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MAYOR

DEPARTMENT OF PUBLIC WORKS

BUREAU OF ENGINEERING

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The Honorable Bob Blumenfield, Chair
Public Works Committee
Los Angeles City Council

c/o Michael Espinosa
Office of the City Clerk
City Hall, Room 350

COUNCIL FILE (CF) NO. 20-1469 / PUBLIC WAY RESERVATION SYSTEM (PWRS) AND CLOSURE NOTIFICATION TO THE PUBLIC TO MINIMIZE PUBLIC IMPACT

Dear Councilmember Blumenfield:

RECOMMENDATIONS

To continue efforts to enhance the Public Way Reservation System (PWRS), the Bureau of Engineering (Engineering) recommends the following:

1. DIRECT all departments and bureaus, and REQUEST all proprietary departments, to actively use PWRS for activities planned in the public right-of-way, in an effort to improve data collection, foster collaboration amongst offices, reduce avoidable conflicts, and minimize impacts to the public.

2. REQUEST the City Attorney to draft an ordinance to make any necessary clarifications to the Los Angeles Municipal Code (LAMC) and/or the Los Angeles Administrative Code (LAAC) to allow the Administrative Citation Enforcement (ACE) Unit to issue citations in the enforcement of recently enacted penalties included in Ordinance 186854.

BACKGROUND AND DISCUSSION

On February 9, 2021, City Council adopted a report from the Public Works Committee with the following recommendations:

> 1. INSTRUCT the Bureau of Engineering, in coordination with the Los Angeles Department of Transportation, to report on the efforts and resources needed to further update and refine the existing PWRS software to create a public-facing web portal that makes it easy for the public to know when sidewalks and streets are closed.
>
> 2. REQUEST the Board of Public Works to develop a uniform construction notice as well as required notification times similar to FilmLA notices for public and private projects that clearly states what work will be happening, when it will happen, and what the impacts will be.
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> 3. INSTRUCT the Los Angeles Department of Transportation, in coordination with the Bureau of Engineering and Bureau of Street Services, to develop protocols for sidewalk and street closures that ensure pedestrian, bicycle, and vehicular detours and impacts are minimized during all construction projects.

Introduction and Recent Events

The progress this past year may not have been quite at the pace that we would have expected prior to COVID and the Separation Incentive Program; but we have continued to move forward in spite of the challenges and have made significant progress.

PWRS efforts have become somewhat merged with the efforts under Mayor Garcetti's Executive Directive 25 (ED 25) Titled "L.A.'s Green New Deal: Leading By Example", issued on February 10, 2020. In response to ED 25, many City Departments coordinated with the Mayor's Office to create a Public Right of Way (PROW) Protocols policy which was presented to, and adopted by, the Board of Public Works on May 26, 2021. A large theme of that policy is for various departments to better coordinate toward the goals of the protocols, and follow-up efforts continue to define the details of how that will take place. One of the discussions related to that is a possible hub of sharing project information, especially in project concept and planning stages.

One of our major objectives for future improvements to PWRS was to try to include more information about projects in the planning stages so that it would not only show what is in construction or about to be in construction, but would show information early enough that entities planning to conduct work in the PROW could use it not just as a tool to avoid conflicts with others, but as a tool to actually coordinate with others and integrate their projects when feasible to reduce the impact on the public and also potentially reduce costs for all parties. There is obviously some overlap between the ED 25 working group and the prior PWRS goals, so Engineering is actively participating and will adapt the PWRS goals to compliment any new systems that may be implemented without

duplication. There is a possibility that PWRS will be broadened to be the solution for the increased coordination being implemented under ED 25.

The Engineering GIS Division, which created and maintains PWRS and will be implementing future improvements, lost six positions in the 2021-22 budget as a result of the Separation Incentive Program, and it has five additional vacancies at the time of this report. Very importantly, three of the six programmer analyst positions in the division are vacant. Aside from being responsible for PWRS, the GIS division is responsible for programming and maintaining all Engineering development services related web applications and is also responsible for developing and maintaining NavigateLA, the City's primary Geographic Information System (GIS) application for the PROW. The GIS division is also the lead for Engineering in overseeing BuildLA improvements and is managing a consultant task order to implement citywide BuildLA initiatives. Therefore, significant improvements to the PWRS system will be reliant on filling vacancies and training new staff and/or hiring consultant services to assist. PWRS is very important to Engineering, and we do intend to make great efforts to continue to improve the system.

The existing PWRS software, available at https://navigatela.lacity.org/pwrsviewer/, is a tool that provides centralized, detailed information of various activities in the PROW. Users utilize the information to coordinate their activities and resolve conflicts. Some project information data is fed directly from various permit, project or maintenance tracking applications, while other data is entered directly into PWRS by users. PWRS's usefulness is highly dependent on the accuracy and completeness of the data it houses, so active user participation is essential to capture thorough project information in a timely manner.

Ordinance to Amend Various LAMC Sections

As instructed by the Council action of May 1, 2018, Engineering collaborated with the City Attorney on the drafting of a new ordinance to effect various requested changes to LAMC. On November 25, 2020, Council adopted Ordinance 186854, which became effective January 14, 2021. The adopted code changes allow for further improvement of PWRS, and some highlights from the ordinance include:

- Duration of excavation permits may now be flexible, and extensions are allowed. Previously, permits were issued with 6-month fixed terms, regardless of work scope and size of excavation, and extensions were not allowed.
- Warranty period of resurfacing work is clarified. The 5-year warranty period explicitly starts after request for final inspection is submitted.
- Responsibility and warranty of work is clarified. Permittee on record is explicitly responsible for completion of permitted work.
- Penalty schedule for non-compliance is updated to contemporary rates.

Subsequent to the adoption of Ordinance 186854, there was some concern by the ACE Unit that additional code authorizations may be needed for their unit to be able to enforce the new penalties. The ACE Unit, in which The Bureau of Street Services (StreetsLA) is a part of, is felt to be the most efficient and effective way to enforce the new non-

compliance penalties. Therefore, this report includes a recommendation that the City Council request that the City Attorney draft an Ordinance making any necessary code changes to allow the ACE Unit to enforce the new permit non-compliance penalties.

Software and System Advancement

Engineering continues to make progress to further improve PWRS and as allowed under existing LAMC. To date, we have employed an array of new technologies to create and support the modernization of the system. For example, to create and maintain both the map and geoprocessing services that are being used by the new PWRS Viewer, the application was recently moved to Engineering's Microsoft Azure cloud environment, the mapping component was migrated from Mapguide viewer to ESRI's current ArcGIS server technology (version 10.7.1), and the database has been updated to Microsoft SQL Server 2017. Additionally, Engineering uses Adobe's ColdFusion 11 as a web-development platform to put together the Viewer with all its parts by combining HTML 5 (HyperText Markup Language), CSS (Cascading Style Sheets), JavaScript API (Application Programming Interface) and Bootstrap 4 (a collection of HTML, CSS and JavaScript bits of code).

This technology platform enables Engineering to tailor system changes to exact needs. As for the modular design approach, it allows for easier integration with other City applications. In the past Engineering has conducted evaluations of off-the-shelf software options. A few products were found that have promise but the cost was significant and would still require a large effort on the City side to customize them. The recommendation at this time is to continue with the enhancement of the in-house application.

Currently, for users to add data onto PWRS, some input data directly onto the platform while others provide database information directly to Engineering in the form of shapefiles or spreadsheets. When project information was provided to us via databases, Engineering created a tool that grabs specific data points and uploads the project records to PWRS. Our preferred method of data sharing is to have all users share their data via map services that can easily be consumed or via a REST API set up that we can access to grab their data. We are working with the City departments to try to establish more data connections in that manner.

A recent accomplishment which will enhance the information available to PWRS is the completion of the Utility Excavation Permit (U Permit) Trench Cut and Traffic Area precise geocoding modules. These modules allow users to more precisely show activity area and traffic control areas which would improve availability of closure information of sidewalks and streets. In the coming year, Engineering plans to work with LADOT to expand the geocoding module such that applicants will also geocode the key traffic control boundaries and material laydown areas.

Engineering has also just issued a purchase order to order one year of Nexar CityStream Road Work Zones. This software uses driver dash cam footage and Artificial Intelligence technology to capture information of construction activities and obstructions in the PROW. It is then made available to the City via a web application that lets users easily see

detected construction activities on a map and to click them to see street level photos of the activity. It identifies new construction activities in a different color than those that had been reported on previous days to make it easy to identify new activities. The information is also available to be accessed via API which provides great potential to integrate with our PWRS and other systems to identify activities that appear to be active and also potentially to identify activities for review if they do not appear to have a matching authorization.

Stakeholder and System User Feedback

Currently, PWRS is used by Capital Improvement Project planners and designers, Film LA, utility companies, other permit holders, and special events planners, among others. Challenges to the current system include unnecessarily broad time frames are sometimes shown for scheduled work, precise work locations are often not known, and data sets are sometimes incomplete. The goal is to improve system features to:

- Further improve the system user interface.
- Gather more complete and detailed data, including for long range planning.
- Provide an improved decision tool for planning purposes, not just conflict avoidance, by better gathering and presentation of project data, and to support collaboration opportunities amongst system users.
- Improve information filters to help system users obtain granular information that is specific and useful and that can be customized to individual needs.
- Enhance customer service by making project information current, easily digestible and accessible to all, including the public.
- Ascertain the feasibility of changing the system from passive to active management of reservations of the PROW.

Engineering recently held detailed discussions with City departments and bureaus such as LADOT, Los Angeles Department of Water and Power (LADWP), StreetsLA, Bureau of Street Lighting (BSL), and Bureau of Sanitation (LASAN) to initiate the process of gathering more complete and detailed project data. Aside from presenting ongoing system improvements efforts, we were able to establish protocols for data sharing to streamline the process.

We will continue the intake of feedback from permit issuers, system users, and customers. Meeting with a variety of users and soliciting their inputs in a continual basis has allowed us to collect valuable ideas and deliver customer need-based improvements.

Development of Uniform Construction Notices

With regard to recommendation number 2 from Council, Engineering has attended preliminary meetings with staff from Council District 14, the Board of Public Works, LADOT, and StreetsLA to discuss next steps to facilitate the development of uniform construction notices and required notification times for public and private projects. We will continue to participate in these efforts.

Engineering has also worked with the Bureau of Contract Administration (BCA) to increase knowledge of the Engineering Brown Book requirement for a 10-day notice prior to starting construction work. Specifically, the language states:

> At least 10 days before the start of construction, the Contractor shall notify, in writing, abutting property occupants of the proposed construction start date. A copy of said written notification shall be provided to the Inspector for approval before distribution to the occupants of the abutting property.
>
> The Contractor shall notify the MTA Superintendent of Transportation Services office at (213) 922-4646 at least 72 hours before any work that will affect normal bus operations.

Digitization of substructure facilities

Currently, to determine the location of utilities within the street, it is necessary to research a combination of old scanned substructure maps and geocoded permits available online. Gathering and reviewing these documents is both time-consuming and labor-intensive and can result in staff missing important information. Digitizing substructure facilities would greatly improve safety and coordination of various activities in the PROW. Digitized information collected in a single source would not only ensure easier access of complete information on the location and alignment of substructure facilities but would give staff the ability to view comprehensive and easily digestible information in the field. This would make field activities, such as permit enforcement work and coordination of activities, much more efficient and accurate. Similarly, the information would be very valuable to the public when planning projects of their own.

To gauge the cost of digitization, Engineering recently completed a pilot test to capture and digitize the substructure facilities within a test area. During this process, we quantified staff time and resources needed to complete sample plans, assessed the required quality level of data, and established metrics for cost recovery. The test area selected was in downtown Los Angeles and included 15 substructure map sheets along with 106 U Permits. For reference, an average map sheet within the pilot project area was 5.5 acres in size. It took four staff approximately 300 hours to complete the digitization process (2,994 features were digitized, including 470 points, 726 polygons and 1,798 lines). Throughout the City, there are 4,489 substructure map sheets of various sizes and approximately 137,397 U Permits previously issued that would need to be reviewed and digitized. Based on the pilot test results and using simple extrapolation assumptions, we estimate that it would take three full-time staff approximately 10 to 20 years to complete the digitization of all existing facilities. This estimate assumes that some efficiency will be gained if full-time effort is dedicated towards the task, but it is difficult to project how much faster we would be able to process them. The project could focus on completing the most active construction areas of the City first to get the earliest benefit from such a program.

Engineering proposes to work with Mayor and Council in the next budget to explore potential funding options for staffing this initiative. The work would benefit a wide variety of projects, so it may be possible to have multiple funding sources contribute to a portion of the cost of the effort. We strongly believe that a digital library of substructures will

revolutionize the way the efficiency and safety of doing work in the PROW and that it would pay for itself over time with the reduced costs of project planning and by reducing accidental damages to existing substructures. It would also enable the use of a variety of new technologies to view a digital overlay of substructures in the field using tablets or mixed reality glasses. Engineering is piloting a software called vGIS to do just that at the current time, but we can only view our digitized substructures such as sewers and storm drains and not the other utilities that have not yet been digitized.

If you have any questions regarding this report, please contact Deputy City Engineer Ted Allen at (213) 485-4915.

Sincerely,

Gary Lee Moore, PE, ENV SP
City Engineer

GLM/TA/CS/:jgr

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cc: Jennifer McDowell, Office of the Mayor
Seleta Reynolds, Department of Transportation