CITY OF LOS ANGELES
INTER-DEPARTMENTAL CORRESPONDENCE

DATE: March 18, 2015 **CSC No. 2014-001**

TO: Honorable Members of the City Council

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SUBJECT: **JOINT REQUEST TO FUND BUILDLA PROJECT YEAR 1**

Summary

In January 2011, the City contracted with KH Consulting Group and Woolpert, Inc. to examine the City's development review process and recommend solutions that would create a more predictable, transparent, and efficient development review process. The consultants identified technology improvements and their accompanying process reforms as critical strategic priorities for improving the efficiency, transparency, and predictability of the review process. Specifically, the resulting Strategic Plan directs the City to pursue "BuildLA" – a unified system for development services, including a common architecture and infrastructure, common business applications, and common support tools. The plan notes that simply replacing the current technology silos will not allow the City to implement the many process and service improvements identified in the Strategic Plan.

BuildLA is a cooperative undertaking by City departments that provide development services: Building and Safety (LADBS), City Planning (DCP), Fire (LAFD), Public Works – Bureau of Engineering (PW-BOE), PW-Sanitation (PW-BOS), Transportation (DOT), and Water and Power and, as a City technical advisor, Information Technology Agency (ITA). It is driven and overseen by the DSC Agencies, as chaired by the Mayor's Office. Member departments include Building and Safety, City Planning, Fire, PW-BOE, and Transportation. ITA ensures the City's infrastructure (Internet access, ITA support, etc.) and security requirements are in line with the City's IT strategic plan.

While the Development Strategic Plan specifically identified some essential features of BuildLA (electronic plan/document submission, plan check, and markup; universal project identification functionality; project tracking; performance measurement capabilities), it did not detail specific technical requirements for such a system. In order to identify these requirements and develop a detailed system solution strategy for BuildLA, the City retained Gartner Consulting (Construction Services Trust Fund funding approved by PLUM on July 31, 2012).

[1] Bureau of Engineering represents all Public Works DSC Bureaus.

Gartner's engagement began in September 2012. Since that time, they have worked with the City to develop a conceptual system architecture, functional requirements, and business case for BuildLA.

On November 9th, 2012, the City issued a Request for Information to solicit information from vendors about technology products and packages that could meet the needs identified for BuildLA. The City worked with Gartner to synthesize all of this information and determine the most prudent technology and deployment strategy for BuildLA.

A Request for Proposal (RFP) was initially posted on March 20, 2013, but was closed without selecting a preferred vendor due to administrative deficiencies on the part of the participants. The RFP was refined by the Evaluation Committee (a panel of 9 evaluators - 2 from LADBS, 2 from DCP, 1 each from DOT, ITA, LAFD, PW-BOE, and PW-BOS) to reduce project time and cost by changing requirements from being mandatory to optional. For example, the requirements for an LADBS Licensing and Testing module were eliminated which saved more than $2.5 million and at least two months of development time. Likewise, an online Claim for Refund System was eliminated because the City already has a Claim for Refund System that processes claims citywide – BuildLA can point to that system. The refined RFP was re-posted on June 27, 2013. After rigorous examination by the Evaluation Committee which included demonstrations and follow-up questioning, Accela Inc. was selected as the City's preferred vendor on October 21, 2014.

Therefore, the Development Service Center (DSC) departments/bureaus (DSC Agencies), having completed an in-depth requirements analysis and rigorous Request for Proposal (RFP) process with the assistance of Gartner Inc., are prepared to begin Phase 1 of the BuildLA project. The Project is expected to be completed in two phases over a total of 26 months. Appendix A provides a BuildLA System Overview and Appendix B provides a BuildLA Budget and includes high-level deliverables for the three project phases.

Recommended Actions

That the Council, subject to the approval of the Mayor:

1. Approve funding in the amount of $10,200,000 from the Construction Services Trust Fund (Fund 438/50) for the Department of Building and Safety (LADBS) to fund Project Year 1 of BuildLA;
2. Instruct the Office of the City Administrative Officer (CAO) to earmark, up to, an additional $11,560,000 from the Construction Services Trust Fund (Fund 438/50) for the Department of Building and Safety to fund Project Years 2 and 3 of BuildLA;
3. Request the City Attorney, with assistance of the CAO, to draft an ordinance to increase the Construction Service Surcharge from 2% to 3% sun setting seven years from the effective date of the ordinance; and
4. Instruct LADBS, with the assistance of the other development services departments, to negotiate a final phasing and compensation plan with the highest ranked proposer, Accela Inc. not to exceed $21,760,000 and three years.

Project Scope

The project for which funding is requested includes the procurement and implementation of the BuildLA system, as conceptually described in Appendix A, over a three-year time horizon.

BuildLA System Overview

The conceptual system architecture for BuildLA is outlined in Appendix A. Broadly, the major components of BuildLA are:

- BuildLA Portal – provides the informational and transactional user interface.
- Enterprise Enabling Technologies – support BuildLA capabilities across departments.
- Integration – services that integrate the major pieces of BuildLA.
- Departmental Systems – provide department-specific permitting capabilities that replace existing systems.
- Existing Departmental Systems – existing department technology that will be integrated with BuildLA, not replaced.
- Existing City Systems – existing citywide technology that will integrate with BuildLA.

Objectives

The objective of BuildLA is to improve the efficiency, transparency, and predictability of the City's development review process by acquiring and implementing an enterprise-wide system to streamline and enable the development review process with leading-edge technology. This system will:

- **Improve customer service** by providing web-based services, including application submittal and plan review; allowing applicants easy, online access to project status and timelines; and making services more accessible.
- **Improve operational efficiency** by streamlining and automating inter- and intra-departmental processes, eliminating redundancies, and providing performance measurement capabilities for more active management of case processing functions.
- **Increase transparency** by providing real-time information to customers and stakeholders about the status of service requests – who has a case, what actions have been taken, and when the project is expected to be completed.
- **Reduce costs** by consolidating hardware costs, software license fees, application development, and maintenance costs across all involved departments.

Benefits

In an effort to define the costs, benefits, and return on investment for the BuildLA solution, Gartner collaborated with the City to identify quantitative and qualitative benefits of the investment in BuildLA. As such, Gartner worked with the City to agree on future benefits borne through BuildLA related to efficiencies gained, increase in building community self-service tasks, opportunities for increased revenue, and other areas.

In summary, BuildLA will deliver functionality that current operations do not provide and is urgently needed for improved customer service and to realize "tactical savings" and benefits for the City in areas like retiring obsolete legacy systems, eliminating waste, and realizing productivity gains.

Budget and Procurement Strategy

As noted above, the City issued an RFI on November 9th and received responses on November 30th, 2012. The responses received and Gartner's analysis provided the basis for the selection of a deployment strategy and development of a Request for Proposals for the BuildLA system. The RFP was awarded to the highest ranked proposal on October 21, 2014. If the funding commitment requested herein is approved, the Department of Building and Safety will begin, along with representatives from the Mayor's team, City Administrative Officer (CAO) and the City Attorney's Office, final contract negotiations to secure a contract with the City's preferred vendor.

Appendix B contains a BuildLA Project Budget based on industry research conducted by Gartner and the responses received to the RFP on September 10, 2014.

The project's budget is constrained by the funds available in the Construction Services Trust Fund. We are requesting that 98% of the current balance and 98% of the balance in each of the next three years be earmarked for the BuildLA project. The total project is expected to be completed within 26 months, but expenditures will paid over 36 months. The current balance of the Construction Services Trust Fund is sufficient to cover initial expenditures associated with Project Year 1. To ensure that the Fund remains healthy and able to pay for the remaining project years/phases, it is expected that an ordinance will be required to increase the Construction Service Surcharge from its current 2% to 3% with a sunset clause to return the surcharge back to 2% seven years from the effective date of the ordinance. The Construction Services Trust Fund Cash Flow model in Appendix B reflects the above assumptions and has been developed in partnership with the CAO's office. Specifically, it was compiled to make sure that the projected revenues of the Fund will be adequate to pay for the projected direct non-reoccurring costs of BuildLA and the other previously "earmarked" multi-phased Zone Code reform project.

Impact of Not Approving this Request

Not funding this request will be detrimental to achieving widespread development reform and providing expanded and technologically-improved revenue-generating customer services. BuildLA will provide many improvements to the development process, including the following:

- Transparency/accountability (online status checks for the customer and City staff).
- More online services (ePlan, payment for services, submit requests for services, etc.),
- Predictability (online access to parcel and project based code information, etc.).
- Online collaboration tools for customers and City staff.
- Robust and scalable system solutions that can be more easily managed to respond to change in laws and business process.

Further, replacement and upgrades of obsolete and unreliable major mission-critical systems which support development services have been placed on hold for the past five year waiting for the BuildLA solution. These systems have experienced many outages impacting hundreds of thousands of transactions, causing our customers frustration and unreasonable delays in receiving services for which they have paid or want to pay for. We are long overdue for addressing these issues and are at risk of experiencing even more severe outages and permanent loss of data/records. Losing data/records puts the City at risk of legal actions related to storing and managing our data, including financial and parcel information crucial to City operations as well as protecting the needs of our customers.

APPENDIX A -- SYSTEM OVERVIEW

The model contains a number of large building blocks:

- BuildLA Portal – providing the informational and transactional user interface
- Enterprise Enabling Technologies – supporting BuildLA capabilities across departments (e.g. workflow management, electronic plan review)
- Integration – providing integration between the major building blocks
- Departmental functionality – providing department-focused permitting capabilities that replaces existing systems (e.g. entitlement)
- Existing Departmental Systems – existing department technology, not replaced with BuildLA but integrating with BuildLA
- Existing City Systems – existing City technology that integrates with BuildLA (e.g. Financial Management System, Geospatial Information Systems)

The remainder of this document describes these building blocks and drills down to the capabilities.

1.1 Build LA Portal

The portal represents a unified customer self-service interface for constituents and developers, and a set of support services for LA City employees.

1.1.1 Customer Self Services

Customer self-services consist of capabilities for users to learn about the permitting process, prior to submitting an application and perhaps prior to construction activities in order to streamline the process, and transactional services that execute the permitting process across various departments on behalf of the user.

1.1.1.1 Transactional

The transactional services implement the permit application process.

1.1.1.1.1 Application Wizard

This wizard is a structured, guided mechanism for the user to select and formulate the application prior to submittal. It brings together three key aspects:

1. The pertinent information about the existing parcel (such as zoning, variances, etc.), which are derived from the existing GIS systems, ZIMAS and NavigateLA.
2. The modifications that the user intends to make.
3. The rules that govern the construction process for that specific instance.

LA City envisions that the user interface shields the user from having to know the intricacies of the rules that are implemented by the departments involved with the application. An analogy might be popular tax preparation software that guides the user with targeted questions and generates the tax return in its myriad of forms on behalf of the user.

The wizard capability would use a rule engine (described under Enabling Technologies) that encapsulates clearance rules, such as those documented in the Clearance Handbook, which compiles rules related to Building and Safety (it is not an all-encompassing clearance guide).
Upon completion of the permit application, but prior to submission, the wizard provides an overview of the expected steps in the application process, the required documentation, and an estimate of the total fees involved. This capability contributes to increasing the **predictability** of the application process.

1.1.1.1.2 Application Management

This capability manages the submission of the application and tracks it on the user's behalf. It provides a customer-centric portal view of the macro workflow process, and tracks the application status. Additional documentation may be required, plans may need to change and fees collected. The application management capability uses a number of enabling technologies:

- Macro Process Automation to orchestrate, execute and track the inter-departmental workflow processes.
- Centralized Document Repository to store and manage all documents related to an application.

A centralized and shared application database captures all pertinent information about the application. It will establish a "universal project ID" that is used across the departments that implement the micro workflow. This capability contributes to increasing the **transparency** of the application process.

1.1.1.1.3 Plan Review Collaboration

Provides online collaboration capability for electronic plan review, integrated with back-end capabilities in the enabling technologies. This capability replaces the use of paper-based drawings. There is some overlap between electronic plan review in a broader sense, which encompasses workflow, document management and portal technology, and other capabilities in the BuildLA model. LA City envisions that the user experience of the product is integrated with the overall portal, to provide a unified interface.

1.1.1.1.4 Account Management

Recognizing that constituents and developers will return to the portal many times while the permit process is in progress (and may have multiple construction projects), there is a need to establish user accounts, providing secure access to the user's projects, and only requiring to enter the same data once.

1.1.1.1.5 GIS User Interface

The GIS user interface allows the user to select the parcel from a map (through parcel ID or street address) and overlay information from ZIMAS and NavigateLA.

1.1.1.1.6 Fees, Cashiering

This capability allows a single interface to make payments, from the user perspective, and (through integration) distribute revenues to departments, and provide a feed to the City financial system. This capability provides a centralized cashiering function, which is used by the departments, and should supersede cashiering functionality that may be embedded in a departmental solution.

1.1.1.2 Unassisted Channel

The unassisted channel provides customer self-service capability that does not require any direct interaction with City employees.

1.1.1.2.1 Self Service Knowledge Base

Knowledge management for customer self-service includes department knowledge, agent knowledge, social knowledge, hosted community knowledge and partner knowledge. It is the accumulation and management of a knowledge repository, and the delivery of that knowledge through a self-service interface or the integration of the knowledge with a Web chat, Virtual Assistants (see next section) or email response management solution.

This capability provides a means for users to learn about the development/construction lifecycle process and educate themselves prior to submitting applications. It will help to better prepare users and streamline the process downstream.

The current policy and clearance process is complex and cumbersome. The knowledge that is currently distributed in various ways could be captured in a structured way that is searchable and understandable for users. Knowledge sources include the department's experts, ordinances, the partial clearance handbook and other department's rules, ways in which expediters approach the application process, etc.

Such a knowledge base could range from a web content management solution that provides search capability, to a knowledge base that provides a high degree of responsiveness to answer user's questions. Typically, a response rate of 85% or higher is needed to make this a genuinely useful service that reduces the need for direct interaction with customer agents.

Knowledge management for customer self-service includes corporate knowledge, agent knowledge, social knowledge, hosted community knowledge and partner knowledge. It is the accumulation and management of a knowledge repository, and the delivery of that knowledge through a self-service interface or the integration of the knowledge with a Web chat, VA or email response management solution. A customer service team should be responsible for building, maintaining and growing a knowledge management repository for use across all attended and unattended service channels.

1.1.1.2.2 Virtual Assistants

A Virtual Assistant is a conversational, computer-generated character that simulates a conversation to deliver voice- or text-based information to a user. It incorporates natural-language understanding, dialogue control, domain knowledge and a visual appearance (such as photos or animation) that change according to the content of the dialogue. The primary interaction methods are text to text, text to speech, speech to text and speech to speech. Interaction with a Virtual Assistant can be via phone, the web, SMS, chat messenger, or other Web-based or mobile interfaces. The virtual assistant has a key dependency on speech-based applications in situations where voice processing is enabled. This combination of speech technology with the virtual assistant typically provides a stronger customer service proposition. A great virtual assistant should offer more than just search; it also should enrich the quality of the customer experience and assist the customer throughout the online interaction.

Use of the virtual assistant (and the knowledge base) can be monitored for further optimization.

1.1.1.2.3 Self Help Videos

Increased bandwidth to homes and to mobile devices via new generations of mobile networks has combined with the consumer acceptance of YouTube to make video an increasingly important aspect of customer experiences. Using prerecorded video clips to support customer service or training requests has the potential of reducing interactions with the contact center, and short "how to" video clips can help less experienced users learn in approachable ways that may be difficult to achieve in other formats. Phone or Web chat agents can also provide customers with a URL to a recorded video clip to deal with or solve a particular problem. Typically, self-help clips cover frequently asked questions in the contact center. They can be created informally by the employees or organization itself or formally by a recording studio.

1.1.1.2.4 Peer-to-Peer Community

Community peer-to-peer (P2P) support systems involve social customer relationship management (CRM) tools for customer service that crowd source answers. They comprise software designed to engage, support and manage an online community, as the community identifies problems and creates solutions for them. These systems help create better methods of engaging constituents during service interactions. Much like virtual assistant activity logs, the community knowledge base can be mined to further improve customer self-service over time.

1.1.1.2.5 Interactive Voice Recognition (IVR)

Interactive Voice Recognition enables systems to interact with humans through the use of voice and touch-tone telephony via computer-telephony integration (CTI). IVR is usually delivered within the contact center ecosystem, and has been widely adopted for payment and account management functions, as well as inbound and outbound notifications with customers. Currently, IVR is being used to request and schedule inspections.

1.1.1.2.6 Public Inquiry

The public inquiry capability supports inquiries related to construction projects that originate from parties who are not directly involved with the project, such as neighbors. These inquiries could be related to potential code violations, or purely informational. For a particular parcel or address, BuildLA will supply a subset of information related to the current permits and permit applications.

1.1.1.3 Assisted Channel

The assisted channel provides various ways in which users can interact with live agents, through different channels (e.g. phone, in-person).

1.1.1.3.1 Web Chat

Web chat allows users to ask a question at any time, from learning about rules and regulations to managing specific applications. Since the customer agent have access to the knowledge base, they can typically handle multiple requests at the same time, making this a much more efficient channel from the City's perspective.

Web chat refers to an online, text-based interaction with a live agent. A Web chat session involves interactive, Internet-browser-based, live text interactions that can be launched at any time, from learning about rules and regulations to managing specific applications. Since the agent have access to the knowledge base, they can typically handle multiple requests at the same time, making this a much more efficient channel from the City's perspective. A Web chat session may also be initiated through a Virtual Assistant then passed to a live agent. Web chat is primarily an externally focused collaboration tool, as opposed to instant messaging, which is an internally focused collaboration tool.

1.1.1.3.2 Email Response Management

Email response management systems can help automate, streamline and ensure consistent high quality of customer email interactions. Key features typically include natural-language processing to analyze, categorize, route and automatically respond to certain types of inquiries; response libraries for building standard replies to frequent questions; tracking for email interactions; and reporting to oversee overall performance — response times, resolution rates, email aging and emails still outstanding.

1.1.1.3.3 Collaborative Browsing

Collaborative browsing, or co-browsing, enables an agent to interact with a customer by using the customer's Web browser to share the same space. Regardless of physical location, users and agents can share a browser view and simultaneously browse a site to assist with forms completion or to guide the customer through a series of processes. Co-browsing differentiates itself from screen or application sharing because it is not achieved by sending a high rate of screen shots of the presenter's screen to one or more participants. Instead, in a synchronous fashion, it distributes the URLs visited by the presenter to the participant's browser.

1.1.2 Support Services

Support services within the BuildLA Portal consist of capabilities for LA City users to directly support customers through the assisted channel (described under Customer Self-Service) and to support the management of the permit application processes.

1.1.2.1 Management

This group of capabilities allows City users to manage the processes that are automated through the BuildLA portal.

1.1.2.1.1 Workflow Analytics

The Macro Process Automation capability (described in Enterprise Enabling Technologies) executes and tracks the application process between departments. It captures a number of metrics that can be used by City personnel to establish Key Performance Indicators. Based on these indicators, the City can ensure that the application process steps are completed within the expected service levels, and allow intervention when needed.

1.1.2.1.2 Workforce Management

Similar to Workflow Analytics, the Macro Process Automation capability tracks the number and types of applications routed to individual departments. Based on these metrics, trends and forecasts, the City can proactively allocate its workforce based on anticipated demand.

1.1.2.1.3 Collaboration

Many departments are part of the application process for a single application and the process will change from a largely sequential process to executing parallel steps where feasible. This requires a capability for multiple departments to collaborate and coordinate on individual applications. Currently, the City uses email or phone calls to collaborate. We envision the use of the following collaboration tools:

- Shared calendars – enabling groups to track application event information that is organized within a calendar.
- Tasks – assignments, acceptance, delegation, rejection, and prioritization of inter-departmental tasks.
- Asynchronous tools – facilitating discussions or the exchange of information without requiring participants to be communicating at the same time. These include capabilities such as collaborative authoring (e.g., document libraries, wikis, or other forms of online documents), collaborative list management, blogs, discussion forums, surveys, or "walls" where messages can be left.
- Synchronous tools – enabling the exchange of information among participants in real time so that participants can be simultaneously focused on an exchange. These include capabilities such as web conferencing, instant messaging, or group chat.

1.1.2.1.4 Knowledge Management

Knowledge experts build and maintain the knowledge base that is used to drive the customer self-service knowledge base capability. It provides a means to capture and structure content and track the effectiveness of the knowledge base.

The goal of the knowledge base is to provide a responsiveness of 85% or higher, meaning that user inquiries can typically be answered upon the first attempt. If the rate drops much lower, users are likely to abandon this capability and resort to existing practices. In order to obtain this rate, the knowledge base needs to be deep and actively managed.

1.2 Enabling Technologies

These technologies support the BuildLA Portal, but are not typically categorized as portal capabilities.

1.2.1 Rule Automation

The goal of rule automation in BuildLA is to capture the many rules that govern the permitting process, and evaluate them in an automated framework. Currently, these rules are primarily

documented within individual departments, and have recently been compiled into a Clearance Handbook. Rule automation serves three purposes in the BuildLA conceptual model:

- Support the Application Wizard by helping users to "build" smart permit applications that are aware of the rules, and streamline the process.
- Support decisions within the Macro Process Automation capability by extracting complex rules/decision trees from the workflow tool.
- Support the clearance process as executed by departments, by using a consistent set of rules across the organization.

The City of Los Angeles realizes that rule automation, especially based on complex and "organically grown" development/construction rules, is an ambitious goal. It is likely that implementation starts with a subset of rules, around more common and straightforward services, before encapsulating the more arduous paths.

There are many implementation options for rule automation, ranging from lightweight components to full-fledged Business Rule Management Systems (BRMS). In the introduction of the conceptual model, we emphasized the preference for a pragmatic and efficient implementation, and this is especially pertinent for the rule automation capability.

1.2.1.1.1 Rule Execution

Rule Execution is the runtime environment in which rule sets are evaluated. It supports other capabilities as described above.

1.2.1.1.2 Rule Management

Rule Management provides the capability to author, test, and version control and publish rules to the runtime environment. Systems analysts, and potentially business analysts, typically use a visual tool to manage the rules.

1.2.2 Macro Process Automation

The goal of Macro Process Automation is to capture the inter-departmental workflow of the services that implement permit processes, and execute them in an automated framework. Currently, constituents and developers manage these processes themselves as they are referred from department to department in order to obtain clearances for permits and the finalization of the project.

Workflow automation of these processes encapsulates the steps that users manage today, and aims to execute them more efficiently by the correct sequencing, parallel processing and ensuring that the right information is available for individual departments, at the right time. The departments continue to process their own workflow (micro workflow) using existing tools/products or replacement tools/products. Similar to rule automation, macro process automation is an ambitious goal, and the City may initially only implement the more straightforward services prior to automating the more complex scenarios. The range of implementation options is similarly broad, from lightweight workflow tools to full-fledged Business Process Management Systems. Again, we envision a pragmatic solution.

1.2.2.1.1 Workflow Execution

Workflow Execution is the runtime environment in which the processes are executed.

1.2.2.1.2 Workflow Modeling

Workflow Modeling provides the capability to author, test, maintain version control and publish process models to the runtime environment. Systems analysts, and potentially business analysts, typically use a visual tool to manage the workflow processes.

1.2.3 Geographic Information System (GIS)

The GIS capability enables a parcel-centric (or location-centric, in case there is no parcel within a development location) perspective of BuildLA, rather than one merely based on street addresses. This capability interacts with the City's existing GIS sources: ZIMAS and NavigateLA. GIS capability allows an interactive view of information related to a construction project through accessing different layers of GIS information already existing in the City.

1.2.3.1 Mapping Database

BuildLA will capture information relative to permit applications that is not currently tracked in either ZIMAS or NavigateLA.

1.2.4 Document Repository

BuildLA will integrate with the City's existing document management systems to store all relevant documents related to the development services process. This includes plans (versioned and including all mark-ups), inspection reports, correspondence with applicants, permits issued, Certificates of Occupancy, etc. Documents will be made available to City internal users, customers and – where applicable – to the public through the BuildLA Portal.

1.2.5 Electronic Plan Review

Electronic Plan Review replaces the paper based review of plans that is used today. The goal is to allow users to upload electronic plans when submitting permit applications and use these plans throughout the process, after which they become part of the document repository.

1.2.5.1.1 Markup and Manage

This capability supports the electronic review process of drawings, through a cycle of markup and review cycles, from submission to inspection. All authorized parties have access to the electronic drawings. Typical capability includes the following:

- Browser-based viewing without the need for desktop software
- Capability to route plans for review to multiple departments according to business rules
- Parallel plan review by multiple departments
- Dynamic overlays and comparison of versions
- Electronic mark-up tools.
- Retain version control and audit logs.
- Electronically approve and publish plans.
- Integration capability with workflow and permitting software solutions.

Upon completion of the review process, the electronic plans are archived into the centralized document repository.

1.3 Integration

The BuildLA conceptual architecture consists of multiple capabilities that operate in integrated fashion. In some cases, it makes sense to integrate directly between components, such as a GIS viewer in the portal and the GIS back-end components. In other cases, it makes sense to go through an intermediary integration capability, such as communicating with existing systems that may require customization on either end to establish exchanges.

This capability can be implemented through a wide range of technologies, ranging from simple service bus products to full-fledged Enterprise Integration suites. In some cases, products that cover the Macro Process Automation (which supports process orchestration, in this model) may also cover integration. As the number of integration points is low, the City does not envision a particularly complex solution.

1.3.1.1.1 Endpoint Management
Endpoint management allows integration targets (endpoints) to be wrapped in a service interface and be invoked using standard interface technologies, through the service bus. Systems may have different technical protocols to communicate, requiring protocol conversion.

1.3.1.1.2 Transformation
Transformation allows for the translation and restructuring of messages (or the "payload") between two different systems. Transformation may involve lookups to other systems.

1.4 Departmental Functions
The Departmental functions implement capabilities that are typically covered by Permitting Systems. The City currently uses a number of internally developed systems, which are currently end-of-life. The primary permitting system is the Plan Check Inspection System (PCIS), with the Plan Check Activity Module (PCAM), Automated Certificate of Occupancy (ACOS) and several other subsystems.

1.4.1 Departmental Business Functions
This section lists the main capabilities used within the department level.

1.4.1.1.1 Intake
After the initial intake of applications within the BuildLA Portal, the application is handed off to the intake within each department, which spawns the micro workflows. We envision that the initial validation at the portal level will streamline the intake process so that no major issues are determined at the department level.

1.4.1.1.2 Application Processing
This capability implements the back-office processing and information tracking on behalf of the application. It implements the micro workflow within the departments.

1.4.1.1.3 Plan Examination
The plan examination evaluates the paper based plans as submitted manually, and the electronic plans as submitted through BuildLA. The goal is to migrate to an electronic-only plan review over time.

1.4.1.1.4 Inspections
Inspection capability includes assigning, routing and scheduling of inspections and capture of the inspection results. As further described in the use cases, the City of Los Angeles envisions mobile capability for inspectors in the field, as well as the capability for constituents to use IVR to schedule/request inspections.

1.4.1.1.5 Issuance
These functions are related to the culmination of permit application processes and the appropriate output, such as permits, Certificate of Occupancy, notification of completion, licenses, violations, certifications, notices, etc.

1.4.1.1.6 Adjudication
Adjudication functionality covers the processes from issuing Orders to Comply through appeals and managing hearings.

1.4.2 Department Enabling Technologies
Similar to the Enterprise Enabling Technologies, there are enabling technologies at the department level. However, unlike the enterprise technologies, these are typically components of a line-of-business Permitting System.

1.4.2.1.1 Micro Workflow Management
This capability is focused on the definition, management and execution of the department-level micro workflow.

1.4.2.1.2 Fees, Penalties, Revenues
This capability involves the assessment, acceptance, monitoring and tracking of fees and penalties. It uses the centralized cashiering function established as part of BuildLA.

1.4.2.1.3 Document Management
Document management will be implemented as a centralized capability, with the department-level Permitting System linking to it.

1.4.2.1.4 Tracking, Reporting, Auditing
Department-level tracking, reporting, triggering alerts and auditing of information. This includes managing service level agreements of processes and individual steps.

1.4.2.1.5 Notifications and Statuses
Notifications and status updates to applicants or other departments are routed back through the Macro Process Automation capability to update the user. Notifications and status updates for department personnel remain within the department realm.

1.4.2.1.6 Clearance Rule Evaluation
This capability integrates with and uses the Rule Automation capability as part of the Enterprise Enabling Technologies to evaluate clearance rules. The goal is for all departments, and all components of the broader BuildLA solution to use one consistent rule base and avoid different interpretations / rule evaluations.

1.4.2.1.7 Interface / Integration
This capability reflects the Permitting System endpoint for integration.

1.5 Existing Departmental Systems
BuildLA capabilities will integrate with a number of existing departmental systems that will not be replaced by BuildLA.

1.5.1.1.1 Code Enforcement Information System (CEIS)
CEIS is used by the LADBS Code Enforcement Bureau to track and report both survey-based and citizen-requested code enforcement cases. CEIS is a client-server application using a commercial, off-the-shelf package from Infor Inc. (formerly Hansen Information Technologies Inc.). The mobile application is currently in development.

APPENDIX B -- BUILDLA PROJECT BUDGET

This Appendix consists of the following four sections: I. Construction Services Trust Fund Cash Flow Model; II. Overall BuildLA Project Budget by Fiscal Year; III. Overall BuildLA Project Budget by Project Phase; and IV. High-level Deliverables by Project Phase.

I. Construction Services Trust Fund Cash Flow Model ("1-Stop", Fund 438)

The following cash flow model has been developed with the CAO's office. It was based on the average annual 1-Stop revenue for the past two years plus an increase in the surcharge (from 2% to 3%) and costs contained in the selected proposal and other related quotations for work, software and hardware. This Model illustrates that the projected revenues of the 1-Stop Fund will be adequate to pay for the projected direct non-reoccurring costs of BuildLA and the other previously "earmarked" multi-phased Re-Code LA, a Zone Code reform project.

		Project Year 1	Project Year 2	Project Year 3	Totals
	Costs	**$10,166,000**	**$7,876,000**	**$3,718,000**	**$21,760,000**
Assumptions:					
1	Current Balance (excludes $2.5 million for Re-Code LA)				**10,000,000**
2	1-Stop Revenue Generated for 3 Fiscal Years (FY)			4,000,000/FY	**12,000,000**
3	1-Stop Revenue Set Aside for items needed by DSCs not part of the BuildLA project (e.g., furniture for customer wait areas, hardware for public counters, etc.) = 2% of Annual 1-Stop Revenue			-80,000/FY	**-240,000**
4	**1-Stop Funding Available for BuildLA**				**$21,760,000**

II. Overall BuildLA Project Budget by Fiscal Year

Budget Line Item	Year 1	Year 2	Year 3	Total
Accela and related Software Licenses	1,256,000	1,356,000	6,000	**2,618,000**
Oracle licenses	2,650,000	0	0	**2,650,000**
Hardware	170,000	180,000	20,000	**370,000**
Implementation Services	4,700,000	4,300,000	1,800,000	**10,800,000**
Program Management & Quality Assurance	940,000	940,000	470,000	**2,350,000**
Hosting Services	0	0	420,000	**420,000**
Miscellaneous City Tasks	150,000	150,000	52,000	**352,000**
Maintenance and Operations	300,000	950,000	950,000	**2,200,000**
Total One Time Costs	**$10,166,000**	**$7,876,000**	**$3,718,000**	**$21,760,000**

Footnotes

1. Overall project duration is assumed to be 32 months. The project schedule assumes 2 Phases that overlap by 4 months as per the Accela provided schedule, plus a 5 month pre-planning phase.
2. The table above includes recurring costs that begin in the second half of year 3 once the solution is fully implemented. The City intends to go out to bid for M&O services after year 3.
3. Accela related Software costs have been adjusted to reflect that the City will purchase Oracle licenses separately. The $1.9 million in savings have been equally allocated across years 1 and 2.
4. 25% of estimates hardware costs have been added to this budget, while the rest is assumed to be covered through departmental budgets as part of regularly scheduled upgrades.
5. Program Management and Quality Assurance will be provided through an agreement with a technical project management consultant having expert knowledge and skills specific to this project.

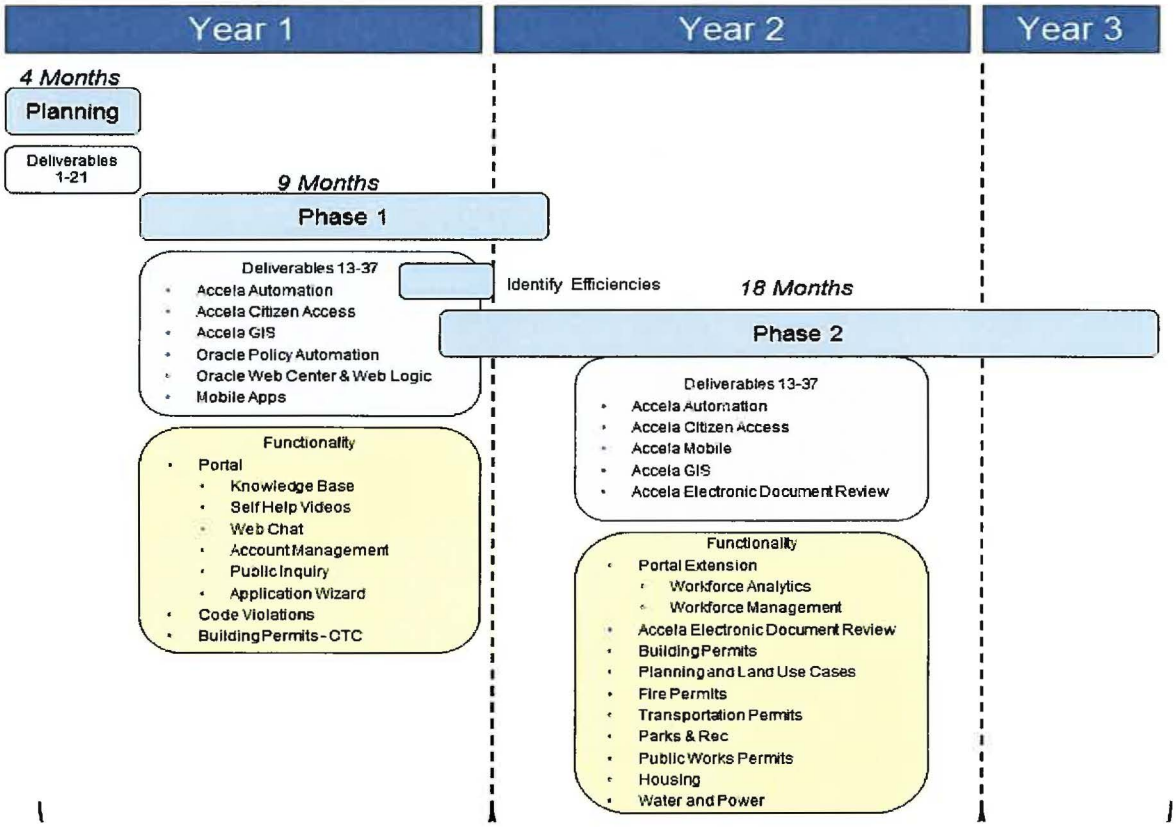
III. Overall BuildLA Project Budget by Project Phase

Budget Line Item	Phase 1 (13 months)	Phase 2 (18 months)	Total
Accela and related Software Licenses	1,256,000	1,362,000	**2,618,000**
Oracle licenses	2,650,000	0	**2,650,000**
Hardware	170,000	200,000	**370,000**
Implementation Services	4,700,000	6,100,000	**10,800,000**
Program Management and Quality Assurance	940,000	1,410,000	**2,350,000**
Hosting Services	0	420,000	**420,000**
Miscellaneous City Tasks	150,000	202,000	**352,000**
Maintenance and Operations	300,000	1,900,000	**2,200,000**
Total One Time Costs	$12,382,897	$15,343,608	**$21,760,000**

Footnotes

1. Project Phase 1 assumes a 5 month pre-planning phase not currently proposed by Accela.

IV. High-level Deliverables by Project Phase



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