services, Concessions, Amenities, &amp; Technology Performance Currently Tracked</th>
</tr>
</thead>
</table>

**Goal:** Desired Services Open and Available, Desired Amenities That are Free are Available, and Desired Technology is Available, Reliable, and Fast

- # guest satisfaction rating on ACI/ASQ survey
- % concessions open for business 1 hour before 1st flight, by terminal
- % concessions open for business 30 minutes after last flight, by terminal

ACI/ASQ survey to be administered in the first quarter of 2016

**Note:** The number of complaints on Infoline about concessions has decreased in the last year.

### Infoline Complaints about Concessions

<table>
<thead>
<tr>
<th>Year</th>
<th>Count</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013-2014</td>
<td>70</td>
</tr>
<tr>
<td>2014-2015</td>
<td>60</td>
</tr>
</tbody>
</table>

### Cell Phone Charging Stations

- # cell phone charging stations available per 1,000 EPAX by terminal
- Mbps connection speed of Wi-Fi by terminal
- % terminal space offering free Wi-Fi

**Note:** Although the number of cell phone charging stations has increased in every LAX terminal, such amenities are now often viewed as a core service in today’s wired world. Hence, LAWA may want to move this metric into the Core Services BSC. As discussed in Part I, Internet speed remains an issue at LAX.

### # amenities, by type, available that are free to guests

As discussed in Chapter I.4 on “LAX Guest Experience,” LAX currently has 6 nursing rooms (with plans for 8 by year-end (1 per terminal)); 2 shoeshine stations; charging stations in every terminal (including charging stations provided via advertising and airlines (seat, stations, and laptop “lanes”), and LAWA-powered seats); and 1 pet relief space (with plans for 8 by 2017 (1 per terminal)).
World Class – Hospitality (Informed & Friendly Staff)

Finding. LAWA is striving to increase staff awareness of the importance of hospitality. LAWA launched training programs on airport hospitality to enhance guest experience. To date:

- More than 2,000 LAWA staff members were trained between 2011 through 2013.
- More than 2,000 Westfield staff members were trained in 2015.

Infoline may not be the best measurement because it requires a guest taking the time to call in a complaint or commendation; however, during that time period, the number of complaints about LAWA staff decreased and LAWA partners (e.g., airlines, contractors, shuttle services) increased. An inverse trend occurred with commendations: LAWA’s increased and its partners’ decreased.

Table II.3m: Proposed LAX Hospitality Goals and Infoline Performance

<table>
<thead>
<tr>
<th>Sample Performance Measurements</th>
<th>LAX’s Hospitality</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Goal:</strong> Friendly and Informed Staff</td>
<td></td>
</tr>
<tr>
<td><strong>Leading Indicators</strong></td>
<td></td>
</tr>
<tr>
<td>- % staff members in terminals trained in airport FAQ responses</td>
<td></td>
</tr>
<tr>
<td>- % staff members in terminals with access to FAQ information</td>
<td></td>
</tr>
<tr>
<td>- % partner staff members in terminals trained in airport FAQ responses</td>
<td></td>
</tr>
<tr>
<td>- % partner staff members in terminals with access to FAQ information</td>
<td></td>
</tr>
<tr>
<td>- % staff members in terminals trained in airport FAQ responses</td>
<td></td>
</tr>
</tbody>
</table>

Infoline Complaints

- LAWA Staff
- Partners
## Sample Performance Measurements

- % staff members in terminals with access to FAQ information
- % partner staff members in terminals trained in airport FAQ responses
- % partner staff members in terminals with access to FAQ information

### Lagging Indicators

- # LAWA staff members escalating to supervisors and others because of lack of information
- # partner staff members escalating to supervisors and others because of lack of information
- % "shopped" questions responded to accurately
- % "shopped" questions where staff member escalated quickly and properly when he/she did not know the answer

### World Class – Informed Guests

Finding. LAWA is launching an effort to help guests to be more informed and, thus, less reliant on others.

LAWA identified and trained Guest Experience Members (GEMs) to be available within the LAX terminals; LAWA also provides VIP Services. The number of guests assisted is increasing each year, consistent with LAX’s MAP growth rate. LAWA is using social media and other means to disseminate information more rapidly. The second chart shows the increased use of operations in audio paging. The Law Enforcement & Homeland Security Division’s minutes from identification of issue to notification has improved – it has gone from less than 15 minutes in 2011-2012 to now around 11 minutes.
### Table II.3n: Proposed LAX Informed Goals and Performance

#### Sample Performance Measurements for Informed Guests

**Goal:** Guests Able to Find Their Way with Minimal Assistance

<table>
<thead>
<tr>
<th>Information Desks</th>
<th>Wayfinding</th>
<th>Apps and Social Media</th>
<th>Escalation/Notification</th>
</tr>
</thead>
<tbody>
<tr>
<td>• # unstaffed information booths in peak hours</td>
<td>• # visible signs for parking lots, traffic routes, terminals, gates, restaurants, rest rooms</td>
<td>• # apps for guests</td>
<td>• # minutes from identification of issue to notification</td>
</tr>
<tr>
<td>• # information desk inquiries</td>
<td>• # media options for information</td>
<td>• # users of apps</td>
<td></td>
</tr>
<tr>
<td>• # information desk inquiries</td>
<td></td>
<td>• # followers in social media channels</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>• # likes in social media channels</td>
<td></td>
</tr>
</tbody>
</table>

#### Balanced Scorecard – Guest Experience: World-Class Services

The next pages display the Guest Experience BSC prototype for world-class services at LAX. This BSC reflects the top 75 metrics for world-class services, reflecting data currently available at LAWA and the metrics that LAX should begin to monitor. This BSC is important for distinguishing airports that are best-in-class. Additional world-class measurements that LAWA might want to track in future years are displayed in Appendix D.
<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td># AMBIANCE &amp; SENSE OF PLACE (LA)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1.1 LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>Q/A</td>
</tr>
<tr>
<td>2.1.2 Guest Satisfaction - Ranking</td>
<td>Ranking of LAX in ACI/ASQ satisfaction by ACI/ASQ or others</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>A</td>
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<tr>
<td>2.1.3 PAX Satisfaction Ranking</td>
<td>Ranking of LAX in PAX satisfaction by ACI/ASQ</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>Q/A</td>
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<td>2.1.28 LA Themed Artwork</td>
<td>LA-themed art exhibitions - TBIT</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>A</td>
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<td>2.1.30 LA Themed Signage</td>
<td>LA-themed signs - TBIT</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1.0</td>
<td>M</td>
<td></td>
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<tr>
<td># CONCESSIONS &amp; AMENITIES</td>
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<td></td>
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<td></td>
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<tr>
<td>2.2.1 Cell Phone Charging</td>
<td># cell phone charging stations - T1</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>A</td>
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<tr>
<td>2.2.2 Cell Phone Charging</td>
<td># cell phone charging stations - T2</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>A</td>
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<td>2.2.3 Cell Phone Charging</td>
<td># cell phone charging stations - T3</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>7</td>
<td>A</td>
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<tr>
<td>2.2.4 Cell Phone Charging</td>
<td># cell phone charging stations - T4</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>A</td>
</tr>
<tr>
<td>2.2.5 Cell Phone Charging</td>
<td># cell phone charging stations - T5</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>2.2.6 Cell Phone Charging</td>
<td># cell phone charging stations - T6</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>A</td>
</tr>
<tr>
<td>2.2.7 Cell Phone Charging</td>
<td># cell phone charging stations - T7</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>2.2.8 Cell Phone Charging</td>
<td># cell phone charging stations - T8</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>2</td>
<td>4</td>
<td>A</td>
</tr>
<tr>
<td>2.2.9 Cell Phone Charging</td>
<td># cell phone charging stations - TBIT</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>7</td>
<td>A</td>
</tr>
<tr>
<td>2.2.11 Wi-Fi Speed</td>
<td># Mbps connection speed of Wi-Fi</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
<td>60</td>
</tr>
<tr>
<td>2.2.12 Concession Quality</td>
<td>% complaints about concessions on Infoline</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
<td>100%</td>
</tr>
<tr>
<td>2.2.13 Concession Availability</td>
<td>% concessions open 1 hour (2 hours in TBIT)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
<td>100%</td>
</tr>
<tr>
<td>2.2.14 Concession Availability</td>
<td>% concessions open at boarding call for last 1st flight, against plan</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>M</td>
<td>100%</td>
</tr>
<tr>
<td>2.2.15 Amenities</td>
<td>% amenities offer to guests</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>9</td>
<td>A</td>
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<tr>
<td>2.2.16 ATMs</td>
<td># ATMs in terminals</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1 to 2</td>
<td>1 to 2 A</td>
</tr>
<tr>
<td># HOSPITALITY (INFORMED STAFF)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.3.1 LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>Q/A</td>
</tr>
<tr>
<td>2.3.2 LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding courtesy and helpfulness of check-in staff</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>Q/A</td>
</tr>
</tbody>
</table>
Los Angeles World Airports (LAWA)
Industrial, Economic, & Administrative (IEA) Survey
Balanced Scorecard: GUEST EXPERIENCE - WORLD CLASS SERVICES

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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>2.3</td>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
<td>Q/A</td>
</tr>
<tr>
<td>2.4</td>
<td>INFORMED GUESTS</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.4.3</td>
<td>Notification Lag Time - APD</td>
<td># mins from identification of issue to notification in appropriate channel</td>
<td>14</td>
<td>13</td>
<td>12</td>
<td>11</td>
<td>TBD, Estimates</td>
<td>A</td>
</tr>
<tr>
<td>2.4.4</td>
<td>Notification Lag Time - APD</td>
<td># mins from identification of issue to notification</td>
<td>14</td>
<td>13</td>
<td>12</td>
<td>11</td>
<td>TBD, Estimates</td>
<td>A</td>
</tr>
<tr>
<td>2.4.6</td>
<td>Notification Lag Time - Ops</td>
<td># mins from identification of issue to notification</td>
<td>NA</td>
<td>NA</td>
<td>30</td>
<td>30</td>
<td>TBD, Estimates</td>
<td>A</td>
</tr>
<tr>
<td>2.4.9</td>
<td>Wayfinding - Signage</td>
<td># foreign language on signage, as per Title VI</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.4.10</td>
<td>Wayfinding - Signage</td>
<td># wayfinding complaints on Infoline</td>
<td>17</td>
<td>16</td>
<td>8</td>
<td>20</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>2.4.12</td>
<td>Guest Services - GEMs</td>
<td># PAX assisted by GEMs</td>
<td>16,731,324</td>
<td>17,152,914</td>
<td>17,852,139</td>
<td>19,105,667</td>
<td>TBD</td>
<td>M</td>
</tr>
</tbody>
</table>


2.3.3 LAX ACI/ASQ Survey % LAX ACI/ASQ Survey satisfaction rating NA NA NA NA TBD 2016 Q/A

2.3.4 LAX ACI/ASQ Survey % LAX ACI/ASQ Survey satisfaction rating NA NA NA NA TBD 2016 Q/A

2.3.5 Shopped Success - LAWA Staff % shopped questioned responded to accurately - LAWA terminals NA NA NA NA 90% A

2.3.6 Shopped Success - Partners % shopped questioned responded to accurately - LAWA terminals NA NA NA NA 90% A

2.3.20 Customer Service Training # LAWA staff trained in guest experience and - - - 2,000 trained by Westfield 3,000 A

2.3.22 Customer Service Training # partners trained in guest experience and airport information - - - 2,000 trained by Westfield 40,000 A
II.4: BSC – FINANCIAL PERFORMANCE

OVERVIEW

LAWA tracks financial performance indicators to ensure that the business aspects of running LAX are effectively maintained. Many of these metrics merit considerable attention at the executive and BOAC levels, because they are important indicators of the overall financial health of the airport. The performance indicators in this chapter cluster into the following topics:

<table>
<thead>
<tr>
<th>Focus</th>
<th>Purpose of Metrics</th>
<th>Topics in this Chapter</th>
</tr>
</thead>
<tbody>
<tr>
<td>LAWA’s financial risk and financial competitive position</td>
<td>Metrics associated with managing the operation of the business aspects of being an airport are fiscally sound.</td>
<td>Financial Risk, Revenue Sources</td>
</tr>
<tr>
<td>Accounting’s operational cost management performance</td>
<td>Metrics associated with ensuring that accounting operations (e.g., Accounts Payable and Receivable) are well managed.</td>
<td>Operational Cost Management, Accounting Operations Efficiency</td>
</tr>
<tr>
<td>Risk management</td>
<td>Metrics associated with ensuring that risks are being insured and managed cost-effectively.</td>
<td>Insurance Program Management</td>
</tr>
</tbody>
</table>

The financial data are stored and reported through SAP, which has been LAWA’s enterprise financial system since 2000. Therefore, most of the metrics have historical trend data. As a result, this BSC is an example of a best practice at LAWA and can serve as a model for other divisions on how to use data.

FINANCIAL RISK

Financial risk is the risk associated with whether LAW A will be able to continue to pay its current and future operating costs and debt service obligations. Table II.4a displays the metrics that LAWA uses to answer that question and its current performance.
Table II.4a: Financial Risk Measurements and LAWA Performance

<table>
<thead>
<tr>
<th>Focus</th>
<th>Description and Significance</th>
<th>LAWA Financial Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Senior lien bond ratings</td>
<td>The ratings from nationally recognized, independent, third-party rating agencies (Fitch, Moody’s, and S&amp;P) indicate LAWA’s ability to pay off its outstanding bonds.</td>
<td>Since these ratings have been tracked, LAWA has maintained AA (Fitch), Aa3 (Moody’s), and AA (S&amp;P) ratings.</td>
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<tr>
<td>Total debt service coverage ratio</td>
<td>The number of times LAWA’s net operating income (before depreciation/amortization) could cover LAWA’s annual debt payment; shows the health of the airport’s operating margins.</td>
<td>LAWA’s current coverage exceeds 2.5 times the debt payment.</td>
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**Senior Lien Bond Ratings**

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**Total Debt Service Coverage Ratio**

*Note: 1.25x coverage required by indenture; >/= 1.75x preferred*

![Graph showing total debt service coverage ratio from 2006 to 2015.](image)

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</thead>
<tbody>
<tr>
<td>2.96</td>
<td>4.13</td>
<td>4.97</td>
<td>5.05</td>
<td>3.13</td>
<td>2.54</td>
<td>2.61</td>
<td>3.02</td>
<td>3.28</td>
<td>2.54</td>
<td></td>
</tr>
</tbody>
</table>

| $ cash on hand                  | The number of days of operating expenses payable from available cash held in LAWA’s accounts at fiscal year-end indicates how long a revenue interruption the airport can sustain. | LAWA meets or exceeds its 365-day target. |
|---------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---|---|---|---|---|---|---|---|---|---|
| 2.96                            | 4.13 | 4.97 | 5.05 | 3.13 | 2.54 | 2.61 | 3.02 | 3.28 | 2.54 |
$ debt per enplaned passenger (EPAX) | Existing debt per EPAX, an industry-standard metric and a relative measure of leverage comparable to other peer airports, is one measure of capital capacity. | During the past 5 years, LAWA has been between $113 and $119 per EPAX.

--

**REVENUE SOURCES**

As discussed in the “Executive Summary,” total operating revenue is $1.1 billion; LAX accounts for 93% of it. The majority of LAX’s revenue (66%) is from rentals, landing fees, and other aeronautical sources. The balance (34%) is from concessions and parking, as shown in Table II.4b.
Table II.4b: LAX Revenue Sources (2015)

<table>
<thead>
<tr>
<th>LAX Revenue Sources</th>
<th>Revenue ($000s)</th>
<th>% of Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Rentals / Other Aeronautical</td>
<td>$460,338</td>
<td>44%</td>
</tr>
<tr>
<td>Landing Fees</td>
<td>$227,518</td>
<td>22%</td>
</tr>
<tr>
<td>Terminal Concessions</td>
<td>$166,745</td>
<td>16%</td>
</tr>
<tr>
<td>Non-Terminal Concessions (except Parking)</td>
<td>$101,534</td>
<td>10%</td>
</tr>
<tr>
<td>Parking</td>
<td>$85,803</td>
<td>8%</td>
</tr>
<tr>
<td>Other Concession</td>
<td>$3,862</td>
<td>&gt;1%</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$1,045,800</strong></td>
<td><strong>100%</strong></td>
</tr>
</tbody>
</table>

The next two sections discuss LAWA’s financial competitive performance, including competitive position to enable LAX in particular to generate aeronautical and non-aeronautical revenues.

FINANCIAL COMPETITIVE PERFORMANCE

The financial competitive position indicates where LAX stands as an international airport. Table II.4c displays the metrics LAWA uses to track its competitive position financially, as well as its performance.

Table II.4c: Financial Competitive Position Measurements and LAWA Performance

<table>
<thead>
<tr>
<th>Measurements</th>
<th>Significance</th>
<th>LAWA Competitive Position Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td># LAWA annual enplanements</td>
<td>Growing enplanements is a sign of operational and competitive health.</td>
<td>Since the last IEA Survey in 2008, LAX’s enplanements have increased from 31,142 in 2008 to 36,114 in 2015 – a 16% percent increase. In 2014, LAWA moved up in ranking from 3 to 2.</td>
</tr>
</tbody>
</table>

Number of Annual Enplanements (000s)

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</tr>
</thead>
<tbody>
<tr>
<td>LAX Enplanements</td>
<td>30,655</td>
<td>30,803</td>
<td>31,142</td>
<td>28,329</td>
<td>29,003</td>
<td>30,281</td>
<td>31,519</td>
<td>32,524</td>
<td>34,334</td>
<td>36,114</td>
</tr>
</tbody>
</table>
Measurements | Significance | LAW A Competitive Position Performance
--- | --- | ---
Annual U.S. enplanement ranking | Ranking is an indicator of the airport’s importance in the national air service market. | Rankings generally do not fluctuate much year-to-year. Within the U.S., LAX ranks:
- No. 2 in enplanements, after an 8-year trend of ranking No. 3
- No. 3 in number of take-offs and landings (708,674 in 2014, an increase of 1.4% over 2013)
- No. 4 or No. 5 in air cargo tonnage processed
Worldwide, LAX ranks:
- No. 5 in number of arriving/departing passengers
  - Atlanta is No. 1.
  - Beijing is No. 2 and gaining on Atlanta’s ranking.
  - Dubai is gaining on LAX’s ranking.
- No. 3 in number of take-offs and landings (i.e., aircraft movements)
- No. 14 or No. 15 in air cargo tonnage processed

### National Enplanement Ranking
Goal: Maintain position in top 3

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<thead>
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<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LAX Annual National Enplanement Ranking</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>3</td>
<td>2</td>
<td>n/a</td>
</tr>
</tbody>
</table>

$ annual reconciled landing fee | Relative changes show the trend for the cost of bringing an aircraft into the Los Angeles market. | LAX’s landing fees have ranged between $4.06 and $4.37 during the last 5 years. Landing fees are important to contain and ensure competitiveness with other airports. Forecasts at some large airport hubs are beginning to trend toward the high $20s. LAX’s level will be a function of future projects. Stability is as important as the absolute level for LAX (avoid single year volatility). While an uptrend is less competitive, constraints are largely related to airlines’ appetites for further capital improvements and the profitability of routes connecting to the airport.
Measurements | Significance | LAW A Competitive Position Performance

### Airport Landing Fee

- **LAX Reconciled Landing Fee**
  - 2006: $2.86
  - 2007: $3.01
  - 2008: $3.42
  - 2009: $3.88
  - 2010: $3.74
  - 2011: $4.06
  - 2012: $4.24
  - 2013: $4.37
  - 2014: $4.33
  - 2015: $4.27

- **Annual Growth Rate**
  - 5.2%
  - 13.6%
  - 13.5%
  - -3.6%
  - 8.6%
  - 4.4%
  - 3.1%
  - -0.9%
  - -1.4%

### Cost Per Enplaned Passenger

- **LAX Cost per Enplanement**
  - 2006: $7.02
  - 2007: $6.93
  - 2008: $8.91
  - 2009: $11.27
  - 2010: $10.84
  - 2011: $11.36
  - 2012: $12.18
  - 2013: $12.31
  - 2014: $13.50
  - 2015: $14.18

$ annual cost to the airlines per EPAX

Annual cost per EPAX is one indicator of a passenger air carrier’s unit cost for operations at an airport.

EPAX annual cost has moved from $11.36 in 2011 to $14.18 in 2015 at LAX.
LAWA does not appear to put much emphasis on cargo, beyond efforts to lease facility space. LAWA’s Law Enforcement & Homeland Security Division works on cargo security, but mostly from a terrorist prevention standpoint and in cooperation with the carriers to prevent theft. Beyond that, cargo is primarily the responsibility of the air carriers.

**NON-AERONAUTICAL REVENUE GENERATION PERFORMANCE**

*Non-aeronautical revenue provides LAW with diversification from the airline industry,* including terminal and non-terminal revenues generated (displayed in Table II.4d). It is also a source of revenue available to increase margins beyond the “break-even” cost recovery formulas used to calculate airline rates and charges.

### Table II.4d: Non-Aeronautical Revenue Measurements and LAW Performance

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAW Risk Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% non-aeronautical revenue of total revenue</td>
<td>Annual non-aeronautical revenues as a percent of total operating revenues indicate the level of diversified revenues source outside of airline counterparts. LAWA’s current non-aeronautical revenue as a percent of total revenue ranges between 34.2% and 34.7% during the last 5 years. LAWA has set a target of &gt;/= 40%, but indicates that it is not likely to achieve that target.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Non-Aeronautical Revenue as a Percentage of Total Revenue</th>
</tr>
</thead>
<tbody>
<tr>
<td>-------</td>
</tr>
<tr>
<td>Non-Aero Revenue as % of Total</td>
</tr>
</tbody>
</table>

This non-aeronautical revenue can be further analyzed by revenue generated within the terminals and revenue generated outside of the terminals.

**Non-Aeronautical, Terminal-Related Revenue**

Table II.4e displays LAW’s measurements and performance regarding non-aeronautical revenue within the terminals.

### Table II.4e: Non-Aeronautical, Terminal Revenue Measurements and LAW Performance

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAW Risk Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ annual terminal-related concession revenue</td>
<td>The annual terminal-related concession revenue shows the relative increase or decrease of revenue produced by passengers via services inside the terminals. Annual terminal-related concession is significant, $166.7 million in 2015. The uptrend is important. LAWA has set a 10-year annualized growth rate target of approximately 4.5%, inclusive of new facilities. LAWA has exceeded that target for the last three years.</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey
Measurements Used

### Significance and LAWA Risk Performance

**Annual Terminal-Related Concession Revenue ($000s)**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td>Revenue</td>
<td>$ 79,932</td>
<td>$ 94,456</td>
<td>$ 110,573</td>
<td>$ 107,035</td>
<td>$ 101,340</td>
<td>$ 122,522</td>
<td>$ 126,191</td>
<td>$ 141,672</td>
<td>$ 154,374</td>
<td>$ 166,745</td>
</tr>
<tr>
<td>Revenue Growth</td>
<td>-1.3%</td>
<td>18.2%</td>
<td>17.1%</td>
<td>-3.2%</td>
<td>-5.3%</td>
<td>20.9%</td>
<td>3.0%</td>
<td>12.3%</td>
<td>9.0%</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

- $ annual terminal revenue per square foot
  - Ratios are useful for understanding terminal revenue generated. Annual terminal related concession revenues per square foot show the relative efficiency of the concession operations in the terminal, particularly to ensure that LAWA is making the highest and best use of its space. An upward trend is positive.

**Annual Terminal Revenue ($) Per Square Foot**

- $ annual terminal revenue per EPAX
  - Ratios are useful, particularly for understanding EPAX spending patterns, particularly because passengers tend to buy more before they board airplanes rather than after they arrive at airports, as discussed in Chapter II.1. Annual terminal-related, concession revenues per EPAX shows the efficiency of concession operations relative to the passengers served. An upward trend is positive.
**Non-Aeronautical, Non-Terminal Related Revenue**

Non-terminal revenue is generated by concession, parking, and ground transportation services outside of the terminals, but by LAWA, as displayed in Table II.4f.

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAWA Risk Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ annual non-terminal-related concession revenue</td>
<td>The annual non-terminal related concession revenue shows the relative increase or decrease of revenue produced by guests via services outside of the terminals. Annual non-terminal related concession is significant, $187.3 million in 2015. Parking represents a significant portion of the revenue – $85 million last year. The uptrend is important. LAWA anticipates setting a 10-year annualized growth rate target of +5%, inclusive of opening and closing facilities.</td>
</tr>
</tbody>
</table>
Measurements Used | Significance and LAWA Risk Performance

**Annual Non-Terminal Related Concession Revenue ($000s)**

- Ratios are useful, particularly for understanding spending patterns. Annual terminal-related concession revenues per EPAX show the efficiency of concession operations relative to the passengers served. An upward trend is positive.

**Annual Non-Terminal Related Concession Revenue Per Enplaned Passenger**
OPERATIONAL COST MANAGEMENT PERFORMANCE

*Operational cost management measures LAWA’s success in controlling growth in operating expenses.*

Uncontrolled growth can erode net income available to pay debt service. LAWA tracks metrics addressing operational cost management, focusing primarily on annual operating expenses, EPAX, and employee headcount. LAWA uses these metrics to report both actual performance and as ratios to EPAXs and operating expenses compared to inflation. These metrics are important to ensure that LAWA will continue to remain financially viable. Table II.4g displays the key metrics that are tracked.

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAWA Financial Operations Performance</th>
</tr>
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<tbody>
<tr>
<td>Operating Expenses</td>
<td>Annual operating expenses before depreciation show the annual costs of operating and maintaining the airports. Annual year-over-year operating expense growth rate is useful for comparing operating costs to inflation – an important factor in meeting financial projections. LAWA's annual operating expenses increased 24.7% from $517.7 million in 2008 to $645.4 million in 2015. A LAWA goal for annual operating expense before depreciation is to maintain levels below 5.5%, inclusive of new facilities (4% average + 1.5% for new facilities).</td>
</tr>
<tr>
<td>$ annual operating expense before depreciation</td>
<td></td>
</tr>
<tr>
<td>$ annual year-over-year operating expense growth rate</td>
<td></td>
</tr>
</tbody>
</table>

### Annual Operating Expense (Before Depreciation/Amortization)

$ Millions (000s)

<table>
<thead>
<tr>
<th>Year</th>
<th>$ Millions (000s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>2006</td>
<td>451,324</td>
</tr>
<tr>
<td>2007</td>
<td>468,524</td>
</tr>
<tr>
<td>2008</td>
<td>517,732</td>
</tr>
<tr>
<td>2009</td>
<td>522,911</td>
</tr>
<tr>
<td>2010</td>
<td>529,552</td>
</tr>
<tr>
<td>2011</td>
<td>541,228</td>
</tr>
<tr>
<td>2012</td>
<td>580,160</td>
</tr>
<tr>
<td>2013</td>
<td>589,430</td>
</tr>
<tr>
<td>2014</td>
<td>610,027</td>
</tr>
<tr>
<td>2015</td>
<td>645,398</td>
</tr>
</tbody>
</table>

| LAX Operating Expense Growth | 2006 | 10.6% | 2007 | 3.8% | 2008 | 10.5% | 2009 | 1.0% | 2010 | 1.3% | 2011 | 2.2% | 2012 | 7.2% | 2013 | 1.6% | 2014 | 3.5% | 2015 | 5.8% |

2016 LAWA IEA Survey
Measurements Used

- $ annual operating expense per EPAX
- $ annual employee headcount
- $ annual year-over-year employee headcount growth

Significance and LAWA Financial Operations Performance

- Annual operating expense per EPAX relates the cost of operating the airport relative to the volume of passenger traffic served. Most airports are in the $11 to $15 range, but SFO is higher at $17.50. At $17.87 in 2015, LAX is currently on the highest end of operating cost per enplanement, and should target maintaining or decreasing its current level.

- Annual employee headcount is the number of employees employed by LAWA and may illustrate management’s progress in controlling personnel costs – to the extent that they are able, given Civil Service constraints. Annual year-over-year employee headcount growth shows the absolute level of employee growth. LAWA focuses on trends. An uptrend is less competitive. LAWA’s goal is to maintain level or marginally decrease overall headcount through attrition.
Measurements Used

**Significance and LAWA Financial Operations Performance**

**Employee Headcount**

![Bar chart showing employee headcount from 2006 to 2015](chart)

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<tbody>
<tr>
<td>LAX Employee Headcount Growth</td>
<td>5.5%</td>
<td>5.8%</td>
<td>1.2%</td>
<td>-3.6%</td>
<td>1.3%</td>
<td>1.8%</td>
<td>-1.0%</td>
<td>-0.2%</td>
<td>0.3%</td>
<td>0.3%</td>
</tr>
</tbody>
</table>

- **$ annual employee headcount per EPAX**

Employee headcount per EPAX is useful in understanding the number of employees vis-à-vis the level of passenger traffic served. LAWA regards flat or decreasing levels as an indicator of management discipline. Headcount represents all workers at LAWA; the passenger count is LAX only.

**Number of Employees per 1 Million Passengers**

![Bar chart showing number of employees per 1 million passengers from 2006 to 2015](chart)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>LAX Employees per Million PAX</td>
<td>92.9</td>
<td>97.7</td>
<td>102.1</td>
<td>113.7</td>
<td>107.1</td>
<td>103.8</td>
<td>101.5</td>
<td>97.4</td>
<td>92.1</td>
<td>87.8</td>
</tr>
</tbody>
</table>
ACCOUNTING OPERATIONS EFFICIENCY

Indicators of accounting operations efficiency are related to accounts receivables, debt write-off, accounts payable processing, and ability to take advantage of discounts, as summarized in Table II.4h.

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAWA Financial Operations Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accounts Receivable</td>
<td>The number of days customer accounts are outstanding is an indicator of how quickly LAWA is collecting its receivables. A lower number is better. In 2015, the average number of days that customer accounts were outstanding was 13 days.</td>
</tr>
<tr>
<td># days/length of outstanding customer accounts</td>
<td></td>
</tr>
<tr>
<td>$ bad-debt write-off</td>
<td>Total annual bad debt write-offs as a percent of annual revenue indicate how effective LAWA is in collecting its receivables. A lower percentage of bad debt write-off is better. Bad debt write-off is currently less than .05% of annual revenue.</td>
</tr>
</tbody>
</table>

Average Days Customer Accounts Outstanding

![Average Days Customer Accounts Outstanding Chart]

- 2011: 17 days
- 2012: 17 days
- 2013: 21 days
- 2014: 20 days
- 2015: 13 days
Measurements Used

Total Annual Bad Debt Write-offs as a Percentage of Total Annual Revenue

Accounts Payable

- Number of days/cycle-time for payment of invoices

The City has set a requirement that all invoices be paid within 30 days. A smaller number indicates faster processing time. Fewer days are better for improving vendor relations, retaining services, and obtaining competitive prices. LAWA counts the number of days for payment of an invoice upon receipt by Accounts Payable of a completed invoice. LAWA currently reports an average of 29 days.

Invoice Process Cycle Time (City requirement = 30 days)
## Measurements Used

<table>
<thead>
<tr>
<th>Measurement</th>
<th>Significance and LAWAS Financial Operations Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% discounts received for prompt payment</td>
<td>A higher percent indicates more discounts are taken against invoices.</td>
</tr>
<tr>
<td>$ value of discounts received for prompt payment</td>
<td>Over the past 5 years, LAWA has received between 89% and 98% of available discounts.</td>
</tr>
</tbody>
</table>

### Percentage of Discounts Taken as a Percentage of Discounts Available

<table>
<thead>
<tr>
<th>Year</th>
<th>Percentage</th>
</tr>
</thead>
<tbody>
<tr>
<td>2011</td>
<td>90%</td>
</tr>
<tr>
<td>2012</td>
<td>96%</td>
</tr>
<tr>
<td>2013</td>
<td>98%</td>
</tr>
<tr>
<td>2014</td>
<td>96%</td>
</tr>
<tr>
<td>2015</td>
<td>89%</td>
</tr>
</tbody>
</table>
INSURANCE PROGRAM MANAGEMENT

Insurance program management encompasses Workers’ Compensation, property/casualty coverage, and general aviation liability.

Workers’ Compensation

Table II.4i displays LAWA’s measurements and performance vis-à-vis Workers’ Compensation.

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAWA Risk Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ Workers’ Compensation claims per employee</td>
<td>Workers’ Compensation claims per employee shows the trend in number of claims to monitor effectiveness of LAWA’s program, separate from cost (which may not be within management’s control). Decreasing trends in the number of Workers’ Compensation claims are positive and indicative of effective program management.</td>
</tr>
<tr>
<td>Number of Workers’ Compensation Claims per 100 Employees</td>
<td></td>
</tr>
</tbody>
</table>

| $ Workers’ Compensation cost per open claim per employee | Workers’ Compensation cost per open claim per employee shows the trend in the average cost per claim over time and highlights external cost changes. Increasing trends are negative in terms of Workers’ Compensation costs. Increases are largely due to changes in payment requirements under Workers’ Compensation laws. |
$ annual Workers’ Compensation costs

Annual Workers’ Compensation costs show the trend for overall costs year-to-year. Increasing trends in total Workers’ Compensation costs are negative. Changes in total cost are influenced by the number of claims and payment requirements under Workers’ Compensation laws.

Total Workers’ Compensation Costs

- 2006-2007: $3,225,921
- 2007-2008: $5,050,072
- 2008-2009: $5,114,225
- 2009-2010: $5,257,704
- 2010-2011: $6,508,066
- 2011-2012: $6,212,811
- 2012-2013: $5,828,270
- 2013-2014: $6,208,543
- 2014-2015: $8,377,570
Other Risk Management

The Risk Management Division tracks levels of insurance coverage relative to premiums paid for the coverage over time, as shown in Table II.4j.

<table>
<thead>
<tr>
<th>Measurements Used</th>
<th>Significance and LAW A Risk Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insurance Coverage</td>
<td></td>
</tr>
<tr>
<td>$ property/casualty insurance coverage levels relative to cost</td>
<td>Due in large part to favorable market conditions that Risk Management has taken advantage of, LAWA is getting greater coverage at a significantly reduced cost.</td>
</tr>
<tr>
<td>$ aviation and terrorism insurance</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Property/Casualty Coverage Levels Relative to Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>General aviation liability coverage levels relative to cost</td>
</tr>
</tbody>
</table>
### BALANCED SCORECARDS – FINANCIALS & RISK MANAGEMENT

The next pages display the BSCs that KH developed in collaboration with the Chief Financial Officer and Comptroller to meet LAWA’s goal of financial stability and sustainability.
## Los Angeles World Airports (LAWA): Industrial, Economic, & Administrative (IEA) Survey

### Balanced Scorecard: FINANCE

<table>
<thead>
<tr>
<th>#</th>
<th>Financial Measurement Description</th>
<th>2010-2011</th>
<th>2011-2012</th>
<th>2012-2013</th>
<th>2013-2014</th>
<th>2014-2015</th>
<th>5-Year Average</th>
<th>% Change From Prior Year</th>
<th>Target 2020</th>
<th>Freq</th>
</tr>
</thead>
<tbody>
<tr>
<td>1-8</td>
<td>Customer Experience</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td># days invoice process cycle time</td>
<td>25</td>
<td>25</td>
<td>23</td>
<td>24</td>
<td>29</td>
<td>25.2</td>
<td>21%</td>
<td>&gt;30</td>
<td>M</td>
</tr>
<tr>
<td>1.2</td>
<td>Airport Infrastructure/Operations</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.2.1</td>
<td># enplanements (000s)</td>
<td>30,281</td>
<td>31,519</td>
<td>32,524</td>
<td>34,334</td>
<td>36,114</td>
<td>32,954.4</td>
<td>5%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.2.2</td>
<td>$ LAX landing fee</td>
<td>$4.06</td>
<td>$4.24</td>
<td>$4.37</td>
<td>$4.33</td>
<td>$4.27</td>
<td>$4.25</td>
<td>-1%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.2.3</td>
<td>$ LAX airline costs per Enplaned Passenger (EPAX)</td>
<td>$11.36</td>
<td>$12.18</td>
<td>$12.31</td>
<td>$13.50</td>
<td>$14.18</td>
<td>$12.71</td>
<td>5%</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.2.4</td>
<td># cargo tonnage</td>
<td>NA</td>
<td>1,993,593</td>
<td>1,928,720</td>
<td>2,002,910</td>
<td>2,132,486</td>
<td>NA</td>
<td>6%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>Internal Organization/Technology</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.3.1</td>
<td># average days accounts receivable outstanding</td>
<td>17</td>
<td>17</td>
<td>21</td>
<td>20</td>
<td>14</td>
<td>17.8</td>
<td>-30%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.3.2</td>
<td>% annual bad debt write-off as a % of annual revenue</td>
<td>0.01%</td>
<td>0.01%</td>
<td>0.05%</td>
<td>0.05%</td>
<td>0.04%</td>
<td>0.03%</td>
<td>-20%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3.3</td>
<td>% Discounts Received as a % of Discounts Available</td>
<td>90%</td>
<td>96%</td>
<td>98%</td>
<td>96%</td>
<td>89%</td>
<td>94%</td>
<td>-7%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3.4</td>
<td>$ General Aviation &amp; Terrorism Insurance Coverage ($million)</td>
<td>$1.3</td>
<td>$1.3</td>
<td>$1.3</td>
<td>$1.3</td>
<td>$1.3</td>
<td>$1.3</td>
<td>0%</td>
<td>$1.3 A</td>
<td></td>
</tr>
<tr>
<td>1.3.5</td>
<td>$ General Aviation &amp; Terrorism Insurance Premiums ($million)</td>
<td>$3.81</td>
<td>$3.64</td>
<td>$3.67</td>
<td>$3.61</td>
<td>$3.31</td>
<td>$3.61</td>
<td>-8%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3.6</td>
<td>$ Property/Casualty Coverage ($ billion)</td>
<td>$1.50</td>
<td>$1.50</td>
<td>$2.00</td>
<td>$2.00</td>
<td>$2.25</td>
<td>$1.85</td>
<td>13%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.3.7</td>
<td>$ Property/Casualty Premiums ($ million)</td>
<td>$3.93</td>
<td>$3.91</td>
<td>$4.00</td>
<td>$3.70</td>
<td>$4.39</td>
<td>$3.99</td>
<td>19%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>Learning Employees, People &amp; Culture</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4.1</td>
<td># LAX employee headcount</td>
<td>3,144</td>
<td>3,200</td>
<td>3,168</td>
<td>3,161</td>
<td>3,170</td>
<td>3,169</td>
<td>0%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.4.2</td>
<td># LAX employee headcount per Million Annual Passengers (MAP)</td>
<td>103.8</td>
<td>101.5</td>
<td>97.4</td>
<td>92.1</td>
<td>87.8</td>
<td>96.5</td>
<td>-5%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.4.3</td>
<td># Workers’ Compensation claims per 100 employees</td>
<td>12</td>
<td>12</td>
<td>13</td>
<td>11</td>
<td>13</td>
<td>12.2</td>
<td>18%</td>
<td>10</td>
<td>Q</td>
</tr>
<tr>
<td>1.4.4</td>
<td>$ total Workers’ Compensation costs</td>
<td>$6,508,065</td>
<td>$6,712,811</td>
<td>$5,824,370</td>
<td>$6,208,543</td>
<td>$8,377,970</td>
<td>$6,726,352</td>
<td>35%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>Financial</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.1</td>
<td>Total debt service coverage</td>
<td>2.54</td>
<td>2.61</td>
<td>3.02</td>
<td>3.28</td>
<td>2.54</td>
<td>2.8</td>
<td>-23%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.5.2</td>
<td># days cash on hand</td>
<td>449</td>
<td>424</td>
<td>407</td>
<td>365</td>
<td>412</td>
<td>411.4</td>
<td>13%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.5.3</td>
<td>$ debt per EPAX</td>
<td>$119.56</td>
<td>$113.32</td>
<td>$116.49</td>
<td>$116.00</td>
<td>$119.05</td>
<td>$116.88</td>
<td>3%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.5.4</td>
<td>$ LAX operating expense</td>
<td>$541,228</td>
<td>$580,160</td>
<td>$589,430</td>
<td>$610,027</td>
<td>$645,398</td>
<td>$593,249</td>
<td>6%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.5.5</td>
<td>$ LAX operating expense per EPAX</td>
<td>$17.87</td>
<td>$18.41</td>
<td>$18.12</td>
<td>$17.77</td>
<td>$18.77</td>
<td>$18.01</td>
<td>1%</td>
<td>A</td>
<td></td>
</tr>
<tr>
<td>1.5.6</td>
<td>$ terminal concession revenue ($000s)</td>
<td>$122,522</td>
<td>$126,391</td>
<td>$141,672</td>
<td>$154,374</td>
<td>$166,745</td>
<td>$142,301</td>
<td>8%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.5.7</td>
<td>$ terminal concession revenue ($000s) per square foot</td>
<td>$29.28</td>
<td>$26.91</td>
<td>$27.28</td>
<td>$30.02</td>
<td>$31.99</td>
<td>$29.10</td>
<td>7%</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.5.8</td>
<td>$ terminal concession revenue ($000s) per EPAX</td>
<td>$4.05</td>
<td>$4.00</td>
<td>$4.36</td>
<td>$4.50</td>
<td>$4.61</td>
<td>$4.30</td>
<td>2%</td>
<td>Q</td>
<td></td>
</tr>
<tr>
<td>1.5.9</td>
<td>$ non-terminal concession revenue ($000s)</td>
<td>$140,673</td>
<td>$152,576</td>
<td>$162,467</td>
<td>$176,937</td>
<td>$187,337</td>
<td>$163,998</td>
<td>6%</td>
<td>M</td>
<td></td>
</tr>
<tr>
<td>1.5.10</td>
<td>$ non-terminal concession revenue ($000s) per EPAX</td>
<td>$4.64</td>
<td>$4.84</td>
<td>$4.99</td>
<td>$5.15</td>
<td>$5.19</td>
<td>$4.96</td>
<td>1%</td>
<td>Q</td>
<td></td>
</tr>
</tbody>
</table>

**Los Angeles World Airports (LAWA): Industrial, Economic, & Administrative (IEA) Survey**

**Chapter II.4, BSC-Finance**
II.5: BSC – ADMINISTRATION

OVERVIEW

KH worked with several functions currently arrayed under the Deputy Executive Director, Administration, to develop BSCs for Procurement Services, Human Resources (HR) Services, and Internal Audit. Because of the nature of their services, these areas can affect all LAWA divisions. They each had a difficult time compiling the data for the BSCs because most of the indicators to be tracked required designing manual systems. Specifically:

- **Procurement Services** has not compiled performance metrics, and has only current information on cycle times.
- **Human Resources Services** is just now beginning to gather monthly cycle-time data and relies on manual data collection methods.
- **Internal Audit** has gathered 2014-2015 data.

PROCUREMENT SERVICES

The number of solicitations, particularly RFBs, has declined during the last four years, in part because of the Chief Executive Officer’s newly approved authority to award multi-year contracts. Professional and Construction contract awards have comprised the bulk of LAWA’s contracting due to the Modernization projects of the last few years. This trend will likely continue with the implementation of LAMP.
While gathering data, Procurement defined several performance areas to track and identified potential issues to delve deeper into.

**BOAC-approved Contracts take longer (5 months) than non-BOAC approved contracts.** As shown in Table II.5a, LAWA has made a significant improvement in the number of days required for BOAC-approved professional services contracts since 2012-2013. Even with these improvements, the cycle times are still long; average cycle time for BOAC-approved contracts is approximately 5 months, from posting of solicitation on LABAVN to BOAC for authorization to award.

There are many potential causes for the extended time period for BOAC-approved contracts, including “delays” that do not apply to other contracts. The delays include City Attorney review, contract development and execution, alignment with the BOAC calendar and agenda review cycle, and City Council approvals, when required.

**Table II.5a: Sample Procurement Measurements: Cycle Times for Contract Approval**

<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>LAWA Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td># days to complete BOAC-approved contracts</td>
<td></td>
</tr>
<tr>
<td># days to complete contracts that do not require BOAC approval</td>
<td></td>
</tr>
</tbody>
</table>

LAWA may not be getting optimal pools of bidders; 58% of the solicitations receive only 1 or 2 bids and represent 60% of the awarded dollar value for Goods, Equipment, and Non-Professional Services (GENPs) in 2014-2015, as discussed in Chapter I.5 and shown in Table II.5b. The number of firms attending the “Doing Business with LAWA” has also decreased over the past 5 years.
Table II.5b: Sample Procurement Measurements: Number of Bids and Vendor Training

<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>LAWA Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% solicitations with 3 or more bids</td>
<td>GENPS RFBs: Number of Bid Responses</td>
</tr>
<tr>
<td>$ solicitations with 3 or more bids</td>
<td></td>
</tr>
</tbody>
</table>

Good metrics lead to good questions more than good answers. Without historical trend data on the number of bidders and additional information about how LAWA compares to City-wide success in this indicator, it is only possible to speculate on potential causes to this limited number of bidders. As discussed in Chapter I.5, LAWA has identified a number of potential barriers. LAWA will need to research and analyze the causes to recommend appropriate steps to take to increase the percent of multiple-bid solicitations.

At LAWA, the annual inventory count percent variance has been low in two years, but spiked in 2013-2014, as shown in Table II.5c. LAWA measures its performance against a variance standard of between 3% and 5%. Tracking these types of metrics will lead LAWA managers to raise questions and explore the causes.
Table II.5c: Sample Warehousing Measurements

<table>
<thead>
<tr>
<th>Potential Measurements</th>
<th>LAWA Performance</th>
</tr>
</thead>
<tbody>
<tr>
<td>% annual inventory count variance</td>
<td>![Graph showing LAX Warehouse Annual Inventory Count Percent Variance from 2012-13 to 2014-15]</td>
</tr>
</tbody>
</table>

Note: Industry percentage variance standard is 3% to 5%

HUMAN RESOURCES (HR) SERVICES

Human Resources (HR) Services Division’s mission is to:

- Onboard new employees
- Create and retain employee personnel records
- Provide guidance to management and LAWA employees
- Ensure EEO compliance with LAWA and City policies and State and Federal laws
- Assist in employee development through training and education
- Investigate misconduct and other disputes where necessary; partner with management and take action to address misconduct as necessary

HR Transactions

Finding. Human Resources (HR) Services maintains primarily transaction and volume data, as key indicators of workload.

Human Resources (HR) Services maintains a wide variety of numerical data. Most of the historical data involve volumes of transactions: volume of employee relations case work, volume of front counter interactions, number of employees on the attendance deviation program, and number of complaints filed monthly.

Number of transactions is one indicator of workload. HR has data on:

- # HR transactions, which have increased since 2013 and are anticipated to increase again in 2016
- # front-counter transactions, which have declined between 2014 and 2015
- # discipline cases handled
# EEO cases received
# LAWA employees trained
# new LAWA employees attending orientation

### HR Transactions:
Request To Fill (RTF) Forms Processed

<table>
<thead>
<tr>
<th>Year</th>
<th>All Others</th>
<th>New Employee Orientation</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012-3</td>
<td>215</td>
<td>156</td>
</tr>
<tr>
<td>2013-4</td>
<td>116</td>
<td>198</td>
</tr>
<tr>
<td>2014-5</td>
<td>177</td>
<td>396</td>
</tr>
<tr>
<td>2015-6</td>
<td>547</td>
<td>289</td>
</tr>
</tbody>
</table>

### HR Front Counter Customer Experience

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Front Counter Service Requests</th>
</tr>
</thead>
<tbody>
<tr>
<td>2014</td>
<td>7,746</td>
</tr>
<tr>
<td>2015</td>
<td>4,835</td>
</tr>
</tbody>
</table>

### Total Discipline Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of Discipline Cases</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012</td>
<td>23</td>
</tr>
<tr>
<td>2013</td>
<td>33</td>
</tr>
<tr>
<td>2014</td>
<td>19</td>
</tr>
<tr>
<td>2015</td>
<td>21</td>
</tr>
</tbody>
</table>

### EEO Cases

<table>
<thead>
<tr>
<th>Year</th>
<th>Number of EEO Cases Received</th>
</tr>
</thead>
<tbody>
<tr>
<td>2013</td>
<td>45</td>
</tr>
<tr>
<td>2014</td>
<td>57</td>
</tr>
<tr>
<td>2015</td>
<td>45</td>
</tr>
</tbody>
</table>
HR Cycle Times

Finding. Human Resources (HR) Services understands the value, but lacks cycle time data that would help it to provide better customer service.

During the course of the IEA Survey, HR conducted a survey of the HR staff members as part of an introspective effort to first evaluate itself. When asked, “I understand the divisional goals and how I contribute to LAWA’s overall purpose,” 63% responded always, 24% responded usually, and 13% responded sometimes.

HR faced some challenges in compiling cycle-time data and launched an effort to gather such metrics as part of the IEA Survey. Cycle time tracking is only available through manual systems that are being designed as a result of this IEA Survey. Therefore, only one or two months’ of data were collected for this IEA Survey Report. Ongoing gathering of the information will provide a baseline to establish improvement targets, and will permit analysis of the factors that affect the ability of HR to reach new targets. HR has plans to compile needed data in going forward.

Cycle times are being gathered in the areas most often cited by HR clients as areas of concern:

- # days to fill budgeted and non-budgeted positions
- # days to allocate a new position
- # days to establish a List of Eligible Candidates
- % discipline cases – civilian – where the HR review met turnaround 90-day goal
- % discipline cases – Law Enforcement & Homeland Security Division – where the HR review met turnaround 30-day goal
- % workplace violence cases getting timely review within 90 days after the initial threat assessment
- % EEO cases meeting case closure goals
As a result of this data-gathering process with KH, HR management acquired a deeper appreciation that performance measurements are most helpful when one understands the logic and reasoning behind them and uses the metrics to answer the 'why' related to HR’s performance in various service areas. Through this approach, HR can use its databases and trend data to improve and predict HR’s future performance.

**Human Factor Data**

**Finding.** Human Resources (HR) Services identified key measurements for monitoring LAWA employee satisfaction and experiences.

As a result of the IEA Survey, HR has identified a number of priority areas where gathering HR metrics will be useful in terms of understanding LAWA employees’ satisfaction.

**Orientation and supervisory training.** HR recently solicited feedback on its New Employee Orientation course; on a scale of “1 to 5” with “5” being “High,” 15% rated it 4, 85% rated it 5. Similarly, the end-of-course survey on the Supervisor’s Toolkit training received a 4.7 on a scale of 5 in overall satisfaction. HR plans to track the effectiveness of the course from the point of view of the supervisors of those who took the course to determine whether improvements were noticed.

**Employee satisfaction ratings.** In the next fiscal year, budget permitting, HR is planning to launch a LAWA-wide questionnaire of employee satisfaction that will include questions from the employee questionnaire conducted by KH Consulting Group (KH) as part of the 2008 IEA Survey. Using the same questions will permit assessment of the change in employees’ opinions over the past 8 years.

**Gender equity.** Gender equity has been a focus of Mayor Garcetti; LA City departments report on performance in non-traditional positions. Table II.5d displays LAWA’s performance in terms of gender equity. Overall, 50% of the leadership is female; however, 23% of LAWA’s workforce in non-traditional positions is female – an area HR plans to focus on.
Table II.5d: Gender Equity, By EEO Category, at LAWA

<table>
<thead>
<tr>
<th>Gender Equity Category</th>
<th>EEO Category</th>
<th># Females</th>
<th>Total # of Employees</th>
<th>% Females</th>
</tr>
</thead>
<tbody>
<tr>
<td>Leadership</td>
<td>Category A: Officials/Administration</td>
<td>54</td>
<td>109</td>
<td>50%</td>
</tr>
<tr>
<td>Administrative</td>
<td>Category E: Paraprofessionals</td>
<td>1</td>
<td>1</td>
<td>88%</td>
</tr>
<tr>
<td></td>
<td>Category F: Administrative Support</td>
<td>298</td>
<td>339</td>
<td></td>
</tr>
<tr>
<td>Non-Traditional</td>
<td>Category C: Technicians</td>
<td>22</td>
<td>151</td>
<td>23%</td>
</tr>
<tr>
<td></td>
<td>Category D: Protective Service Workers</td>
<td>160</td>
<td>875</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category G: Skilled Craft Workers</td>
<td>7</td>
<td>423</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Category H: Service-Maintenance</td>
<td>325</td>
<td>813</td>
<td></td>
</tr>
<tr>
<td>Professionals</td>
<td>Category B: Professionals</td>
<td>261</td>
<td>503</td>
<td>52%</td>
</tr>
</tbody>
</table>

**INTERNAL AUDIT**

Internal Audit has been tracking metrics associated with:

- # hours expended in audits
- # training required for maintenance of certifications

In alignment with the recommendations included in Chapter I.3 for an expanded role of Internal Audit, the scorecard will also track:

- # audits identified as high risk that were completed
- % approved audit plan completed
- # recommendations implemented within the recommended timeframe
- # satisfaction rating with audits performed

**BALANCED SCORECARDS – ADMINISTRATION**

Given the data constraints, just discussed, the initial BSC developed for Procurement Services, Human Resources Services, and Internal Audit is in the following pages.
Los Angeles World Airports (LAWA): Industrial, Economic, & Administrative (IEA) Survey
Industrial, Economic, & Administrative (IEA) Survey
Balanced Scorecard: **ADMINISTRATION**

<table>
<thead>
<tr>
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</tr>
</thead>
<tbody>
<tr>
<td><strong>Public Accountability</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1 Procurement</td>
<td>$ total value of contracts awarded subject to SBE Program</td>
<td>NA</td>
<td>NA</td>
<td>$410,784,255</td>
<td>$225,256,267</td>
<td>-45.2%</td>
<td></td>
</tr>
<tr>
<td>1.2 Procurement</td>
<td>$ total value of SBE awards combined as primes and subcontractors</td>
<td>NA</td>
<td>NA</td>
<td>$120,580,852</td>
<td>$63,789,981</td>
<td>-47.1%</td>
<td></td>
</tr>
<tr>
<td>1.3 Procurement</td>
<td>% dollar value of SBE awards combined as primes and subcontractors</td>
<td>NA</td>
<td>NA</td>
<td>29.35%</td>
<td>28.31%</td>
<td>-0.01%</td>
<td></td>
</tr>
<tr>
<td>1.4 Procurement</td>
<td># firms trained at Doing Business with LAWA workshop</td>
<td>142</td>
<td>122</td>
<td>109</td>
<td>112</td>
<td>2.8%</td>
<td></td>
</tr>
<tr>
<td><strong>Customer Service (within LAWA)</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1 Procurement</td>
<td># average days between BAVN posting of Professional Services RFPs and BOAC contract award</td>
<td>NA</td>
<td>174</td>
<td>143</td>
<td>162</td>
<td>13.3%</td>
<td></td>
</tr>
<tr>
<td>2.2 Procurement</td>
<td># average days between BAVN posting of GENPS RFBs and BOAC contract award</td>
<td>NA</td>
<td>151</td>
<td>148</td>
<td>119</td>
<td>-19.6%</td>
<td></td>
</tr>
<tr>
<td>2.3 Procurement</td>
<td># average days between BAVN posting of Non-BOAC GENPS RFBs and PSD contract award</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>90</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2.4 HR</td>
<td>Cycle time for new employee onboarding - Budgeted</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2.5 HR</td>
<td>Cycle time for new employee onboarding - Not Budgeted</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2.6 HR</td>
<td>Cycle time for allocation request</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2.7 HR</td>
<td>Cycle time for exam requests to Personnel</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2.8 HR</td>
<td>% HR front counter service requests completed within 1 trip</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>2.9 Internal Audit</td>
<td>% customers satisfied per audit</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td><strong>Internal Organization/Technology</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1 Procurement</td>
<td># RFIs w/project and administrative review</td>
<td>6</td>
<td>10</td>
<td>13</td>
<td>12</td>
<td>-7.7%</td>
<td></td>
</tr>
<tr>
<td>3.2 Procurement</td>
<td># RFQs w/project, administrative and vendor review</td>
<td>6</td>
<td>1</td>
<td>4</td>
<td>5</td>
<td>25.0%</td>
<td></td>
</tr>
<tr>
<td>3.3 Procurement</td>
<td># RFPs w/project, administrative, vendor and evaluation review</td>
<td>29</td>
<td>33</td>
<td>33</td>
<td>34</td>
<td>3.0%</td>
<td></td>
</tr>
<tr>
<td>3.4 Procurement</td>
<td># RFBs for GENPS reviewed and processed</td>
<td>199</td>
<td>190</td>
<td>189</td>
<td>137</td>
<td>-27.5%</td>
<td></td>
</tr>
<tr>
<td>3.5 Procurement</td>
<td>$ value of BOAC approved Professional Services contracts</td>
<td>NA $58,550,787</td>
<td>$432,728,198</td>
<td>$116,122,406</td>
<td>-73.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.6 Procurement</td>
<td>$ value of BOAC approved Construction Engineering contracts</td>
<td>NA $438,012,062</td>
<td>$354,874,217</td>
<td>$369,270,332</td>
<td>4.1%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.7 Procurement</td>
<td>$ value of BOAC approved GENPS contracts</td>
<td>NA $46,630,298</td>
<td>$105,352,526</td>
<td>$85,401,732</td>
<td>-18.9%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.8 Procurement</td>
<td>$ value of Non-BOAC approved GENPS contracts awarded</td>
<td>NA $6,923,970</td>
<td>$17,366,675</td>
<td>$18,437,993</td>
<td>6.2%</td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.9 Procurement</td>
<td>% GENPS contract solicitations fewer than 3 bids</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>58%</td>
<td></td>
</tr>
</tbody>
</table>
### Balanced Scorecard: ADMINISTRATION

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
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<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>% GENPS contract solicitations receiving a single bid</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>29%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>$ value of GENPS cooperative purchasing awards</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>$3,836,924</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% value of GENPS cooperative purchasing awards</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>4%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>$ value of GENPS Emergency Purchase Orders</td>
<td>NA</td>
<td>$56,357</td>
<td>$74,151</td>
<td>$77,364</td>
<td>4.9%</td>
<td>NA</td>
</tr>
<tr>
<td>% variance in LAX Warehouse</td>
<td>NA</td>
<td>5.5%</td>
<td>2.0%</td>
<td>4.3%</td>
<td>0.02</td>
<td>NA</td>
</tr>
<tr>
<td># HR front counter requests for service</td>
<td>NA</td>
<td>NA</td>
<td>7,746</td>
<td>4,835</td>
<td>-37.6%</td>
<td>NA</td>
</tr>
<tr>
<td># satisfaction with New Employee Orientation by new employees - November 2015 (Scale 5)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>4.85</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td># satisfaction with Tool Kit training (Fall 2015)</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>4.7</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% HR staff surveyed who understand HR contribution to LAWA purpose</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>87%</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td># Airport Police Discipline cases completed within 30 days</td>
<td>38</td>
<td>38</td>
<td>42</td>
<td>35</td>
<td>-16.7%</td>
<td>NA</td>
</tr>
<tr>
<td># Civilian Discipline cases completed within 90 days</td>
<td>23</td>
<td>33</td>
<td>19</td>
<td>21</td>
<td>10.5%</td>
<td>NA</td>
</tr>
<tr>
<td># discipline cases not challenged</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% discipline appeals upheld</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% EEO complaint investigations completed within 90 days</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% workplace violence cases completed within 90 days</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% women in non-traditional jobs</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td># employees attending new employee orientation</td>
<td>NA</td>
<td>156</td>
<td>198</td>
<td>336</td>
<td>69.7%</td>
<td>NA</td>
</tr>
<tr>
<td>% women in non-traditional jobs</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>23%</td>
<td>NA</td>
<td>1,220</td>
</tr>
<tr>
<td>% total hours available for audits per auditor</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% staff hours spent auditing per auditor</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>% high risk audits completed from approved audit plan</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>100</td>
</tr>
<tr>
<td>% audits completed within +/- 10% of budget</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>100</td>
</tr>
<tr>
<td>% recommendations fully implemented</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>90</td>
</tr>
<tr>
<td>% audits completed at Executive Mgmts. request</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>100</td>
</tr>
<tr>
<td>% staff time spent managing external auditors</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>10</td>
</tr>
</tbody>
</table>
## Los Angeles World Airports (LAWA): Industrial, Economic, & Administrative (IEA) Survey

### Balanced Scorecard: ADMINISTRATION

<table>
<thead>
<tr>
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</thead>
<tbody>
<tr>
<td><strong>Learning Employees</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.1 Procurement</td>
<td># trainings classes/industry conferences attended by PSD staff</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>18</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>4.2 Procurement</td>
<td># Contract Managers and DCAs attending P&amp;C Training Program</td>
<td>58</td>
<td>70</td>
<td>91</td>
<td>88</td>
<td>-3.3%</td>
<td></td>
</tr>
<tr>
<td><strong>Finance</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.3 Finance</td>
<td>LAX Employee Headcount</td>
<td>3,200</td>
<td>3,168</td>
<td>3,161</td>
<td>3,170</td>
<td>0.3%</td>
<td>40</td>
</tr>
<tr>
<td><strong>Internal Audit</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4.4 Internal Audit</td>
<td># CPE hours completed per auditor</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>40</td>
</tr>
<tr>
<td>4.5 Internal Audit</td>
<td># Audit Related CPE credits completed per auditor</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>20</td>
</tr>
<tr>
<td>4.6 Internal Audit</td>
<td># of Ethics Related CPE credits completed per auditor</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>8</td>
</tr>
<tr>
<td>4.7 Internal Audit</td>
<td># Professional Certifications obtained/maintained per staff</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
<td>1</td>
</tr>
<tr>
<td><strong>Financial</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5.1 Procurement</td>
<td>$ estimated savings through competitive bidding of GENPS contracts</td>
<td>`</td>
<td>NA</td>
<td>NA</td>
<td>$857,673</td>
<td>NA</td>
<td></td>
</tr>
</tbody>
</table>

---

Chapter II.5, BSC - Administration
II.6: BSC – INFORMED PUBLIC

OVERVIEW

There are many audiences and purposes for metrics gathered by public agencies. KH focused on strategic and executive/managerial aspects, as contrasted with comprehensive operational metrics used day-to-day. While most of these data and metrics are available to the public through the California Public Records Act (CPRA), most residents are not likely to be interested in the level of detail that is reported in this IEA Survey report.

The Public can be divided into three separate groups:

- **Informed guests.** A key piece of the Guest Experience BSC is informed guests, already discussed in Chapter I.4 and Chapter II.3. The interests of guests and “meeters and greeters” largely lie in receiving real-time information about getting to and from flights, and knowing where to access concessions and amenities. LAWA is focusing on ensuring that the desired information is available through different communication channels and media.

- **Informed neighbors.** The surrounding communities will be interested in the environmental metrics and some of the economic development metrics gathered in the CSR BSC, covered in Chapter I.3 and Chapter II.2. The neighbors are most concerned about traffic and noise – both likely to be ongoing issues with all communities surrounding LAX. Moreover, noise will continue to be an important discussion due to the FAA’s upgrade to a satellite system that is designed to reduce air traffic congestion with more direct and condensed routing into airports that will change noise contours. Therefore, it will be helpful for neighboring communities to understand the economic benefits of the airport – how many of their neighbors earn their livelihood because of LAX – to counterbalance the potential discomfort and inconvenience of noise and traffic disruptions.

- **LA city residents.** That leaves City residents, who are not traveling to and from the airport and who are not neighbors of the airport. As taxpayers, and as responsible Angelenos, they will want to be certain that:
  - LAWA is being operated safely, effectively, fairly, and efficiently.
  - The economic benefits of the airport are being managed well.
  - The negative environmental impacts are closely watched and managed.

At the same time, the public does not want to be required to review a large number of indicators. This section suggests a BSC listing a handful of important metrics that might be of interest to those residents.

---

The areas of greatest interest to the public regarding LAWA are:

- **LA Image and Reputation** – LAWA as a great asset that promotes a positive image of Los Angeles as an international gateway
- **Economic Impact** – LAWA as an economic engine for LA City
- **Environmental Responsibility** – LAWA as a responsible environmental citizen
- **Effective Management** – LAWA as an effectively managed City department
- **Efficient Management & Operations** – LAWA as an efficiently managed City department
- **Fiscal Responsibility** – LAWA as a well-run business

Table II.6a presents a roadmap of where LAWA would locate the metrics for building an Informed Public scorecard for these areas of greatest interest to the public. LAWA will want to display the data in user-friendly ways – graphs, trend lines, etc.

**Table II.6a: Roadmap for Building an Informed Public Balanced Scorecard, Linked to Sample Goals and Potential Measurements**

<table>
<thead>
<tr>
<th>#</th>
<th>Scorecard Source</th>
<th>Measurement Description</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td><strong>LA Image and Reputation</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Goal:</strong> LAWA as a great asset that promotes a positive image of Los Angeles as an international gateway</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td># LAX ranking among world airports</td>
</tr>
<tr>
<td></td>
<td>Guest Experience</td>
<td># guest satisfaction ratings</td>
</tr>
<tr>
<td></td>
<td>Guest Experience</td>
<td># non-stop flights in U.S. and internationally</td>
</tr>
<tr>
<td></td>
<td>Guest Experience</td>
<td># international cities and foreign countries served</td>
</tr>
<tr>
<td></td>
<td>Finance</td>
<td># LAX ranking among world airports</td>
</tr>
<tr>
<td></td>
<td>Guest Experience</td>
<td># criminal complaints</td>
</tr>
<tr>
<td></td>
<td><strong>Economic Impact</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Goal:</strong> LAWA as an economic engine for LA City</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSR</td>
<td># total direct and indirect jobs created by LAWA</td>
</tr>
<tr>
<td></td>
<td>CSR</td>
<td># total direct and indirect revenues generated by LAX (TOT, POT, sales tax, etc.)</td>
</tr>
<tr>
<td></td>
<td><strong>Environmental Responsibility</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Goal:</strong> LAWA as a responsible environmental citizen</td>
<td></td>
</tr>
<tr>
<td></td>
<td>CSR</td>
<td># year-over-year changes in GHG emissions</td>
</tr>
<tr>
<td></td>
<td>CSR</td>
<td># year-over-year changes in water usage</td>
</tr>
<tr>
<td></td>
<td>CSR</td>
<td># GHG emissions per MAP</td>
</tr>
<tr>
<td></td>
<td>CSR</td>
<td># GHG ranking of LAX as a domestic airport (if available)</td>
</tr>
<tr>
<td></td>
<td><strong>Effective Management</strong></td>
<td></td>
</tr>
<tr>
<td></td>
<td><strong>Goal:</strong> LAWA as an effectively managed City department</td>
<td></td>
</tr>
<tr>
<td></td>
<td>NA</td>
<td># runway incursions or other airplane safety issues</td>
</tr>
</tbody>
</table>
## Scorecard Source

<table>
<thead>
<tr>
<th>Scorecard Source</th>
<th>Measurement Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>CSR</td>
<td># citations by regulatory agencies</td>
</tr>
</tbody>
</table>

### Efficient Management & Operations

**Goal:** LAWA as an efficiently managed City department

<table>
<thead>
<tr>
<th>Finance</th>
<th>$ cost per enplaned passenger (EPAX)</th>
</tr>
</thead>
<tbody>
<tr>
<td>NA</td>
<td>$ construction cost overruns</td>
</tr>
</tbody>
</table>

### Fiscal Responsibility

**Goal:** LAWA as a well-run business

<table>
<thead>
<tr>
<th>Finance</th>
<th>LAWAN debt rating</th>
</tr>
</thead>
<tbody>
<tr>
<td>Finance</td>
<td>$ LAWAN operating expenses per EPAX</td>
</tr>
<tr>
<td>Finance</td>
<td>$ LAWAN revenues</td>
</tr>
</tbody>
</table>

**Note:** NA = Available at LAWAN, but not in any of the BSC prototypes that KH developed.

### BALANCED SCORECARDS – INFORMED PUBLIC

The next pages display the BSC that KH developed for an “Informed Public,” based on available data at the time of this IEA Survey.
<table>
<thead>
<tr>
<th>#</th>
<th>Focus Informed Public Measurement Description</th>
<th>FY 2013-2014 or CY 2014</th>
<th>FY 2014-2015 or CY 2015</th>
<th>% Change from Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>LA Image &amp; Reputation: LAWA as a great asset that promotes a positive image of Los Angeles as an international gateway</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.1</td>
<td>LAX Ranking # LAX ranking among world airports</td>
<td>2</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1.2</td>
<td>LAX Ranking # ranking in terms of size, based on MAP - U.S. (ACI)</td>
<td>5</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1.3</td>
<td>LAX Ranking # ranking in terms of size, based on MAP - Worldwide (ACI)</td>
<td>3</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1.4</td>
<td>LAX Ranking # aircraft movements - ranking (ACI)</td>
<td>5</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1.5</td>
<td>LAX Ranking # ranking for air cargo tonnage processed- U.S. (ACI)</td>
<td>15</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1.6</td>
<td>LAX Ranking # ranking for air cargo tonnage processed- Worldwide (ACI)</td>
<td>70,663,265</td>
<td>74,936,256</td>
<td>6.0%</td>
</tr>
<tr>
<td>1.7</td>
<td>LAX Size # PAX (enplaned/deplaned, transit PAX counted once) (ACI)</td>
<td>NA</td>
<td>NA</td>
<td>TBD 2016</td>
</tr>
<tr>
<td>1.8</td>
<td>Guest Experience # guest satisfaction ratings (ACI/ASQ survey)</td>
<td>NA</td>
<td>NA</td>
<td></td>
</tr>
<tr>
<td>1.9</td>
<td>Guest Experience # LAX PAX rating out of 1,000 points on J.D. Power North American Airport Study</td>
<td>NA</td>
<td>670</td>
<td>NA</td>
</tr>
<tr>
<td>1.10</td>
<td>Guest Experience # LAX ranking out of 31 largest domestic airports based on J.D. Powers North American Airport Study</td>
<td>NA</td>
<td>29</td>
<td>NA</td>
</tr>
<tr>
<td>1.11</td>
<td>Air Services # non-stop cities (US) - LAX</td>
<td>102</td>
<td>98</td>
<td>-3.9%</td>
</tr>
<tr>
<td>1.12</td>
<td>Air Services # non-stop cities (int'l) - LAX</td>
<td>67</td>
<td>72</td>
<td>7.5%</td>
</tr>
<tr>
<td>1.13</td>
<td>Air Services # countries served from LAX</td>
<td>37</td>
<td>40</td>
<td>8.1%</td>
</tr>
<tr>
<td>1.14</td>
<td>Air Services # take-offs/landings per week</td>
<td>1,942</td>
<td>NA</td>
<td>1.4%</td>
</tr>
<tr>
<td>1.15</td>
<td>Air Services # ranking take-offs/landings per week in U.S.</td>
<td>3</td>
<td>3</td>
<td>No Change</td>
</tr>
<tr>
<td>1.16</td>
<td>Cargo # air cargo processed (loaded, unloaded, and mail) in metric</td>
<td>1,816,269</td>
<td>NA</td>
<td>3.9%</td>
</tr>
<tr>
<td>1.17</td>
<td>Cargo # air cargo processed (loaded, unloaded, and mail) in metric</td>
<td>1,816,269</td>
<td>NA</td>
<td>3.9%</td>
</tr>
<tr>
<td>1.18</td>
<td>Cargo $-billions air cargo value - LAX</td>
<td>$96.3</td>
<td>NA</td>
<td>5.1%</td>
</tr>
<tr>
<td>1.19</td>
<td>Safety # Part I crimes</td>
<td>532</td>
<td>583</td>
<td>9.6%</td>
</tr>
<tr>
<td>1.20</td>
<td>Safety # Part 1 crimes Per MAP (1 million passengers)</td>
<td>7.5</td>
<td>7.8</td>
<td></td>
</tr>
<tr>
<td>1.21</td>
<td>Safety # Part 1 crimes Per MAP Plus Badged Employees</td>
<td>--</td>
<td>7.4</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Economic Impact: LAWA as an economic engine for LA City</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.1</td>
<td>Tax Revenues $ estimated sales tax generated by airport-related businesses</td>
<td>NA</td>
<td>$4,163,960</td>
<td>NA</td>
</tr>
<tr>
<td>2.2</td>
<td>Tax Revenues $ Parking Occupancy Tax (POT) - LAWA</td>
<td>NA</td>
<td>$876,000</td>
<td>NA</td>
</tr>
<tr>
<td>2.3</td>
<td>Tax Revenues $-millions local tax revenues - LAX</td>
<td>$92,700,000</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2.4</td>
<td>Tax Revenues $ Possessory Interest Tax Revenue - VNY</td>
<td>$16,941,663</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2.5</td>
<td>Tax Revenues $ Secured Property Tax Revenue - VNY</td>
<td>$581,067</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>2.6</td>
<td>Jobs # jobs created in LA County - LAWA</td>
<td>NA</td>
<td>39,585</td>
<td>NA</td>
</tr>
<tr>
<td>2.8</td>
<td>Household Income $ (MM) labor income in adjacent zip codes - LAWA</td>
<td>NA</td>
<td>$11,336,981</td>
<td>NA</td>
</tr>
<tr>
<td>2.9</td>
<td>Household Income $ (estimated) earned by local households in LA County due to LAWA</td>
<td>NA</td>
<td>$150,014,413</td>
<td>NA</td>
</tr>
<tr>
<td>2.10</td>
<td>Household Income $ (estimated) earned by local households in LA City due to LAWA</td>
<td>NA</td>
<td>$45,563,335</td>
<td>NA</td>
</tr>
<tr>
<td>2.11</td>
<td>Economic Output - LAWA $ economic output - LAWA</td>
<td>NA</td>
<td>$963,524,793</td>
<td>NA</td>
</tr>
<tr>
<td>2.12</td>
<td>Economic-VNY # operations - VNY</td>
<td>238,000</td>
<td>NA</td>
<td>-11.9%</td>
</tr>
<tr>
<td>2.13</td>
<td>Economic-VNY # Fixed Base Operators</td>
<td>3</td>
<td>3</td>
<td>0%</td>
</tr>
<tr>
<td>3</td>
<td>Environmental Responsibility: LAWA as a responsible environmental citizen</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1</td>
<td>Noise # LAX noise complaints</td>
<td>NA</td>
<td>8,062</td>
<td>NA</td>
</tr>
<tr>
<td>3.2</td>
<td>Energy # kWh green power purchased</td>
<td>NA</td>
<td>20,917,626</td>
<td>NA</td>
</tr>
<tr>
<td>3.4</td>
<td>Materials &amp; Resources # tons recycled cardboard, mixed paper, plastic, glass, metal - LAX</td>
<td>9,530</td>
<td>NA</td>
<td>NA</td>
</tr>
</tbody>
</table>
### Balanced Scorecard: Informed Public

<table>
<thead>
<tr>
<th>#</th>
<th>Focus</th>
<th>Informed Public Measurement Description</th>
<th>FY 2013-2014 or CY 2014</th>
<th>FY 2014-2015 or CY 2015</th>
<th>% Change from Prior Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.5</td>
<td>Natural Resources</td>
<td># El Segundo Blue Butterfly individuals (average)</td>
<td>26,881</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>3.6</td>
<td>Water</td>
<td># gallons total Potable Water consumed LAX</td>
<td>NA</td>
<td>501,786,824</td>
<td>NA</td>
</tr>
<tr>
<td>3.7</td>
<td>Water</td>
<td># gallons Reclaimed water consumed LAX</td>
<td>NA</td>
<td>57,411,992</td>
<td>NA</td>
</tr>
<tr>
<td>3.8</td>
<td>Water</td>
<td># year-over-year changes in water usage</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>3.9</td>
<td>Water</td>
<td>$ savings using reclaimed water</td>
<td>NA</td>
<td>$300,000</td>
<td>NA</td>
</tr>
<tr>
<td>4.0</td>
<td>GHG</td>
<td># GHG emissions per MAP</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>4.1</td>
<td>GHG</td>
<td># GHG ranking o LAX as a domestic airport</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>4.2</td>
<td>GHG</td>
<td># year-over-year changes in GHG</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>4.3</td>
<td>Effective Management: LAWA as an effectively managed City department</td>
<td>LAX Debt per Enplaned Passenger</td>
<td>$116.00</td>
<td>$119.05</td>
<td>2.6%</td>
</tr>
<tr>
<td>4.4</td>
<td>Finance</td>
<td>#runway incursions or other airplane safety issues</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>4.5</td>
<td>Finance</td>
<td># citations by regulatory agencies</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>5.1</td>
<td>Efficient Management &amp; Operations: LAWA as an efficiently managed City department</td>
<td># LAX employee headcount</td>
<td>3,161</td>
<td>3,170</td>
<td>0.3%</td>
</tr>
<tr>
<td>5.2</td>
<td>Staffing</td>
<td># LAX employees per MAP (1:MAP)</td>
<td>92.1</td>
<td>87.8</td>
<td>-4.7%</td>
</tr>
<tr>
<td>5.3</td>
<td>Costs</td>
<td>$ cost per enplaned passenger (EPAX)</td>
<td>$13.50</td>
<td>$14.18</td>
<td>5.0%</td>
</tr>
<tr>
<td>5.4</td>
<td>Costs</td>
<td>$ construction cost overruns</td>
<td>NA</td>
<td>NA</td>
<td>NA</td>
</tr>
<tr>
<td>5.5</td>
<td>Fiscally Responsible: LAWA as a well-run business</td>
<td>LAX debt bond rating</td>
<td>AA</td>
<td>AA</td>
<td>No Change</td>
</tr>
<tr>
<td>5.6</td>
<td>Finance</td>
<td>$ revenues - landing fees - $/1,000 lbs. landed weight</td>
<td>$4</td>
<td>$4</td>
<td>No Change</td>
</tr>
<tr>
<td>5.7</td>
<td>Operations</td>
<td>$ LAX Operating Expense ($000s)</td>
<td>$610,027</td>
<td>$645,398</td>
<td>5.8%</td>
</tr>
<tr>
<td>5.8</td>
<td>Concessions</td>
<td>$ Terminal Concession Revenue ($000s)</td>
<td>$154,374</td>
<td>$166,745</td>
<td>8.0%</td>
</tr>
<tr>
<td>5.9</td>
<td>Expenses</td>
<td>$ LAX Operating Expense ($000s)</td>
<td>$610,027</td>
<td>$645,398</td>
<td>5.8%</td>
</tr>
<tr>
<td>6.1</td>
<td>Expenses</td>
<td>$ ONT Operating Expense ($000s)</td>
<td>$54,382</td>
<td>$52,671</td>
<td>-3.1%</td>
</tr>
<tr>
<td>6.2</td>
<td>Expenses</td>
<td>$ VNY Operating Expense ($000s)</td>
<td>$13,576</td>
<td>$12,482</td>
<td>-8.1%</td>
</tr>
<tr>
<td>6.3</td>
<td>Expenses</td>
<td>$ PMD Operating Expense ($000s)</td>
<td>$2,959</td>
<td>$2,666</td>
<td>-9.9%</td>
</tr>
<tr>
<td>6.4</td>
<td>Expenses</td>
<td>$ LAWA Operating Expense ($000s)</td>
<td>$680,944</td>
<td>$713,217</td>
<td>4.7%</td>
</tr>
<tr>
<td>6.5</td>
<td>Revenues</td>
<td>LAX Landing Fees ($000s)</td>
<td>$222,608</td>
<td>$227,518</td>
<td>2.2%</td>
</tr>
<tr>
<td>6.6</td>
<td>Revenues</td>
<td>LAX Rentals / Other Aeronautical ($000s)</td>
<td>$405,918</td>
<td>$460,338</td>
<td>13.4%</td>
</tr>
<tr>
<td>6.7</td>
<td>Revenues</td>
<td>LAX Terminal Concessions ($000s)</td>
<td>$154,374</td>
<td>$166,745</td>
<td>8.0%</td>
</tr>
<tr>
<td>6.8</td>
<td>Revenues</td>
<td>LAX Non-Terminal Concessions (except Parking) ($000s)</td>
<td>$97,023</td>
<td>$101,534</td>
<td>4.6%</td>
</tr>
<tr>
<td>6.9</td>
<td>Revenues</td>
<td>LAX Parking ($000s)</td>
<td>$79,914</td>
<td>$85,803</td>
<td>7.4%</td>
</tr>
<tr>
<td>6.10</td>
<td>Revenues</td>
<td>LAX Other Operating Revenues ($000s)</td>
<td>$1,892</td>
<td>$3,862</td>
<td>104.1%</td>
</tr>
<tr>
<td>6.11</td>
<td>Revenues</td>
<td>LAX Operating Revenues ($000s)</td>
<td>$961,729</td>
<td>$1,045,800</td>
<td>8.7%</td>
</tr>
<tr>
<td>6.12</td>
<td>Revenues</td>
<td>ONT Operating Revenues ($000s)</td>
<td>$56,659</td>
<td>$56,880</td>
<td>0.4%</td>
</tr>
<tr>
<td>6.13</td>
<td>Revenues</td>
<td>VNY Operating Revenues ($000s)</td>
<td>$19,028</td>
<td>$16,847</td>
<td>-11.5%</td>
</tr>
<tr>
<td>6.14</td>
<td>Revenues</td>
<td>PMD Operating Revenues ($000s)</td>
<td>$2,173</td>
<td>$3,160</td>
<td>45.4%</td>
</tr>
<tr>
<td>6.15</td>
<td>Revenues</td>
<td>LAWA Operating Revenues ($000s)</td>
<td>$1,039,589</td>
<td>$1,122,687</td>
<td>8.0%</td>
</tr>
</tbody>
</table>

Part III: Implementing and Monitoring
III.1: IMPLEMENTATION PLAN

This chapter outlines the steps to be taken to implement the IEA Survey Report recommendations and monitor progress. Many of the recommendations complement and build on each other. Therefore, they should be implemented systematically.

Step 1: Review and Accept Recommendations in Principle

In most areas, KH has outlined proposed actions in the recommendations without being too prescriptive regarding the details. Most important is LAWA’s commitment to continual improvement and evidence-based management in its quest to be competitive and world class. The recommendations set forth a pathway for implementing change and continual improvements.

The Joint-Administrators, BOAC, and LAWA executives should review each recommendation in Part I and Part II. They should accept the recommendations in principle or modify them as suggested by group consensus or as required to meet specific constraints, such as availability of resources. Each recommendation should be accepted, rejected, or modified; none should be ignored.

The City should request that LAWA’s CEO provide feedback regarding LAWA’s planned actions regarding the IEA Survey recommendations within 90 days of issuance of the IEA Survey Report.

Step 2: Assign an IEA Project Manager to Monitor Implementation

The importance, scope, and interrelationships of the recommended changes require centralized attention and monitoring to ensure a successful outcome. With the support of LAWA’s CEO, LAWA’s Internal Audit could be appointed as the IEA Project Manager to handle supervision, coordination, and monitoring of implementation efforts across LAWA Divisions.

Step 3: Appoint Implementation Managers and Develop Implementation Plans

At this point, the final priorities, timelines, and accountabilities can be set. For each recommended change, the IEA Project Manager – in consultation with the LAWA’s CEO and executives – should assign an Implementation Manager with responsibility for it. The intent is to suggest ultimate responsibility; certain aspects may be delegated to individuals below the level of the Implementation Manager.

LAWA should also establish the relative priority and timing for implementing each recommendation. All recommendations should be started in the next six months to two years. In most cases:

- Implementation of the recommendations with immediate priority should commence as soon as possible.
- Intermediate priority recommendations can be deferred until action of the higher priority recommendations is under way.
- In some cases, lower priority recommendations may be implemented earlier because they are easy to accomplish and may result in some “quick victories.”
Other high priority recommendations may be implemented later once LAWA has established more of a foundation for success.

The Implementation Managers should prepare an Implementation Plan for each recommendation. Cost implications should be refined at this point, depending on the course of action the LAWA executives and management adopt. Exhibit III.1a displays the kind of information that each Implementation Plan should contain at a minimum.

**Exhibit III.1a: Implementation Plan Format**

<table>
<thead>
<tr>
<th>Action Steps</th>
<th>Assigned Responsibility</th>
<th>Scheduled Start-End Dates</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.</td>
<td></td>
<td></td>
</tr>
<tr>
<td>...</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Etc.</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A defined performance objective is a statement of the expected situation or condition after implementation of the recommendation. This objective should serve as a benchmark to measure accomplishment of the associated recommendation.

The IEA Project Manager and appropriate LAWA executives should review and approve each plan.

**Step 4: Begin Implementation and Monitor Progress**

Once the Implementation Plans are approved, the action steps should begin. Each Implementation Manager should prepare a quarterly, one-page report concerning the progress of each plan (i.e., recommendation) for the IEA Project Manager. In turn, the IEA Project Manager should summarize these quarterly reports for the LAWA CEO and executives, BOAC, Office of the Controller (Controller), and Joint-Administrators. As Implementation Managers identify adjustments necessary to the plans, they should consult with the IEA Project Manager and note the needed adjustments on their progress reports.

KH designed the “LAWA IEA – Implementation Tracking Summary.xlsx,” an Excel spreadsheet template for ongoing reporting purposes within LAWA, to the Controller, and with the Joint Administrators. The fields provide basic background and context for each recommendation and are taken directly from the IEA Survey and the Implementation Plans prepared by the Implementation Managers. These fields should remain unchanged once set and agreed upon.
# Source – Chapter and section number from the IEA Survey Report
Area – Chapter name from the IEA Survey Report
Recommendation – Shortened label for recommendation
Recommendation Description – Full recommendation description from the IEA Survey Report
Priority – High, Medium, or Low; based on discussions and the Implementation Plan
Accountability – Implementation Manager responsible for the recommendation
Performance Objective – Specific, measurable outcome for the recommendation from the Implementation Plan
Planned Start – Planned start date for first action from the Implementation Plan
Planned Completion – Planned completion date for final action from the Implementation Plan

Table III.1b: Planning Fields in LAWA IEA – Implementation Tracking Summary

<table>
<thead>
<tr>
<th>#/Source</th>
<th>Area</th>
<th>Recommendation</th>
<th>Recommendation Description</th>
<th>Priority</th>
<th>Accountability</th>
<th>Performance Objective</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.2.3</td>
<td>Strategy and Accountability</td>
<td>Balanced Scorecards</td>
<td>LAWA should implement a Balanced Scorecard (BSC) approach as a performance management system</td>
<td>High</td>
<td>IEA Project Manager</td>
<td>All divisions have BSCs by December 2016</td>
</tr>
</tbody>
</table>

To provide ongoing summary updates, the IEA Project Manager updates the following fields based on the quarterly reports provided by each Implementation Manager. These fields provide the ongoing status updates for each recommendation over time:

- **Actual Start** – Actual start date of first action, based on quarterly reports
- **Actual/Estimated Completion** – Adjusted estimate or actual completion of final action, based on quarterly reports
- **Date Updated** – Last date that an update was provided and entered into the Implementation Tracking Summary
- **Notes** – More detailed and qualitative explanations of challenges, progress, updates, etc.

An example of the table is provided below:

Table III.1c: Progress Monitoring Fields in LAWA IEA – Implementation Tracking Summary

<table>
<thead>
<tr>
<th>Planned Start</th>
<th>Actual Start</th>
<th>Planned Completion</th>
<th>Actual/Estimated Completion</th>
<th>Date Updated</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/1/16</td>
<td>7/1/16</td>
<td>4/1/17</td>
<td>4/1/17</td>
<td>10/1/16</td>
<td>All divisions have convened working groups that have been trained on BSCs and have begun drafting measurements for BSCs in the provided formatting</td>
</tr>
</tbody>
</table>

For ease of reading, the “Actual/Estimated Completion” field will automatically format based on the updated status compared to the plan, to highlight the need for managerial action, shown in Table III.1d.
Table III.1d: Actual/Estimated Completion Format

<table>
<thead>
<tr>
<th>Actual/Estimated Completion Formatting</th>
<th>Managerial Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete, on-time or ahead of schedule</td>
<td>No action needed</td>
</tr>
<tr>
<td>Incomplete, on-time or ahead of schedule</td>
<td>Ensure on-time completion</td>
</tr>
<tr>
<td>Complete, behind schedule</td>
<td>Follow-up to determine why recommendation was not completed to plan</td>
</tr>
<tr>
<td>Incomplete, behind schedule</td>
<td>Determine actions or resources needed to improve completion time or quality</td>
</tr>
</tbody>
</table>

There will be instances that the planned completion date will need to be adjusted, avoiding highlighting items as incomplete, when all have agreed that a later date is desirable. The IEA Project Manager will make the adjustments after discussion with the Implementation Manager and reviewing all changes with the executive team and, if necessary, with the Controller and Joint Administrators. Such changes should be done wisely, and not just to move a date a month or two to generate the appearance of compliance.

The LAWA CEO should give an annual oral report to BOAC regarding progress to date in implementing the IEA Survey recommendations. The Joint-Administrators will need to determine what level of involvement they intend to have during the implementation process. At a minimum, they should meet once a year during the first two years of implementation with the LAWA executives to discuss progress to date, “lessons learned,” adjustments made, and overall successes and setbacks.

To ensure that the implementation effort results in recommendations that build on each other and toward a better future, LAWA executives need to monitor, track, and evaluate progress in implementing the IEA Survey recommendations on an ongoing basis. As necessary and each year, LAWA executives should make the necessary refinements to achieve the desired outcomes.
<table>
<thead>
<tr>
<th>#/ Source</th>
<th>Area</th>
<th>Recommendation</th>
<th>Recommendation Description</th>
<th>Priority</th>
<th>Accountability</th>
<th>Implementation Goal</th>
<th>Performance Objective</th>
<th>Planned Start</th>
<th>Actual Start</th>
<th>Planned Completion</th>
<th>Actual/Estimated Completion</th>
<th>Date Updated</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.2.1</td>
<td>Strategy and Accountability</td>
<td>Strategic Prioritization</td>
<td>LAWA would benefit from a strategic framework for defining priorities, which it should then measure and improve.</td>
<td>High</td>
<td>CEO</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I.2.2</td>
<td>Strategy and Accountability</td>
<td>Strategic Budgeting</td>
<td>LAWA should use a more strategic approach to developing its budget.</td>
<td>High</td>
<td>CFO</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I.2.3</td>
<td>Strategy and Accountability</td>
<td>Balanced Scorecards</td>
<td>LAWA should implement a Balanced Scorecard (BSC) approach as a performance management system.</td>
<td>High</td>
<td>CEO</td>
<td></td>
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</tr>
<tr>
<td>I.2.4</td>
<td>Strategy and Accountability</td>
<td>Organizational Structure</td>
<td>LAWA's organizational structure should be designed to reflect its strategic directions.</td>
<td>High</td>
<td>CEO</td>
<td></td>
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</tr>
<tr>
<td>I.3.1</td>
<td>Corporate Social Responsibility</td>
<td>Embrace CSR Principles</td>
<td>To improve public accountability, LAWA should embrace Corporate Social Responsibility (CSR) principles.</td>
<td>High</td>
<td>CEO</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I.3.2</td>
<td>Corporate Social Responsibility</td>
<td>Economic Impact</td>
<td>LAWA can monitor and plan to increase its contributions to the Los Angeles economy.</td>
<td>High</td>
<td>New function</td>
<td></td>
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</tr>
<tr>
<td>I.3.3</td>
<td>Corporate Social Responsibility</td>
<td>Economic Development - Local</td>
<td>LAWA should continue to leverage land use planning and investments to maximize economic development around LAX.</td>
<td>High</td>
<td>COO with Planning &amp; Development</td>
<td></td>
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<tr>
<td>I.3.4</td>
<td>Corporate Social Responsibility</td>
<td>Environmental Impact Reduction &amp; Communication</td>
<td>LAWA should present the &quot;big picture&quot; of its environmental impact, while communicating its sustainability efforts.</td>
<td>High</td>
<td>COO with Environmental Programs Group</td>
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<tr>
<td>I.3.5</td>
<td>Corporate Social Responsibility</td>
<td>Community Relations</td>
<td>LAWA must always work on maintaining good external stakeholder relationships.</td>
<td>High</td>
<td>CEO with others assisting</td>
<td></td>
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</tr>
<tr>
<td>I.3.6</td>
<td>Corporate Social Responsibility</td>
<td>Gov't Affairs Effectiveness</td>
<td>LAWA should establish goals and measurements for evaluating the effectiveness of government affairs' activities.</td>
<td>Medium</td>
<td>Chief Executive Affairs Officer</td>
<td></td>
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</tr>
<tr>
<td>I.3.7</td>
<td>Corporate Social Responsibility</td>
<td>Internal Audit</td>
<td>LAWA may reduce losses and improve performance with a stronger Internal Audit function with BOAC oversight.</td>
<td>Medium</td>
<td>CEO, BOAC Chair</td>
<td></td>
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</tr>
<tr>
<td>I.4.1</td>
<td>Guest Experience</td>
<td>Guest Experience Measurements</td>
<td>LAWA should continue its guest experience efforts, tied to BSC performance measurements.</td>
<td>High</td>
<td>Guest Experience Program</td>
<td></td>
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</tr>
<tr>
<td>I.4.2</td>
<td>Guest Experience</td>
<td>Sense of LA &amp; Amenities</td>
<td>LAWA needs to ramp up the sense of LA and its amenities for LAX to be world class.</td>
<td>High</td>
<td>Guest Experience Program</td>
<td></td>
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</tr>
<tr>
<td>I.4.3</td>
<td>Guest Experience</td>
<td>Hospitality &amp; Informed Guests</td>
<td>LAX needs to focus on improving its reputation for hospitality and helping to make it easier for guests to navigate LAX.</td>
<td>High</td>
<td>Guest Experience Program</td>
<td></td>
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</tr>
<tr>
<td>I.4.4</td>
<td>Guest Experience</td>
<td>Safe &amp; Secure</td>
<td>LAWA's highest priority is to ensure that the airports are safe and secure.</td>
<td>High</td>
<td>Chief of Security &amp; Public Safety</td>
<td></td>
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<td></td>
</tr>
<tr>
<td>I.4.5</td>
<td>Guest Experience</td>
<td>CTA Congestion</td>
<td>LAWA needs to proactively manage CTA congestion during and after construction.</td>
<td>High</td>
<td>COO with DED/DMMG &amp; coordinated with COO</td>
<td></td>
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</tr>
<tr>
<td>I.4.6</td>
<td>Guest Experience</td>
<td>Operations Technology Investment</td>
<td>LAWA should increase its operations technology investments, given anticipated construction-related challenges.</td>
<td>High</td>
<td>COO</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>I.4.7</td>
<td>Guest Experience</td>
<td>Maintenance - Preventive &amp; Unscheduled</td>
<td>LAWA maintenance should continue its efforts to tackle preventive and unscheduled maintenance.</td>
<td>High</td>
<td>FMUG</td>
<td></td>
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</tbody>
</table>
### Los Angeles World Airports (LAWA): Industrial, Economic, & Administrative (IEA) Survey

#### Implementation Monitoring Tracker - 2016

<table>
<thead>
<tr>
<th>#/ Source</th>
<th>Area</th>
<th>Recommendation</th>
<th>Recommendation Description</th>
<th>Priority</th>
<th>Accountability</th>
<th>Performance Objective</th>
<th>Planned Start</th>
<th>Actual Start</th>
<th>Planned Completion</th>
<th>Actual/Estimated Completion</th>
<th>Date Updated</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.4.8</td>
<td>Guest Experience</td>
<td>Partner Collaboration</td>
<td>LAW A will need to develop collaborative relationships with multiple jurisdictions to measure guest experiences in/out of LAX.</td>
<td>High</td>
<td>Guest Experience Program</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.4.9</td>
<td>Guest Experience</td>
<td>Leverage Technology &amp; Applications</td>
<td>LAW A will need to be nimble and move expeditiously to leverage technology and develop apps.</td>
<td>High</td>
<td>Guest Experience Program, IMTG Assist</td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.5.1</td>
<td>Capital Improvement Process</td>
<td>Capital Planning, Budgeting, &amp; Technology</td>
<td>LAW A should enhance its SAP system to better support capital projects.</td>
<td>High</td>
<td>CFO, IMTG Assist</td>
<td></td>
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</tr>
<tr>
<td>1.5.2</td>
<td>Capital Improvement Process</td>
<td>Capital Improvement Plans</td>
<td>LAW A should establish at least 5-year and 10-year Capital Improvement Plans (CIP).</td>
<td>High</td>
<td>CFO, Planning &amp; Development</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.3</td>
<td>Capital Improvement Process</td>
<td>Capital Program Implementation</td>
<td>LAW A can improve capital program implementation through stronger management readiness and coordinated processes.</td>
<td>High</td>
<td>CFO, DED/ADG, LAMP, &amp; CONRAC/ITF, Roads</td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.4</td>
<td>Capital Improvement Process</td>
<td>Augmentation Staff Management</td>
<td>Better management of the augmentation staff may lower capital program and project costs.</td>
<td>High</td>
<td>CFO with Admin./Human Resources</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.5</td>
<td>Capital Improvement Process</td>
<td>Capital Program Staff Alignment</td>
<td>LAW A will need a full complement of capable staff to implement its aggressive capital program.</td>
<td>High</td>
<td>CFO with Admin./Human Resources</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>1.5.6</td>
<td>Capital Improvement Process</td>
<td>Procurement RFP Process</td>
<td>Changes in procurement can reinforce LAW A's commitment to a fair and impartial RFP process.</td>
<td>High</td>
<td>CFO with Admin./Procurement</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.5.7</td>
<td>Capital Improvement Process</td>
<td>Parking Audit</td>
<td>LAW A should conduct a fiscal and operational audit of parking operations.</td>
<td>High</td>
<td>Internal Audit</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>1.6.1</td>
<td>PMD and ONT Airports</td>
<td>ONT Transition Planning</td>
<td>Effective planning will be key to a successful transition of ONT to another airport authority (CAA).</td>
<td>High</td>
<td>CEO</td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1.1</td>
<td>BSC Implementation</td>
<td>Develop BSCs</td>
<td>LAW A should develop BSCs and a performance measurement system (builds on Recommendation 1.2.3)</td>
<td>High</td>
<td>CEO</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.1.2</td>
<td>BSC Implementation</td>
<td>Financial Metrics</td>
<td>LAW A should designate Finance to manage financial metrics reported in all balanced scorecards (BSC)</td>
<td>Medium</td>
<td>CFO</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
<tr>
<td>3.1.3</td>
<td>BSC Implementation</td>
<td>Refine &amp; Implement BSCs</td>
<td>LAW A should review, refine, adopt, and monitor the Balanced Scorecards (BSC) developed during the IEA Survey.</td>
<td>High</td>
<td>CEO with Executive Team</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>
Los Angeles World Airports (LAWA): Industrial, Economic, & Administrative (IEA) Survey
Implementation Monitoring Tracker - 2016

<table>
<thead>
<tr>
<th>#/Source</th>
<th>Area</th>
<th>Recommendation</th>
<th>Recommendation Description</th>
<th>Priority</th>
<th>Accountability</th>
<th>Performance Objective</th>
<th>Planned Start</th>
<th>Actual Start</th>
<th>Planned Completion</th>
<th>Actual/Estimated Completion</th>
<th>Date Updated</th>
<th>Notes</th>
</tr>
</thead>
<tbody>
<tr>
<td>I.2.3</td>
<td>Strategy and Accountability</td>
<td>Balanced Scorecards</td>
<td>LAWA should implement a Balanced Scorecard (BSC) approach as a performance management system</td>
<td>High</td>
<td>CEO</td>
<td>All divisions have BSCs</td>
<td>7/1/2016</td>
<td>7/1/16</td>
<td>4/1/2017</td>
<td>4/1/17</td>
<td>10/1/2016</td>
<td></td>
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</table>

For ease of reading, the "Actual/Estimated Completion" field will automatically format based on the updated status compared to the plan, to highlight the need for managerial action, shown below.

<table>
<thead>
<tr>
<th>Actual/Estimated Completion</th>
<th>Managerial Action</th>
</tr>
</thead>
<tbody>
<tr>
<td>Complete, on-time or ahead of schedule</td>
<td>No action needed</td>
</tr>
<tr>
<td>Incomplete, on-time or ahead of schedule</td>
<td>Ensure on-time completion</td>
</tr>
<tr>
<td>Complete, behind schedule</td>
<td>Follow-up to determine why recommendation was not completed to plan</td>
</tr>
<tr>
<td>Incomplete, behind schedule</td>
<td>Determine actions or resources needed to improve completion time or quality</td>
</tr>
</tbody>
</table>

Appendices
APPENDIX A: IEA SURVEY APPROACH

JOINT ADMINISTRATORS

The IEA Survey is administered through a Joint Administration of the Offices of the Mayor, Controller, and Chief Legislative Analyst (CLA) (on behalf of the City Council). The Joint Administrators serve an important role for discussing LAWA’s strengths, accomplishments, and opportunities for improvement and ensuring the KH team has identified and investigated the key issues; advising KH about sources within the City to obtain needed data or information; considering the pros and cons of different approaches for addressing identified opportunities for improvement; and furnishing insights regarding constraints, such as the City Charter, Personnel Code, Memoranda of Understanding (MOUs), or other City requirements.

For the 1999, 2008, and 2016 IEA Surveys, the Joint Administrators have invited a LAWA executive to attend these meetings to ensure LAWA was informed of the issues raised and, if needed, have an opportunity to offer more insights regarding the issues. The selected LAWA executive also included LAWA’s Internal Auditor. Both had only advisory roles.

OBJECTIVES AND SCOPE

In conducting the 2008 and 1999 IEA Surveys, KH’s goal was to expeditiously review LAWA performance and develop strategic recommendations to position LAWA for the future. This IEA Survey differs from these prior IEA Surveys in direction. In Phase I, the Joint Administrators asked the KH team to focus primarily on understanding LAA’s performance metrics, considering how they could be applied to:

- Performance-Based Budgeting
- Competitiveness
- Economic Development
- Management of Capital Projects
- Transportation

In Phase II, KH focused on building a framework for a performance management system for improved public accountability. The KH team applied the Balanced Scorecard (BSC) model to performance measurements in four key areas – two strategic and two business oriented:

- **Strategic BSCs that affect external and internal stakeholders:** Corporate Social Responsibility (CSR) and Guest Experiences
- **Internal business operations, affecting all aspects of LAWA:** Administrative Support Areas (Procurement, Human Resources, and Internal Audit) and Finance, Accounting, and Risk Management
KH also developed recommendations in areas that support better performance in these key areas, including capital planning and budgeting, transportation and access, and competitiveness. KH’s focus was primarily on LAWA overall and LAX with some performance measurements developed for VNY.

KH also took into consideration Stated Practices, Actual Practices, Prevailing Practices, Good Practices, and Next Practices. Successful, competitive organizations are striving to anticipate “Next Practices” rather than settle for Prevailing or Best Practices.

**TASKS PERFORMED**

The KH team performed a broad array of fact-finding and analytical tasks:

**Work Planning and Fact-Finding**

- Developed Phase I and Phase II Work Plans, which KH reviewed with the Joint-Administrators and LAWA executives
- Reviewed documents
- Conducted more than 85 interviews, including primarily LAWA BOAC, executives, managers, and staff; Los Angeles City officials; union representatives (SEIU and airport police); and other stakeholders
- Documented strengths and accomplishments since the 2008 IEA Survey
- Built on the work of Robert Kaplan and David Norton to adapt Strategy Maps and Balanced Scorecard (BSC) concepts to LAWA

**Performance Measurements**

- Surveyed LAWA managers regarding the performance measurements they currently use; 47 out of 53 responded (89% response rate)
- Of the 215 measurements initially identified, compiled the information to indicate:
  - Group/division identifying specific measurements
  - Measurement name and description
  - Data for FY2010-2011 though FY2014-15
  - Target and target priority
  - Frequency Used, Frequency Desired, Difference
  - Use (e.g., financial operations, guest experience, our people, public accountability, community impact)
Linkages to Strategic Plan, Capital Plan, etc.
Use by division, LAWA, BOAC, etc.
Availability of data (routinely available, requires effort to obtain, not available)
Changes in measurement since FY2010-2011
Data source

- Completed a gap analysis of missing performance indicators, resulting in an initial list of 600 potential measurements (16% of the potential measurements had reported data points)
- Conducted a series of performance management workshops at LAWA, including 3 with LAWA executives and 12 workshops with working groups focused on finance/accounting, human resources, administration, and guest experience
- Facilitated a series of meetings to identify the best measurements to use, given available data and priorities, and populated data fields where available
- Identified the approach for LAWA to collect data and establish a baseline in the future for the balance of the data fields
- Supported LAWA working groups in preparing their presentations on BSCs to LAWA executives
- Established targets and timing where feasible

Analysis and Reporting

- Identified findings, opportunities, and associated recommendations, focusing on areas that would help improve current performance levels in the studied areas
- Reviewed opportunities with LAWA executives to verify them for completeness and accuracy
- Prepared a Phase I report and a draft IEA Survey Report, which KH reviewed with the Joint Administrators and LAWA executives to ensure accuracy and completeness
- Prepared the final IEA Survey Report (this document)
Chapter I.3 on CSR presented the GIS information for the County of Los Angeles. The following GIS maps focus on the data for the boundaries of the City of Los Angeles and the SCAG region.
Distribution of Labor Income

LAWA Payroll, by Zip Codes in SCAG Region, 2015

Distribution of Airport Workers
LAWA Badges Issued, by Zip Codes in SCAG Region, 2015

Distribution of Airport Workers
LAWA Badges Issued, by Zip Codes in LA City, 2015

LAWA Purchases
Accounts Payable Paid, by Zip Codes in SCAG Region 2014 & 2015

LAWA Purchases
LAWA Accounts Payable Paid, by Zip Codes in LA City, 2014 & 2015

Land Use – One-Way Trips to LAX
2012 Traveler Trips in One Direction to LAX for the Peak Day of the Average Month – SCAG Region

Land Use – One-Way Trips to LAX

2012 Traveler Trips in One Direction to LAX for the Peak Day of the Average Month – LA City

## APPENDIX C: ACRONYMS & TERMINOLOGY

This Appendix defines acronyms, followed by airport codes, used in the IEA Survey report.

### ACRONYMS

<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description or Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>9/11</td>
<td>September 11, 2001 terrorist attacks</td>
</tr>
<tr>
<td>A380</td>
<td>Airbus 380</td>
</tr>
<tr>
<td>AA/EEO</td>
<td>Affirmative Action/Equal Employment Opportunity</td>
</tr>
<tr>
<td>ACH</td>
<td>Automated Clearing House</td>
</tr>
<tr>
<td>ACI</td>
<td>Airport Council International</td>
</tr>
<tr>
<td>ADA</td>
<td>Americans with Disabilities Act</td>
</tr>
<tr>
<td>AFE</td>
<td>Authority of Expenditures</td>
</tr>
<tr>
<td>AIP Grants</td>
<td>Airport Improvement Program Grant fund established by the Airport and Airways Improvement Act (AAIA) of 1982. Airport Improvement Program (AIP) grants are funded by Federal aviation user taxes. Grant monies can be either discretionary or entitlement grants depending on the use and restrictions.</td>
</tr>
<tr>
<td>Airside</td>
<td>The airfield, gates, jet ways, and other facilities associated with the movement of aircraft. “Airside” often refers to all facilities beyond the passenger security screen although the distinction differs from airport to airport.</td>
</tr>
<tr>
<td>ALPA</td>
<td>Air Line Pilots Association, International</td>
</tr>
<tr>
<td>ALUC</td>
<td>Airport Land Use Commission</td>
</tr>
<tr>
<td>APM</td>
<td>Automated People Mover, a new light rail system LAWA plans to build</td>
</tr>
<tr>
<td>apron</td>
<td>The paved area leading from the terminals to the taxiways and runways. For purposes of our report, the terms “ramp” and “apron” are used interchangeably.</td>
</tr>
<tr>
<td>AQMP</td>
<td>Air Quality Management Plan</td>
</tr>
<tr>
<td>ARB</td>
<td>State of California Air Resource Board</td>
</tr>
<tr>
<td>ARFF</td>
<td>Airport Rescue and Firefighting</td>
</tr>
<tr>
<td>ATA</td>
<td>Air Transport Association</td>
</tr>
<tr>
<td>ATC</td>
<td>Airport Transit Connector</td>
</tr>
<tr>
<td>AVI</td>
<td>Automatic Vehicle Identification</td>
</tr>
<tr>
<td>AVR</td>
<td>Average Vehicle Ridership</td>
</tr>
<tr>
<td>BAGS</td>
<td>Baggage Airline Guest Services</td>
</tr>
<tr>
<td>BOAC</td>
<td>Board of Airport Commissioners. LAWA operates under the management and control of a five-member (seven under the new City Charter) Board of Airport Commissioners, who are appointed by the Mayor and approved by the City Council.</td>
</tr>
<tr>
<td>BOAC Commissioners</td>
<td>Those individuals who serve on the Board of Airport Commissioners.</td>
</tr>
<tr>
<td>BOAC President</td>
<td>President of the Board of Airport Commissioners</td>
</tr>
<tr>
<td>BSC</td>
<td>Balanced Scorecard</td>
</tr>
<tr>
<td>CAC</td>
<td>Citizen Advisory Council</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description or Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>CALM</td>
<td>Construction &amp; Logistics Management team at LAX</td>
</tr>
<tr>
<td>Caltrans</td>
<td>State of California, Department of Transportation</td>
</tr>
<tr>
<td>CAO</td>
<td>Los Angeles City Administrative Officer. The CAO is the chief financial advisor to the Mayor and the City Council and reports directly to both.</td>
</tr>
<tr>
<td>CBA</td>
<td>Community Benefits Agreement</td>
</tr>
<tr>
<td>CBP</td>
<td>United States Customs Service – Customs Border Patrol</td>
</tr>
<tr>
<td>CCT</td>
<td>Closed-Circuit Television</td>
</tr>
<tr>
<td>CDG</td>
<td>Commercial Development Group at LAWA</td>
</tr>
<tr>
<td>CEQA</td>
<td>California Environmental Quality Act</td>
</tr>
<tr>
<td>CFO</td>
<td>Chief Financial Officer</td>
</tr>
<tr>
<td>CFR</td>
<td>Code of Federal Regulations</td>
</tr>
<tr>
<td>CIP</td>
<td>Capital Improvement Plan</td>
</tr>
<tr>
<td>City (the)</td>
<td>City of Los Angeles</td>
</tr>
<tr>
<td>City Attorney</td>
<td>The City Attorney is attorney and legal advisor to the City of Los Angeles, a municipal corporation, and the City Council, all officers, boards, and departments. The City Attorney provides LAWA with Legal Services that are housed at and paid for by LAWA.</td>
</tr>
<tr>
<td>City Controller</td>
<td>The City’s chief accounting and auditing officer.</td>
</tr>
<tr>
<td>City Council</td>
<td>City Council of Los Angeles</td>
</tr>
<tr>
<td>City Personnel Department</td>
<td>Centralized human resources services for the City of Los Angeles. LAWA is subject to all Personnel Department policies and programs, including Civil Service rules.</td>
</tr>
<tr>
<td>City Treasurer</td>
<td>The custodian of all funds of the City and affiliated entities, including LAWA.</td>
</tr>
<tr>
<td>CLA</td>
<td>Los Angeles Chief Legislative Analyst. The Office of the CLA provides staff support to the City Council and its various committees.</td>
</tr>
<tr>
<td>CNEL</td>
<td>Community Noise Equivalent Level</td>
</tr>
<tr>
<td>CNG</td>
<td>Compressed Natural Gas</td>
</tr>
<tr>
<td>commercial air carriers</td>
<td>Private companies licensed by the U.S. Government to operate aircraft between cities to carry passengers and freight for profit.</td>
</tr>
<tr>
<td>Compensatory Landing Fees</td>
<td>Rate-making methodology based on recovery of costs allocable to the particular facilities occupied or used.</td>
</tr>
<tr>
<td>connecting traffic</td>
<td>The number of airport enplanements or percentage thereof, who pass through the airport to a separate destination, and thus use the airport as a transfer point to change planes. See also: hub airport.</td>
</tr>
<tr>
<td>CONRAC</td>
<td>Consolidated Rent-a-Car Center, a new facility that LAWA plans to build</td>
</tr>
<tr>
<td>COO</td>
<td>Chief Operating Officer</td>
</tr>
<tr>
<td>CTA</td>
<td>Central Terminal Area at LAX</td>
</tr>
<tr>
<td>CUP</td>
<td>Central Utility Plant at LAX</td>
</tr>
<tr>
<td>CUTE</td>
<td>Common Use Terminal Equipment</td>
</tr>
<tr>
<td>CY</td>
<td>Calendar Year</td>
</tr>
<tr>
<td>dB</td>
<td>decibels</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description or Definition</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>DBB</td>
<td>Design-Bid-Build</td>
</tr>
<tr>
<td>DBFOM</td>
<td>Design-Build-Finance-Operate-Maintain</td>
</tr>
<tr>
<td>debt per enplaned passenger</td>
<td>Net funded debt divided by total enplaned passengers. A measure of leverage and relative indebtedness.</td>
</tr>
<tr>
<td>Discretionary AIP Grants</td>
<td>AIP grant monies available on a project-specific basis. Generally carry fewer restrictions than entitlement grants.</td>
</tr>
<tr>
<td>discretionary funds</td>
<td>Leftover revenues to be used by the airport authority at their discretion. Discretionary funds can be considered the authority’s “profit.”</td>
</tr>
<tr>
<td>DOA</td>
<td>City of Los Angeles Department of Airports, a proprietary department of the City (also known as Los Angeles World Airports (LAWA))</td>
</tr>
<tr>
<td>DOC</td>
<td>Department Operations Center, LAWA’s emergency operations center</td>
</tr>
<tr>
<td>dominant carrier</td>
<td>The air carrier handling the highest percentage of total enplanements at a particular airport.</td>
</tr>
<tr>
<td>dotted-line reporting</td>
<td>The secondary (higher-level) supervisor to whom an</td>
</tr>
<tr>
<td>EDS</td>
<td>Explosive Detection Systems</td>
</tr>
<tr>
<td>EEO/AA</td>
<td>Equal Employment Opportunity/Affirmative Action</td>
</tr>
<tr>
<td>EIR</td>
<td>Environmental Impact Report</td>
</tr>
<tr>
<td>EIS</td>
<td>Environmental Impact Statement</td>
</tr>
<tr>
<td>enplanements</td>
<td>A measure of airport utilization based upon the total number of revenue passengers boarding an aircraft at a given airport.</td>
</tr>
<tr>
<td>enterprise agency</td>
<td>A governmental agency, which is predominantly fee supported. Examples include airports, harbors, water utilities, etc.</td>
</tr>
<tr>
<td>EOC</td>
<td>Emergency Operations Center</td>
</tr>
<tr>
<td>EPA</td>
<td>U.S. Environmental Protection Agency. This Federal agency is charged to protect human health and safeguard the natural environment – air, water, and land.</td>
</tr>
<tr>
<td>EPAX</td>
<td>Enplaned Passengers</td>
</tr>
<tr>
<td>FAA</td>
<td>The Federal Aviation Administration, an agency of the U.S. Department of Transportation. The FAA was created by the Federal Aviation Act of 1958 and its mandates include aviation safety, navigational aids, and air traffic control. Through its sizable grant programs and regulatory authority, the FAA exercises considerable influence over the planning and development of individual airports.</td>
</tr>
<tr>
<td>FAMIS</td>
<td>Finance, Accounting, and Management Information System, LAWA’s term for the SAP application installed in 2001</td>
</tr>
<tr>
<td>FAR</td>
<td>Federal Aviation Regulation</td>
</tr>
<tr>
<td>FBO</td>
<td>Fixed Base Operation. A ground-based operation, such as a hangar, fueling facility, catering kitchen, etc.</td>
</tr>
<tr>
<td>FEIR</td>
<td>Final Environmental Impact Report</td>
</tr>
<tr>
<td>FTE</td>
<td>Full-Time Equivalent</td>
</tr>
<tr>
<td>GA</td>
<td>general aviation</td>
</tr>
<tr>
<td>GAR</td>
<td>General Airport Revenue Bond, the most common form of airport authority indebtedness.</td>
</tr>
<tr>
<td>GDP</td>
<td>Gross Domestic Product</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey

Appendix.7
<table>
<thead>
<tr>
<th>Acronym</th>
<th>Description or Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>GENPS</td>
<td>Goods, Equipment, and Non-Professional Services</td>
</tr>
<tr>
<td>GHG</td>
<td>Greenhouse Gas</td>
</tr>
<tr>
<td>GIS</td>
<td>Geographic Information System</td>
</tr>
<tr>
<td>GPI</td>
<td>Genuine Progress Indicators</td>
</tr>
<tr>
<td>GTC</td>
<td>Ground Transportation Center</td>
</tr>
<tr>
<td>guest</td>
<td>A passenger or an individual who is meeting or dropping off a passenger at LAX (also referred to as “meeters and greeters”)</td>
</tr>
<tr>
<td>Harbor Department</td>
<td>The port operations in the City of Los Angeles</td>
</tr>
<tr>
<td>HAZMAT</td>
<td>Hazardous materials</td>
</tr>
<tr>
<td>HR</td>
<td>Human resources</td>
</tr>
<tr>
<td>hub airport</td>
<td>A hub airport predominantly handles connecting passengers rather than Origination and Destination (O&amp;D) traffic. LAX is not a domestic hub airport, although it serves as a critical connection for trans-Pacific flights.</td>
</tr>
<tr>
<td>IATA</td>
<td>International Air Transport Association</td>
</tr>
<tr>
<td>ICAO</td>
<td>International Civil Aviation Organization</td>
</tr>
<tr>
<td>IEA Survey</td>
<td>Industrial, Economic, and Administrative Survey, a performance review mandated by City Charter (this study)</td>
</tr>
<tr>
<td>IP</td>
<td>Internet Protocol</td>
</tr>
<tr>
<td>IT</td>
<td>Information technology</td>
</tr>
<tr>
<td>ITC</td>
<td>Intermodal Transportation Center</td>
</tr>
<tr>
<td>itinerant carrier</td>
<td>A seasonally operated airline or an infrequent user of an airport.</td>
</tr>
<tr>
<td>Joint-Administrators</td>
<td>The IEA Survey is joint-administered by representatives from the Offices of the Mayor, Chief Legislative Analyst (CLA), and City Controller.</td>
</tr>
<tr>
<td>KH</td>
<td>KH Consulting Group, a Los Angeles-based management consulting firm; the primary contractor for this IEA Survey</td>
</tr>
<tr>
<td>KH Team</td>
<td>Includes all the KH and subcontractor consultants who worked on the IEA Survey</td>
</tr>
<tr>
<td>KPI</td>
<td>Key Performance Indicator. KPIs are the critical measurements of success: financial performance, process improvement, or customer satisfaction.</td>
</tr>
<tr>
<td>LA</td>
<td>Los Angeles</td>
</tr>
<tr>
<td>LA Metro</td>
<td>Los Angeles County Metropolitan Transit Authority. This Authority is the primary provider of transit-related services for the Southern California region.</td>
</tr>
<tr>
<td>LA/ONT</td>
<td>The marketing name LAWA uses for Ontario International Airport (ONT).</td>
</tr>
<tr>
<td>LA/PMD</td>
<td>The marketing name LAWA uses for Palmdale Regional Airport (PMD).</td>
</tr>
<tr>
<td>LA/VNY</td>
<td>The marketing name LAWA uses for Van Nuys Airport (VNY).</td>
</tr>
<tr>
<td>LABVN</td>
<td>Los Angeles Business Virtual Network</td>
</tr>
<tr>
<td>LADOT</td>
<td>Los Angeles City, Department of Transportation</td>
</tr>
<tr>
<td>LADWP</td>
<td>Department of Water and Power in the City of Los Angeles</td>
</tr>
<tr>
<td>LAFD</td>
<td>Los Angeles Fire Department. LAFD provides crash, fire, and rescue (CFR) services to LAWA at LAX and VNY.</td>
</tr>
<tr>
<td>LAMP</td>
<td>Landside Access Modernization Program</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description or Definition</td>
</tr>
<tr>
<td>-----------</td>
<td>--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>landed ton</td>
<td>A landed ton is one thousand pounds of aircraft landing at an airport. Landing fees are generally calculated based on landed tons as determined by the certified landing weight of each type of aircraft.</td>
</tr>
<tr>
<td>landside</td>
<td>That portion of airport facilities devoted to the main terminal complex, ground transportation, and movement of passengers and baggage away from aircraft areas. Although the distinction differs from airport to airport, landside is often considered as all the terminal facilities up to the passenger security screen.</td>
</tr>
<tr>
<td>LAPD</td>
<td>Los Angeles Police Department</td>
</tr>
<tr>
<td>LAUSD</td>
<td>Los Angeles Unified School District</td>
</tr>
<tr>
<td>LAWA</td>
<td>Los Angeles World Airports (also known as the City of Los Angeles Department of Airports (DOA), a proprietary department of the City). DOA owns and manages four airports: Los Angeles International (LAX), Ontario International (ONT), Van Nuys Airport (VNY), and Palmdale Airport (PMD).</td>
</tr>
<tr>
<td>LAWA – ADG</td>
<td>LAWA’s Airports Development Group</td>
</tr>
<tr>
<td>LAWA - COO</td>
<td>Chief Operating Officer</td>
</tr>
<tr>
<td>LAWA - CPPEG</td>
<td>LAWA’s Capital Programming, Planning &amp; Engineering Group</td>
</tr>
<tr>
<td>LAWA - CUP</td>
<td>Central Utility Plant</td>
</tr>
<tr>
<td>LAWA – ELUP</td>
<td>Environmental &amp; Land Use Planning</td>
</tr>
<tr>
<td>LAWA – FMUG</td>
<td>Facilities Maintenance &amp; Utilities Group</td>
</tr>
<tr>
<td>LAWA – IMTG</td>
<td>LAWA’s Information Management &amp; Technology Group</td>
</tr>
<tr>
<td>LAX</td>
<td>Los Angeles International Airport (IATA airport code)</td>
</tr>
<tr>
<td>LAX Modernization Program</td>
<td>The first comprehensive modernization plan for LAX in more than 20 years; it included such projects as the Midfield Satellite Concourse, adapted gates at TBIT for wide-body A380 aircraft, and related projects, such as taxiways, tunnels, aircraft ramp areas, utility improvements, etc.</td>
</tr>
<tr>
<td>LAXAAC</td>
<td>Los Angeles International Airport Area Advisory Committee – a citizen advisory group for LAX</td>
</tr>
<tr>
<td>LEA</td>
<td>Law Enforcement Agency</td>
</tr>
<tr>
<td>LEA Assist</td>
<td>Law Enforcement Agency assistance, i.e., could include almost any action, such backing up a City police unit on a vehicle stop, transporting a prisoner and escort to an aircraft for extradition, etc.</td>
</tr>
<tr>
<td>LEED</td>
<td>Leadership in Energy and Environmental Design</td>
</tr>
<tr>
<td>LOA</td>
<td>Leave of Absence</td>
</tr>
<tr>
<td>load factors</td>
<td>Percentage of passenger seats filled</td>
</tr>
<tr>
<td>LOI</td>
<td>Letter of Intent</td>
</tr>
<tr>
<td>LRT</td>
<td>Light Rail Transit</td>
</tr>
<tr>
<td>LSBE</td>
<td>Local Small Business Enterprise</td>
</tr>
<tr>
<td>LUMP</td>
<td>Land-Use Mitigation Program</td>
</tr>
<tr>
<td>MAP</td>
<td>Million Annual Passengers (enplaning + deplaning)</td>
</tr>
<tr>
<td>Maximo</td>
<td>Maintenance software used at LAWA</td>
</tr>
<tr>
<td>MBE</td>
<td>Minority Business Enterprise</td>
</tr>
<tr>
<td>meeters and greeters</td>
<td>Individuals who meet or drop off passengers at LAX</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description or Definition</td>
</tr>
<tr>
<td>---------</td>
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</tr>
<tr>
<td>MMRP</td>
<td>Mitigation Monitoring and Reporting Program</td>
</tr>
<tr>
<td>MOA</td>
<td>Memorandum of Agreement</td>
</tr>
<tr>
<td>Moody’s</td>
<td>A bond rating agency</td>
</tr>
<tr>
<td>MoS</td>
<td>Memorandum of Support</td>
</tr>
<tr>
<td>MOU</td>
<td>Memorandum of Understanding</td>
</tr>
<tr>
<td>MPC</td>
<td>Mobile Passport Control app</td>
</tr>
<tr>
<td>NA</td>
<td>Not applicable</td>
</tr>
<tr>
<td>NCP</td>
<td>Noise Compatibility Program</td>
</tr>
<tr>
<td>NEPA</td>
<td>National Environmental Policy Act</td>
</tr>
<tr>
<td>NIGP</td>
<td>National Institute of Government Purchasing</td>
</tr>
<tr>
<td>NLAMP</td>
<td>New Los Angeles Marketing Partnership</td>
</tr>
<tr>
<td>non</td>
<td>non-aviation revenue</td>
</tr>
<tr>
<td></td>
<td>Revenue generated from concessions, parking, terminal services, etc.</td>
</tr>
<tr>
<td>NOP</td>
<td>Notice of Preparation</td>
</tr>
<tr>
<td>O&amp;D</td>
<td>Origination and Destination (O&amp;D) traffic consists of an airport’s passengers, which begin or end a journey at that airport (as opposed to connecting passengers). LAX is predominantly an O&amp;D airport.</td>
</tr>
<tr>
<td>OCIP</td>
<td>Owner-Controlled Insurance Program</td>
</tr>
<tr>
<td>Office of the Mayor</td>
<td>As the executive officer of the City, the Mayor exercises supervision over all City affairs. In addition to appointing the Airport Commissioners, the Mayor has additional responsibilities for overseeing LAWA.</td>
</tr>
<tr>
<td>ONT</td>
<td>Ontario International Airport (IATA airport code); also referred to as LA/ONT in LAWA marketing materials</td>
</tr>
<tr>
<td>OPD</td>
<td>Operating Agreement</td>
</tr>
<tr>
<td>PARCS</td>
<td>Parking Access Revenue Control System</td>
</tr>
<tr>
<td>PAX</td>
<td>Passenger</td>
</tr>
<tr>
<td>PC</td>
<td>Personal Computer</td>
</tr>
<tr>
<td>Personnel Department</td>
<td>The Personnel Department provides resources services in accordance with the Civil Service system for the City of Los Angeles</td>
</tr>
<tr>
<td>PFC</td>
<td>Passenger Facility Charges (PFCs) are a per passenger assessment levied by individual airports. PFCs are a relatively recent financing innovation approved by the FAA on an airport by airport basis.</td>
</tr>
<tr>
<td>Planning Department</td>
<td>The City Planning Department guides the City’s land use development and infrastructure financing decisions by a series of planning documents, which address population distribution, traffic circulation, public facilities, location of housing, commercial and industrial facilities, protection of the natural environment, and the health, welfare, and safety of the general public.</td>
</tr>
<tr>
<td>PMD</td>
<td>Palmdale Regional Airport (IATA airport code); also referred to as LA/PMD in LAWA marketing materials.</td>
</tr>
<tr>
<td>Port of Los Angeles</td>
<td>Harbor Department in the City of Los Angeles</td>
</tr>
<tr>
<td>PTS</td>
<td>Procurement Tracking System</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description or Definition</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>RAIC</td>
<td>Regional Airport Improvement Corporation. A consortium of airlines which finance airport infrastructure through issuance of special facility lease revenue bonds. Six of the eight terminals at LAX are financed by RAICs.</td>
</tr>
<tr>
<td>ramp</td>
<td>The area where aircraft are serviced immediately adjacent to the terminal. For purposes of our report, the terms “ramp” and “apron” are used interchangeably.</td>
</tr>
<tr>
<td>RAMS</td>
<td>Revenue Asset Management System</td>
</tr>
<tr>
<td>refunding</td>
<td>A procedure whereby a bond issuer refines an outstanding bond issued by issuing new bonds.</td>
</tr>
<tr>
<td>Residual landing fees</td>
<td>Rates based on recovery of net cost of a cost center or an airport as a whole, after allowing credit for concession and other non-airline revenues.</td>
</tr>
<tr>
<td>RFB</td>
<td>Request for Bid</td>
</tr>
<tr>
<td>RFI</td>
<td>Request for Information</td>
</tr>
<tr>
<td>RFP</td>
<td>Request for Proposal</td>
</tr>
<tr>
<td>RFQ</td>
<td>Request for Qualification</td>
</tr>
<tr>
<td>ROI</td>
<td>Return on Investment</td>
</tr>
<tr>
<td>ROW</td>
<td>Right of Way</td>
</tr>
<tr>
<td>RTIP</td>
<td>Regional Transportation Improvement Plan</td>
</tr>
<tr>
<td>RTP</td>
<td>Regional Transportation Plan</td>
</tr>
<tr>
<td>RTPA</td>
<td>Regional Transportation Planning Agency</td>
</tr>
<tr>
<td>S&amp;P</td>
<td>Standard and Poor’s, a bond rating agency</td>
</tr>
<tr>
<td>SAIP</td>
<td>South Airfield Improvement Project</td>
</tr>
<tr>
<td>SANBAG</td>
<td>San Bernardino Associated Governments</td>
</tr>
<tr>
<td>SAP</td>
<td>Financial software used at LAWA. SAP is the corporate name for what was formerly Systems Applications and Products. SAP provides LAWA’s accounting, financial reporting, materials management, and human resources software.</td>
</tr>
<tr>
<td>SBE</td>
<td>Small Business Enterprise</td>
</tr>
<tr>
<td>SCAG</td>
<td>Southern California Association of Governments. This organization is a regional planning agency and a Council of Governments comprised of 184 cities in six counties, which promote growth, personal well-being, and livable communities for all Southern Californians.</td>
</tr>
<tr>
<td>SCAQMD</td>
<td>South Coast Air Quality Management District. This district is responsible for air pollution control for the four-county region, including Los Angeles and Orange counties and parts of Riverside and San Bernardino counties.</td>
</tr>
<tr>
<td>SEIR</td>
<td>Supplemental Environmental Impact Report</td>
</tr>
<tr>
<td>signatory airline</td>
<td>An airline which has signed an operating agreement at a particular airport. Most large carriers are “signatories.”</td>
</tr>
<tr>
<td>SLBE</td>
<td>Small Local Business Enterprise</td>
</tr>
<tr>
<td>solid-line reporting relationship</td>
<td>Primary supervisor for day-to-day management</td>
</tr>
<tr>
<td>SPARTA</td>
<td>Service Providers and Artisan Tradesman Activities</td>
</tr>
<tr>
<td>SPAS</td>
<td>Specific Plan Amendment Study</td>
</tr>
<tr>
<td>SPIIMS</td>
<td>Sustainability Performance Improvement Management System</td>
</tr>
<tr>
<td>Acronym</td>
<td>Description or Definition</td>
</tr>
<tr>
<td>---------</td>
<td>---------------------------</td>
</tr>
<tr>
<td>T-#</td>
<td>Terminal number (as in Terminal 5 = T-5)</td>
</tr>
<tr>
<td>TBIT</td>
<td>Tom Bradley International Terminal</td>
</tr>
<tr>
<td>TSA</td>
<td>Transportation Security Administration</td>
</tr>
<tr>
<td>UPS</td>
<td>United Parcel Services</td>
</tr>
<tr>
<td>USCS</td>
<td>United States Customs Service</td>
</tr>
<tr>
<td>USDOT</td>
<td>United States Department of Transportation. The Aviation Consumer Protection Division of the U.S. Department of Transportation processes consumer concerns and complaints pertaining to air carriers.</td>
</tr>
<tr>
<td>USGBC</td>
<td>United States Green Building Council</td>
</tr>
<tr>
<td>UTAHS</td>
<td>Underground Tanks and Hazardous Substances Payroll Codes: (Vacation, Holiday)</td>
</tr>
<tr>
<td>VC, HO</td>
<td></td>
</tr>
<tr>
<td>VMT</td>
<td>Vehicle Miles Driven</td>
</tr>
<tr>
<td>VNY</td>
<td>Van Nuys Airport (IATA airport code); also referred to as LA/VNY in LAWA marketing materials.</td>
</tr>
<tr>
<td>WBE</td>
<td>Woman Business Enterprise</td>
</tr>
</tbody>
</table>

### IATA AIRPORT CODES

<table>
<thead>
<tr>
<th>IATA Airport Code</th>
<th>Airport</th>
</tr>
</thead>
<tbody>
<tr>
<td>AMS</td>
<td>Amsterdam Airport</td>
</tr>
<tr>
<td>ATL</td>
<td>Atlanta Hartsfield-Jackson Airport</td>
</tr>
<tr>
<td>BOS</td>
<td>Boston Logan International Airport</td>
</tr>
<tr>
<td>BUR</td>
<td>Burbank-Glendale-Pasadena Airport (Bob Hope)</td>
</tr>
<tr>
<td>BWI</td>
<td>Baltimore/Washington International Thurgood Marshall Airport</td>
</tr>
<tr>
<td>CDG</td>
<td>Paris Charles de Gaulle Airport</td>
</tr>
<tr>
<td>DCA</td>
<td>Ronald Reagan Washington International Airport</td>
</tr>
<tr>
<td>DEN</td>
<td>Denver International Airport</td>
</tr>
<tr>
<td>DFW</td>
<td>Dallas/Fort Worth Airport</td>
</tr>
<tr>
<td>DTW</td>
<td>Detroit Airport</td>
</tr>
<tr>
<td>EWR</td>
<td>Newark Airport</td>
</tr>
<tr>
<td>FRA</td>
<td>Frankfurt Airport</td>
</tr>
<tr>
<td>HKG</td>
<td>Hong Kong International Airport</td>
</tr>
<tr>
<td>HND</td>
<td>Tokyo Haneda International Airport</td>
</tr>
<tr>
<td>IAD</td>
<td>Dulles International Airport</td>
</tr>
<tr>
<td>IAH</td>
<td>Houston George Bush Intercontinental Airport</td>
</tr>
<tr>
<td>JFK</td>
<td>New York John F. Kennedy International</td>
</tr>
<tr>
<td>LAX</td>
<td>Los Angeles International Airport</td>
</tr>
<tr>
<td>LGB</td>
<td>Long Beach Airport</td>
</tr>
<tr>
<td>LHR</td>
<td>London Heathrow Airport</td>
</tr>
<tr>
<td>MIA</td>
<td>Miami International Airport</td>
</tr>
<tr>
<td>MSP</td>
<td>Minneapolis Saint Paul International Airport</td>
</tr>
<tr>
<td>IATA Airport Code</td>
<td>Airport</td>
</tr>
<tr>
<td>------------------</td>
<td>--------------------------------</td>
</tr>
<tr>
<td>OAK</td>
<td>Oakland International Airport</td>
</tr>
<tr>
<td>ONT</td>
<td>Ontario International Airport</td>
</tr>
<tr>
<td>ORD</td>
<td>Chicago O’Hare Airport</td>
</tr>
<tr>
<td>PHX</td>
<td>Sky Harbor International Airport – Phoenix, AZ</td>
</tr>
<tr>
<td>PIT</td>
<td>Pittsburgh International Airport</td>
</tr>
<tr>
<td>PMD</td>
<td>Palmdale Regional Airport</td>
</tr>
<tr>
<td>SEA</td>
<td>Seattle/Tacoma International Airport</td>
</tr>
<tr>
<td>SFO</td>
<td>San Francisco International Airport</td>
</tr>
<tr>
<td>SIN</td>
<td>Changi Airport – Singapore</td>
</tr>
<tr>
<td>VNY</td>
<td>Van Nuys Airport</td>
</tr>
</tbody>
</table>
APPENDIX D: ADDITIONAL METRICS

Appendix D contains additional metrics that LAWA might consider in two specific areas – Environmental Responsibility and Guest Experience – as it develops a more complete performance measurement system.

ENVIRONMENTAL RESPONSIBILITY

Table D.1 displays the breadth of measurements considered in developing the Environmental Responsibility BSC in Chapter II.2.

<table>
<thead>
<tr>
<th>Measurement Label &amp; Description – Environmental Responsibility</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Green Buying</strong></td>
</tr>
<tr>
<td>$ consumable products purchased that meet IFMA environmental standards or equivalent</td>
</tr>
<tr>
<td>% consumable building supplies purchased that meet IFMA environmental standards or equivalent</td>
</tr>
<tr>
<td># suppliers engaged in Extended Producer Responsibility (EPR) and resource recovery</td>
</tr>
<tr>
<td># non-recyclable products</td>
</tr>
<tr>
<td>% non-recyclable products</td>
</tr>
<tr>
<td># “Sustainable Lease Agreements” based on Model of Port</td>
</tr>
<tr>
<td># environmental compliance audits completed</td>
</tr>
<tr>
<td><strong>Water Conservation</strong></td>
</tr>
<tr>
<td># water reused</td>
</tr>
<tr>
<td>% water reused</td>
</tr>
<tr>
<td># (amount) potable water used.</td>
</tr>
<tr>
<td># imported water</td>
</tr>
<tr>
<td>% imported water</td>
</tr>
<tr>
<td># locally sourced water</td>
</tr>
<tr>
<td># water recycled</td>
</tr>
<tr>
<td>% water recycled</td>
</tr>
<tr>
<td>% water locally sourced</td>
</tr>
<tr>
<td># storm water capture</td>
</tr>
<tr>
<td>% storm water capture</td>
</tr>
<tr>
<td># sewer spills</td>
</tr>
<tr>
<td>% on-schedule shutdowns of water utility</td>
</tr>
<tr>
<td># unscheduled water shutdowns of water utility</td>
</tr>
<tr>
<td>% landscape acreage with drought resistant plants, artificial turf, and rock in landscape</td>
</tr>
<tr>
<td># average hours to respond to failed automated valves and faucets</td>
</tr>
<tr>
<td>% overall reduction in water usage compared to base year, using California water reduction standards</td>
</tr>
<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td># repairs and replacements of outmoded plumbing</td>
</tr>
<tr>
<td># gallons of water loss in the cooling tower operation through more efficient means of rejecting heat</td>
</tr>
<tr>
<td># gallons of water used per PAX in terminals</td>
</tr>
<tr>
<td># gallons of water used in irrigation systems</td>
</tr>
<tr>
<td># gallons water used LAWA</td>
</tr>
<tr>
<td># gallons of water used LAX</td>
</tr>
<tr>
<td>% of target - gallons of water used</td>
</tr>
<tr>
<td>% compliance with California IGP on storm water pollution prevention</td>
</tr>
<tr>
<td># gallons runoff water exceeding pollution standards</td>
</tr>
<tr>
<td>% compliance with California IGP on storm water pollution prevention</td>
</tr>
<tr>
<td># gallons of water used LAX</td>
</tr>
<tr>
<td># gallons total Potable Water consumed LAX</td>
</tr>
<tr>
<td># gallons total Potable Water consumed VNY</td>
</tr>
<tr>
<td># gallons total Potable Water consumed ONT</td>
</tr>
<tr>
<td>$ Potable Water LAX</td>
</tr>
<tr>
<td>$ Potable Water VNY</td>
</tr>
<tr>
<td>$ Potable Water ONT</td>
</tr>
<tr>
<td>gallons Reclaimed water consumed LAX</td>
</tr>
<tr>
<td># gallons Reclaimed water consumed VNY</td>
</tr>
<tr>
<td># gallons Reclaimed water consumed ONT</td>
</tr>
<tr>
<td># acres Drought tolerant area LAX</td>
</tr>
<tr>
<td># Total landscape area, acres LAX</td>
</tr>
<tr>
<td># Landscaped area using reclaimed water LAX</td>
</tr>
<tr>
<td># acres drought tolerant area VNY</td>
</tr>
<tr>
<td># acres total landscape area VNY</td>
</tr>
<tr>
<td># acres drought tolerant area ONT</td>
</tr>
<tr>
<td># acres total landscape area ONT</td>
</tr>
<tr>
<td>% Converted to computer internet based controlled irrigation LAX</td>
</tr>
<tr>
<td># acreage Converted to computer internet based controlled irrigation LAX</td>
</tr>
<tr>
<td>$ for each irrigation module LAX</td>
</tr>
<tr>
<td># gallons recycled Fleet maintenance car wash LAX</td>
</tr>
<tr>
<td># gallons recycled for Fleet car wash VNY</td>
</tr>
<tr>
<td># gallons recycled for Fleet car wash VNY</td>
</tr>
<tr>
<td># gallons recycled Tenant Rental Car wash</td>
</tr>
<tr>
<td>$ savings using reclaimed water</td>
</tr>
</tbody>
</table>

**Noise**

# sound insulation completed El Segundo
### Measurement Label & Description – Environmental Responsibility

<table>
<thead>
<tr>
<th>Label</th>
</tr>
</thead>
<tbody>
<tr>
<td># sound insulation completed City of Los Angeles</td>
</tr>
<tr>
<td># sound insulation completed City of Van Nuys</td>
</tr>
<tr>
<td># sound insulation completed County of LA</td>
</tr>
<tr>
<td># sound insulation completed Inglewood</td>
</tr>
<tr>
<td># sound insulation completed Total LAWA</td>
</tr>
<tr>
<td>% sound insulation completed El Segundo</td>
</tr>
<tr>
<td>% sound insulation completed City of Los Angeles</td>
</tr>
<tr>
<td>% sound insulation completed City of Van Nuys</td>
</tr>
<tr>
<td>% sound insulation completed County of LA</td>
</tr>
<tr>
<td>% sound insulation completed Inglewood</td>
</tr>
<tr>
<td>% sound insulation completed ONT</td>
</tr>
<tr>
<td>% sound insulation completed Total LAWA of 32,485 eligible</td>
</tr>
<tr>
<td>$ home sound insulation City Los Angeles</td>
</tr>
<tr>
<td>$ home sound insulation Inglewood</td>
</tr>
<tr>
<td>$ home sound insulation El Segundo</td>
</tr>
<tr>
<td>$ home sound insulation County Los Angeles</td>
</tr>
<tr>
<td>$ payment for sound insulation Los Angeles by FAA</td>
</tr>
<tr>
<td>$ payment for sound insulation Inglewood by FAA</td>
</tr>
<tr>
<td>$ payment for sound insulation El Segundo by FAA</td>
</tr>
<tr>
<td>$ payment for sound insulation County Los Angeles by FAA</td>
</tr>
<tr>
<td>$ payment for sound insulation City Los Angeles by LAWA</td>
</tr>
<tr>
<td>$ payment for sound insulation Inglewood by LAWA</td>
</tr>
<tr>
<td>$ payment for sound insulation El Segundo by LAWA</td>
</tr>
<tr>
<td># homes insulated through Sound Insulation Grant (SIG) program</td>
</tr>
<tr>
<td>$ awarded for Sound Insulation Grant (SIG) program</td>
</tr>
<tr>
<td>$ payment for sound insulation</td>
</tr>
<tr>
<td># LAX early turns exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td># VNY early turns exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td># LAX east departures exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td># LAX noise complaints by aircraft type</td>
</tr>
<tr>
<td># VNY noise complaints by aircraft type</td>
</tr>
<tr>
<td># LAX aircraft exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td># ONT aircraft exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td># VNY aircraft exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td># VNY aircraft exceeding noise threshold by aircraft type</td>
</tr>
<tr>
<td>&quot;# homes insulated through Sound Insulation Grant (SIG) program&quot;</td>
</tr>
<tr>
<td>&quot;$ awarded for Sound Insulation Grant (SIG) program&quot;</td>
</tr>
<tr>
<td>&quot;$ payment for sound insulation&quot;</td>
</tr>
<tr>
<td>&quot;# LAX early turns exceeding noise threshold by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# VNY early turns exceeding noise threshold by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# LAX east departures exceeding noise threshold by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# LAX noise complaints by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# VNY noise complaints by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# LAX aircraft exceeding noise threshold by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# ONT aircraft exceeding noise threshold by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# VNY aircraft exceeding noise threshold by aircraft type&quot;</td>
</tr>
<tr>
<td>&quot;# VNY aircraft exceeding noise threshold by aircraft type&quot;</td>
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<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
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<tr>
<td>----------------------------------------------------------------</td>
</tr>
<tr>
<td># LAX early turns exceeding noise threshold</td>
</tr>
<tr>
<td># VNY early turns exceeding noise threshold</td>
</tr>
<tr>
<td># LAX east departures exceeding noise threshold</td>
</tr>
<tr>
<td># LAX noise complaints</td>
</tr>
<tr>
<td># VNY noise complaints</td>
</tr>
<tr>
<td># ONT noise complaints</td>
</tr>
<tr>
<td># LAX noise complaints/10000 departures</td>
</tr>
<tr>
<td># VNY noise complaints/10,000 departures</td>
</tr>
<tr>
<td># ONT noise complaints/10,000 departures</td>
</tr>
<tr>
<td># monthly noise complaint reports (LAX &amp; VNY)</td>
</tr>
<tr>
<td># monthly LAX east departure reports</td>
</tr>
<tr>
<td># monthly VNY quieter departure reports</td>
</tr>
<tr>
<td># quarterly LAWA noise reports</td>
</tr>
<tr>
<td>$ spent on noise reduction insulation</td>
</tr>
<tr>
<td># residents LAX within incompatible area =/&gt;65 CNEL</td>
</tr>
<tr>
<td># residents within incompatible area =/&gt;65 CNEL VNY</td>
</tr>
<tr>
<td># residents within incompatible area =/&gt;65 CNEL ONT</td>
</tr>
<tr>
<td># Homes located within 65dB CNEL LAX w/ installed insulation</td>
</tr>
<tr>
<td># VNY Homes located within 65dB CNEL w/ installed insulation</td>
</tr>
<tr>
<td># ONT Homes located within 65dB CNEL w/ installed insulation</td>
</tr>
<tr>
<td># noise complaints LAX</td>
</tr>
<tr>
<td># noise complaints VNY</td>
</tr>
<tr>
<td># noise complaints ONT</td>
</tr>
<tr>
<td># noise contours LAX</td>
</tr>
<tr>
<td># noise contours VNY</td>
</tr>
<tr>
<td># noise contours ONT</td>
</tr>
<tr>
<td># noise monitoring stations LAX</td>
</tr>
<tr>
<td># noise monitoring stations VNY</td>
</tr>
<tr>
<td># noise monitoring stations ONT</td>
</tr>
<tr>
<td>Fly Friendly Awards</td>
</tr>
<tr>
<td>% Aircraft compliance w/ noise reduction</td>
</tr>
<tr>
<td># residents LAX within incompatible area =/&gt;65 CNEL</td>
</tr>
<tr>
<td># residents within incompatible area =/&gt;65 CNEL VNY</td>
</tr>
<tr>
<td># residents within incompatible area =/&gt;65 CNEL ONT</td>
</tr>
<tr>
<td># Homes located within 65dB CNEL LAX w/ installed insulation</td>
</tr>
<tr>
<td># VNY Homes located within 65dB CNEL w/ installed insulation</td>
</tr>
<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td># ONT Homes located within 65dB CNEL w/ installed insulation</td>
</tr>
<tr>
<td>% complete Noise Mitigation of Places of Worship per CBA</td>
</tr>
<tr>
<td>% complete Lennox School District Sound Attenuation per CBA</td>
</tr>
<tr>
<td>% complete Inglewood School District Sound Attenuation Per CBA</td>
</tr>
<tr>
<td># Nighttime Departures</td>
</tr>
<tr>
<td># Eastbound Departures</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Energy Stewardship</th>
</tr>
</thead>
<tbody>
<tr>
<td>$ Electricity Total LAX</td>
</tr>
<tr>
<td>$ Total cost electricity VNY</td>
</tr>
<tr>
<td>$ Total cost electricity ONT</td>
</tr>
<tr>
<td>$ Total cost natural gas LAX</td>
</tr>
<tr>
<td>$ Total cost natural gas VNY</td>
</tr>
<tr>
<td>$ Total cost natural gas ONT</td>
</tr>
<tr>
<td>$ Utility costs avoided LAX</td>
</tr>
<tr>
<td>$ Utility costs avoided VNY</td>
</tr>
<tr>
<td>$ Utility costs avoided ONT</td>
</tr>
<tr>
<td># Volume Vehicle Energy CNG LAX</td>
</tr>
<tr>
<td>$ vehicle energy CNG LAX</td>
</tr>
<tr>
<td># Volume vehicle energy LNG LAX</td>
</tr>
<tr>
<td># Vehicle energy LNG LAX</td>
</tr>
<tr>
<td># Volume vehicle energy propane</td>
</tr>
<tr>
<td>$ Vehicle energy propane LAX</td>
</tr>
<tr>
<td># Volume Vehicle energy, Unleaded Gas LAX</td>
</tr>
<tr>
<td>$ Vehicle energy, Unleaded Gas LAX</td>
</tr>
<tr>
<td># Volume Vehicle energy, Diesel LAX</td>
</tr>
<tr>
<td>$ Vehicle energy, Diesel LAX</td>
</tr>
<tr>
<td># gallons total Vehicle energy (diesel) VNY</td>
</tr>
<tr>
<td># gallons total Vehicle energy (unleaded) VNY</td>
</tr>
<tr>
<td># Total Vehicle energy (CNG, LNG, Propane, Unleaded, Diesel) LAX</td>
</tr>
<tr>
<td># gallons Total liquid fuel gallons/gas consumed VNY</td>
</tr>
<tr>
<td># gallons Total liquid fuel gallons/gas consumed ONT</td>
</tr>
<tr>
<td>$ Vehicle energy LAX</td>
</tr>
<tr>
<td>$ Vehicle energy VNY</td>
</tr>
<tr>
<td>$ Vehicle energy ONT</td>
</tr>
<tr>
<td># SF structures with Indoor space LAX</td>
</tr>
<tr>
<td># SF structures with Indoor space VNY</td>
</tr>
<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td># structures with internal space data ONT</td>
</tr>
<tr>
<td># SF structure with internal space data</td>
</tr>
<tr>
<td># MM Indoor space energy usage, CTA (HNTB 2013/2014), kWh</td>
</tr>
<tr>
<td># Total EV charging stations</td>
</tr>
<tr>
<td># EV charging stations, FlyAway</td>
</tr>
<tr>
<td>% Renewable energy generated on-site</td>
</tr>
<tr>
<td># kWh Green power purchase</td>
</tr>
<tr>
<td>$ Green power purchase</td>
</tr>
<tr>
<td>% Green power purchase total electricity</td>
</tr>
<tr>
<td># units replaced; savings/unit; annual hours of operation for MSD Retrofit/efficiency</td>
</tr>
<tr>
<td># units replaced; savings/unit; annual hours of operation MSD Parking lot lamp LED upgrades</td>
</tr>
<tr>
<td># units replaced; savings/unit; annual hours of operation Tenant efficiency projects</td>
</tr>
<tr>
<td>Retrofit/efficiency projects list of energy conservation actions</td>
</tr>
<tr>
<td># sf Building automation systems at admin &amp; safety base retrofit</td>
</tr>
<tr>
<td>% retrofit to LED 851 taxiway edge lights; 20% of 344 in-pavement runway guard lights; and,</td>
</tr>
<tr>
<td>% retrofit to LED 344 in pavement runway guard lights;</td>
</tr>
<tr>
<td>% retrofit to LED of 192 airfield signs.</td>
</tr>
<tr>
<td>% Total LAX CUP GHG emissions reduction due to Replacement</td>
</tr>
<tr>
<td># tons LAX CA Cap and Trade Total offset emissions (GHG and AQ) in tons</td>
</tr>
<tr>
<td># tons GHG and AQ report total offset emissions per RECLAIM report</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Greenhouse Gas/Vehicle Miles Traveled (GHG/VMT)</th>
</tr>
</thead>
<tbody>
<tr>
<td>#GHG LAW A</td>
</tr>
<tr>
<td>#GHG Airfield ONT</td>
</tr>
<tr>
<td>#GHG Airfield LAW A</td>
</tr>
<tr>
<td>#GHG Airfield LAX</td>
</tr>
<tr>
<td># VMT (Vehicle Miles Travelled) LAW A Cars</td>
</tr>
<tr>
<td># VMT LAX Cars</td>
</tr>
<tr>
<td># VMT ONT Cars</td>
</tr>
<tr>
<td># VMT VNY Cars</td>
</tr>
<tr>
<td># GHG LAW A Cars</td>
</tr>
<tr>
<td># GHG LAX Cars</td>
</tr>
<tr>
<td># GHG ONT Cars</td>
</tr>
<tr>
<td># GHG VNY Cars</td>
</tr>
<tr>
<td># VMT (Vehicle Miles Travelled) LAW A Transit</td>
</tr>
<tr>
<td># VMT LAX Transit</td>
</tr>
<tr>
<td># GHG LAX Transit</td>
</tr>
<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
</tr>
<tr>
<td># VMT LAX Goods Movement</td>
</tr>
<tr>
<td># VMT ONT Goods Movement</td>
</tr>
<tr>
<td># VMT VNY Goods Movement</td>
</tr>
<tr>
<td># GHG LAWA Goods Movement</td>
</tr>
<tr>
<td># GHG LAX Goods Movement</td>
</tr>
<tr>
<td># GHG ONT Goods Movement</td>
</tr>
<tr>
<td># GHG VNY Goods Movement</td>
</tr>
<tr>
<td># average vehicle minutes curb dwell time X average greenhouse gas emissions per car per minute</td>
</tr>
<tr>
<td># GHG Buildings LAWA</td>
</tr>
<tr>
<td># GHG Buildings LAX</td>
</tr>
<tr>
<td># GHG Buildings ONT</td>
</tr>
<tr>
<td># GHG Buildings VNY</td>
</tr>
<tr>
<td>Air Quality</td>
</tr>
<tr>
<td># LAWA autos</td>
</tr>
<tr>
<td># LAWA buses</td>
</tr>
<tr>
<td># LAWA pickups</td>
</tr>
<tr>
<td># alternate fuel vehicle total LAX</td>
</tr>
<tr>
<td># alternate fuel vehicle CNG LAX</td>
</tr>
<tr>
<td># alternate fuel vehicle Electric LAX</td>
</tr>
<tr>
<td># alternate fuel vehicle Propane LAX</td>
</tr>
<tr>
<td># alternate fuel vehicle Bio-fuel LAX</td>
</tr>
<tr>
<td># alternate fuel vehicle Hybrid LAX</td>
</tr>
<tr>
<td># LAX Single Occupancy Vehicle (SOV) trips per day</td>
</tr>
<tr>
<td># alternate fuel VNY vehicles</td>
</tr>
<tr>
<td># one-way trip average mile distance (LAX employees)</td>
</tr>
<tr>
<td># carbon dioxide LAX emissions - stationary sources (buildings) MTCO2</td>
</tr>
<tr>
<td># greenhouse gas emissions, MTCO2 Vehicles</td>
</tr>
<tr>
<td># FlyAway routes</td>
</tr>
<tr>
<td># FlyAway PAX</td>
</tr>
<tr>
<td># Flyway average daily ridership</td>
</tr>
<tr>
<td># reduced/day vehicle trips</td>
</tr>
<tr>
<td># FlyAway miles traveled per day</td>
</tr>
<tr>
<td># FlyAway trips</td>
</tr>
<tr>
<td># FlyAway emissions reduced per day</td>
</tr>
<tr>
<td># M VMT (miles) reduced VMT through LAWA Rideshare program</td>
</tr>
<tr>
<td># gallons fuel saved Rideshare LAWA</td>
</tr>
</tbody>
</table>
## Measurement Label & Description – Environmental Responsibility

<table>
<thead>
<tr>
<th>Measurement Label &amp; Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>% SOV Rideshare</td>
<td></td>
</tr>
<tr>
<td>% Van Rideshare</td>
<td></td>
</tr>
<tr>
<td>% Transit Rideshare</td>
<td></td>
</tr>
<tr>
<td>% Carpool Rideshare</td>
<td></td>
</tr>
<tr>
<td>% Bike/Walk Rideshare</td>
<td></td>
</tr>
<tr>
<td># CO2 Rideshare emission reduction in M lbs.</td>
<td></td>
</tr>
<tr>
<td># LAX’s 141 gates with PCA preconditioned air</td>
<td></td>
</tr>
<tr>
<td>% LAX’s 141 gates with PCA preconditioned air</td>
<td></td>
</tr>
<tr>
<td># reduced emissions from LAX gates with PCA preconditioned air</td>
<td></td>
</tr>
<tr>
<td># LAX gates with 400 Hz power</td>
<td></td>
</tr>
<tr>
<td># LAX’s 141 gates with 400 Hz power (benefit)</td>
<td></td>
</tr>
<tr>
<td># kWh Charging stations LAX</td>
<td></td>
</tr>
<tr>
<td># charging stations LAX (emissions benefit)</td>
<td></td>
</tr>
<tr>
<td># airline biofuel (United)</td>
<td></td>
</tr>
<tr>
<td># solar power (program)</td>
<td></td>
</tr>
<tr>
<td># LAWA Air Apportionment (2013 story)</td>
<td></td>
</tr>
<tr>
<td>average vehicle minutes curb dwell time LAX</td>
<td></td>
</tr>
<tr>
<td># CO criteria pollutant</td>
<td></td>
</tr>
<tr>
<td># NOx criteria pollutant</td>
<td></td>
</tr>
<tr>
<td># SO2 criteria pollutant</td>
<td></td>
</tr>
<tr>
<td># PM2.5 criteria pollutant</td>
<td></td>
</tr>
<tr>
<td># CO regulated pollutant</td>
<td></td>
</tr>
<tr>
<td># NO2 regulated pollutant</td>
<td></td>
</tr>
<tr>
<td># SO2 regulated pollutant</td>
<td></td>
</tr>
<tr>
<td># VOC regulated pollutant (x55 types)</td>
<td></td>
</tr>
<tr>
<td># Winter Ultrafine Particles</td>
<td></td>
</tr>
<tr>
<td># Summer Ultrafine Particles</td>
<td></td>
</tr>
<tr>
<td># VOC and PM emissions from Jet fuel, gas, diesel</td>
<td></td>
</tr>
<tr>
<td># VOC and PM emissions from jet fuel</td>
<td></td>
</tr>
<tr>
<td># VOC and PM emissions from gas</td>
<td></td>
</tr>
<tr>
<td># VOC and PM emissions from diesel</td>
<td></td>
</tr>
<tr>
<td># LAWA sets aside for Air Quality Funds</td>
<td></td>
</tr>
<tr>
<td>X average greenhouse gas emissions per car per minute LAX</td>
<td></td>
</tr>
</tbody>
</table>

## Materials & Resources

<table>
<thead>
<tr>
<th>Measurement Label &amp; Description</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td># waste produced</td>
<td></td>
</tr>
<tr>
<td>% waste stays in LA County</td>
<td></td>
</tr>
<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td># tons organic waste collected</td>
<td></td>
</tr>
<tr>
<td># tenant waste recycled</td>
<td></td>
</tr>
<tr>
<td>% tenant waste recycled</td>
<td></td>
</tr>
<tr>
<td>% solid waste diverted through recycling</td>
<td></td>
</tr>
<tr>
<td>% total solid waste generated by LAWA and all tenants that is recycled (minimum of 50% set)</td>
<td></td>
</tr>
<tr>
<td># waste stream diverted from going to landfill</td>
<td></td>
</tr>
<tr>
<td># tons recycled cardboard, mixed paper LAX</td>
<td></td>
</tr>
<tr>
<td># copiers with double-sided printing LAX</td>
<td></td>
</tr>
<tr>
<td># tons diverted Source Reduction LAX</td>
<td></td>
</tr>
<tr>
<td># tons plastic recycled LAX</td>
<td></td>
</tr>
<tr>
<td># tons glass recycled LAX</td>
<td></td>
</tr>
<tr>
<td># tons metal recycled LAX</td>
<td></td>
</tr>
<tr>
<td># tons recycled wood (pallet and green materials) LAX</td>
<td></td>
</tr>
<tr>
<td># tons reused wood (pallets) LAX</td>
<td></td>
</tr>
<tr>
<td># tons green materials recycled</td>
<td></td>
</tr>
<tr>
<td># tons biomass zoo donation: formula of 600lbs/cy of loose leaves and green materials</td>
<td></td>
</tr>
<tr>
<td># tons tire recycled LAX</td>
<td></td>
</tr>
<tr>
<td># tons food diverted LAX</td>
<td></td>
</tr>
<tr>
<td># tons electronics diverted LAX</td>
<td></td>
</tr>
<tr>
<td># tons recycled electronics LAX</td>
<td></td>
</tr>
<tr>
<td># tons other recycled LAX</td>
<td></td>
</tr>
<tr>
<td># tons furniture diverted: 1 ton reused/2 weeks and 2 tons donated/2 weeks</td>
<td></td>
</tr>
<tr>
<td>% Total Waste Diversion Rate</td>
<td></td>
</tr>
<tr>
<td># Municipal Solid Waste Total tons to landfill/incinerator LAX</td>
<td></td>
</tr>
<tr>
<td># tons Municipal Solid Waste to landfill/incinerator VNY</td>
<td></td>
</tr>
<tr>
<td># tons Municipal Solid Waste Total to landfill/incinerator ONT</td>
<td></td>
</tr>
<tr>
<td># tons recycled Municipal Solid Waste LAX, excluding construction concrete recycling</td>
<td></td>
</tr>
<tr>
<td># tons Municipal Solid Waste VNY</td>
<td></td>
</tr>
<tr>
<td># tons Municipal Solid Waste ONT</td>
<td></td>
</tr>
<tr>
<td># tons diverted Hazardous Waste, including Universal waste</td>
<td></td>
</tr>
<tr>
<td># tons Tenant Recycling LAX</td>
<td></td>
</tr>
<tr>
<td># tons Tenant Municipal Solid Waste LAX</td>
<td></td>
</tr>
<tr>
<td># Construction &amp; Demolition material LAX</td>
<td></td>
</tr>
<tr>
<td># tons landfill/incinerator VNY</td>
<td></td>
</tr>
<tr>
<td># tons Construction &amp; Demolition material landfill</td>
<td></td>
</tr>
<tr>
<td>% recycling of construction debris</td>
<td></td>
</tr>
<tr>
<td>Measurement Label &amp; Description – Environmental Responsibility</td>
<td></td>
</tr>
<tr>
<td>---------------------------------------------------------------</td>
<td></td>
</tr>
<tr>
<td># recycling of construction debris</td>
<td></td>
</tr>
<tr>
<td># tons recycled Construction and demolition debris</td>
<td></td>
</tr>
<tr>
<td># tons Construction &amp; Demolition material recycled VNY</td>
<td></td>
</tr>
<tr>
<td># tons recycled Construction &amp; Demolition material ONT</td>
<td></td>
</tr>
<tr>
<td># asphalt</td>
<td></td>
</tr>
<tr>
<td># tons recycled Master Plan Construction Concrete Recycling LAX (includes rock, concrete, and asphalt)</td>
<td></td>
</tr>
<tr>
<td>% MSD Procurement contracts with sustainability clauses LAX</td>
<td></td>
</tr>
<tr>
<td>% IMTG Procurement contracts with sustainability clauses LAX</td>
<td></td>
</tr>
<tr>
<td># custodial supplies (green products) LAX</td>
<td></td>
</tr>
<tr>
<td>$ custodial supplies (green products) LAX</td>
<td></td>
</tr>
<tr>
<td>$ custodial supplies (conventional products) LAX</td>
<td></td>
</tr>
<tr>
<td>% custodial supplies (conventional products) LAX</td>
<td></td>
</tr>
<tr>
<td>% sustainability clauses in procurement contracts</td>
<td></td>
</tr>
<tr>
<td>% waste stays in LA County</td>
<td></td>
</tr>
<tr>
<td># tons waste stays in LA County</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Green Construction</th>
</tr>
</thead>
<tbody>
<tr>
<td># LEED certified buildings (CUP)</td>
</tr>
<tr>
<td>% total square footage LEED certified buildings</td>
</tr>
<tr>
<td># sf area permeable pavement LAX</td>
</tr>
<tr>
<td># projects LAGBC Tier 1</td>
</tr>
<tr>
<td># sf area LAGBC Tier 2</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Natural Resources</th>
</tr>
</thead>
<tbody>
<tr>
<td># acres El Segundo Blue Butterfly Habitat conserved (Buckwheat)</td>
</tr>
<tr>
<td># El Segundo Blue Butterfly individuals (average)</td>
</tr>
<tr>
<td># tarplants LAX</td>
</tr>
<tr>
<td># acacia &amp; ficus trees donated to zoo program LAX</td>
</tr>
<tr>
<td># dune volunteers LAX</td>
</tr>
<tr>
<td># coastal habitat native conservation - plants and animal species LAX</td>
</tr>
<tr>
<td># area acres of mitigation land</td>
</tr>
<tr>
<td>GPA Beach water Dry Season</td>
</tr>
<tr>
<td>GPA Beach water Wet Season</td>
</tr>
<tr>
<td>% storm water capture LAI</td>
</tr>
<tr>
<td>% storm water capture LA</td>
</tr>
<tr>
<td>% storm water capture LAX</td>
</tr>
<tr>
<td>% storm water capture ONT</td>
</tr>
<tr>
<td>% storm water capture VNY</td>
</tr>
<tr>
<td># heat temperature from LAX Asphalt</td>
</tr>
</tbody>
</table>
## Measurement Label & Description – Environmental Responsibility

### Awards

- # LA Green Business Certification awards non-LAWA
- # LA Green Business Certification awards LAWA

### Reports & Clearances

- # Mitigation Monitoring Reporting Program Reports (MMRP) completed each year for prior year
- # sustainability reports completed within 1 year
- % compliance with CA 23 CCR 16, involving Underground Storage Tank (UST) management
- # CEQA and NEPA environmental clearances per project
- % compliance with CA 23 CCR 16, involving Underground Storage Tank (UST) management
- # CEQA and NEPA environmental clearances per project
- # Level 3 Airport Carbon Accreditation Achieved

## GUEST EXPERIENCE

Table D.2 displays the breadth of measurements considered in developing the Guest Experience BSC in Chapter II.3. Because LAWA lacks access to data that affect the guest experience, but are maintained and monitored by its partners, such as the airlines, TSA, etc., KH has color-coded those metrics:

- Private companies (airlines, private shuttle services, private parking lots, concessionaires, etc.) in **peach**
- Other governmental agencies (TSA, CBP, FAA, CBP) in **yellow**

### Table D.2: Potential Measurements – Guest Experience

<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Guest Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>CORE SERVICES</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Access: Time/Efficiency</strong></td>
<td></td>
</tr>
<tr>
<td>Vehicular</td>
<td></td>
</tr>
<tr>
<td>ADA Vans - PAX</td>
<td># disabled PAX served by ADA vans</td>
</tr>
<tr>
<td>ADA Vans - Response Time</td>
<td># mins between ADA van request and PAX pickup</td>
</tr>
<tr>
<td>ASR - Roadway</td>
<td># roadway area shutdown requests (ASR) approved by CALM (CY)</td>
</tr>
<tr>
<td>ASR - Terminal</td>
<td># terminal area shutdown requests (ASR) approved by CALM (CY)</td>
</tr>
<tr>
<td>CTA - # Vehicles/Day</td>
<td># vehicles entering the CTA each day</td>
</tr>
<tr>
<td>CTA - Curb Availability</td>
<td># feet of inner and outer curb available (minus construction) - lower</td>
</tr>
<tr>
<td>CTA - LL Drive Time</td>
<td># mins to complete CTA orbit - Lower</td>
</tr>
<tr>
<td>CTA - UL Drive Time</td>
<td># mins to complete CTA orbit - Upper</td>
</tr>
<tr>
<td>CTA Congestion</td>
<td># CTA congestions where CTA orbit takes 30 mins or more</td>
</tr>
<tr>
<td>Drive Time - Century</td>
<td># mins to drive Century Blvd</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey
<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Guest Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Drive Time - N Side</td>
<td># mins to drive north side approach</td>
</tr>
<tr>
<td>Drive Time - Sepulveda</td>
<td># mins to drive Sepulveda Blvd tunnel</td>
</tr>
<tr>
<td>FlyAway - On-time</td>
<td>% FlyAway operating according to schedule, by route</td>
</tr>
<tr>
<td>FlyAway - Performance</td>
<td>% rating 4 or 5 out of 5 for FlyAway Service on Yelp - Van Nuys</td>
</tr>
<tr>
<td>FlyAway - Satisfaction</td>
<td>% rating 4 or 5 out of 5 for FlyAway Service on Yelp - Downtown</td>
</tr>
<tr>
<td>FlyAway - Satisfaction</td>
<td>% rating 4 or 5 out of 5 for FlyAway Service on Yelp - Westwood</td>
</tr>
<tr>
<td>FlyAway - Satisfaction</td>
<td>% rating 4 or 5 out of 5 for FlyAway Service on Yelp - Hollywood</td>
</tr>
<tr>
<td>Parking - Closure Time</td>
<td># average mins per lot closure - Lot 3</td>
</tr>
<tr>
<td>Parking - Closure Time</td>
<td># average mins per lot closure - Lot 4</td>
</tr>
<tr>
<td>Parking - Closure Time</td>
<td># average mins per lot closure - Lot 5</td>
</tr>
<tr>
<td>Parking - Closure Time</td>
<td># average mins per lot closure - Lot 6</td>
</tr>
<tr>
<td>Parking - Closures</td>
<td># closures - Lot 3</td>
</tr>
<tr>
<td>Parking - Closures</td>
<td># closures - Lot 4</td>
</tr>
<tr>
<td>Parking - Closures</td>
<td># closures - Lot 5</td>
</tr>
<tr>
<td>Parking - Closures</td>
<td># closures - Lot 6</td>
</tr>
<tr>
<td>Parking - Exit Gates</td>
<td># exit gates open - by lot</td>
</tr>
<tr>
<td>Parking Occupancy Rate</td>
<td>% hours parking is &lt;90% full - by lot</td>
</tr>
<tr>
<td>Parking Occupancy Rate</td>
<td>% hours parking is &gt;90% full - by lot</td>
</tr>
<tr>
<td>Parking Occupancy Rate</td>
<td>% hour parking is 100% full - by lot</td>
</tr>
<tr>
<td>Parking-Cell-Phone Lot</td>
<td># using cell phone lot</td>
</tr>
<tr>
<td>Parking-Cell-Phone Lot</td>
<td># average mins. in cell phone lot</td>
</tr>
<tr>
<td>Parking-Cell-Phone Lot</td>
<td># parking spaces in cell phone lot</td>
</tr>
<tr>
<td>Parking-Cell-Phone Lot</td>
<td># vehicles entering cell phone lot</td>
</tr>
<tr>
<td>Parking-Transactions</td>
<td># seconds to process various types of transactions - Grace Period</td>
</tr>
<tr>
<td>Parking-Transactions</td>
<td># seconds to process various types of transactions - Regular</td>
</tr>
<tr>
<td>Public Transport Use</td>
<td># PAX using public transport</td>
</tr>
<tr>
<td>Shuttles - Headway - Airline Connection Buses</td>
<td># mins between airline connection buses during peak hours</td>
</tr>
<tr>
<td>Shuttles - Headway - Hotel</td>
<td># mins between hotel shuttles during peak hours</td>
</tr>
<tr>
<td>Shuttles - Headway – Parking</td>
<td># mins between parking shuttles during peak hours</td>
</tr>
<tr>
<td>Shuttles - Headway - Rental Cars</td>
<td># mins between rental car shuttles during peak hours</td>
</tr>
<tr>
<td>Shuttles - PAX Volume</td>
<td># PAX using LAWA-operated shuttles</td>
</tr>
<tr>
<td>Shuttles - PAX Volume</td>
<td># PAX using third-party-operated shuttles</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>---------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Shuttles - Throughput -</td>
<td># total airline connection buses entering CTA (CY)</td>
</tr>
<tr>
<td>Airline Connection Buses -</td>
<td></td>
</tr>
<tr>
<td>Hotel</td>
<td></td>
</tr>
<tr>
<td>Shuttles - Throughput -</td>
<td># total hotel shuttles entering CTA (CY)</td>
</tr>
<tr>
<td>Parking</td>
<td></td>
</tr>
<tr>
<td>Shuttles - Throughput -</td>
<td># total parking shuttles entering CTA (CY)</td>
</tr>
<tr>
<td>Total</td>
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</tr>
<tr>
<td>Shuttles - Throughput -</td>
<td># total rental car shuttles entering CTA (CY)</td>
</tr>
<tr>
<td>Total</td>
<td></td>
</tr>
<tr>
<td>Taxi Queue</td>
<td># average PAX in taxi queue</td>
</tr>
<tr>
<td>Taxi Volume</td>
<td></td>
</tr>
<tr>
<td>Traffic Officers</td>
<td></td>
</tr>
<tr>
<td># average traffic officers on duty at peak evening hours</td>
<td></td>
</tr>
</tbody>
</table>

**Pedestrian**

<table>
<thead>
<tr>
<th>Airline Ticket Counter Processing Time</th>
<th># mins to complete PAX processing at ticket counter - T1</th>
</tr>
</thead>
<tbody>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T2</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T3</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T4</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T5</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T6</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T7</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - T8</td>
</tr>
<tr>
<td>Airline Ticket Counter Processing Time</td>
<td># mins to complete PAX processing at ticket counter - TBIT</td>
</tr>
<tr>
<td>Baggage Handling System Availability</td>
<td># baggage handling system outages over 10 mins - inbound</td>
</tr>
<tr>
<td>Baggage Handling System Availability</td>
<td># baggage handling system outages over 10 mins - outbound</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - total LAX</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T1</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T2</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T3</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T4</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-----------------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T5</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T6</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - T7</td>
</tr>
<tr>
<td>Baggage Handling System Throughput</td>
<td># bags through baggage handling system - TBIT</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 15 minutes - LAX</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 30 minutes - LAX</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 45 minutes - LAX</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in over 45 minutes - LAX</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 15 minutes - T2</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 30 minutes - T2</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 45 minutes - T2</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in over 45 minutes - T2</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 15 minutes - T5</td>
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<td>% total PAX through CBP checkpoint in under 30 minutes - T5</td>
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<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 45 minutes - T5</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in over 45 minutes - T5</td>
</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 15 minutes - TBIT</td>
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<td>% total PAX through CBP checkpoint in under 30 minutes - TBIT</td>
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</tr>
<tr>
<td>CBP PAX Clearance Rate</td>
<td>% total PAX through CBP checkpoint in under 15 minutes - TBIT</td>
</tr>
<tr>
<td>CBP PAX Clearance Time</td>
<td># average minutes for PAX to clear CBP checkpoints</td>
</tr>
<tr>
<td>CTA Parking to Terminal Walk Time</td>
<td># mins walking from CTA parking to terminal</td>
</tr>
<tr>
<td>Inner Curb to Terminal Walk Time</td>
<td># mins walking from inner curb to terminal</td>
</tr>
<tr>
<td>Outer Curb to Terminal Walk Time</td>
<td># mins walking from outer curb to terminal</td>
</tr>
<tr>
<td>PAX Disembarking</td>
<td># mins from when the plane is at the block and PAX exits the terminal</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td>% total PAX through TSA checkpoint in under 20 mins, by terminal</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td>% total PAX through TSA checkpoint in over 45 min, by terminal</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-----------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - total LAX</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - T1</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - T2</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - T3</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - T4</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - T5</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - T6</td>
</tr>
<tr>
<td>TSA PAX Clearance Rate</td>
<td># PAX wait times &gt;20 min - TBIT</td>
</tr>
<tr>
<td>TSA PAX Clearance Time</td>
<td># average minutes for PAX to clear TSA checkpoints</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - total LAX</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - T1</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - T2</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - T3</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - T4</td>
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<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - T5</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - T6</td>
</tr>
<tr>
<td>TSA PAX Volumes</td>
<td># people screened/processed through TSA checkpoints - TBIT</td>
</tr>
<tr>
<td>Walk Times Measured</td>
<td>% airport where walking times to nearest and farthest gates have been measured and posted</td>
</tr>
<tr>
<td>Wheelchair Requests</td>
<td># wheelchair requests, by terminal</td>
</tr>
<tr>
<td>Airside</td>
<td></td>
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<tr>
<td>Flight Delays</td>
<td>% departing flights delayed more than 15 mins - total</td>
</tr>
<tr>
<td>Flight Delays</td>
<td>% departing flights delayed more than 15 mins - weather</td>
</tr>
<tr>
<td>Flight Delays</td>
<td>% departing flights delayed more than 15 mins - runway</td>
</tr>
<tr>
<td>Flight Delays</td>
<td>% arriving flights delayed more than 15 mins</td>
</tr>
<tr>
<td>Flight Delays</td>
<td># average mins of delay per delayed gate departure</td>
</tr>
<tr>
<td>Flight Delays</td>
<td>% delayed gate arrivals</td>
</tr>
<tr>
<td>Flight Delays</td>
<td># average mins of delay per delayed gate arrival</td>
</tr>
<tr>
<td>Gate Availability</td>
<td>% downtime for gates</td>
</tr>
<tr>
<td>Remote Gate Usage</td>
<td># PAX served at remote gates</td>
</tr>
<tr>
<td>Remote Gate Usage</td>
<td># flights served at remote gates</td>
</tr>
<tr>
<td>Remote Gate Usage</td>
<td>% flights served at remote gates</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-----------------------------------</td>
<td>-------------------------------------------------------------------------------------------------------------</td>
</tr>
<tr>
<td>Remote Gate Usage</td>
<td># PAX served at remote gates - TBIT</td>
</tr>
<tr>
<td>Remote Gate Usage</td>
<td># flights served at remote gates - TBIT (CY)</td>
</tr>
<tr>
<td>Remote Gate Usage</td>
<td>% flights served at remote gates - TBIT (CY)</td>
</tr>
<tr>
<td>Traffic Management Initiatives</td>
<td># Traffic Management Initiatives (TMI) - ground stops, EDCT, etc.</td>
</tr>
<tr>
<td>Air Services Development</td>
<td></td>
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<tr>
<td>Lost Service</td>
<td># nonstop destinations (Intl) no longer served - LAX</td>
</tr>
<tr>
<td>Lost Service</td>
<td># nonstop &amp; 1-stop destinations (US) no longer served - LAX</td>
</tr>
<tr>
<td>Lost Service</td>
<td># foreign countries lost with non-stop or 1-stop services - LAX</td>
</tr>
<tr>
<td>Lost Service</td>
<td># non-stop cities or foreign countries lost - ONT</td>
</tr>
<tr>
<td>New Service</td>
<td># new nonstop or 1-stop destinations (Intl) - LAX</td>
</tr>
<tr>
<td>Service - Foreign Countries LAX</td>
<td># foreign countries served with non-stop or 1-stop services - LAX</td>
</tr>
<tr>
<td>Service - Foreign Countries ONT</td>
<td># foreign countries served - ONT</td>
</tr>
<tr>
<td>Service - Intl Cities LAX</td>
<td># non-stop or 1-stop cities (int’l) - LAX</td>
</tr>
<tr>
<td>Service - Intl Cities ONT</td>
<td># non-stop cities (int’l) - ONT</td>
</tr>
<tr>
<td>Service - US Cities LAX</td>
<td># non-stop cities (US) - LAX</td>
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<tr>
<td>Service - US Cities ONT</td>
<td># non-stop cities (US) - ONT</td>
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<tr>
<td>Safe &amp; Secure</td>
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</tr>
<tr>
<td>ADA Facilities</td>
<td># disability services complaints on Infoline</td>
</tr>
<tr>
<td>Airport Police Count</td>
<td># uniformed officers</td>
</tr>
<tr>
<td>First Aid Facilities</td>
<td># first aid facilities</td>
</tr>
<tr>
<td>Incidence of Crime - Property</td>
<td># part 1 property crimes (burglary, theft, auto theft, burglary of motor vehicle, theft from motor vehicle) - LAX (CY)</td>
</tr>
<tr>
<td>Incidence of Crime - Property</td>
<td># part 1 property crimes per million PAX (burglary, theft, auto theft, burglary of motor vehicle, theft from motor vehicle) - LAX (CY)</td>
</tr>
<tr>
<td>Incidence of Crime - Violent</td>
<td># part 1 violent crimes (aggravated assault, homicide, rape, robbery) - LAX (CY)</td>
</tr>
<tr>
<td>Incidence of Crime - Violent</td>
<td># part 1 violent crimes per million PAX (aggravated assault, homicide, rape, robbery) - LAX (CY)</td>
</tr>
<tr>
<td>Injuries</td>
<td># injuries on elevators, escalators - LAX</td>
</tr>
<tr>
<td>Lighting Maintenance</td>
<td>% lights in in terminals in working condition</td>
</tr>
<tr>
<td>Pedestrian Safety</td>
<td># pedestrian-involved vehicular accidents</td>
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<tr>
<td>Pedestrian Safety</td>
<td># lighted pedestrian signs</td>
</tr>
<tr>
<td>Safe Facilities</td>
<td># reported injuries by PAX in terminals</td>
</tr>
<tr>
<td>Visible Law Enforcement</td>
<td># high-visibility patrols</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
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<tr>
<td>-----------------------------</td>
<td>------------------------------------------------------------------------------------------------------------</td>
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<tr>
<td>Maintained &amp; Clean</td>
<td></td>
</tr>
<tr>
<td>Cleaning Frequency</td>
<td># hours interval between bathroom cleaning/inspection</td>
</tr>
<tr>
<td>Cleaning Frequency</td>
<td># hours interval between lactation room cleaning/inspection</td>
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<tr>
<td>Custodial Monitoring</td>
<td># custodial problems reported by passengers on Infoline</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T1</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T2</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T3</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T5</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T6</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - T7 and T8</td>
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<tr>
<td>Custodial Staffing</td>
<td># sq. ft per custodial worker - TBIT</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># custodial workers - T1</td>
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<tr>
<td>Custodial Staffing</td>
<td># custodial workers - T2</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># custodial workers - T3</td>
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<tr>
<td>Custodial Staffing</td>
<td># custodial workers - T4</td>
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<td>Custodial Staffing</td>
<td># custodial workers - T5</td>
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<tr>
<td>Custodial Staffing</td>
<td># custodial workers - T6</td>
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<tr>
<td>Custodial Staffing</td>
<td># custodial workers - T7 and T8</td>
</tr>
<tr>
<td>Custodial Staffing</td>
<td># custodial workers - TBIT</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding cleanliness of washrooms/toilets</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding cleanliness of airport terminal</td>
</tr>
<tr>
<td>Maintenance Consistency</td>
<td># cleanliness/terminal facilities complaints in terminal areas maintained by LAWA (T1, T2, T3, TBIT) on Infoline</td>
</tr>
<tr>
<td>Maintenance Consistency</td>
<td># cleanliness/terminal facilities complaints in terminal areas maintained by airlines on Infoline</td>
</tr>
<tr>
<td>Maintenance Responsiveness</td>
<td># hours between reported outage/custodial issue and completed repair</td>
</tr>
<tr>
<td>Maintenance Responsiveness</td>
<td># restroom fixtures out of service</td>
</tr>
<tr>
<td>Maintenance Responsiveness</td>
<td># average days to resolve unscheduled maintenance requests</td>
</tr>
<tr>
<td>Maintenance Responsiveness</td>
<td># unscheduled public area work orders not resolved within 3 days</td>
</tr>
<tr>
<td>Major System Downtime</td>
<td># hours downtime for HVAC, Elevators, Escalators, etc. - by terminal</td>
</tr>
<tr>
<td>Major System Downtime</td>
<td># hours downtime for Elevators, Escalators, etc. - by parking lot</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T1</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-------------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T2</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T3</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T4</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T5</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T6</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T7</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - T8</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - Airfield</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - CTA</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - Remote Gates</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># maintenance incidents (e.g. HVAC, Elevators, Escalators, etc.) - VNY</td>
</tr>
<tr>
<td>Major System Incidents</td>
<td># incidents for Elevators, Escalators, etc. - by parking lot</td>
</tr>
<tr>
<td>Major System Maintenance</td>
<td>% recommended preventive maintenance completed by major system</td>
</tr>
<tr>
<td>Major System Maintenance</td>
<td># scheduled maintenance work orders deferred or delayed</td>
</tr>
<tr>
<td>Power Reliability</td>
<td># power outages and surges - power grid</td>
</tr>
<tr>
<td>Power Reliability</td>
<td># power outages and surges - LAX system</td>
</tr>
<tr>
<td>Roadway Cleanliness</td>
<td># complaints regarding cleanliness of CTA and surrounding streets (tunnel) on Infoline</td>
</tr>
</tbody>
</table>

**WORLD-CLASS SERVICES**

**Ambiance & Sense of Place (LA)**

<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Guest Satisfaction - Ranking</td>
<td># ranking of LAX in PAX satisfaction by ACI/ASQ or others</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T1</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T2</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T3</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T4</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T5</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T6</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T7</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - T8</td>
</tr>
<tr>
<td>LA Themed Artwork</td>
<td># LA-themed art exhibitions - TBIT</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td># LA-themed concessions - T1</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td># LA-themed concessions - T2</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td># LA-themed concessions - T3</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey

Appendix.31
<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Guest Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>LA Themed Concessions</td>
<td>LA-themed concessions - T4</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td>LA-themed concessions - T5</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td>LA-themed concessions - T6</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td>LA-themed concessions - T7</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td>LA-themed concessions - T8</td>
</tr>
<tr>
<td>LA Themed Concessions</td>
<td>LA-themed concessions - TBIT</td>
</tr>
<tr>
<td>LA Themed Events</td>
<td>LAWA-sponsored events for guest appreciation</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T1</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T2</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T3</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T4</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T5</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T6</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T7</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - T8</td>
</tr>
<tr>
<td>LA Themed Signage</td>
<td>LA-themed signs - TBIT</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding ambiance of the airport</td>
</tr>
<tr>
<td>PAX Satisfaction Ranking</td>
<td>PAX satisfaction rating by ACI/ASQ</td>
</tr>
</tbody>
</table>

### Concessions & Amenities

<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>ATMs</td>
<td>ATMs in terminals</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T1</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T2</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T3</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T4</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T5</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T6</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T7</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - T8</td>
</tr>
<tr>
<td>Cell Phone Charging</td>
<td>cell phone charging stations - TBIT</td>
</tr>
<tr>
<td>Concession Availability -</td>
<td>% concessions open at boarding call for last flight, against plan</td>
</tr>
<tr>
<td>Evening</td>
<td></td>
</tr>
<tr>
<td>Concession Availability -</td>
<td>% concessions open 1 hour (2 hours in TBIT) before 1st flight, against plan</td>
</tr>
<tr>
<td>Morning</td>
<td></td>
</tr>
<tr>
<td>Concession Quality -</td>
<td># complaints about concessions on Infoline</td>
</tr>
<tr>
<td>Complaints</td>
<td></td>
</tr>
<tr>
<td>Currency Exchange</td>
<td># currency exchange locations in terminals (international terminals only)</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Free Amenities</td>
<td># amenities that are free to guests (e.g. lactation rooms, shoeshine, pet relief, excluding charging stations)</td>
</tr>
<tr>
<td>Lounge Area ADA Seats</td>
<td># hold room ADA-designated seats in terminal areas - by terminal</td>
</tr>
<tr>
<td>Lounge Area ADA Seats</td>
<td># hold room ADA-designated seats in terminal areas - TBIT</td>
</tr>
<tr>
<td>Lounge Area Seats</td>
<td># hold room seats in terminal areas - by terminal</td>
</tr>
<tr>
<td>Lounge Area Seats</td>
<td>% seating capacity accounted for by peak hour TSA entries - by terminal</td>
</tr>
<tr>
<td>Lounge Area Seats</td>
<td># hold room seats in terminal areas - TBIT</td>
</tr>
<tr>
<td>Lounge Area Seats</td>
<td>% seating capacity accounted for by peak hour TSA entries - TBIT</td>
</tr>
<tr>
<td>Wi-Fi Coverage</td>
<td>% terminal covered by Wi-Fi - by terminal</td>
</tr>
<tr>
<td>Wi-Fi Speed</td>
<td># Mbps connection speed of Wi-Fi</td>
</tr>
</tbody>
</table>

**Hospitality (Informed & Friendly Staff)**

<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Hospital Staff</th>
</tr>
</thead>
<tbody>
<tr>
<td>Commendations - LAWA Staff</td>
<td># commendations about LAWA staff on Infoline</td>
</tr>
<tr>
<td>Complaints - LAWA Staff</td>
<td># complaints about LAWA staff on Infoline</td>
</tr>
<tr>
<td>Complaints - Partners</td>
<td># complaints about partners on Infoline</td>
</tr>
<tr>
<td>Customer Service Training - LAWA Staff</td>
<td>% LAWA staff trained in guest experience and airport information</td>
</tr>
<tr>
<td>Customer Service Training - Partners</td>
<td>% partners trained in guest experience and airport information</td>
</tr>
<tr>
<td>FAQ Test Scores - LAWA Staff</td>
<td>% correct answers on FAQ test - LAWA staff</td>
</tr>
<tr>
<td>FAQ Test Scores - Partners</td>
<td>% correct answers on FAQ test - partners</td>
</tr>
<tr>
<td>Friendliness - LAWA Staff</td>
<td>% LAWA staff rated excellent in friendliness by shoppers</td>
</tr>
<tr>
<td>Friendliness - Partners</td>
<td>% partners rated excellent in friendliness by shoppers</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding courtesy and helpfulness of airport staff</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding courtesy and helpfulness of check-in staff</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding courtesy and helpfulness of inspection staff</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding courtesy and helpfulness of security staff</td>
</tr>
<tr>
<td>Shopped Success - LAWA Staff</td>
<td>% shopped questioned responded to accurately - LAWA terminals</td>
</tr>
<tr>
<td>Shopped Success - LAWA Staff</td>
<td>% shopped questioned responded to accurately - Westfield</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey
<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Guest Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Shopped Success - LAWA Staff</td>
<td>% shopped questioned responded to accurately - DFS</td>
</tr>
<tr>
<td>Shopped Success - Partners</td>
<td>% shopped questioned responded to accurately - LAWA terminals</td>
</tr>
<tr>
<td>Shopped Success - Partners</td>
<td>% shopped questioned responded to accurately - Westfield</td>
</tr>
<tr>
<td>Shopped Success - Partners</td>
<td>% shopped questioned responded to accurately - DFS</td>
</tr>
<tr>
<td>Informed Guests</td>
<td></td>
</tr>
<tr>
<td>Guest Services</td>
<td># guests served by Guest Services</td>
</tr>
<tr>
<td>Guest Services - GEMs</td>
<td># PAX assisted by GEMs</td>
</tr>
<tr>
<td>Guest Services - Volunteer Assists</td>
<td># PAX assisted by VIPs</td>
</tr>
<tr>
<td>Guest Services - Volunteer Hours</td>
<td># VIP volunteer hours (CY)</td>
</tr>
<tr>
<td>LAX ACI/ASQ Survey</td>
<td>% LAX ACI/ASQ Survey satisfaction rating regarding ease of finding your way through airport</td>
</tr>
<tr>
<td>Notification Lag Time - APD</td>
<td># mins from identification of issue to notification in appropriate channel</td>
</tr>
<tr>
<td>Everbridge</td>
<td></td>
</tr>
<tr>
<td>Notification Lag Time - APD</td>
<td># mins from identification of issue to notification in appropriate channel</td>
</tr>
<tr>
<td>Message Signs</td>
<td></td>
</tr>
<tr>
<td>Notification Lag Time - APD</td>
<td># mins from identification of issue to notification in appropriate channel</td>
</tr>
<tr>
<td>Twitter</td>
<td></td>
</tr>
<tr>
<td>Notification Lag Time - Ops Audio Paging</td>
<td># mins from identification of issue to notification in appropriate channel</td>
</tr>
<tr>
<td>Notification Lag Time - Ops Visual Message System</td>
<td># mins from identification of issue to notification in appropriate channel</td>
</tr>
<tr>
<td>PAX Accessing Traffic Information</td>
<td># PAX accessing roadway information via traditional or social media</td>
</tr>
<tr>
<td>Traffic Bulletins - APD</td>
<td># bulletins released via social media regarding traffic conditions - APD (CY)</td>
</tr>
<tr>
<td>Traffic Bulletins - PR</td>
<td># bulletins released to media regarding traffic conditions - PR</td>
</tr>
<tr>
<td>Wayfinding - Signage</td>
<td># wayfinding complaints on Infoline</td>
</tr>
<tr>
<td>OTHER AREAS TO POTENTIALLY MEASURE</td>
<td></td>
</tr>
<tr>
<td>System-wide Measurements</td>
<td></td>
</tr>
<tr>
<td>Acres - LAX</td>
<td># acres - LAX</td>
</tr>
<tr>
<td>Acres - LAX</td>
<td># acres - LAX</td>
</tr>
<tr>
<td>Acres - VNY</td>
<td># acres - VNY</td>
</tr>
<tr>
<td>Air Cargo</td>
<td># tons of cargo landed</td>
</tr>
<tr>
<td>Air Cargo</td>
<td># tons of cargo embarked</td>
</tr>
<tr>
<td>Air Cargo</td>
<td># cargo tonnage - LAWA</td>
</tr>
<tr>
<td>Air Cargo</td>
<td>$ cargo value - LAWA</td>
</tr>
<tr>
<td>Air Cargo</td>
<td># cargo tonnage - LAX</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Air Cargo</td>
<td>$ cargo value - LAX</td>
</tr>
<tr>
<td>Air Cargo</td>
<td># cargo tonnage - ONT</td>
</tr>
<tr>
<td>Air Cargo</td>
<td>$ cargo value - ONT</td>
</tr>
<tr>
<td>Aircraft Operations</td>
<td># aircraft arriving and departing</td>
</tr>
<tr>
<td>PAX - Domestic</td>
<td># of domestic PAX - Total</td>
</tr>
<tr>
<td>PAX - Domestic LAX</td>
<td># of domestic PAX - LAX</td>
</tr>
<tr>
<td>PAX - Domestic ONT</td>
<td># of domestic PAX - ONT</td>
</tr>
<tr>
<td>PAX - Intl</td>
<td># of international PAX - LAX</td>
</tr>
<tr>
<td>PAX - Intl ONT</td>
<td># of international PAX - ONT</td>
</tr>
<tr>
<td>PAX - Total</td>
<td># of PAX - Total</td>
</tr>
<tr>
<td>PAX - Total LAX</td>
<td># of PAX - LAX</td>
</tr>
<tr>
<td>PAX - Total ONT</td>
<td># of PAX - ONT</td>
</tr>
<tr>
<td>PAX - Total VNY</td>
<td># of PAX - VNY</td>
</tr>
<tr>
<td>PAX Departing</td>
<td># departing PAXs</td>
</tr>
<tr>
<td>PAX Inbound</td>
<td># inbound PAXs</td>
</tr>
<tr>
<td>PAX - International</td>
<td># arriving international PAXs, by terminal</td>
</tr>
<tr>
<td>PAX - International</td>
<td># departing international PAXs, by terminal</td>
</tr>
<tr>
<td>Planes/day - LAX</td>
<td># take-offs/landings per day - LAX</td>
</tr>
<tr>
<td>Planes/day – ONT</td>
<td># take-offs/landings per day - ONT</td>
</tr>
<tr>
<td>Planes/day – VNY</td>
<td># take-offs/landings per day - VNY</td>
</tr>
<tr>
<td>Sq ft - LAX T1</td>
<td># square footage by terminal - LAX T1</td>
</tr>
<tr>
<td>Sq ft - LAX T2</td>
<td># square footage by terminal - LAX T2</td>
</tr>
<tr>
<td>Sq ft - LAX T3</td>
<td># square footage by terminal - LAX T3</td>
</tr>
<tr>
<td>Sq ft - LAX T4</td>
<td># square footage by terminal - LAX T4</td>
</tr>
<tr>
<td>Sq ft - LAX T5</td>
<td># square footage by terminal - LAX T5</td>
</tr>
<tr>
<td>Sq ft - LAX T6</td>
<td># square footage by terminal - LAX T6</td>
</tr>
<tr>
<td>Sq ft - LAX T7</td>
<td># square footage by terminal - LAX T7</td>
</tr>
<tr>
<td>Sq ft - LAX T8</td>
<td># square footage by terminal - LAX T8</td>
</tr>
<tr>
<td>Sq ft - LAX TBIT</td>
<td># square footage by terminal - LAX TBIT</td>
</tr>
<tr>
<td>Sq ft - ONT T1USO</td>
<td># square footage by terminal - ONT T1USO</td>
</tr>
<tr>
<td>Sq ft - ONT T2</td>
<td># square footage by terminal - ONT T2</td>
</tr>
<tr>
<td>Sq ft - ONT T4</td>
<td># square footage by terminal - ONT T4</td>
</tr>
<tr>
<td>Sq ft - VNY</td>
<td># square footage by terminal - VNY</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-------------------</td>
<td>-------------------------------------------</td>
</tr>
<tr>
<td><strong>Transportation</strong></td>
<td></td>
</tr>
<tr>
<td><strong>Air Mobility</strong></td>
<td></td>
</tr>
<tr>
<td>Aircraft Delays-Capacity</td>
<td># aircraft delays due to airside capacity limits or restrictions</td>
</tr>
<tr>
<td>Aircraft Delays-Duration</td>
<td># total mins all aircraft delayed due to airside capacity limits or restrictions</td>
</tr>
<tr>
<td>Aircraft Delays-Other</td>
<td># aircraft delays due to ground stops at other airports</td>
</tr>
<tr>
<td>Capacity Utilization</td>
<td>% utilization of estimated air operations maximum capacity</td>
</tr>
<tr>
<td>Non-Commercial Aircraft</td>
<td># non-commercial aircraft arrivals</td>
</tr>
<tr>
<td>Runway Clearance</td>
<td># Foreign Object Reports of debris on runways</td>
</tr>
<tr>
<td>Runway Clearance-Birds</td>
<td># reports of bird activities on or near runways</td>
</tr>
<tr>
<td>Runway Clearance-Birds</td>
<td># reported bird strikes by aircraft</td>
</tr>
<tr>
<td><strong>Access – Ground Mobility</strong></td>
<td></td>
</tr>
<tr>
<td>Airline Connection-Bus</td>
<td># average mins from T-1 To T-8</td>
</tr>
<tr>
<td>Airline Connection-Bus</td>
<td># bus movements to/from T-4</td>
</tr>
<tr>
<td>Airline Connection-Bus</td>
<td># average of bus PAXs per terminal per hour</td>
</tr>
<tr>
<td>Airport Access</td>
<td># mins from 5 most common origin &amp; destination (O&amp;D) points to 105 and 405 ramps</td>
</tr>
<tr>
<td>Airport Incidents</td>
<td># incidents, by type, by terminal, to which Airport Operations Personnel respond</td>
</tr>
<tr>
<td>Audit-Parking</td>
<td># parking audits completed</td>
</tr>
<tr>
<td>Audit-Transport</td>
<td># ground transport contract compliance audits completed</td>
</tr>
<tr>
<td>CTA Bus Movements</td>
<td># buses entering CTA</td>
</tr>
<tr>
<td>Facility Readiness</td>
<td>To ensure that the public areas, restrooms, and facilities are at optimal levels of cleanliness and operations for their use</td>
</tr>
<tr>
<td>Facility Readiness</td>
<td># inspections of public areas</td>
</tr>
<tr>
<td>Facility Readiness</td>
<td># deficiencies against checklist. Each Public Restroom is inspected quarterly. The inspection centers on customer experience and safety and conditions: working fixtures, exhaust fans, sinks/counters</td>
</tr>
<tr>
<td>Facility Readiness</td>
<td>% concessions open for business 2 hours before 1st flight, by Terminal, against plan</td>
</tr>
<tr>
<td>Facility Readiness</td>
<td>% concessions open for business at boarding call for last flight, by Terminal, against plan</td>
</tr>
<tr>
<td>FlyAway-Customer Satisfaction</td>
<td># customer satisfaction surveys completed</td>
</tr>
<tr>
<td>FlyAway-Customer Satisfaction</td>
<td># average overall satisfaction rating</td>
</tr>
<tr>
<td>FlyAway-Net Costs</td>
<td>$ net cost to operate FlyAway service by route per PAX - Hollywood</td>
</tr>
<tr>
<td>FlyAway-Net Costs</td>
<td>$ net cost to operate FlyAway service by route per PAX - Santa Monica</td>
</tr>
<tr>
<td>FlyAway-Net Costs</td>
<td>$ net cost to operate FlyAway service by route per PAX - Union Station</td>
</tr>
<tr>
<td>FlyAway-Net Costs</td>
<td>$ net cost to operate FlyAway service by route per PAX - Van Nuys</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey

Appendix.36
<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Guest Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>FlyAway-Net Costs</td>
<td>$ net cost to operate FlyAway service by route per PAX - Westwood</td>
</tr>
<tr>
<td>FlyAway-On-time Performance</td>
<td>On-time performance of each FlyAway route as a percentage</td>
</tr>
<tr>
<td>FlyAway-Parking Traffic</td>
<td># average parking spaces used by FlyAway PAX @ VNY</td>
</tr>
<tr>
<td>FlyAway-PAXs</td>
<td># PAXs by route</td>
</tr>
<tr>
<td>FlyAway-Ridership</td>
<td># FlyAway PAXs by route - Hollywood</td>
</tr>
<tr>
<td>FlyAway-Ridership</td>
<td># FlyAway PAXs by route - Santa Monica</td>
</tr>
<tr>
<td>FlyAway-Ridership</td>
<td># FlyAway PAXs by route - Union Station</td>
</tr>
<tr>
<td>FlyAway-Ridership</td>
<td># FlyAway PAXs by route - Van Nuys</td>
</tr>
<tr>
<td>FlyAway-Ridership</td>
<td># FlyAway PAXs by route - Westwood</td>
</tr>
<tr>
<td>Guest Satisfaction</td>
<td>% terminal space with excellent cell phone coverage</td>
</tr>
<tr>
<td>Multi-Modal Access-Bus</td>
<td># average mins for shuttle buses' round trip to/from LAX Transportation Center</td>
</tr>
<tr>
<td>Multi-Modal Access-Bus</td>
<td># shuttle buses arriving LAX Transportation Center</td>
</tr>
<tr>
<td>Multi-Modal Access-Bus</td>
<td># PAX to LAX Transportation Center (outbound)</td>
</tr>
<tr>
<td>Multi-Modal Access-Bus</td>
<td># PAX from LAX Transportation Center (inbound)</td>
</tr>
<tr>
<td>Multi-Modal Access-Train</td>
<td># average mins for round trip LAX to/from Green Line Station Shuttle</td>
</tr>
<tr>
<td>Multi-Modal Access-Train</td>
<td># shuttle Buses arriving at Green Line Station</td>
</tr>
<tr>
<td>Multi-Modal Access-Train</td>
<td># of shuttle PAX from LAX to Green Line (outbound)</td>
</tr>
<tr>
<td>Multi-Modal Access-Train</td>
<td># of shuttle PAX from LAX to Green Line Shuttle (inbound)</td>
</tr>
</tbody>
</table>

**Other Guest Experiences**

<table>
<thead>
<tr>
<th>Parking</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking-CTA Exit Flow</td>
<td># average mins wait time at parking lot exit plazas</td>
</tr>
<tr>
<td>Parking-Customer Safety</td>
<td># operating and observed cameras in parking garages or parking lots</td>
</tr>
<tr>
<td>Parking-Garage Transactions</td>
<td># transactions per hour</td>
</tr>
<tr>
<td>Parking-Revenue</td>
<td>$ revenue from parking - LAX</td>
</tr>
<tr>
<td>Parking-Revenue</td>
<td>% change in parking revenue year-to-year - LAX</td>
</tr>
<tr>
<td>Parking-Revenue</td>
<td>$ revenue from parking - VNY</td>
</tr>
<tr>
<td>Parking-Revenue</td>
<td>% change in parking revenue year-to-year - LAX</td>
</tr>
<tr>
<td>Parking-Revenue Control</td>
<td># operational anti-passback loop detectors at lot entrances</td>
</tr>
<tr>
<td>Parking-Revenue Control</td>
<td>$ variance bank deposit/combined cashier reports</td>
</tr>
<tr>
<td>Audits</td>
<td>% reconciliation of cashier reports</td>
</tr>
<tr>
<td>Parking-Spaces</td>
<td>% parking capacity available at 6:00 am</td>
</tr>
<tr>
<td>Parking-Ticket Inventory</td>
<td># tickets in secure storage, first day of each month</td>
</tr>
</tbody>
</table>

2016 LAWA IEA Survey
<table>
<thead>
<tr>
<th>Measurement Label</th>
<th>Measurement Description – Guest Experience</th>
</tr>
</thead>
<tbody>
<tr>
<td>Parking-Ticket Inventory</td>
<td># tickets issued to parking lot operator</td>
</tr>
<tr>
<td>Parking-Ticket Inventory</td>
<td># tickets received in secure storage</td>
</tr>
<tr>
<td>PAX Volumes</td>
<td># combined International and domestic PAX volumes by terminal</td>
</tr>
<tr>
<td><strong>PAX/Guest Service</strong></td>
<td></td>
</tr>
<tr>
<td>Shuttle Buses- Hotels</td>
<td># shuttle bus permits active for hotels</td>
</tr>
<tr>
<td>Shuttle Buses- Hotels</td>
<td># shuttle bus movements for hotels</td>
</tr>
<tr>
<td>Shuttle Buses- Hotels</td>
<td>$ shuttle bus permit income from hotels</td>
</tr>
<tr>
<td>Shuttle Buses-LAX</td>
<td>Adherence to published headways for shuttle service as a percentage (Lot C, Green line, Employee Operation)</td>
</tr>
<tr>
<td>Shuttle Buses-Remote</td>
<td># shuttle bus movements to/from LAX remote parking</td>
</tr>
<tr>
<td>Parking LAX</td>
<td># shuttle bus permits active for private remote parking</td>
</tr>
<tr>
<td>Shuttle Buses-Remote</td>
<td># shuttle bus movements for private remote parking</td>
</tr>
<tr>
<td>Shuttle Buses-Rental Cars</td>
<td># shuttle bus permits active for rental cars</td>
</tr>
<tr>
<td>Shuttle Buses-Rental Cars</td>
<td># shuttle bus movements for rental cars</td>
</tr>
<tr>
<td>Taxis</td>
<td># taxi tickets issued</td>
</tr>
<tr>
<td>Taxis</td>
<td>$ taxi ticket revenue</td>
</tr>
<tr>
<td>Taxis-Dispatched</td>
<td># taxis dispatched from holding area</td>
</tr>
<tr>
<td>Terminal Access</td>
<td># mins from remote parking lot to curbside</td>
</tr>
<tr>
<td>Terminal Access</td>
<td># mins from 105 ramp to TBIT - peak</td>
</tr>
<tr>
<td>Terminal Access</td>
<td># mins from 405/Century off-ramp to TBIT - peak</td>
</tr>
<tr>
<td>Terminal Access</td>
<td># elevators out of service for longer than one hour, by Terminal</td>
</tr>
<tr>
<td>Terminal Access</td>
<td># escalators out of service for longer than one hour, by Terminal</td>
</tr>
<tr>
<td>Terminal Access</td>
<td># elevators out of service for longer than one hour in CTA parking structures</td>
</tr>
<tr>
<td>Terminal Operations</td>
<td>% PAX transiting TSA inspection &gt;20 mins</td>
</tr>
<tr>
<td>Terminal Operations</td>
<td>% PAX transiting CBP checkpoints &lt; 45 mins</td>
</tr>
<tr>
<td>Terminal Operations</td>
<td>% public areas (sq ft) with strong cell phone signal, by Terminal</td>
</tr>
<tr>
<td>Terminal Operations</td>
<td>% public areas (sq ft) with strong wireless internet signal, by Terminal</td>
</tr>
<tr>
<td>Traffic-Area Shutdown Requests</td>
<td># construction-related closures of roads and facilities at LAX</td>
</tr>
<tr>
<td>Traffic-Ground Mobility</td>
<td># requests for Traffic Officer assistance from ARCC</td>
</tr>
<tr>
<td>Traffic-Vehicular</td>
<td># vehicles on CTA roadways</td>
</tr>
<tr>
<td>Traffic-Vehicular</td>
<td># mph speeds on CTA roadways</td>
</tr>
<tr>
<td>Traffic-Vehicular</td>
<td># average mins vehicle travel time from T-1 to Sepulveda/Century exit</td>
</tr>
<tr>
<td>Measurement Label</td>
<td>Measurement Description – Guest Experience</td>
</tr>
<tr>
<td>-------------------</td>
<td>---------------------------------------------</td>
</tr>
<tr>
<td>Traffic-Vehicular</td>
<td># vehicles exiting CTA at Sepulveda/Century intersection</td>
</tr>
<tr>
<td><strong>Domestic PAX/Guest Service</strong></td>
<td></td>
</tr>
<tr>
<td>Guest Services</td>
<td># guests served by Guest Services</td>
</tr>
<tr>
<td>TSA-PAX Volumes</td>
<td># PAXs processed through TSA checkpoints</td>
</tr>
<tr>
<td>TSA-Wait Times</td>
<td>Peak and average wait times for TSA and CBP</td>
</tr>
<tr>
<td>TSA-Wait Times</td>
<td># average mins PAXs wait for clearance at TSA during peak hours</td>
</tr>
<tr>
<td>TSA-Wait Times</td>
<td># average mins PAXs wait for clearance at TSA during off peak hours</td>
</tr>
<tr>
<td><strong>International PAX/Guest Service</strong></td>
<td></td>
</tr>
<tr>
<td>CBP-APC Kiosks</td>
<td># average mins of peak hour waiting time for Automated Passport Control (APC) Kiosks. Measurements taken to monitor efficiencies of the kiosks</td>
</tr>
<tr>
<td>CBP-APC Kiosks</td>
<td># PAX cleared per day at kiosks</td>
</tr>
<tr>
<td>CBP-APC Kiosks</td>
<td># average seconds for APC Kiosks transaction times by month</td>
</tr>
<tr>
<td>CBP-APC Kiosks</td>
<td># average waiting time for APC Kiosks</td>
</tr>
<tr>
<td>CBP-Wait Times</td>
<td># average mins PAXs wait for clearance at Customs &amp; Border Protection (CBP) during peak hours - LAX</td>
</tr>
<tr>
<td>CBP-Wait Times</td>
<td># average mins PAXs wait for clearance at Customs &amp; Border Protection (CBP) during off peak hours - ONT</td>
</tr>
<tr>
<td>CBP-Wait Times</td>
<td>Note: PAXs arriving LAX on international flights should be processed through the CBP primary inspection process with no wait time in excess of 45 mins. Because it is captured as a percentage on a monthly basis, it does not lend itself well to the provision of data points.</td>
</tr>
<tr>
<td>Remote Gates</td>
<td>% flights at remote gates, by carrier</td>
</tr>
<tr>
<td>Remote Gates</td>
<td># PAX handled at remote gates</td>
</tr>
<tr>
<td>Remote Gates-Buses</td>
<td># average mins for bus response time for arriving flights at remote gates</td>
</tr>
<tr>
<td><strong>Airline/Lessee Service</strong></td>
<td></td>
</tr>
<tr>
<td>Badging</td>
<td># badges requested</td>
</tr>
<tr>
<td>Badging</td>
<td># badges Issued</td>
</tr>
<tr>
<td>Badging</td>
<td># badges being processed</td>
</tr>
<tr>
<td>Badging</td>
<td># average processing time for badging</td>
</tr>
<tr>
<td>Badging</td>
<td># badge applications pending &lt;5 days</td>
</tr>
<tr>
<td>Badging-Customer Service</td>
<td># average mins for badging counter customer transactions</td>
</tr>
<tr>
<td>Badging-Customer Service</td>
<td># customers serviced by each badging counter employee</td>
</tr>
<tr>
<td>Customer Service (Law Enforcement)</td>
<td># average rating on identified Guest Service Survey questions</td>
</tr>
<tr>
<td>Tenant Improvement Construction</td>
<td>% total tenant improvements that are on schedule by terminal</td>
</tr>
</tbody>
</table>
# Measurement Label | Measurement Description – Guest Experience
--- | ---
## Operations
### Landside
Air Cargo | # air cargo operations
Air Cargo | # tons airline belly cargo
### Central Terminal Area
| Landside Traffic Management | Address heavy congestion in CTA for PAXs and identify means to alleviate traffic and allow PAXs to get to terminals more efficiently - Number of vehicles in CTA
### Police-Response | # responses to traffic congestion by terminal
### Terminal Access | # mins from parking lot to terminal curb
### Traffic-Buses | # bus PAXs
### Traffic-CTA | Address heavy congestion in CTA for PAXs and identify means to alleviate traffic and allow PAXs to get to terminals more efficiently - Time entered/exit
### Traffic-CTA | # mins to complete CTA orbit
### Traffic-CTA | % traffic volume/total calculated vehicle capacity for CTA
### Traffic-Curb Management | # rows of cars at main terminal doors for each terminal
### Traffic-Flow | # average vehicle speed, CTA, during rush hours
### Traffic-Flow | # CTA parking lot entries
### Traffic-Flow | # remote parking lot entries
### Traffic-Vehicular | # vehicles entering CTA
### Traffic-Vehicular | # vehicles departing CTA
### Travel Time-Vehicular | # average vehicle miles traveled to LAX from targeted communities
## Concessions & Real Estate
### Leasing & Development
| Parking-Contract | $ net revenue from parking operations
| Parking-Contract | $ gross revenue from parking operations
| Parking-Contract | $ parking lot operating expenses
| Permits-LAWA Property Use | # completed permits with terms and conditions to occupy LAWA property
| Property Leasing-Amendments | # completed and executed lease amendment negotiations
| Property Leasing-Competitiveness | # Requests for Expression of Interest (RFEI) for leasing property
| Property Leasing-Competitiveness | # Requests for Proposals (RFPs) for leasing property
| Property Leasing-Competitiveness | # Requests for Bids (RFBs) for leasing property
| Property Leasing-Executed | # completed and executed lease negotiations