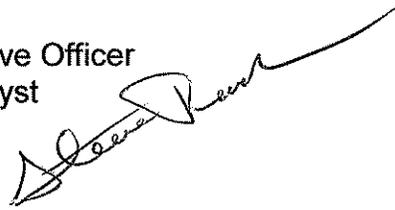


**CITY OF LOS ANGELES**  
INTER-DEPARTMENTAL CORRESPONDENCE

Date: October 23, 2013

REF: TSB-282-13

To: Miguel Santana, Chief Administrative Officer  
Gerry Miller, Chief Legislative AnalystFrom: Steve Reneker, General Manager  
Information Technology AgencySubject: **SAVE OUR STREETS LA (SOS LA) – PUBLIC RIGHT-OF-WAY ACTIVITY  
COORDINATION SOFTWARE SYSTEM (COUNCIL FILE No. 13-0612)****BACKGROUND**

On January 15, 2013, the City Council considered a motion relative to placing a \$3 billion street repair general obligation bond program on the May 2013 General Municipal Election Ballot (Englander/Buscaino – Krekorian, et al. - C.F. 13-1300-S1),. The proposal would provide \$300 million annually for the next ten years to repair more than 8,700 lane miles of streets in the City that are in the worst condition. Council adopted an amending motion (Buscaino – Englander, C.F. 13-1300-S1) that referred this matter to the Public Works Committee to allow more time for study, debate, public input, and outreach on this proposal.

On August 7, 2013, the Public Works Committee approved the recommendations communicated from Councilmembers Buscaino and Englander regarding the public outreach initiatives undertaken and the 24 detailed recommendations created based on input from the public. On August 21, 2013, Council adopted the Public Works Committee report relative to the SOS LA program and requested a comprehensive report on these recommendations from the CAO and the CLA within 45 days.

Upon request of the CAO and CLA, the Information Technology Agency is submitting this report in response to recommendation #22 of the Public Works Committee Report and the Council Motion (Englander - Buscaino - C.F. 13-0612) which recommends that: CAO and CLA, with assistance from Bureau of Engineering, Bureau of Street Services, and Bureau of Contract Administration, report back with recommendations for procuring a new, cloud-based, public right-of-way activity coordination software system. (Council File No.13-0612). The information below summarizes our research and recommendations.

**OVERVIEW**

Public right-of-way coordination software is an electronic tool used by municipalities to synchronize and communicate activities that impede the public right-of-way (City streets and sidewalks). Common activities tracked in this type of software include street resurfacing, construction, utility repairs, special events, movie filming, etc. This type of

software requires data entry of all permitted work into a central repository. The objective is to improve:

- coordination across departments (e.g. prevent conflicting projects on same street at same time),
- collaboration between departments (i.e. opportunity for multiple projects to be combined to minimize closure time),
- communication to the public (e.g. easy-to-use website to geographically show existing and planned work),
- prevention of re-work (e.g. moratoriums on recently paved roads to prevent construction soon after resurfacing).

After discussions with vendors and City departments, most notably the Public Works Bureau of Engineering, Bureau of Contract Administration, and Department of Transportation, the ITA identified several key success factors for an effective public right-of-way coordination software.

1. The system must incorporate all relevant activities that impede the public right-of-way (street resurfacing, utility work, filming, etc.).
2. The system must interface with existing department permit and work management systems. This allows automated transmission of planned and existing closures into the central repository.
3. The system must provide tools to foster coordination and collaboration between City departments (e.g. warning messages, attachments of source documents, reports, etc).
4. The system should support mobile devices and the review/update of projects from the field.
5. The system should effectively communicate current and planned closures to the public (e.g. easy-to-use website).
6. The City should establish a strong policy that enforces consistent department usage of the centralized system (regardless of software used). This requires a strong governance process to ensure all relevant departments are logging all relevant activity into the centralized system.

After identifying key features of a public right-of-way coordination software and the necessary City policy to ensure usage, we researched available options for the City of Los Angeles. The following options were evaluated by the ITA:

- A. Utilize the existing City of Los Angeles Public Way Reservation System (PWRS). This is an in-house map-based application system implemented through a 2006 pilot program (L.A.M.C 62.251) and managed by the Department of Public Works, Bureau of Engineering (BOE).
- B. Acquire and implement a commercial, cloud-based public right-of-way coordination software.

For a side-by-side comparison of functions and features between the City of Los Angeles Public Works Reservation System (PWRS) and a sample cloud-based system

(Envista) refer to Appendix A - COMPARISON OF FEATURES (City PWRS and Envista).

### **OPTION A – UTILIZE EXISTING PUBLIC WAY RESERVATION SYSTEM (PWRS)**

Motivated by the 2000 Democratic National Convention in Los Angeles, the City of Los Angeles has since been developing software and processes for the coordination of public right-of-way closures. In 2006, the City added L.A.M.C 62.251 to establish a pilot program, the Public Way Reservation System (PWRS), in the BOE Central District Office to coordinate non-emergency activities and construction work in the City's sidewalks and streets. The objective was to coordinate work to be performed in the same area by different entities and to minimize impact on area residents, businesses, and traffic. At the end of the pilot, BOE recommended implementation of the PWRS citywide. Council approved the recommendation for City Attorney to draft an ordinance that required use of the PWRS throughout the City. However, draft versions of the ordinance raised the concern that the Municipal Code may not be the best vehicle for ensuring compliance and may create unintended consequences (e.g. criminal penalties). Recently, BOE has submitted a transmittal through the Board of Public Works requesting to eliminate any proposed changes to the L.A.M.C. in favor of simply using the permitting process as the vehicle to implement citywide usage. The PWRS continues to be used by multiple departments during this policy discussion.

After a PWRS demonstration from the BOE, ITA identified that the current Public Way Reservation System (PWRS) incorporates much of the key functions needed by a public right-of-way coordination software. The system currently captures relevant activities that impeded the public right-of-way via City permits (street construction, utility work, filming permits, etc). Since inception, the PWRS has already incorporated over 46,000 permits provided by PW BOE, PW Street Services, Department of Transportation (DOT), DWP (Power), DWP (Water), FilmLA, LAPD, and periodically from MTA. This information is captured under one database and used as a "tool" for coordinating activity, including conflict reports, mapping software for geographic representation, department contact information, etc. This system was developed by BOE programmers with input from its key stakeholders, including the Los Angeles Police Department (LAPD), FilmLA, Bureau of Street Services (BSS), Chief Legislative Analyst (CLA), City Administrative Office (CAO), Bureau of Contract Administration (BCA) and the Downtown Business Improvement District (BID).

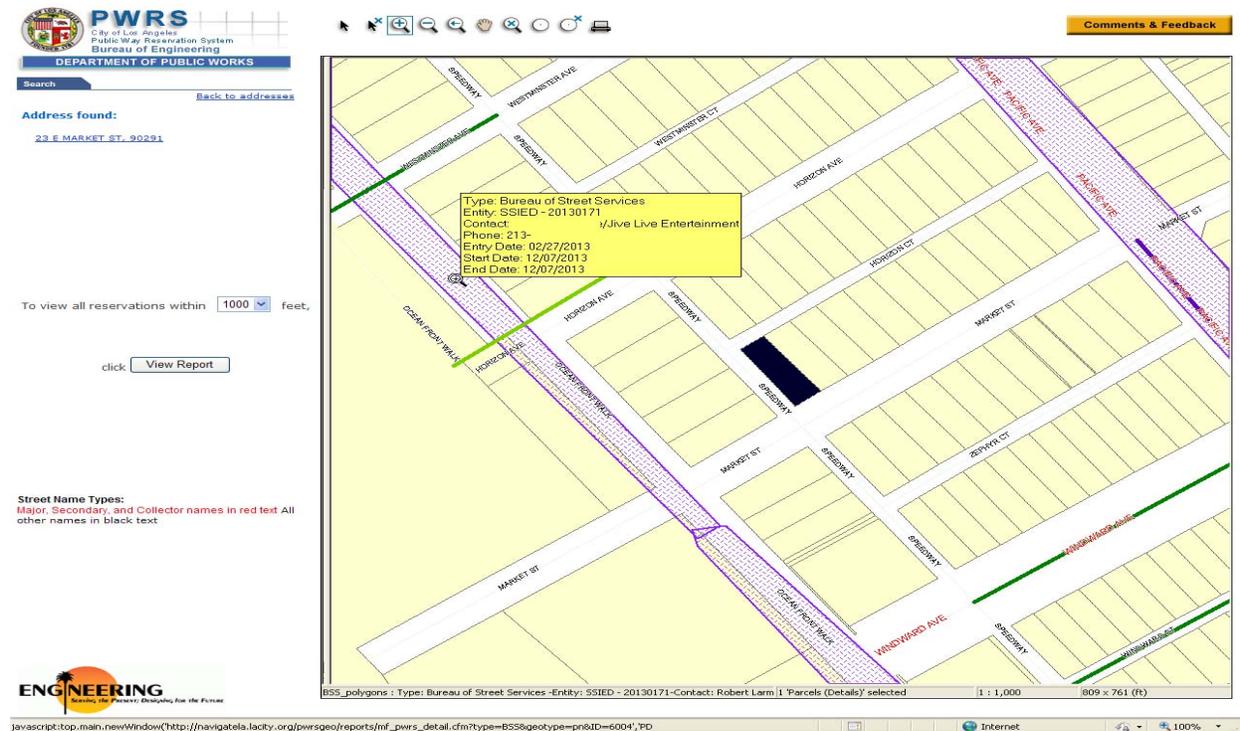
The PWRS is highly integrated with existing BOE departmental permit systems, accounting for 80% of all City permits entered into the system. In addition, BOE has already established processes with multiple other departments to ensure the data entry of all new activities (DWP power and water projects, FilmLA for central city area, PW BSS Street Preservation, LAPD first amendment marches, DOT ATSAC projects, etc). The PWRS also includes an interactive map that geographically demonstrates planned and current work (see Image 1 below). This includes icons that can be clicked on to provide detailed documentation about the project, including contact information for questions and conflicts.

The goal of the original PWRS pilot was to minimize traffic impacts. While the existing PWRS firmly met many of the objectives of public right-of-way coordination software, both ITA and BOE readily admit that some key improvements would be needed to support the enormity and visibility of the SOSLA initiative. Upgrades to the PWRS are proposed to add additional features and tools, developed with stakeholder input, to enhance project planning, scheduling and coordination to minimize street cuts. BOE staff will upgrade the PWRS using Esri ArcGIS technology for mapping, Javascript API, ColdFusion for programming, and Microsoft SQL server for the database. The following tasks are planned to be completed by BOE to upgrade the PWRS by June 30, 2014.

- Meet with all departments and agency PWRS coordinators
- Review and confirm PWRS system improvements. This includes improved integration with existing stakeholder work management applications
- Modernize and upgrade the public viewer (public facing website)
- Develop and deploy PWRS access through mobile devices
- Upgrade the reservation and coordination system module to include the enhanced features identified in Appendix A
- Coordinate with all stakeholders, departments and agencies that issue permits to occupy the public right of way
- Conduct training for and outreach to all stakeholders

The current Public Way Reservation System is managed and supported by BOE. Hardware and software already used for NavigateLA is currently available for BOE to host and run the application. The software uses BOE hardware (servers) and is managed through the existing City data networks. While these servers require periodic replacement (typically every 5 years), BOE does not foresee a near-term investment required for new servers to support a SOSLA initiative. BOE estimates requiring a contractor for the one-time update (1 FTE) at an estimated cost of \$200,000 to develop the PWRS enhancements listed above. This one-time investment would greatly improve the look-and-feel of the current system, increase system capabilities, and provide additional easy-to-use tools for City departments and the public. Ongoing maintenance requires about 20 hours per month from an existing employee.

Alternatively, BOE has an option of using its existing PWRS as a system that interfaces with a centralized commercial public right-of-way coordination system (described below). This would leverage existing PWRS system functions and integration with the modern look-and-feel of the commercial system. However, this would be the most expensive alternative (paying for the maintenance of the existing system and the implementation of a new one).



**Image 1 – Example of Public Way Reservation System (PWRs) Viewer Module. Users can navigate to geographic area and view project details through the map**

### **OPTION B - IMPLEMENT A NEW CLOUD-BASED PUBLIC RIGHT-OF-WAY COORDINATION SYSTEM**

Several U.S. cities and utility companies have implemented public right-of-way (PROW) coordination systems that are commercially developed and available in the market. Today, such systems are available to municipalities and utility companies as map-based “software-as-a-service” (SaaS). These SaaS systems are “cloud-based” solutions that do not require hardware and software investments from the municipality. These offerings typically require a one-time setup cost, a service cost to develop integration between existing City systems and the SaaS software, and an ongoing annual subscription. Listed below are notable cities that are currently using a cloud-based, public right-of-way coordination software.

- City of Baltimore
- City and County of San Francisco
- Washington D.C.
- City of Memphis
- City of Pittsburg
- City of Boston (Pilot Mode)

As an example, the City of Baltimore (referenced in C.F. 13-0612) utilizes the Envista product. The functions provided by this software include:

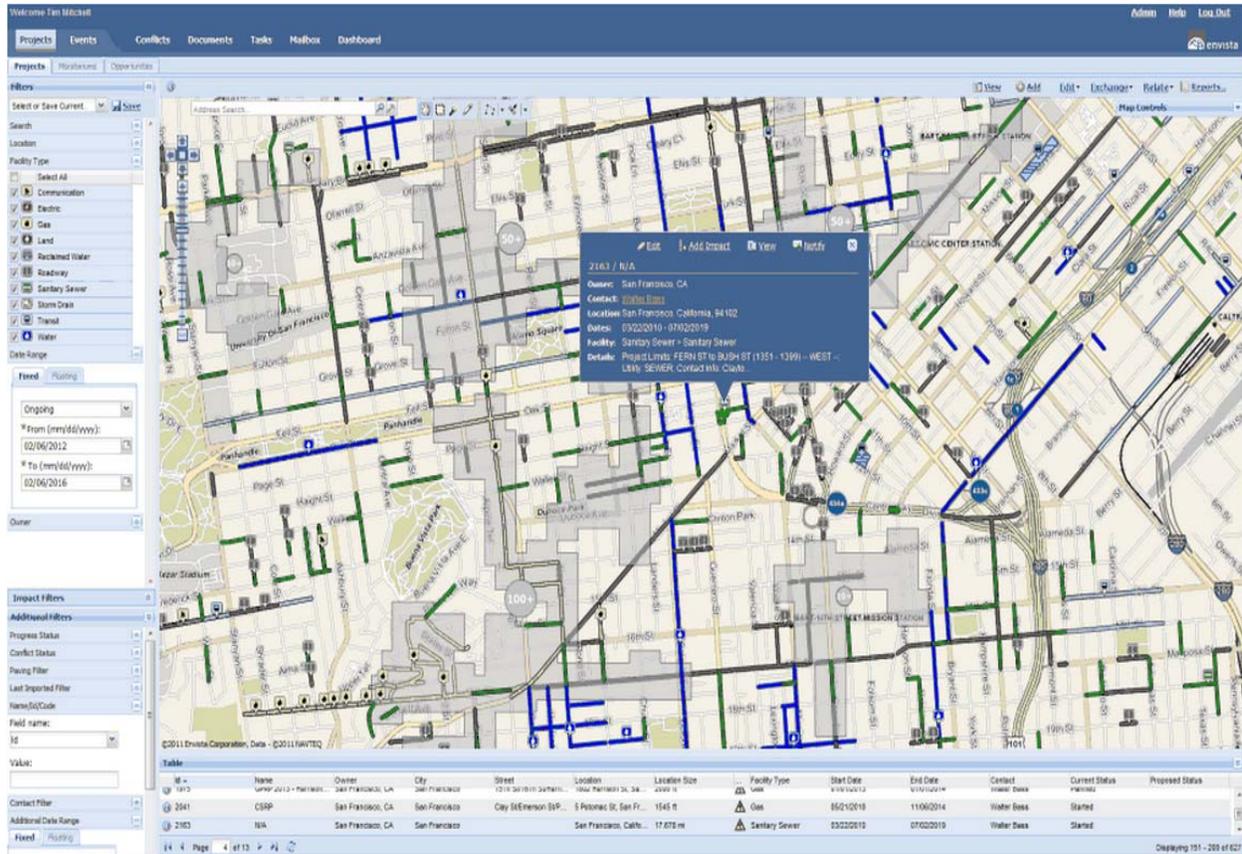
- Entry of new projects online or through automated interface

- Easy-to-use map of planned and current projects (see Image 2 below).
- Automated identification of project conflicts
- Creation of both project moratoriums & “opportunities” (allowing other departments to piggyback on project to minimize total closure time)
- E-mail integration
- Dedicated, easy-to-use Citizen’s view (public facing map via website)

To implement a new cloud-based public right-of-way coordination system, the City would be required to do the following:

- Develop and publish a Request for Proposal (RFP) for commercial, cloud-based public right-of-way coordination systems.
- Negotiate pricing and scope of work.
- Contract professional services to integrate commercial system with existing department IT systems (e.g. BOE, DWP, etc.).
- Revise existing process to ensure that all new work activities were being entered and coordinate through the new commercial system.

A benefit to the SaaS, cloud-based solution is that the City would not need to make a hardware (server) investment every five years to support the system. In addition, any vendor enhancements made to the software would be automatically implemented in future versions free-of-charge. However, the City would pay a substantial annual subscription for the life of the system (potentially decades). It is estimated that a 10-year subscription to such products, including one-time setup costs, will range from \$5 Million to \$7 Million over 10 years (\$500,000 to \$700,000 per year). In addition, the City would still need to maintain its existing departmental systems, such as the PWRS, as they would still be required to interface into a potential new cloud-based application.



**Image 2 – Example of a Popular Commercial Cloud-Based Public Right-of-Way Coordination System Used by City of San Francisco (Envista)**

## RECOMMENDATION

Based on the proposed SOSLA initiative and the key requirements of a public right-of-way coordination system, the ITA recommends the following:

1. The City of Los Angeles utilize its existing Public Way Reservation System (PWRS) to support the SOSLA initiative and ongoing functions. To fully satisfy the requirements of a SOSLA initiative, the existing PWRS would need additional enhancements and improvements through contractor programming services estimated at a one-time cost of \$200,000.
2. Improve City policies to enforce the citywide usage of the Public Way Reservation System (PWRS). During ITA's research, multiple City departments stressed the importance of a stronger process to ensure citywide usage (regardless of software tool being used), such as a Mayoral Executive Directive. These types of systems require both the technical solution (e.g. PWRS system) and a strong business process to ensure departments are entering their activity, coordinating with other departments, and abiding by moratoriums to ensure street resurfacing is not quickly marred by subsequent construction.

**FISCAL IMPACT STATEMENT**

The BOE has estimated the one-time cost of enhancing the existing PWRS at \$200,000 through contract programming services. No additional, near-future technology-related costs are anticipated.

Attachment

cc: Ted Ross, Information Technology Agency  
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David Hirano, City Administrative Officer  
Staci Sosa, City Administrative Officer  
Randy Price, Public Works – Bureau of Engineering  
Russ Strazzella, Public Works – Bureau of Contract Administration  
Jay Kim, Department of Transportaion

**APPENDIX A - COMPARISON OF FEATURES (City PWRS and Envista)**

As requested by the City Council Public Works and Gang Reduction Committee, the following table provides a side-by-side comparison of functions and features between the City of Los Angeles Public Works Reservation System (PWRS) and the cloud-based Envista system.

<b>Functions</b>	<b>Features</b>	<b>City PWRS</b>	<b>Envista</b>
<b>Projects</b>	Create, view, and update a new project	✓	✓
	Enter, view, and update project schedule (start and end date)	✓	✓
	Enter, view, and update project location (graphically on the map)	✓	✓
	Enter, view, and update project type	✓	✓
	Enter, view, and update project contact information	✓	✓
	Link source documents to a project	✓	✓
<b>Moratoriums</b>	Generate a moratorium when creating a project	June 30, 2014	✓
<b>Opportunities</b>	Select a project as an opportunity	June 30, 2014	✓
<b>Special Events</b>	Enter, view, and update events (including parades, festivals, road races, political rallies, etc.)	✓	✓
<b>Traffic Reroutes/Impacts</b>	Identify traffic re-routes associated with event or project		✓
<b>Right-of-Way (ROW) Permits</b>	Create, view, update, and delete ROW permits	✓	✓
<b>Conflict Management and Resolution</b>	Ability to detect and generate a conflict when two projects or events are proposed in the same location or during the same time period	✓	✓
	Ability to report conflict and contact info for resolution	✓	✓
	Ability to send email relative to a conflict	June 30, 2014	✓
<b>Documentation Library</b>	Ability to upload and retrieve plans/documents associated with a project	✓	✓
<b>Public Website</b>	Provides for public view of information on projects, events, street closures, permits status, etc.	✓	✓
	Allows drill-down to closures based on specific address and timeframe	✓	✓
<b>Email Notifications / Alerts</b>	Ability to setup automatic email notifications to specified users	June 30, 2014	✓
<b>User Interface / Map Platform</b>	Create, view, update and delete projects and events directly on the map	✓	✓
	Ability to show or hide various layers (icons, routes, labels, etc.)	✓	✓
<b>Reports</b>	Ability to generate pre-defined standards reports	✓	✓
	Ability to generate custom reports		✓
	Generate report in various formats, such as .pdf	✓	✓
	Export reports to MS Excel .xls file format	June 30, 2014	✓
<b>Mobile Access</b>	Ability to access and use the system via mobile devices	June 30, 2014	
<b>Integration with City Systems</b>	Existing electronic interfaces with over 80% of City PROW systems/processes	✓	
<b>Cloud-Based Model</b>	Cloud software that allows periodic vendor updates and no hardware investment		✓