

Potential Metrics for Our Green/Duwamish Stormwater Strategy Objectives

Goal 1: Reduce priority toxics and other pollutants discharging to receiving waters.

Objective 1: Improve source control across multiple sectors (commercial, industrial, agriculture, residential).

Strategies	<ul style="list-style-type: none"> a) Expand and prioritize the implementation of business inspections by both Phase I and Phase II jurisdictions in the Green/Duwamish watershed to ensure stormwater BMPs are in use. b) Work with agricultural communities to support the use stormwater BMPs in agricultural operations. c) Expand data-driven source tracing programs (e.g., Seattle’s storm solids tracing). d) Work with the legislature to test and ban products/chemicals to address known pollution sources and materials. e) Develop a plan to address known sources in commonly used stormwater management materials (e.g., change material specifications).
Potential Metrics	<ul style="list-style-type: none"> • Number of business in compliance with stormwater BMPs. • Decrease in water quality violations from MS4 discharges. • Percent increase in acres of the watershed with source control actions in place.

Objective 2: Increase and improve maintenance practices for stormwater infrastructure.

Strategies	<ul style="list-style-type: none"> a) Repair and maintain stormwater facilities and conveyance systems. b) Remove legacy and ongoing pollutants through enhanced stormwater maintenance practices such as pavement sweeping and conveyance line cleaning. c) Research new maintenance methods and technologies to quantify pollutant-reduction benefits (i.e., green infrastructure maintenance).
Potential Metrics	<ul style="list-style-type: none"> • Decreased number of stormwater facility failures. • Pounds of solids removed from storm systems.

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Objective 3: Increase research on sources of priority toxics.

Strategies	<ul style="list-style-type: none"> a) Research pollution sources affecting stormwater, air and soil (e.g., products, CECs, and PPCPs). b) Increase research around effectiveness of stormwater treatment for both structures and activities.
Potential Metrics	<ul style="list-style-type: none"> • Number of stormwater related studies posted on Washington Stormwater Center’s website. • Number of Chemical Action Plan (CAP) programs affecting water quality. • Increased funding from grants to conduct targeted research.

Objective 4: Retrofit stormwater infrastructure to include or improve treatment.

Strategies	<ul style="list-style-type: none"> a) Implement retrofits of existing development including Roadway runoff systems and transportation infrastructure in order of agreed-upon priority. b) Develop watershed-wide retrofitting needs on a watershed, basin and catchment level.
Potential Metrics	<ul style="list-style-type: none"> • Number of stormwater facilities retrofitted annually. • Increase in acreage of lands with new water quality treatment.

Goal 2: Foster partnerships, broad participation and collaboration amongst watershed stakeholders and communities.

Objective 1: Increase cross-sector and cross-jurisdictional partnerships and collaboration.

Strategies	<ul style="list-style-type: none"> a) Coordinate aligned programs and projects to address common actions (salmon recovery, flood-risk, open space preservation). b) Partner with and provide assistance to facilitate stormwater champions within industry. c) Identify and invest in public/private partnership opportunities.
Potential Metrics	<ul style="list-style-type: none"> • Percent of watershed stakeholder survey respondents who are collaborating on stormwater projects in the watershed.

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Objective 2: Develop tools to increase collaboration amongst stakeholders.

Strategies	<ul style="list-style-type: none"> a) Remove barriers to the public to inspire voluntary action of retrofitting and non-mandatory maintenance of existing stormwater infrastructure. b) Incentivize participation in stormwater partnerships to improve stakeholder and public engagement across the watershed. c) Develop and support resident sampling and stewardship programs.
Potential Metrics	<ul style="list-style-type: none"> • Percent increase in projects implemented and cost savings due to efficiencies gained through collaborative partnerships. • Number of stakeholders involved in watershed decision-making.

Goal 3: Increase access to existing data, research and resources.

Objective 1: Compile and centralize access to existing, available stormwater information.

Strategies	<ul style="list-style-type: none"> a) Develop a map inventory of watershed assets, infrastructure specifications and resources. b) Compile and apply national and state stormwater management research. c) Utilize and leverage available information from existing organizations and programs
Potential Metrics	<ul style="list-style-type: none"> • Percent of watershed stakeholder survey respondents who have better access to available data and information.

Objective 2: Use existing information to prioritize actions regionally.

Strategies	<ul style="list-style-type: none"> a) Consider results of effectiveness studies to inform cost effectiveness. b) Ensure environmental justice communities are reflected in action prioritization in the watershed. c) Prioritize pollutant drivers. d) Prioritize other stormwater improvements (e.g., maintenance, outfall retrofits, retrofit culverts). e) Develop pollutant reduction metrics for maintenance and other operational actions to better understand and customize approaches.
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Potential Metrics	<ul style="list-style-type: none"> Percent of watershed stakeholder survey respondents responding that they have improved action prioritization due to increased access to information.
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Objective 3: Develop prioritized list of capital infrastructure needs (based on agreed-upon priorities).

Strategies	<ol style="list-style-type: none"> Develop a watershed-based list of sequenced capitol retrofit needs (e.g., outfalls, culverts, and aging infrastructure). Gap analysis of capital needs on a recurring schedule. Establish a method of pooling funds to implement the most effective actions.
Potential Metrics	<ul style="list-style-type: none"> Number of basins in the Green/Duwamish Watershed with prioritized lists of stormwater capital infrastructure needs.

Goal 4: Restore natural hydrologic functions through reduction in uncontrolled stormwater runoff flows.

Objective 1: Increase stormwater infiltration and permeability.

Strategies	<ol style="list-style-type: none"> Improve technology related to and increase the appropriate use of permeable pavement, where feasible. Increase use of Low Impact Development BMPs Decrease impervious surfaces in the watershed and preserve and increase permeable landscapes and parcels.
Potential Metrics	<ul style="list-style-type: none"> Percent increase in use of LID and green infrastructure. Number of redirected discharge outfalls. Percent of properties that have no net discharge. Number of basins with basin-wide feasibility analyses.

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Objective 2: Ensure all properties have and maintain stormwater controls.

Strategies	<ul style="list-style-type: none"> a) Strengthen requirements to redevelop and retrofit stormwater infrastructure, and address nonconforming landscapes b) Retrofit under-functioning stormwater flow control and conveyance facilities. c) Implement basin-level public retrofitting programs. d) Conduct riparian tree planting and restoration. e) Conduct maintenance to ensure long-term functionality of private and public infiltration BMPs (i.e., rain gardens).
Potential Metrics	<ul style="list-style-type: none"> • Percent or number of properties with stormwater controls increased. • Number of facilities inspected to determine maintenance needs.

Objective 3: Perform watershed – level basin planning.

Strategies	<ul style="list-style-type: none"> a) Analyze the basin by assessing current zoning and vested rights to determine where there might be insufficient stormwater infrastructure and most beneficial investment opportunities. b) Continue to advance understanding of the impacts of restoring hydrologic functions. c) Assess current conditions and capacity of current infrastructure and operational activities to determine shortfalls in flow control and water quality treatment needs.
Potential Metrics	<ul style="list-style-type: none"> • Number of basin plans created & implemented.

Goal 5: Increase innovation in stormwater management.

Objective 1: Evaluate and implement incentive programs.

Strategies	<ul style="list-style-type: none"> a) Identify and advance effective private incentive programs (e.g., Salmon Safe certification & Envirostars). b) Expand government incentive programs (e.g. rainwise, stormwater facility credits) where the actions are not mandatory. c) Promote project-level Low Impact Development to create awareness of its value.
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Potential Metrics	<ul style="list-style-type: none"> Number of incentive programs in the watershed.
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Objective 2: Increase research in key stormwater management areas.

Potential Metrics	<ul style="list-style-type: none"> Number of research studies conducted.
Strategies	<ol style="list-style-type: none"> Partner with educational institutions to conduct research. Improve understanding of the effects of infiltration on groundwater quality and quantity and relation to surface water. Research the use of restored riparian corridors as a stormwater treatment system. Develop metrics for stormwater management programs such as: <ol style="list-style-type: none"> Output metrics (e.g., assets mapped, studies conducted, agreements reached) Outcome metrics (e.g., behavior change, public reached, water quality targets met). Investigate the efficacy of regional facilities (i.e. mitigation banking, CASQA, basin treatment). Quantify Low Impact Development benefits. Pilot test innovative stormwater management technology.

Objective 3: Support stormwater NPDES permit implementation

Potential Metrics	<ul style="list-style-type: none"> Number of instances where research is used to alter NPDES permit requirements through adaptive management.
Strategies	<ol style="list-style-type: none"> Add NPDES permit coverage for secondary MS4 permittees (e.g. schools, ports, drainage districts). Continue audits of effectiveness of NPDES stormwater permit for municipalities, transportation, industrial and construction sectors. Address barriers to compliance through technical assistance. Continue and increase implementation of NPDES activities. Fully implement all stormwater permit requirements (Construction, Industrial, Secondary, City/County).

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Goal 6: Increase awareness and an understanding of stormwater management.

Objective 1: Research and carry out best methods for stormwater management messaging to target audiences.

Strategies	<ul style="list-style-type: none"> a) Develop, test and implement effective stormwater messaging and delivery to diverse audiences. b) Localize and deliver regional stormwater best management practice education and social marketing campaigns for target audiences. c) Educate the public and legislators about economic and health benefits of stormwater management. d) Develop an education campaign for land owners/land users about stormwater impacts of their actions and the benefits of stormwater management.
Potential Metrics	<ul style="list-style-type: none"> • Percent of public survey respondents aware of the impacts of stormwater and solutions and changed public behavior.

Objective 2: Expand stormwater management education, advocacy & training.

Strategies	<ul style="list-style-type: none"> a) Develop a public education and advocacy campaign to support legislation and funding for stormwater actions. b) Expand community and workforce stormwater management training (e.g., Dirt Corps) in part to increase innovation in stormwater management. c) Conduct regional training for jurisdictions, developers, private owners and other stakeholders about existing data, research and resources.
Potential Metrics	<ul style="list-style-type: none"> • Number of stormwater education programs. • Number of legislative efforts banning harmful pollutants in products.

Goal 7: Build a coalition or collaborative entity to carry out the vision for the Green/Duwamish watershed wide stormwater management strategy.



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Objective 1: Develop a strategy to build the G/D stormwater management coalition or collaborative entity.

Strategies	<ul style="list-style-type: none">a) Identify example models of collaboration for stormwater management.b) Work with watershed stormwater stakeholders to identify successful representation of a coalition.c) Identify roles and responsibilities of a coalition.
Potential Metrics	<ul style="list-style-type: none">• Stormwater coalition is built.