



Policy and Regulatory Opportunities Brief

GREEN INFRASTRUCTURE, CLIMATE RESILIENCE, & HEALTH EQUITY POLICY AGENDA

MAY 2022

Current State and Local Policies & Regulatory Structures Impede Green Infrastructure Expansion

Regulatory and legislative tools to increase implementation of green infrastructure (GI) are important because they often yield faster and surer results than could be achieved solely with projects on publicly owned lands or voluntary measures by private landowners. Current regulatory and legislative approaches do too little to encourage, incentivize and support the much-needed expansion of GI.

There are few mechanisms to encourage, let alone require, the use of GI in various state and local policies, regulations, or programs. Use of GI is not prioritized in current regulatory structures, including the municipal separate stormwater system (MS4). While many state and local programs, including stormwater and transportation regulations, allow the use of GI in meeting program requirements and goals, the current structure and priorities of existing programs are too narrow to achieve the broad implementation of GI needed to advance community climate resilience and health equity. Furthermore, narrow, sector-specific standards and overall lack of standards for GI has failed to produce innovations that would yield broader health, climate, and equity benefits. For example the MS4 permits require permittees to meet clearly defined pollution prevention/reduction standards in order to protect water quality for the sake of public health, however this narrow scope of protecting public health could be vastly expanded with the prioritization of GI to address water pollution and improve air quality and community

access to greenspace that GI can provide (See [Data Brief](#) for more information).

Robust state and local legislation and regulations present the opportunity to create a strong framework to prioritize GI in stormwater management and other sectors. Regulations and requirements should also prioritize GI over gray infrastructure whenever possible. Key opportunities for expanding GI through regulation include changes to municipal separate stormwater system (MS4) permitting and regulations, state building codes, and state and local policies and programs.

Pass Supportive Legislation & Establish Robust Regulations to Increase Green Infrastructure

Stormwater Permitting Changes to Increase Green Infrastructure

Given the opportunity to integrate GI into new or retrofitted stormwater management projects, it is critical to address shortcomings in the current stormwater management permitting system. California's Municipal Stormwater Programs regulates storm water discharged from municipal separate storm sewer systems (MS4s) throughout the state. The Stormwater Program manages the Phase I permits (municipalities serving over 100,000 people), Phase II permits (municipalities serving less than 100,000 people), and the stormwater permit for the Department of Transportation. The State Water Resources Control Board and the Regional Water Quality Control Boards (Water Boards) implement and enforce

the stormwater program. MS4 permits require the discharger (often a group of co-permittees encompassing an entire metropolitan area) to develop and implement a Stormwater Management Plan or Program, with the explicit goal of reducing the discharge of pollutants to the maximum extent possible.¹ MS4 Plans must include “pollution prevention measures, treatment or removal techniques, monitoring, use of legal authority, and other appropriate measures to control the quality of stormwater discharged.”² While permittees are allowed to include GI elements within their Stormwater Management Plan, they are not required to use GI wherever possible. Updating MS4 permit requirements would have major implications for GI scale-up across the state given Phase I, II, and Department of Transportation MS4 permits.

- **Integrate Prioritization of Green**

Infrastructure into MS4 Permitting - the State Water Board, Stormwater Program should update stormwater permitting requirements, standards, and accountability processes to prioritize the use of GI whenever possible in regional Stormwater Management Plans. Currently permitting requirements prioritize pollution prevention, treatment, and removal techniques, while essentially ignoring other potential impacts/outcomes associated with stormwater management systems. Better integration of a broader array of outcomes into permitting and regulatory requirements could enhance optimization of health, social, environmental, and climate benefits achievable through multi-benefit stormwater management.

- MS4 permittees should be required to prioritize multi-benefit (GI) projects and investment in communities disproportionately impacted by pollution burden, climate impacts, and health inequities in Stormwater Investment Plans. For example, the [Upper San Gabriel River Watershed Area Stormwater Investment Plan](#) outlines priority stormwater management projects for investment over a five year period; the Plan includes increased point allocations for projects that include nature-based solutions and invest in “disadvantaged communities.”
- Expand MS4 permit accountability metrics, including standards, metrics and evaluation, enforceable mechanisms for operations and maintenance (O&M), and modification provisions to reflect those aligned with GI implementation



as opposed to metrics only associated with gray infrastructure.³ Expanded accountability metrics may include:

- **Standards** should articulate the desired result of the GI strategy. For example, “Site designs for all new and redevelopment require management measures that keep and manage on site the first one inch of rainfall in the designated period. The first one inch of rainfall must be 100% managed with no discharge to surface waters.”⁴ While this standard does not explicitly state which GI strategies must be used, it outlines a standard that can only be achieved through the implementation of GI.
- **Metrics** must be quantifiable as a part of permit compliance. Metrics for GI may be very different than those for gray infrastructure and should be expanded to include metrics for GI such as:
 - Square footage and capacity of green roofs.
 - Square footage of permeable pavements and surfaces.
 - Number and capacity of rain gardens.
 - Acreage of impervious surfaces in the service area where rainwater drains to GI, not to gray infrastructure.
- **Operations and Maintenance** for GI are often more frequent and ongoing than maintenance and repairs for gray infrastructure. Permit guidance should include plans for GI O&M protocols, schedules, responsible municipal departments, and identification of sustainable funding.

> State Water Resources Control Board and the Water Boards should provide technical assistance and guidance to permittees on the integration of GI and provide reference to best practices.

- **Develop Public Health and Equity Assessment for MS4 Permits** – The Water Boards should develop a framework to assess the public health, climate justice, and equity impacts and benefits of MS4 permits that can be included with the permittee’s final permit application. The Water Boards have already developed [Guidance for Obtaining Phase I MS4 Permit Compliance Costs](#) which outlines the process for the Water Boards to complete a cost assessment for the planning and implementation of MS4 permit projects. The Water Boards should collaborate with relevant state and local agencies/departments, including Department of Public Health and local health jurisdictions, to develop the assessment framework and appropriate methodology.

State Level Policy & Regulatory Opportunities to Advance Green Infrastructure

The Office of Planning and Research (OPR) proposed Green Infrastructure Workgroup (see [Coordination Brief](#)) should identify additional legislative and regulatory barriers to expanded GI and propose relevant policy solutions. The policy solutions should include the following:

- **Pass Legislation Requiring Prioritization of GI in all Relevant State-Funded Infrastructure Projects** – GI should be mandated as the default in all relevant infrastructure developments or improvements, including stormwater management (as described above), transportation infrastructure (see below), commercial and residential construction, school construction or improvements, and parks. (See the [Funding Brief](#) for more information on financial and development incentives for GI in private development and projects.)
- **Require Green Infrastructure in all Transportation Projects** – Enact legislation requiring the Department of Transportation (CalTrans) to plan, implement, and maintain GI in all relevant transportation projects, including new projects and upgrades or repairs. Given CalTrans’ ~ \$17 billion dollar budget (2021-2022) establishing this requirement in projects and funding, provides a critical opportunity to increase the implementation

of GI across the state. Currently, CalTrans policy allows the use of GI in stormwater management infrastructure in state road construction and repair, but does not give preference or prioritize it. For example, CalTrans’ Complete Streets include guidance for “planning that reduces greenhouse gas emissions, pollution, preserves open space, and incorporates green infrastructure” as a priority area⁵, but does not require the use of GI in transportation projects. This leaves integration of GI to the discretion of staff, many of whom may remain unfamiliar with the benefits of GI and the specifications for its use. In alignment with the proposed changes to the MS4 permitting process outlined above, CalTrans could implement a statewide policy – and associated training, to establish goals for use of GI – as they recently did with Complete Streets features “requiring Complete Streets features in the planning and design of all new projects”.⁶

> In addition to existing Complete Streets requirements, CalTrans should adopt accountability benchmarks for GI in project planning, design, and implementation, such as number of street trees planted, number of GI elements integrated (e.g., bioswales, rain gardens, permeable pavements, etc.)

- **Prioritize Green Infrastructure in Building Codes** – In 2013, California adopted the first in the nation mandatory green building code, California Green Building Standards Code (CALGreen), which is updated every three years. CALGreen addresses planning and design, energy efficiency, water efficiency and conservation, materials conservation and resources efficiency, and environmental quality. CALGreen includes mandatory requirements for residential and nonresidential new building and building



additions of a certain size. Mandatory requirements for nonresidential buildings include stormwater management requirements: (a) Projects that disturb less than one acre of land must comply with lawfully enacted stormwater management ordinances, or prevent soil erosion through implementation of best management practices, (b) Projects that disturb over one acre of land must comply with post-construction requirement detailed in the applicable National Pollutant Discharge Elimination System (NPDES) General Permit for stormwater discharges associated with construction and land disturbance activities, which includes the development of a Stormwater Pollution Prevention Plan. The General Permit includes language to promote incorporation of GI, but does not require it.

- > The Statewide Construction General Permit should be updated to require the use of GI for stormwater management, and require a justified exemption for the use of gray infrastructure.
- > The California Building Standards Commission, in partnership with the Department of Water Resources should develop model language for the implementation of GI to meet stormwater pollution prevention requirements that could be integrated into required Stormwater Pollution Prevention Plans (SWPPP).
- **Pass Land Bank Enabling Statutes** – A land bank is a “governmental or nonprofit authority created to acquire, maintain, and stabilize vacant, abandoned, and tax-delinquent properties while working with other entities to promote the productive reuse of the properties.”⁷ As of 2022, 17 states had



land bank enabling statutes; California is not among them.⁸ Land banks provide a mechanism to preserve limited available land for community benefit as opposed to private development. Land bank enabling statutes should be used as a strategy to increase GI for community benefit in under-resourced communities.

- > Enact state and local policies in areas where at least five percent of privately owned properties are vacant, and tax-delinquent are transferred to community land banks.
- > Land bank enabling statutes can include waiving delinquent property taxes on land parcels designated by community land banks for GI.
- > Land bank property use decision-making should be deferred to community-based organizations and residents in under-resourced communities, to ensure community needs and priorities are elevated.
- > For more information, see: [County Health Rankings - Land Banking](#), [HUD Exchange Land Banking Toolkit](#), [Land Banking: Models from Across the Country](#), and [Land Bank Authorities: A Guide for the Creation and Operation of Local Land Banks](#) by the Local Initiatives Support Cooperation.
 - [Genesee County Land Bank Authority](#) and [Cuyahoga County Land Revitalization Corporation](#) have acquired land that could be used for public greenspace, urban agriculture and/or stormwater management.
- **Mandate Ongoing Investment in Brownfield and Grayfield Remediation** - Brownfields and grayfields⁹ are often the only available land in dense urban environments and can provide space for community preferred uses, such as parks or greenspace. Funding for remediation should include priorities for local workforce development, community input for future use, and integration of GI in development.
 - > Brownfields and grayfields can be turned into parks to incorporate GI and increase equitable access to green and open spaces.
 - See how the Northwest Side Community Development Corporation and the City of Milwaukee’s Redevelopment Authority turned a brownfield into a [Green Tech Station](#) designed to capture stormwater.

Local Level Policies & Regulations

- **Pass Local Ordinances Requiring Implementation of Green Streets** – Local governments should enact policies requiring the implementation of green streets within their jurisdictions. Green streets include GI elements as part of an integrated multi-modal transportation system that emphasizes pedestrian and bicyclist safety, traffic calming, and public transit oriented design.
 - > Municipalities can require collaboration and joint planning across all departments involved in Green Streets at the municipal level, including local transit authorities, sewer and water districts, street design, public safety, and budgeting, among many others.
 - > Green streets plans should identify existing opportunities to integrate GI in other projects and upgrades. For example, repaving projects or sidewalk repairs should integrate GI in alignment with other Green Streets objectives.
 - > For best practices and examples of implementation, see [Complete & Green Streets: Using Green Infrastructure to Create a Safer Environment](#) by New Jersey Future and Vermont’s [Green Streets Guide](#).
 - > For example, the Common Council of Milwaukee passed a [resolution to revise city ordinances](#) to require GI in all large developments.
- **Develop & Disseminate Guidance for Climate Smart Roofs** – State agencies and departments, including the Building Standards Commission, should develop guidance for municipalities regarding the design and installation of green roofs as a climate smart building practice. There are a growing number of municipalities across the country passing green or living roof ordinances. For example, the city of Portland (OR) passed an [Ecoroof ordinance](#) requiring all new buildings over a certain size to have a vegetated roof that covers 100% of the building area in order to capture stormwater, decrease energy use, and reduce pollution. However, California is currently in a severe drought, and especially in particularly arid regions, it may not be feasible or appropriate to install green roofs. State and local agencies should collaborate to develop appropriate guidance for consideration of drought-tolerant native plant green roofs, including opportunities and strategies to evaluate water needs over a multi-year period relative to the other benefits of evapotranspiration, cooling, energy reduction, and stormwater capture.

See the full [Green Infrastructure, Climate Resilience, & Health Equity Policy Agenda](#) for more information.

1. waterboards.ca.gov/water_issues/programs/stormwater/municipal.html
 2. waterboards.ca.gov/water_issues/programs/stormwater/municipal.html
 3. epa.gov/sites/default/files/2015-10/documents/epa-green-infrastructure-factsheet-1-061212-pj-2.pdf
 4. epa.gov/sites/default/files/2015-10/documents/epa-green-infrastructure-factsheet-1-061212-pj-2.pdf
 5. https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/f0020348_complete-streets-elements-toolbox-a11y.pdf

6. <https://dot.ca.gov/news-releases/news-release-2021-039>
 7. https://www.epa.gov/sites/default/files/2015-08/documents/fs_land_banking.pdf
 8. <https://communityprogress.org/resources/land-banks/national-land-bank-map/>
 9. Grayfield refers to land that is underutilized due to disinvestment and is often primarily asphalt.

For more information, please contact:

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