FORM GEN. 160 (Rev. 6-80)

CITY OF LOS ANGELES

INTER-DEPARTMENTAL CORRESPONDENCE

DATE: January 14, 2015

TO: Honorable Felipe Fuentes, Chair of the Energy and Environment Committee;
Honorable Joe Buscaino, Chair of the Public Works and Gang Reduction Committee
All Council Members

FROM: Enrique C. Zaldivar, Director
Bureau of Sanitation

Gary Lee Moore, City Engineer
Bureau of Engineering

for Nazario Sauceda, Director
Bureau of Street Services

SUBJECT: Green Sustainable Streets Council Motion (Council File 14-0748)

This document is prepared in response to the Motion (Fuentes - Bonin; CF 14-0748) relative to Stormwater Management Guidelines for Public Street Construction and Reconstruction. Specifically, the Motion instructed/requested the Bureau of Street Services (BSS), Bureau of Sanitation (LASAN), Bureau of Engineering (BOE), the Department of Water and Power (DWP), City Administrative Officer (CAO) and the Chief Legislative Analyst (CLA) to develop a draft ordinance that requires all public street construction projects to incorporate stormwater management guidelines.

The Motion indicates that streets convey water in addition to vehicles and pedestrians. It follows that the City should seek to prioritize multi-benefit solutions that improve transportation, minimize flooding, reduce watershed pollution and increase stormwater capture and local water supply.

To meet the Motion's request, a working group comprised of the specified departments reviewed the matter and developed the following recommendations.

RECOMMENDATIONS:

The Bureau of Sanitation, Bureau of Street Services and Bureau of Engineering jointly recommend the following actions for the Energy and Environment Committee and the Public Works and Gang Reduction Committee to consider:

1. INSTRUCT the Bureau of Sanitation, in conjunction with the Bureau of Street Services, Bureau of Engineering, the Department of Water and Power, the City Administrative Officer, Chief Legislative Analyst and the City Attorney, to develop a draft ordinance that incorporates stormwater management checklist requirements for public right-of-way (ROW) projects as follows:

    a. Checklist requirements consisting of the following:
        - Water quality improvement and regulatory standards;

- Stormwater infiltration/filtration feasibility; and
- Drainage capacity/flood mitigation.

b. Checklist requirements to be applied to the following public ROW activities:

- Department of Public Works Projects by private contractors and Capital Projects by City departments such as streets, sewers, storm drains, bridges, street lights, traffic signals, bike lanes and landscaping;
- B-Permit Projects (City/Non-City) - large projects in the public ROW often as part of development projects or projects by City Departments other than the Department of Public Works; and
- Assessment Projects (new sewers, streets, street lights, etc. paid by property owners).

c. Checklist requirements to be applied to the following public ROW projects contingent on requirement feasibility/applicability to projects (i.e. - an impervious surface, no drainage capacity):

- U-Permits – excavations in the streets by utilities;
- E-Permits – excavations in the street by other entities;
- A-Permits – curbs/sidewalks/driveways;
- S-Permits – sewer connections; and
- R-Permits – revocable permits for conditional encroachment

2. INSTRUCT the Bureau of Sanitation, in conjunction with Bureau of Street Services, Bureau of Engineering, and the Department of Water and Power, to develop a *Stormwater Management Handbook for Public* ROW projects (Handbook) that consists of the following implementation/administration elements for consideration by the Board of Public Works;

- Defines green/sustainable elements for projects including acceptable practices, design recommendations, and sizing guidance;
- Defines feasibility/applicability standards including Best Management Practice (BMP) selection and selecting design and performance goals on a site specific basis; and
- Details operations and maintenance activities, frequencies, and requirements for green/sustainable street elements; identify the party or parties responsible for ongoing operations and maintenance and related liabilities.

3. INSTRUCT the City Administrative Officer and the Chief Legislative Analyst, in conjunction with the Bureau of Sanitation, Bureau of Street Services, Bureau of Engineering and the Department of Water and Power, to identify potential funding strategies to support related programs and activities, such as permit/in-lieu fees.

WORKING GROUP ACTIVITIES

The LASAN, BSS, BOE, DWP CAO, CLA, and Council District 7 began meeting as a working group to assess the goals of the Motion and ways to coordinate their efforts. They met several times between August and October 2014 and developed the framework for the draft ordinance requiring stormwater management elements for all public ROW projects. (Note - draft ordinance framework represented within Recommendation No. 1).

The framework established stormwater management checklist requirements for public ROW projects consisting of:

- Water quality improvement and regulatory standards;
- Stormwater infiltration/filtration feasibility; and
- Drainage capacity/flood mitigation.

These three elements are key to ensuring that the ordinance addresses the objectives of increasing water quality, augmenting water supply, and minimizing the impacts of flooding associated with stormwater conveyance.

In addition, the framework identified the public ROW projects that would be subject to the checklist requirements. The listing encompassed both public and private development projects along the ROW.

The listing also identified public ROW projects that may be exempt from the stormwater management checklist requirements depending on the feasibility and applicability of the requirements to the project. For example, some projects may be in areas with low drainage capacity or an impervious surface. In these instances, the requirements may not be applied however; an in-lieu fee may be assessed to ensure that stormwater management objectives are met in another area of the City.

Subsequent to the adoption of a final ordinance, the working group determined that a *Handbook* would be developed jointly by the LASAN, BSS, BOE and the DWP that provides details of implementation/administration for the stormwater management checklist requirements. These provisions would:

- Define green/sustainable elements for projects including acceptable practices, design recommendations, and sizing guidance;
- Define feasibility/applicability standards including Best Management Practice (BMPP selection and selecting design and performance goals on a site specific basis; and
- Detail operations and maintenance activities, frequencies, and requirements for green/sustainable street elements; identify the party or parties responsible for ongoing operations and maintenance and related liabilities.

The Handbook would be considered by the Board of Public Works when it was fully vetted by the various departments and stakeholders. The working group determined that the Handbook should be viewed as a living document that can be updated as necessary through Board of Public Works action.

With respect to supporting a program to conduct the provisions of the ordinance, the working group concluded that the LASAN, BSS, BOE should work with the CAO and the CLA to identify potential funding strategies. The working group identified permit fees and in-lieu fees as potential options. In addition, a stormwater capture/water supply fee could be developed to meet the needs of the program.

BACKGROUND:

Federal, State and Regional Water Quality Permitting Requirements

The City of Los Angeles has approximately 28,000 lane miles of streets with 11,000 miles of sidewalks, 800 linear miles of alleys, and 34,000 catch basins. Streets, sidewalks and alleys carry vast quantities of rainfall runoff into our waterways and beaches. With these runoff pollutants, such as metals, bacteria and trash, toxic chemicals are delivered to local surface water and beaches; and for this reason, stormwater runoff from streets and the public ROW is regulated by regional, state, and federal laws and regulations.

The Municipal Separate Storm Sewer System (MS4) NPDES permit (Final Order No. R4-2012-0175, December 10, 2012) regulates the water quality of stormwater and urban runoff discharges into our waterways and beaches. As the operator of the stormwater conveyance system, LASAN administers the City's MS4 Permit compliance. The MS4 Permit requires that street and road construction mitigate stormwater impacts in a manner consistent with federal guidance efforts, such as *Managing Wet Weather with Green Infrastructure*: Green Streets (December 2008 EPA-833-F-08-009).Street and road construction applies to stand-alone streets, roads, highways, and freeway projects, and also applies to streets within larger projects.

The current MS4 Permit is the most stringent to date. Under this Permit, the City must satisfy 22 Total Maximum Daily Loads (TMDL) regulations; failure to comply will result in financial penalties totaling $37,500 per day per violation.

Incorporating green street elements into street reconstruction and the public ROW can be expanded to serve as an important tool to help management stormwater pollution hear its source, capture, treat and increase the water supply. Examples of green streets elements included permeable pavement, bio-retention and bio-filtration systems, dry wells, and vegetated swales.

In addition, the development of the Enhanced Watershed Management Programs (EWMPs) will help the City incorporate water quality benefits and green street elements. As part of such efforts, the LASAN is conducting large-scale watershed-wide planning efforts in the City's four watersheds: the Upper Los Angeles River, Ballona Creek, Dominguez Channel, and Santa Monica Bay. The EWMP's will produce regional and distributed green projects that will improve water quality, help maximize the use of rainwater to offset freshwater use, reduce the use of imported water, and provide multi-benefits to the community. To be completed in June 2015, the plans will provide the blue print for how to clean-up and improve our limited water resources during the coming decades.

The MS4 Permit required the development of a Green Street Policy. On July 11, 2011, the Board of Public Works adopted an official Green Street Policy. The policy described the potential benefits of green streets and outlined a series of opportunity-focused action items; however, it does not include mandates for public street construction and reconstruction.

The Green Sustainable Streets Council Motion (14-0748) introduced on June 6, 2014 calls for the incorporation of green street elements into the construction and reconstruction within streets and the public ROWs, making it a standard practice to provide multi-benefit solutions.

City-Specific Permits and Processes

Currently, construction and reconstruction projects in the City require a number of permits. Projects are subject to permit requirements by the Department of Building and Safety (DBS), the Department of City Planning (Planning), and BOE among others.

In general construction permits can be categorized into two fundamental groups – those for work on private property for which DBS and Planning are the lead and those in the Public ROW for which BOE is the lead. For work in private property, DBS and Planning are the lead permitting agencies and LASAN provides permit clearance approval for the stormwater mitigation components. Among other requirements, those projects must comply with the provisions of the *Stormwater Pollution Control Measures for Development Planning and Construction Activities* and the provisions of *Development Best Management Practices Handbook*. However, similar stormwater mitigation requirements have not been enacted for Projects in the public ROW. The purpose of this report is to address the requirements for projects in the public ROW.

Multi-Benefits and Public Infrastructure

Incorporating stormwater BMPs into roadway reconstruction and construction in the public ROW represents an opportunity to address multiple issues. Designs can be tailored to meet specific needs of a public ROW project at a low incremental cost, as projects are strategically prioritized to address the following criteria/conditions:

- Water capture/Water supply potential;
- Street is undergoing substantial reconstruction;
- Project contributes to the capture of significant quantities of polluted runoff to regulated water bodies (Los Angeles River, Ballona Creek, Dominguez Channel, and Santa Monica Bay); and
- Street is experiencing repeated flooding and water ponding that accelerates deterioration and leads to higher road maintenance costs.

The LASAN has performed, and partnered on numerous studies, analyses, and plans that were developed to determine areas where incorporating green street elements into the streetscape would have the most value for water quality, drainage and flood control, groundwater infiltration, and watershed health. These efforts include the Greater Los Angeles Integrated Water Resources Management Plan, as well as the aforementioned EWMPs by LASAN.

There is a significant need for drainage infrastructure, as there currently exists a list of more than 400 flood control priority projects that have been identified that could benefit from the mitigation of localized flooding throughout the City.

Green street elements could have an important role in augmenting the local water supply by recharging groundwater basins. The DWP is conducting critical prioritization studies through the development of its Stormwater Capture Master Plan (SCMP). To be completed in June 2015, the plan will identify projects by adding more local stormwater to groundwater supplies such as enhancing water spreading basins, capturing storm water for direct use, and offsetting potable water use through local capture systems. The SCMP and the EWMP are being coordinated as the plans are being prepared by DWP and LASAN, respectively.

Green Streets

Since 2008, City agencies had begun to lay the foundation for a green street program. The program conducted by the Department of Public Works has already produced a number of accomplishments; such as guidance manuals, green streets standards, County public health water quality standards, and implemented rain gardens and green streets/alleys/parking lots projects for various land-use applications at the public ROW. Current green street efforts are coordinated through the Green Streets Committee (GSC), led by the Department of Public Works in conjunction with the other City departments.

The GSC has worked collaboratively to identify stormwater capture and infiltration opportunities with City streets and alleys; and has developed standard plans to implement green street elements such as porous pavement, planters, and infiltration swales in sidewalks, parkway, alleys, and other areas. Numerous projects have resulted from this program as well as seven standard plans and design guidelines that developers and City departments can follow when building green streets and green alleys. The efforts on the GSC are advisory in nature and do not require that specific standards be met in the public ROW.

Funding Needs

Incorporating green street elements into roadway reconstruction and construction has been generally recognized as an incremental cost.

In terms of potential funding sources for green street elements/stormwater capture and water augmentation efforts, the working group identified certain options. One of those options, new state law, AB 2403, provides a mechanism to support stormwater capture and treatment for water supply efforts. Federal and state transportation grant funds, other water quality, or environmental enhancement/mitigation grants may also support these efforts and represent additional funding options.

Another funding option relates to the potential formation of a permit fee structure associated with the stormwater management checklist requirements. The potential fee may be applied to applicable projects along the public ROW to support the program's efforts. This matter requires further review to assess which types of projects may be subject to it as well as the implementation of an in-lieu fee.

CONCLUSION:

The Motion (Fuentes - Bonin; CF14-0748) seeks to incorporate stormwater management guidelines in public ROW projects; thereby prioritizing multi-benefit solutions that improve transportation, minimize flooding, reduce watershed pollution and increase stormwater quality and local water supply. These elements are intended to improve the quality of life in the City. The proposed ordinance framework and associated recommendations as developed by the working group meet the Motion's objectives.

Attachment: Motion (Fuentes-Bonin; CF 14-0748)

c: Kevin James, President, BPW
Barbara Romero, Commissioner, BPW
Matt Szabo, Commissioner, BPW
Miguel A. Santana, CAO
Sharon M. Tso, CLA
Marcie L. Edwards, General Manager, DWP
Martin L. Adams, Asst. General Manager, DWP
Adel Hagekhalil, Asst. Director, LASAN
Alfred Mata, Deputy City Engineer, BOE
Ron Olive, Asst. Director, BOSS

14-0748

Attachment
MOTION

ENERGY & ENVIRONMENT
JUN 6 2014

Streets convey not only automobiles and pedestrians but also water. When it rains, water flows from the street into catch basins and storm drains that then divert the runoff into our local tributaries, rivers and ocean. In the process, street pollution contaminates waterways, and stormwater that could be captured and reused is discharged into the ocean.

This system presents a number of challenges for the City of Los Angeles (City). First, it does not sufficiently address runoff pollution, which the City is mandated to mitigate. The City currently must satisfy 22 Total Maximum Daily Load (TMDL) regulations as part of its Municipal Separate Storm Sewer System (MS4) Permit. Failure to comply with the permit could result in extensive financial penalties.

Second, the current system fails to capitalize on stormwater capture and groundwater infiltration opportunities. Local efforts to bolster our local water supply, particularly in this time of drought, are necessary in order to meet the Mayor's goal of reducing City water imports by half.

Finally, it does not adequately protect against flooding. There are more than 400 known locations that have drainage problems causing localized flooding in our neighborhoods and exposing our residents, motorists, and bicyclists to potential safety hazards. In addition, poor drainage and chronic flooding can damage and undermine street pavement.

Incorporating Best Management Practices and green street infrastructure such as bioswales, curb cuts, and tree wells can mitigate a number of these concerns by infiltrating water where appropriate and removing contaminants from polluted water before discharge.

To achieve this, the Bureau of Street Services, Bureau of Sanitation, Bureau of Engineering, and the Department of Water and Power would need to collaborate and develop green infrastructure projects that provide multi-benefit solutions.

An estimated 2,400 centerline miles are currently failing or near failing. A new approach to capital expenditures should be pursued to maximize the public investment in infrastructure as opposed to today's patch-work approach.

City policy should prioritize multi-benefit solutions that improve transportation and safety, minimize flooding, reduce watershed pollution, and increase stormwater capture and local water supply. A multi-benefit approach also necessitates a review of current departmental performance metrics to better measure the efficiency and effectiveness of such projects.

I THEREFORE MOVE that Council instruct/request the Bureau of Street Services and the Bureau of Sanitation, in conjunction with the Bureau of Engineering, Department of Water and Power, Chief Legislative Analyst and the City Administrative Officer, to work with the City Attorney to develop a draft ordinance that requires all public street construction and reconstruction projects, irrespective of funding source, to incorporate *Stormwater Management Guidelines for Public Street Construction and Reconstruction* (as attached) consisting of the following components:

- Drainage capacity/flood mitigation;
- Stormwater infiltration feasibility;
- Water quality improvement and regulatory standards.

I FURTHER MOVE that the Bureau of Street Services and Bureau of Sanitation report to the Council in 45 days on the status of the working group and draft ordinance development.

JUN 6 2014

PRESENTED BY:

FELIPE FUENTES
Councilmember, 7th District

SECONDED BY:

ORIGINAL

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City of Los Angeles
Stormwater Management Guidelines for Public Street Construction and Reconstruction

All public street construction and reconstruction projects in the City of Los Angeles will utilize Best Management Practices and accepted green street infrastructure standard plans to assess drainage, stormwater infiltration, and water quality needs. Street resurfacing projects will be coordinated among city departments to ensure efficiencies in implementation and will utilize Best Management Practices when appropriate.

I. Prioritization of Streets

The system for prioritizing street construction and reconstruction will give a weighted score to street segments based on criteria that include the following:

- Flooding/drainage deficiencies
- Stormwater infiltration and/or capture feasibility for water supply augmentation
- Water quality deficiencies required to be remediated under the City's Municipal Separate Storm Sewer System permit or to meet other regulations or community needs.

II. Green Street Infrastructure Implementation

The Bureau of Sanitation will review all street construction, reconstruction, and resurfacing projects and work with the Bureau of Street Services, Bureau of Engineering, and the Department of Water and Power to incorporate green street infrastructure as appropriate.

For a construction or reconstruction project on a street segment with low to moderate flooding, staff will analyze the stormwater infiltration feasibility of the location based on its soil permeability, groundwater levels, slope, and contamination. Staff will determine if stormwater should be captured onsite or treated and discharged and identify appropriate green infrastructure elements from the Best Management Practices Tool Box. Treat and discharge practices (Tool Box 2) will only be utilized if infiltration and/or capture are demonstrated as infeasible. All projects will be required to follow infiltration standards as determined by the Bureau of Sanitation, with the performance goal of infiltrating or capturing for use, at a minimum, the 85th percentile storm. Infiltration standards will aim to maximize infiltration and ensure protection of groundwater quality.

Best Management Practices Tool Box*	
Volume Capture (Tool Box 1)	**Treat and Discharge (Tool Box 2)**
– Curb/parkway retrofits – Infiltration trenches – Infiltration galleries – Dry wells – Bioinfiltration/bioretention without underdrains – Cisterns – Other Storage BMPs – Trees	– Bioswales – Curb/parkway retrofits – Bioretention with underdrains – Treatment train of BMPs with biofiltration prioritized – Trees

*The Tool Box is not an exhaustive list and will be updated by Bureau of Sanitation as new standard plans are developed.

For a street segment with severe flooding, staff will first conduct a storm drain analysis prior to construction or reconstruction, and then proceed with the above stormwater infiltration feasibility analysis. The analysis shall include the ability for upstream capture to reduce flooding impacts. When construction or reconstruction begins, the performance goal of infiltrating or capturing for use will be, at a minimum, the 85th percentile storm standard.

For street resurfacing projects, departments will coordinate on opportunities to implement parkway Best Management Practices such as bioswales, curb/parkway retrofits, and trees that could be implemented either in conjunction with street resurfacing or on an independent parallel process through contracting or local grants.

This policy will produce multi-benefit projects that protect against floods, replenish local water supplies through groundwater infiltration and capture for use, mitigate water pollutants, and provide community enhancements.