

APPENDIX II: FULL LIST OF RECOMMENDATIONS

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No.	Summary of Recommendation	Key Players	Cost*	Time**
Stormwater Management & Green Infrastructure				
SWM - P1	PRIORITY: Increased state support for local efforts to promote, incentivize and implement LID and rainwater harvesting, and remove barriers from codes, rules, and permitting processes.	ACWA, OEC, Governor, DEQ, DLCDC, League of Oregon Cities, state legislature, regional councils	\$\$\$	Long-term
SWM - P2	PRIORITY: Explore and develop sources of funding to support local efforts to update local development codes, develop stormwater programs, and implement and monitor LID projects.	OWEB, DEQ, DLCDC, higher ed., state legislature, OEC, regional councils	\$\$\$	Long Term
SWM - P3	PRIORITY: Improve collaboration among DEQ's stormwater, UIC and TMDL programs.	DEQ		Short Term
SWM - P4	PRIORITY: Explore adding provisions to water quality permits and regulations that promote innovations in stormwater management and green infrastructure and build the connection between flow, water quality, and overall stream health.	DEQ		Short and Long Term
SWM - P5	PRIORITY: Develop regional stormwater goals and manuals.	Local governments, regional councils, DEQ		Long Term
SWM - P6	PRIORITY: Increase funding for DEQ's stormwater program.	DEQ, state legislature	\$\$	Long Term
SWM - P7	PRIORITY: Develop incentives to support the creation of stormwater programs in smaller communities.	DEQ, local government	\$	Long Term
SWM - P8	PRIORITY: Strengthen the compliance program for all stormwater permits, including industrial and construction stormwater permits.	DEQ, local governments	\$	Short Term
SWM - P9	Explore and strengthen connections to water in Oregon's land use laws and improve coordination between state agencies.	State agencies, Governor		Long Term
SWM - P10	Offer priority processing by local jurisdictions of plans for LID projects in order to speed up the permitting process and provide a greater incentive to use LID.	Local governments		Long Term
SWM - P11	Clarify that the state plumbing code does allow on-site stormwater management and rainwater harvesting, as long as the local government allows it.	Oregon Building Codes Division		Long Term

* A general estimate of high or low cost.
 ** We believe short-term actions could be implemented in the next two years, while longer-term actions will require several additional years.

STORMWATER SOLUTIONS

Turning Oregon's Rain Back into a Resource

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STORMWATER MANAGEMENT & GREEN INFRASTRUCTURE				
Policy and Programmatic Recommendations				
SWM - P12	Create local fees to fund stormwater programs, and provide discounts and other incentives for on-site stormwater management.	Local governments	\$\$	Long-term
SWM - P13	Allow LID practices to receive credit toward stormwater treatment and detention, if applicable, in local stormwater requirements.	Local governments		Long Term
SWM - P14	Form local Stormwater Solutions Teams	Local governments, watershed councils, conservation groups, OEC, other partners	\$	Short Term
SWM - P15	Incorporate stormwater criteria into the decision-making process for state allocation of transportation dollars.	Oregon Department of Transportation		Long Term
SWM - P16	Promote green infrastructure on industrial properties when appropriate.	DEQ, local governments		Short Term
SWM - P17	Conduct local government follow-up inspections of private and public stormwater facilities that require maintenance after one year and again at least every five years.	Local governments	\$	Short Term
SWM - P18	Survey local jurisdictions about what they do to promote sustainable stormwater management and publish the survey results.	ACWA, OEC, local governments, DEQ, regional councils	\$	Short Term
SWM - P19	Look into requirements for federal redevelopment and housing programs, such as HOPE VI, to ensure they encourage LID.	OEC, ACWA, other partners		Short Term
SWM - P20	Encourage local jurisdictions or regional collaborations to evaluate the benefits and costs of adopting a continuous rainfall simulation model for their stormwater programs.	Local governments, regional councils	\$	Long Term
Education, Technical Assistance, Info-sharing				
SWM - E1	PRIORITY: Develop an educational program focused on growing communities with limited government resources or other barriers to implementing LID. Reach multiple audiences including government staff, elected officials, developers and builders, practitioners, and others.	OSU extension, community colleges, local governments, regional councils, watershed councils, soil and water conservation districts, OEC and other partners	\$\$	Short Term
SWM - E2	PRIORITY: Compile information about long-term maintenance costs of low-impact stormwater facilities.	ACWA, local governments, regional councils	\$	Long Term
SWM - E3	PRIORITY: Develop a stormwater management degree program or class at an Oregon Community College or University that blends landscape architecture and engineering.	Higher Education System	\$	Long Term
SWM - E4	PRIORITY: Encourage green building certification programs (LEED, Earth Advantage, Salmon Safe) to require a minimum level of LID practices, not just optional points, to ensure that certified sites protect hydrology and water quality.	Green Building Council, Earth Advantage, Salmon Safe		Long Term

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No.	Summary of Recommendation	Key Players	Cost	Time
Education, Technical Assistance, Info-sharing (CONT.)				
SWM - E5	PRIORITY: Provide a simple owner's manual or brochure for property owners on maintenance responsibilities and benefits of their onsite stormwater facility, and note its existence on the deed.	Realtors, local governments, homebuilders	\$	Long-term
SWM - E6	PRIORITY: Create an online BMP clearing-house of information documenting LID BMPs, including cost/benefit analysis, case studies and effectiveness monitoring results.	ACWA, OEC, local governments, regional councils, national associations	\$	Short-term
SWM - E7	PRIORITY: Install green stormwater facilities at schools, parks, hospitals and other visible properties.	Local governments, regional councils	\$\$	Long-term
SWM - E8	Assemble and provide "Best Practices" training and guidelines related to design, grading, infiltration, soils and plants for LID vegetated facilities.	DEQ, local governments, ACWA, OEC, OSU Extension	\$	Short-term
SWM - E9	Raise awareness within government agencies of how poor coordination and slow permitting processes are barriers to implementing LID practices, and encourage improvements.	OEC, ACWA, local governments		Short-term
SWM - E10	Support developer-led efforts to promote LID.	Homebuilders Association, OEC, regional councils, local governments		Short-term
SWM - E11	Provide market research to builders and developers interested in implementing LID.	OEC, regional councils, local governments		Short-term
SWM - E12	Develop private-public partnerships to promote downspout disconnects, where desirable.	OEC, local governments, businesses	\$	Short-term
SWM - E13	Develop guidelines for porous pavement installation.	Local governments, Asphalt Paving Association		Short-term
SWM - E14	Certify porous pavement installation.	Asphalt Paving Association	\$	Long-term
Technical Research Needs				
SWM - R1	Research is needed to inform the development of regional stormwater goals.			
SWM - R2	Develop cost/benefit and ecosystem services valuation data.			
SWM - R3	Compile information about maintenance costs and long-term effectiveness of proprietary stormwater infiltration devices.			
SWM - R4	Additional research is needed regarding long-term performance, maintenance requirements and costs for pervious asphalt and concrete.			
SWM - R5	Additional research is needed to address groundwater contamination concerns regarding the use of green infrastructure on industrial properties and in wellfield management areas.			
SWM - R6	Additional research is needed on plant materials, their suitability in different conditions around the state, and their water quality impacts.			

STORMWATER SOLUTIONS

Turning Oregon's Rain Back into a Resource

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Technical Research Needs (cont.)				
SWM - R7	Additional research is needed to demonstrate the effectiveness of green infrastructure BMPs in reducing flow, which should reduce the need for traditional stormwater infrastructure (e.g., gutter and pipe systems and large detention ponds).			
SWM - R8	Do a side-by-side comparison of the water quality and flow benefits from porous pavement versus directing water from the street to a swale with soil and plants.			
POLLUTION PREVENTION				
Policy and Programmatic Recommendations				
PP - P1	Incorporate stormwater criteria into the decision-making process for state allocation of transportation dollars.	DEQ, local jurisdictions, developers, home-builders		Long Term
PP - P2	Promote green infrastructure on industrial properties when appropriate.	Local jurisdictions	\$	Short Term
PP - P3	Cities and counties should lead the way by reducing pesticide and herbicide use on their parks and public properties, and converting some areas to native or low maintenance landscaping as demonstration projects.	Local governments	\$	Short Term
PP - P4	Identify catch basins on parking lots and streets with heavy pollutant loads and install an additional filtration device or other BMP, in accordance with permit codes and standards.	Local governments	\$\$	Long Term
PP - P5	Local jurisdictions should ensure a system is in place to detect and respond to spills and dumping in storm drains, and notify nearby property owners when an incident occurs.	Local governments	\$	Short Term
Education, Technical Assistance, Info-sharing				
PP - E1	PRIORITY: Expand and standardize stormwater courses for Designated Erosion and Sediment Inspectors.	DEQ, homebuilders, General Contractors, local jurisdictions, educational partners		
PP - E2	PRIORITY: Gather information from municipal construction programs and provide that information to smaller cities; encourage them to implement the programs most applicable to them.	Local jurisdictions, regional councils, ACWA, OEC		
PP - E3	PRIORITY: Provide training to building inspectors, Watershed Councils and other citizen groups about red flags to look for at construction sites.	Local jurisdictions, OEC and other educational partners, watershed councils, neighborhood associations		
PP - E4	PRIORITY: Compile information about successful programs to reduce urban use of pesticides and fertilizers and make that available on the web.	ACWA, local jurisdictions, OEC, regional councils		

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Education, Technical Assistance, Info-sharing (cont.)				
PP - E5	PRIORITY: Promote less input-intensive alternatives to grass lawns, including native landscaping and "eco-lawns", which use less water, need less mowing and thrive without fertilizers	Local jurisdictions, OEC, regional councils	\$	Short Term
PP - E6	PRIORITY: Study ways to reduce stormwater pollution from unregulated, semi-industrial businesses such as drive-throughs, stores with heavily used, large parking lots, garden centers, used tire centers, and gas stations.	Local jurisdictions, OEC, DEQ, regional councils	\$	Long Term
PP - E7	PRIORITY: Develop an education and incentive program to increase cleaning/maintenance of private stormdrains and catchbasins.	Local jurisdictions	\$	Short Term
PP - E8	Develop educational programs to reduce automotive fluid leaks.	Local governments, OEC, regional councils	\$	Short Term
PP - E9	Educate business owners and managers about how to clean their parking lots without hosing them down.	Local governments, OEC	\$	Short Term
PP - E10	Encourage the Oregon Contractors Board to include in its erosion control certification a training on how to adapt an engineer's design to the site and make sure it's working.	Oregon Contractors Board	\$	Short Term
PP - E11	Continue to support, promote and expand household hazardous waste collection events in order to reduce dumping of pollutants in stormdrains.	Local governments, regional councils	\$	Short Term
PP - E12	Study ways to reduce other sources of stormwater pollution, including zinc in moss killer and galvanized metal, and copper in flashing, downspouts and automotive brake pads.	Local governments, DEQ, ACWA, OEC	\$	Long Term
PP - E13	Expand stormdrain marking programs.	Local governments, regional councils	\$	Short Term
Technical Research Needs				
PP - R1	Explore PAH-free alternatives to tar-based parking lot sealants.			
PP - R2	Perform research to determine the effectiveness of optimized or enhanced street sweeping.			