#4

Pam Emerson
OSE Green Stormwater Infrastructure Goal RES
July 15, 2013
Version #16

CITY OF SEATTLE

RESOLUTION 31459

A RESOLUTION establishing a City policy that green stormwater infrastructure is a critical aspect of a sustainable drainage system and adopting a 2025 goal for green stormwater infrastructure implementation in Seattle.

WHEREAS, for the purposes of this legislation, green stormwater infrastructure (GSI) is synonymous with "natural drainage solutions" and is defined as the set of distributed stormwater best management practices that mimic natural hydrologic function by slowing and/or reducing stormwater volume close to where it falls as rain; and

WHEREAS, GSI best management practices include but are not limited to tree planting and preservation, green/vegetated roofs, permeable pavement, stormwater cisterns, rainwater harvesting and reuse, raingardens, and bioretention cells; and

WHEREAS, GSI is a proven approach for achieving water quality, stormwater control, flooding prevention, and creek protection goals; and

WHEREAS, GSI reduces the strain on the City's sewer system and stormwater system and preserves system capacity, which will be important in managing Seattle's growth and the potential precipitation impacts from climate change; and

WHEREAS, the Green Ribbon Commission, charged with developing climate action recommendations for inclusion in the next version of Seattle's Climate Action Plan, has identified enhancing the resilience of Seattle's drainage system as a critical climate adaptation measure and has recommended (as a quick start action) the adoption of a green stormwater infrastructure policy that affirms GSI as the preferred stormwater management tool and articulates pathways for multi-agency implementation; and

WHEREAS, Seattle's Urban Forest Stewardship Plan highlights the stormwater benefits of urban trees and forested park lands among the many social, ecological and economic benefits of Seattle's urban forest; and

WHEREAS, GSI projects should closely coordinate with urban forest recovery efforts to strategically prioritize and sequence tree planting efforts; and

WHEREAS, the prioritized use of locally generated compost in GSI projects supports the City's solid waste management goals; and

WHEREAS, GSI can provide additional community benefits, such as increased tree canopy, improved pedestrian safety, new small business opportunities, improvement to

streetscapes or bikeways that provide appreciable economic and aesthetic value, and climate mitigation and adaptation value; and

WHEREAS, certain GSI practices have been integrated into Seattle's Green Factor landscape standards and GSI is being considered as a potential component of Neighborhood Greenway development and other right-of-way improvement efforts; and

WHEREAS, GSI provides opportunities to leverage public investment and promote public education via collaborative partnerships with the private sector; and

WHEREAS, Seattle has been a national leader in the development and delivery of high-performing GSI projects and programs for more than a decade; and

WHEREAS, the City will be obligated to require and use low impact development best management practices in accordance with its 2013 National Pollutant Discharge Elimination System municipal stormwater permit, and the City's Stormwater Code requires the use of certain GSI practices to the "maximum extent feasible"; and

WHEREAS, green infrastructure is encouraged in the pending Combined Sewer Overflow Consent Decree between the City of Seattle and the U.S. Department of Justice in the form the Seattle City Council authorized by Council Bill 117481 (2012); and

WHEREAS, a community-wide GSI goal and coordinated approach to implementation will help ensure that GSI is implemented to the maximum extent feasible and designed to improve both water quality and community livability; NOW THEREFORE,

BE IT RESOLVED BY THE CITY COUNCIL OF THE CITY OF SEATTLE, THE MAYOR CONCURRING, THAT:

Section 1. The City of Seattle recognizes green stormwater infrastructure (GSI) as a critical aspect of a sustainable drainage system and an essential aspect of a livable community and adopts a policy to: a) rely on GSI for stormwater management wherever technically feasible and aligned with urban development priorities; and b) integrate GSI into other appropriate infrastructure investments in order to maximize GSI's community benefits; and c) encourage and facilitate the implementation of GSI on private land, where appropriate; and d) when appropriate, encourage leveraging of City GSI dollars with outside funding; and e) explore novel

and innovative funding, financing and partnership opportunities to support GSI implementation efforts; and f) provide opportunities for civic engagement for public GSI projects.

Section 2. The City adopts the following GSI implementation goal:
Seattle will strive to manage 700 million gallons of stormwater annually with GSI methods by 2025, to be achieved via a combination of publicly and privately owned and maintained facilities.

Section 3. The Office of Sustainability and Environment (OSE) will work under Executive Order 2013-01 to coordinate an interdepartmental effort to develop and deliver a "2025 GSI Implementation Strategy" by June 30, 2014. Seattle Public Utilities (SPU), Seattle Department of Transportation (SDOT), Department of Planning and Development (DPD), Seattle City Light (SCL), and Department of Parks and Recreation (Parks) will collaborate with OSE to develop and implement the strategy. In support of that strategy, OSE will work with affected City departments to:

- Balance the demands of increasing density with community livability, mobility, stormwater management, and other landscape functions in the public right-of-way (ROW) as well as on non-ROW public and private land.
- Identify and pursue leadership opportunities for the citywide integration of GSI and explore strategies to accelerate GSI implementation.
- Identify economic development and job opportunities created by increased implementation of GSI and promote GSI construction methods that meet the policy goals of the City's Sustainable Purchasing Policy.

- Estimate how many gallons each department and their six-year capital improvement programs will contribute toward the goal including associated costs.

Adopted by the City Council the ____ day of _____, 2013, and signed by me in open session in authentication of its adoption this_____ day of _____, 2013.

_____

President _____of the City Council

THE MAYOR CONCURRING:

_____

Michael McGinn, Mayor

Filed by me this ____ day of _____, 2013.

_____

Monica Martinez Simmons, City Clerk

(Seal)

Form revised: December 12, 2012

FISCAL NOTE FOR NON-CAPITAL PROJECTS

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Legislation Title:

Green Stormwater Infrastructure: 2025 Goal and Implementation Strategy

Summary of the Legislation:

This legislation establishes a City policy that green stormwater infrastructure (GSI) is a critical aspect of a sustainable drainage system in Seattle and sets a citywide 2025 implementation goal for GSI. It acknowledges that City departments will define a coordinated and consistent approach to achieving the goal via a 2025 GSI Implementation Strategy under Executive Order 2013-01.

Background:

The purpose of the legislation is to:

1) Explicitly underscore the City's policy commitment to relying on green stormwater infrastructure (GSI) for stormwater management wherever technically feasible and aligned with urban development priorities

2) Ensure GSI is fully integrated into the planning and design of other appropriate infrastructure investments in order to maximize community benefits and public value

3) Set a 2025 implementation goal for GSI in Seattle that drives coordination and innovation

The legislation is intended to articulate a clear City-wide policy stance and to support on-going City leadership in the arena of integrated urban green infrastructure.

For the purposes of this legislation, "GSI" is synonymous with "Natural Drainage Solutions" and is defined as the set of distributed stormwater best management practices that mimic natural hydrologic function by slowing and/or reducing stormwater runoff volume close to where it falls as rain. GSI practices include but are not limited to: tree planting and preservation, green/vegetated roofs, permeable pavement, stormwater cisterns, rainwater harvesting and reuse, rain gardens, and bioretention cells.

SPU has pioneered and led the City's GSI work for over a decade, via a series of increasingly large and more complex projects. This work has proven GSI's performance efficacy and has

provided substantial opportunity for honing both technical and community engagement protocols and procedures. GSI best management practices are now ripe for intentional integration into the urban fabric, more broadly. To be effective, this step requires a coordinated, City-wide, inter-departmental approach. This legislation is therefore also intended to backstop the transition of GSI implementation from a pilot project phase to a phase characterized by an integrated, City-wide approach.

____ **This legislation does not have any financial implications.**

__X__ **This legislation has financial implications.**

Appropriations Notes:

No new appropriations are proposed for 2013-2014, beyond current SPU & SDOT CIP budgets.

OSE is coordinating the development of a 2025 Implementation Plan for delivery in Q2 2014. The plan will:

1) Detail siting and design guidance for optimizing GSI installations in the public right-of-way (including GSI integration with Neighborhood Greenways)

2) Outline cutting edge leadership/innovation opportunities for GSI implementation (unique capital projects, important technical research/monitoring, financing mechanism/s, etc.)

3) Summarize the economic value of social and environmental benefits of GSI, above and beyond water quality benefits

4) Project achievable GSI implementation levels given *current* funding sources and adopted budgets

5) Detail implementation scenarios for achieving the 2025 goal and identify projected required funding levels/breakdown for each. Project types/funding sources will include: City appropriations, grant/foundation funding, public-private leveraging, King County partnerships, Federal and state funding sources, and innovative funding mechanisms such as fee-in-lieu.

Table 1 summarizes a starting point for this analysis, breaking out past, current and to-be-determined GSI implementation by project type/funding source. Implementation units are in millions of gallons managed annually.

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OSE Green Stormwater Infrastructure Goal FISC
April 17, 2013
Version # 6

Table 1:
Baseline for 2025 Implementation Plan // Scenario Development (gallons managed annually with GSI)

Type of Project (Funding Source)	**Past** (2000-2013)	**% of Past Project total (119.4 M gal.)**	**Present Trajectory** (2013-2018 estimates based on current policy & adopted CIP budgets)		**% of Present Trajectory total (105.8 M gal.)**	**To Be Determined** (One potential scenario which will serve as a starting point for GSI Implementation Strategy development)		**% of TBD total (488.3 M gal.)**
SPU Capital Projects	SEA Streets, Carkeek, Cascade, Broadview & Pinehurst Green Grids, High Point, Thornton Creek Water Quality Channel, Ballard Pilot **115M**	**96%**	CSO program Creek/lake Watersheds [i.e.: Swale on Yale; Venema]	**59.2M**	**56%**	RainWise (beyond CSO basins) Integrated Planning Outcome TBD	**146M**	**30 %**
Stormwater Code (Public)	**0.125M**	**0%**	Standard Projects [i.e.: SDOT code-triggered projects]	**2M**	**2%**	Standard Projects Large-Scale/Unique Projects i.e.: Central Waterfront, etc.	**19M**	**4%**
Stormwater Code (Private)	**2.98M**	**2.5%**	Standard Projects [GSI to the Maximum Extent Feasible]	**7.3M**	**7%**	Standard Projects Large-Scale/Unique Projects i.e.: Yesler Terrace, Basketball Arena, etc.	**62.4M**	**13%**
Strategic Partnerships (cost-sharing, beyond code)		**0%**	King County RainWise *Estimates in flux right now, per negotiations w/KC* King County Barton Basin Roadside Bioretention	**29.1M**	**27.5%**	Large-Scale Redevelopment i.e.: 2030 District, Light Rail Stations, etc. Fee-in-Lieu of Code Req. State-Funded ROW Retrofit Program Grant-Funded Innovation Program King County GSI for CSO Reduction	**221.4M**	**45%**
Voluntary Action	[green roofs, non-code] **1.3M**	**1%**	Green Factor [beyond SW code] 12,000 Rain Gardens SDOT [Complete Streets, Street Fund, etc.]	**8.2M**	**7.8%**	Stormwater Facility Credit (Update) TBD	**39.5M**	**8%**
TOTAL	**119.4M**			**105.8M**			**488.3**	
SUM TOTAL				**225.2M**			**700M**	

Of all potential future funding sources, there is greatest near-term certainty around SPU's projected investments (through 2018). Table 2 summarizes SPU's 2013-2018 CIP budget. A discussion of operations and maintenance (O&M) costs follows Table 2.

Table 2:
SPU Green Stormwater Infrastructure CIP Cost Summary Information: 2013-2018
(millions of dollars, rounded)

Program Area	2013		2014	2015	2016	2017	2018	
	Adopted	Projected	Projected	Projected	Projected	Projected	Projected	
Combined Sewer Overflow Basins (TOTAL)	4.8	4.2	5.7	6.3	6.1	4.9	4.0	
Right-of-Way	3.4	2.1	3.0	4.2	3.6	3.2	4.0	
RainWise	1.4	2.1	2.7	2.1	2.5	1.7	0	
Venema Basin	0.50	0.59	2.43	1.22	0	0	0	
Swale on Yale	2.48	2.82	0.26	0.24	2.52	0.24	0.69	
TOTAL	7.8	7.6	8.4	7.7	8.6	5.1	4.7	
SUM TOTAL								42.1

O&M costs

Current data for the O & M costs of City-owned roadside green stormwater infrastructure (rain gardens or natural drainage systems in the right-of-way) estimates $2.00 - $2.60 per square foot of GSI facility (annually), depending on the density of facilities to be managed, contracting structures, landscape maturity, and summer watering demand. This estimate includes the entire landscaped area, hardscape area, crew travel and labor, any needed replacement material, and program management costs.

A conservative estimate for a representative long block (660') where stormwater runoff is fully managed with roadside natural drainage systems will have approximately 4500 square feet of landscaped area, depending on variables such as the depth of the swale, soil infiltration rate, and the designed performance target. This equates to an estimated annual O&M cost of $9000-$11700, per fully managed block.

As a point of reference, the current budgeted scope for a potential "Phase II" set of roadside bioretention (GSI) facilities in Ballard for combined sewer overflow control is to site and design up to 10 long blocks (or 20 short – 330' – blocks).

Anticipated Revenue/Reimbursement Resulting from this Legislation:

None

Total Regular Positions Created, Modified, or Abrogated through this Legislation, Including FTE Impact:

None

Other Implications:

a) **Does the legislation have indirect financial implications, or long-term implications?**

Yes. The primary (short term) indirect cost is the staff time required for inter-departmental coordination and formal review of the 2025 GSI Implementation Strategy under Executive Order 2013-01. This cost is estimated to be no more than 4 hours per week (.1 FTE) for 6 months, in these key departments: SPU, DPD, SDOT, SCL and Parks. OSE has existing staff capacity for leading inter-departmental coordination and strategy development, and it is expected that the coordination role within other affected departments will also be staffed with existing resources.

Possible long-term implications are discussed above.

b) **What is the financial cost of not implementing the legislation?**

One of the main purposes of the legislation is to gain efficiencies (such as avoided community engagement costs achieved via coordinated inter-departmental outreach processes and avoided capital costs achieved via coordinated and purposefully sequenced right-of-way improvement planning, design and construction). These efficiencies would be unlikely if the legislation were not implemented.

c) **Does this legislation affect any departments besides the originating department?**

Yes. The legislation has policy implications on OSE, SPU, FAS, DPD, SDOT, SCL and Parks, who are all required to pursue a coordinated approach to GSI planning and implementation to achieve the 2025 target. SPU and OSE have briefed the directors of impacted departments, and department staff will participate in the development of the GSI Implementation Strategy.

d) **What are the possible alternatives to the legislation that could achieve the same or similar objectives?**

The main alternative is the status quo: No established GSI policy and no goal for GSI implementation in Seattle. Leadership will continue to come from SPU and coordination will proceed on an ad-hoc basis, as a function of staff-level good will and volunteered time.

e) Is a public hearing required for this legislation?

No hearing is required.

f) Is publication of notice with *The Daily Journal of Commerce* and/or *The Seattle Times* required for this legislation?

No.

g) Does this legislation affect a piece of property?

No.

h) Other Issues:

No other issues are identified at this time.

List attachments to the fiscal note below:

None