

**Attachment 6 Examples of Print Materials for Commercial Businesses**

Some materials are not available in electronic formats.

# Protect Morro Bay and the Ocean



## Did you know that ...

Every time you wash oils, antifreeze, soapy water, brake dust and other debris into the street these pollutants flow into storm drains and end up in Morro Bay and the Ocean. These pollutants contaminate our local creeks, the Bay and the Ocean and are hazardous to humans, fish, and other wildlife. Water that runs off streets flows into storm drains. Anything entering the storm drains flows directly to Morro Bay without any treatment.

**Remember You are the Solution to Stormwater Pollution!**

## DON'TS:

**Don't** wash vehicles, engines, wheels, and parts outdoors where washwater and debris flows into the storm drains.



**Don't** hose down accidental spills, fluid drips, or allow leaks to accumulate or run across surfaces.



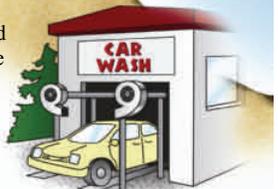
**Don't** store leaky vehicles or equipment outdoors. Never leave oil, antifreeze, or other materials in drip pans or open containers.



**Don't** perform activities outdoors that might result in fluid spills (i.e., oil changing or radiator work) or generate small particles and dust (i.e., grinding or sanding).

## DOs:

**Do** wash vehicles, engines and parts in a designated area. The wash area must be covered, paved, bermed, and drain to treatment. Alternatively, take vehicles to a commercial car wash.



**Don't** allow leaves or debris to accumulate. Never hose down pavements and other wastes into the street, storm drains, or sanitary



**Do** keep your facility clean. Sweep or vacuum work area after each shift and properly dispose of wastes.

**Do** clean accidental spill with dry cleaning methods. Drain fluids from leaking or wrecked vehicles. Store fluids or wastes indoors or in closed, labeled containers with proper secondary containment.



**Do** perform all maintenance and repair work indoors. Clean brake dust off with damp towels or use a HEPA filter vacuum. Collect all dust from brakes and dispose of it as hazardous wastes or recycle as scrap metal.



**Always** clean up spills promptly with a rag, absorbents, or wet/dry vacuum. If water or cleansers are needed, spot mop area and dispose of washwater as hazardous waste.



Water that runs off sidewalks, alleys, and street gutters flows into storm drains. Anything entering storm drains flows directly to the Bay or ocean without treatment. This is different from sanitary sewers (sinks, toilets, etc.) that flow to a waste water treatment plant!

A special thanks to the Alameda Countywide Clean Water Program and the City of Pleasanton for poster concept and design.



# Protect Our Coast and the Ocean



## Did you know that ...

Every time you wash oils, antifreeze, soapy water, brake dust and other debris into the street these pollutants flow into storm drains and end up in the Ocean. These pollutants contaminate our local Creeks and the Ocean and are hazardous to humans, fish, and other wildlife.

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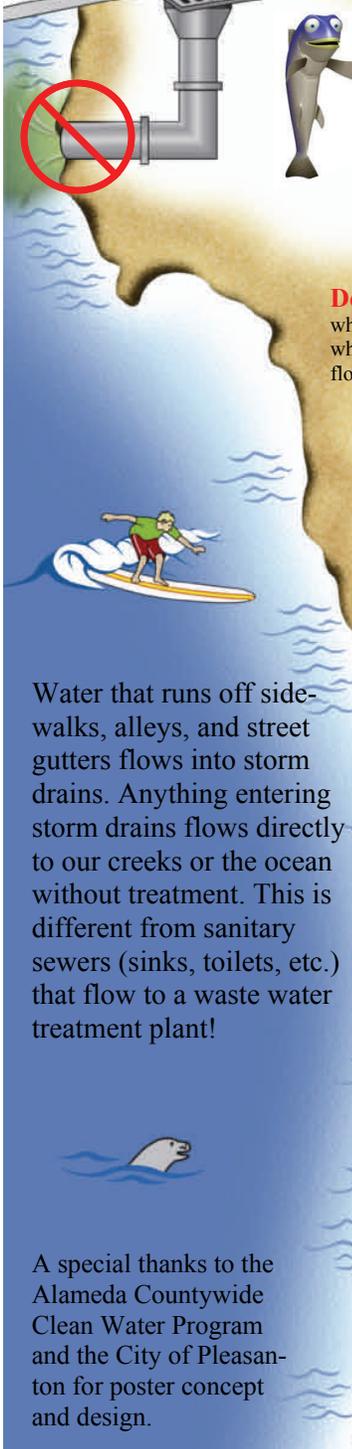
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# Protect Morro Bay and the Ocean



## Did you know that ...

Every time you wash down storage areas, wash kitchen mats in an alley or sidewalk, or dump mop water outside—food particles, grease, cigarette butts, cleaners and other wastes flow into storm drains and end in our local creeks, Morro Bay and the Ocean. These wastes contaminate our local waterways and are hazardous to humans, fish and other wildlife.

**Remember You are  
The Solution to  
Stormwater Pollution!**



## DON'Ts:

**Don't**  
Wash floor mats, hood filters, and other equipment outdoors.



## DOs:

**Do!**  
Wash mats indoors near a kitchen floor drain connected to a sanitary sewer or in the mop sink..



**Water** that runs off sidewalks, alleys, and street gutters flows into storm drains. Anything entering storm drains flows directly to Morro Bay and the Ocean. Unlike sanitary sewers (sinks, toilets etc.) which flow to a wastewater treatment plant, storm drains flow directly to local water ways without treatment of any kind!

**Don't:**  
Hose down trash/recycle bins, grease storage or parking areas unless storm drains are blocked and water is vacuumed or pumped to the sanitary sewer.



**Do!**  
Use dry clean methods such as sweeping or vacuuming to keep waste storage areas, parking lots, and other outside areas clean. Use a kitty litter type absorbent on grease and oil spots and to clean up



**Don't:**  
Dump grease into trash bins or sinks. Disposing of grease into sanitary sewers is prohibited because it clogs sewer lines. Never pour grease into gutters or storm drains.



**Do!**  
Collect grease in containers and contact a licensed recycling company to haul them away. The grease will be recycled into useful products like soaps, animal feed, or bio-diesel fuel.



**Don't:**  
Power wash roof exhaust equipment, building exteriors, or other outside areas unless the storm drains are blocked and wash water is vacuumed or pumped to the sanitary sewer.



**Do!**  
Contract with a mobile cleaning company who agrees to collect all wash water for proper disposal. Sidewalks may be rinsed sparingly using water only if trash and debris are first swept up and grease is removed.



# Protect Our Coast and the Ocean



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Every time you wash down storage areas, wash kitchen mats in an alley or sidewalk, or dump mop water outside—food particles, grease, cigarette butts, cleaners and other wastes flow into storm drains and end in our local Creeks and the Ocean. These wastes contaminate our local waterways and are hazardous to humans, fish and other wildlife.

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## **Attachment 7 Examples of Public Education and Outreach Materials for Industrial Operations**

Since industrial operations are regulated under the Statewide Industrial Stormwater Permit, the County will ensure these operations are referred to the current General Permit stormwater requirements at:

[http://www.waterboards.ca.gov/water\\_issues/programs/stormwater/gen\\_indus.shtml#indus](http://www.waterboards.ca.gov/water_issues/programs/stormwater/gen_indus.shtml#indus)

and to ensure that accurate and consistent BMP advice is given, the County will use standard US EPA and CASQA materials where available.

The CASQA Industrial Stormwater BMP Manual is available at:

<http://www.cabmphandbooks.org/Industrial.asp>

The County will also ensure that these operations are aware of the County's new Stormwater ordinance.

# Stormwater Management

## An Overview for Auto Recyclers



You work in the **No.1** recycling industry in America:  
>> **Auto Recycling** <<

**Most auto dismantlers don't think of themselves as environmentalists, but the auto dismantling industry is very important for the environment.**

Did you know that the automobile is the number one recycled product in America? Over 75% of the materials from cars are recycled. Recycled vehicles generate over 12 million tons of recycled steel, saving enough energy to power over 18 million homes for a full year. Your work makes a real difference to the environment.

On the other hand, if you handle wrecked cars or trucks without proper care, it can cause environmental damage. Fortunately, there are some commonsense measures you can take to protect the environment and the business where you work.

### **How can your work on wrecked vehicles damage the environment?**

When it rains or snows, the flowing water can carry oils, antifreeze, and metals off your facility. These materials can end up in streams, rivers, lakes, and bays, killing aquatic life and seriously polluting water bodies in your area where people swim, fish, and boat.

It may be hard to see the connection between what happens at your facility and the effect on the environment. But polluted runoff is real. When polluted by oil, antifreeze, pesticides, animal waste, and a range of other materials, stormwater from business and residential property can add up to a big problem that affects entire communities.

### **What can YOU do?**

You can follow these commonsense practices to do your part to prevent stormwater pollution.

It's just a matter of changing a few habits and acting responsibly, all the time.



# Stormwater Management

## An Overview for Auto Recyclers

### Only Rain in the Drain

If you follow this motto, you're well on your way toward successful stormwater management. Your goal should be to prevent oil, grease, antifreeze, and any other material from mixing with stormwater. Here's how:

#### 1. Prevent spills and leaks.

**Visually inspect vehicles entering the facility for leaks.** If you see a leak, contain it with a drip pan or absorbent material (such as dry sweep or kitty litter) and clean up the residue from the ground.

When removing vehicle fluids, always use a drain pan, drain tables, or pump or suction system to capture the fluids.

#### 2. Clean up spills immediately.

**When spills and leaks happen, clean up as much of the fluid as you can,** as quickly as possible. For small spills use shop rags, oil dry, or absorbent materials. For larger spills use absorbent socks, pads, and pillows.

Spill kits that include absorbent materials like oil dry and/or absorbent pads, socks, and pillows should be placed conveniently around the shop, and you should know where the kits are at all times. Keep brooms, shovels, or scoops near your spill kit.

Place used absorbents in a designated container for proper disposal. Check with your manager before putting used absorbent in a dumpster.

#### 3. Handle fluids properly.

**After you remove vehicle fluids, store the fluids in clearly marked containers.** These containers should have some type of secondary containment (such as a larger drum or a concrete curb) to prevent a large spill from spreading. Make sure not to mix oils with antifreeze or solvents—that can create a hazardous waste, which can't be recycled and is expensive to get rid of. Also make sure to use the right size funnels when pouring fluids into a storage drum. Check the drums regularly for leaks.

#### 4. Drain, cover, and contain all oily parts stored outside.

**If you store oily parts outside or in vehicles that are outside, ensure they are covered to prevent contact with rain or snow. Inspect these areas regularly for spills and leaks.**

### Stick to these practices!

It is important to *always* implement these practices, and to pay special attention to these issues during wet weather.

Be proud of the work you do to protect the environment. What you do in the yard matters to your business and to your community. You can make a difference!

**10,000** professional automotive recyclers to be served

**1200** resource documents provided

**50** states represented

**3** strategic partners

**1** environmental compliance assistance center

**[www.ECARcenter.org](http://www.ECARcenter.org)**



# Environmental Compliance for Automotive Recyclers

This compliance center is brought to you by the



Now everyone in the automotive recycling industry will have one place to go to find current and relevant information to help them comply with federal, state and local environmental laws.

**ECARcenter.org** is an environmental compliance assistance center developed by the Automotive Recyclers Association, the U.S. Environmental Protection Agency and the National Center for Manufacturing Sciences.

Visitors to **ECARcenter.org** will find plain language explanations of the major environmental regulations affecting automotive recyclers, along with links to additional sources of more detailed information.

**ECARcenter.org** is designed to be an interactive web site that allows users to search by state and activity subject. By taking the ECAR Tour, users will eventually have access to more than 1200 informative fact sheets on topics that recyclers care about most — such as stormwater management, hazardous waste handling, used tire storage, and wastewater disposal.

In addition to detailing what is required, **ECARcenter.org** provides extra information to help improve facility operations, including industry Best Management Practices (BMPs) and self-audit checklists. It also contains tools that help users locate other useful resources on the Internet. **ECARcenter.org** centralizes all of this material in a format that is user-friendly and easily printed.

To benefit users further, the site also features up-to-the-minute industry news articles pulled from publications across the country, as well as an interactive calendar feature that allows users to input dates of industry events.

With funding allocated through EPA, **ECARcenter.org** is available at no cost to the user. For more information about the site, contact Michelle Trowbridge with ARA by phone at 703/385-1001, ext. 23 or e-mail [mtrowbridge@belmontcc.com](mailto:mtrowbridge@belmontcc.com), or contact Paul Chalmer with NCMS by phone at 734/995-4911 or by e-mail at [paulc@ncms.org](mailto:paulc@ncms.org).

**Attachment 8 Samples of Construction Site Runoff Public Education and Outreach Materials**

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*Please see the list on the back of this handout for more NPDES Phase II, SWPPP and storm water protection resources.*

***Does Your Project Involve Grading or Site Disturbance of One Acre or More?***

***Is your project part of a common development?***



***If Yes, You Need To Read This Guide to the National Pollution Discharge Elimination System (NPDES) Phase II Storm Water Regulations.***

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***In March of 2003 Phase II of the National Pollutant Discharge Elimination System (NPDES) Final Rule went into effect. It requires permits for all construction projects that disturb one acre or more and if your project is part of a common plan, such as subdivision. The State Water Resources Control Board is the only agency that can grant the permits.***

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### **How Do I Apply for This Permit?**

Owners of new construction must file a complete Notice of Intent (NOI) package and develop a Storm Water Pollution Prevention Plan (SWPPP) *prior to the commencement of soil disturbing activities*. This package should be mailed to the State Water Resources Control Board at:

State Water Resources Control Board (SWRCB)  
Division of Water Quality Attn: Storm Water Permit Unit  
P.O. Box 1977, Sacramento, California 95812-1977

The Board will issue you a NOI receipt letter with a WDID# (Waste Discharger Identification Number) within approximately two weeks of receipt of the application.

### **What Is A SWPPP?**

A SWPPP is a document that emphasizes the use of appropriately selected, correctly installed and maintained pollution reduction practices. These practices are also known as "BMPs" – Best Management Practices. SWPPPs have two purposes: to identify sources of sediment and other pollutants that affect storm water runoff, and to describe the implementation of BMPs intended to reduce or eliminate the pollutants.

### **What Is An NOI?**

An NOI is a two page application used to notify the State Water Resources Board of your intention to comply with the State's NPDES General Permit for Storm Water Discharges Associated with Construction Activity. The NOI forms are available on the SWRCB website.  
<http://www.swrcb.ca.gov/ss0/docs/noi.pdf>

### **How Much Does Filing an NOI and a SWPPP Cost?**

It depends on the acreage of disturbance, we recommend you go to the website, see below. Check with the SWRCB for the most current fee information. This NOI fee must be paid in full to the State Board prior to receiving your permit.  
[http://www.waterboards.ca.gov/stormwtr/const\\_fees.html](http://www.waterboards.ca.gov/stormwtr/const_fees.html)

### **What Happens If I Don't Get A Permit?**

Landowners that do not comply with the NPDES Construction General Permit requirements are subject to substantial fines. In addition, construction sites are inspected by Regional Water Quality Control Board staff.

### **How Does This Relate to the County's Permit Process?**

This is a separate process regulated and administered at the State level. The County Department of Planning and Building is responsible for public education and outreach and for checking that the State requirements have been satisfied prior to issuing building permits. Many elements contained in a SWPPP are similar to those used to satisfy the County's drainage, sedimentation and erosion control plan requirements. However, they are not interchangeable, and both State and County requirements must be satisfied prior to issuance of a building permit.

# ***Storm Water Resources***

## **Contacts**

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### **SLO County Planning and Building Department**

Elizabeth Szwabowski, Building 781-5725, [eszwabow@co.slo.ca.us](mailto:eszwabow@co.slo.ca.us)  
Murry Wilson, Planning 788-2352, [mwilson@co.slo.ca.us](mailto:mwilson@co.slo.ca.us)

### **Regional Water Quality Control Board (Central Coast Region)**

Internet Address: <http://www.waterboards.ca.gov/centralcoast/>

895 Aero Vista Place, Suite 101, San Luis Obispo, California 93401

Phone (805) 549-3147 • FAX (805) 543-0397

### **State Water Resources Control Board**

[www.waterboards.ca.gov](http://www.waterboards.ca.gov)

1001 I Street  
Sacramento, CA 95814

OR

P.O. Box 100  
Sacramento, CA 95812

(916) 341-5250 fax (916) 341-5252

### **Internet Resources**

USEPA - <http://www.epa.gov/npdes/stormwater>

SWRCB - <http://www.swrcb.ca.gov/stormwtr/construction.html>

CalTrans - <http://www.dot.ca.gov/hq/construc/stormwater/manuals.htm>

CASQA - [www.casqa.org](http://www.casqa.org)

### **Frequently asked questions:**

[http://www.waterboards.ca.gov/fees/docs/swfee\\_faq.pdf](http://www.waterboards.ca.gov/fees/docs/swfee_faq.pdf)

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## EROSION CONTROL NOTES

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1. Erosion control measures for wind, water, material stockpiles, and tracking shall be implemented on all projects at all times and shall include source control, including protection of stockpiles, protection of slopes, protection of all disturbed areas, protection of accesses, and perimeter containment measures. Erosion control shall be placed prior to the commencement of grading and site disturbance activities unless the Public Works Department determines temporary measures to be unnecessary based upon location, site characteristics or time of year. The intent of erosion control measures shall be to keep all generated sediments from entering a swale, drainage way, watercourse, atmosphere, or migrate onto adjacent properties or onto the public right-of-way.
2. Site inspections and appropriate maintenance of all erosion control measures/devices shall be conducted and documented at all times during construction and especially prior to, during, and after rain events.
3. The developer shall be responsible for the placement and maintenance of all erosion control measures/devices as specified by the approved plan until such time that the project is accepted as complete by the Public Works Department or until released from the Conditions of Approval of their General Permit. Erosion control measures/devices may be relocated, deleted or additional measures/devices may be required depending on the actual conditions encountered during construction. Additional erosion control measures/devices shall be placed at the discretion of the Engineer of Work, County Inspector, SWPPP Monitor, or RWQCB Inspector. Guidelines for determining appropriate erosion control devices shall be included in the plans with additional measures/devices noted from the appendix of the Public Improvement Standards.
4. Erosion control devices shall be the first order of work and shall be in place at all times during construction. Additional measures/devices shall be available during the rainy season (between October 15 and April 15) or anytime when the rain probability exceeds 30%. These measures/devices shall be available, installed, and/or applied after each area is graded and no later than five (5) working days after completion of each area.
5. The Contractor, Developer, and Engineer of Work shall be responsible to review the project site prior to October 15 (rainy season) and to coordinate an implementation plan for wet weather erosion control devices. A locally based standby crew for emergency work shall be available at all times during the rainy season (October 15 through April 15). Necessary materials shall be available and stock piled at convenient locations to facilitate rapid construction or maintenance of temporary devices when rain is imminent.
6. In the event of a failure, the developer and/or his representative shall be responsible for cleanup and all associated costs or damage. In the event that damage occurs within the right-of-way and the County is required to perform cleanup, the owner shall be responsible for County reimbursement of all associated costs or damage.
7. In the event of failure and/or lack of performance by the owner and/or contractor to correct erosion control related problems the Public Works Department may revoke all active permits and recommend that County Code Enforcement provide a written notice or stop work order in accordance with Section 22.52.140 [23.10] of the Land Use Ordinance.
8. Permanent erosion control shall be placed and established with 90% coverage on all disturbed surfaces other than paved or gravel surfaces, prior to final inspection. Permanent erosion control shall be fully established prior to final acceptance. Temporary erosion control measures shall remain in place until permanent measures are established.
9. The County Air Pollution Control District (APCD) may have additional project specific erosion control requirements. The Contractor, Developer, and Engineer of Work shall be responsible for maintaining self-regulation of these requirements.
10. All projects involving site disturbance of one acre or greater shall comply with the requirements of the National Pollutant Discharge Elimination System (NPDES). The developer shall submit a Notice of intent (NOI) to comply with the General Permit for Construction Activity with the Regional Water Quality Control Board (RWQCB). The developer shall provide the County with the Waste Discharge Identification Number (WDID #) or with verification that an exemption has been granted by RWQCB. WDID No.: \_\_\_\_\_  
Person to contact 24 hours a day in the event there is an erosion control/sedimentation problem (Storm Water Compliance Officer): Name \_\_\_\_\_ Local Phone No: \_\_\_\_\_

## Construction Material Recyclers and Facilities

This is for informational purposes only and is not a recommendation or endorsement by the County of San Luis Obispo, nor should this list be considered complete. Fees apply. Call for locations, currently accepted materials, and fee information.

### Atascadero

C&D Recycling Facility - Chicago Grade Landfill \*

(805) 466- 2985

Open M-Sat 7:30am-3pm; Sun 9-3pm. Sorting facility may be closed intermittently, call for more information.

Accepts appliances, scrap metal, clean concrete, asphalt, roofing tile, brick, wood & green waste. **(IWMA - Certified)**

Heilman Salvage

(805) 466-4893

Open W-Sat. 9am-5pm

Accepts auto parts, plastic, and scrap metals.

### Cayucos

Negranti Construction

(805) 995-3357

Open M-F 8am-4pm

Accepts asphalt, brick, tile/porcelain, concrete.

### Nipomo

Gator Crushing & Recycling

(805) 995-1097

Open M-F 8am-4pm

Accepts asphalt, brick, tile/porcelain and concrete.

Santa Maria Transfer Station \*

(805) 922-9255

**(IWMA Certified)**

Troesh Ready Mix

(805) 928-3764

Open M-F 7am-4pm; Sat. 8am-noon

Recycles concrete, asphalt, masonry, and tile scrap, stucco fall, and grout.

### Paso Robles

A-1 Metals and Salvage

(805) 238-3545

Open M-F 8am-5pm; Sat. 8am-2pm

Accepts appliances, auto parts, and scrap metal.

Paso Robles Recycling

(805) 238-4678

Open T-Sat. 9am-4:45 pm

Accepts cardboard and some metals.

Viborg Sand & Gravel

(805) 238-4368

Open M-F 7am-4:30pm, Sat 8am-Noon

Accepts concrete, asphalt, roofing tile and bricks.

\* **IWMA-Certified means the Integrated Waste Management Authority has certified that the facility recycles 50% of the waste it receives.**

Paso Robles Landfill  
(805) 238-2028  
Open M-Sat - 8am-3pm

Accepts appliance, scrap metal, clean concrete, asphalt, roofing tile, brick, wood and green waste. **(IWMA-Certified)**

### **San Luis Obispo**

C&D Recycling Facility at Cold Canyon Landfill \*  
(805) 549-8332

Open M-Sun. 8am-3pm

Accepts appliances, asphalt, auto batteries, brick, tile/porcelain, cardboard, plastic, rebar, scrap metals, ceramic toilets (no metal), wood pallets, and yard trimmings. **(IWMA - Certified)**

Pacific Coast Lumber  
(805) 543-5533

Open M-F 8am-5pm; Sat. 9am-1pm

Accepts wood and trees.

R. Burke Corporation  
(805) 543-8568

Open M-F 8am-4pm

Accepts porcelain toilets, broken concrete, asphalt, rock, and brick.

Victor Kemp/Desotto South  
(805) 541-0450

Open M-F 7:30am-4:20pm

Accepts carpet padding.

### **Templeton**

Granite Construction  
(805) 434-2376

Accepts concrete and asphalt.

North SLO County Recycling \*  
(805) 434-0043

Open M-F 7am-4pm, Sat 7-1pm

Accepts mixed construction debris including concrete and asphalt, brick, tile/porcelain, ceramic toilets, drywall, scrap metals, appliances, cardboard, green waste (yard trimmings) lumber, plywood and wooden pallets. **(IWMA - Certified)**

Rossi Transportation  
(805) 434-2884

Open M-F 8am-5pm

Accepts yard trimmings 2"-3" diameter, 6'length max; no stumps, palms, or yuccas.

### **Out of County**

#### **Santa Maria**

Bedford Metals  
(805) 922-4977

Open M-F 8:30am-4:30pm; Sat. varies

Accepts appliances and scrap metals.

\* **IWMA-Certified means the Integrated Waste Management Authority has certified that the facility recycles 50% of the waste it receives.**

# Owners! Builders!

## Are you aware of the recycling requirement for your construction job?

Fifty percent (50%) of the waste from your project must be recycled. Failure to recycle and provide proper documentation can result in a penalty of 2% of your project's value.

## Do you know how to comply and not pay a fine? \$\$\$\$\$\$\$\$\$\$\$\$\$\$

Use a certified facility or take your waste to a specific material (e.g., concrete, metal, cardboard, drywall, etc.) recycler, get a recycling receipt and turn it in to the Public Works Department before your Final Inspection. All waste and recycling receipts must be submitted and approved before Final Inspection is completed. **The words "C&D", "recycle", "drop off" or "recovery" must be imprinted on the receipt**, to indicate you recycled the material.

## Do you know what a certified facility is?

The following eight facilities/companies are certified by the Integrated Waste Management Authority to recycle at least 50% of the waste they receive.

C&D Recycling Facility at Cold Canyon Landfill	805-549-8332
C&D Recycling Facility at Chicago Grade Landfill	805-466-2985
North SLO County Recycling	805-434-0043
API (a roll-off/debris box company)	805-928-8689
R&R (a roll-off/debris box company)	805-929-8000
Recycling Facility at the Paso Robles Landfill	805-238-2028
Santa Maria Transfer Station	805-922-9255
Bedford Enterprises/SMART	805-922-4977

Not all facilities accept mixed loads, call to confirm. Not all facilities recycle all materials (e.g., drywall), call to confirm. Receipts from any of the three landfills must indicate that you used the recycling area of the landfill; **the words "C&D", "recycle", "dropoff" or "recovery" must be imprinted on the receipt**, to indicate you did recycle the load.

## Do you know how to document *not* disposing of materials (usually wood or metal) that you want to reuse later?

A picture can express ten thousand words - submit photographs of the stockpiled materials that will be reused for other projects or as fuel. Photos should be sent in along with the receipts for the recycled and disposed materials.

## Do you know what the penalty is for non-compliance?

The penalty for non-compliance is 2% of the project's value. Before any project can receive Final Building Inspector approval, the recycling requirement must be met, or the penalty must be paid.

## Do you have questions?

Contact Mary Whittlesey in the County Public Works Department: 781-5259.

**H**auling companies - each of these companies (and numbers 7 & 8, above) is permitted to operate anywhere in the unincorporated county. They handle mixed loads of waste; call for prices and availability.

Coastal Roll-Off	805 543-0473 **
Atascadero Waste (WMI)	805 466-3636
Mid-State Solid Waste	805 434-9112 ***
Paso Robles Roll-Off	805 238-4897
San Miguel Roll-Off	805 239-1266

\*\*Associated with Cold Canyon Landfill  
 \*\*\*Associated with North SLO County Recycling

To avoid needing to fill out a Detailed Recycling Plan form, it is your responsibility to tell your hauling company to take it to an IWMA-certified facility. Other facilities are available in the county; they are listed on the flyer "Construction Material Recyclers and Facilities"

## Don't let this happen to you!

**F**ailure to achieve the 50% recycling goal could result in delays in receiving Final Inspection Approval **and a penalty equal to 2% of your project's value.** All penalties must be paid before Final Building Inspector Approval.

For additional information and updates:

Integrated Waste Management Authority  
 805-782-8530

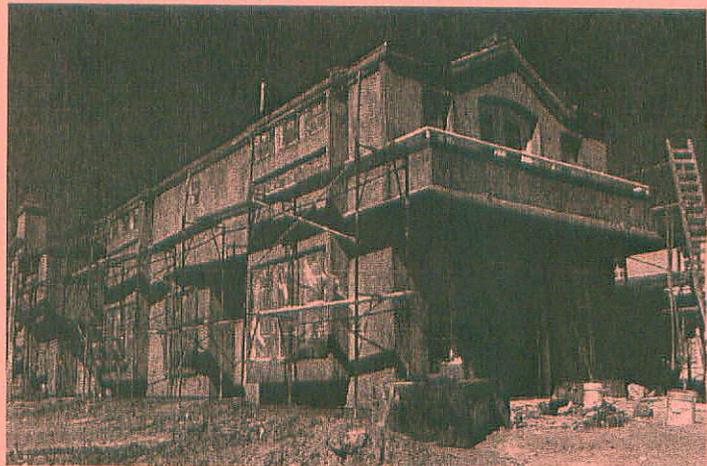
C&D Recycling Program Hotline  
 805-781-1585

County Public Works  
 Solid Waste Coordinator 805-781-5259

If you don't use a certified recycling facility you will need to estimate the amount of waste your project will make. The following table will help you estimate your expected waste loads.

### C&D Waste Generation by Project Type

<u>Type of Project</u>	<u>Appx. Waste</u>
<b>Commercial</b>	
Additions	27 lbs / sq ft
Demolition	70 lbs / sq ft
New Construction	13 lbs / sq ft
Tenant Improvement	10 lbs / sq ft
<b>Multi-Family Residential</b>	
Additions	4.5 lbs / sq ft
Demo & Other	16 lbs / sq ft
New Const	9.5 lbs / sq ft
<b>Single Family Residential</b>	
Additions	33 lbs / sq ft
Demolition	83 lbs / sq ft
New Custom	7.5 lbs / sq ft
New Tract	3.2 lbs / sq ft
Remodel	39 lbs / sq ft



## Simplified Recycling Plan

Excerpt from the Construction Permit Application

### WASTE MANAGEMENT

You need to review the Requirements for Managing Project Waste information on the back of this form and then check the box that fits your project. You must check one of the boxes prior to permit issuance. Note: IWMA means Integrated Waste Management Authority

Are you planning to

- A) use an IWMA-certified construction and demolition waste recycling facility? or
- B) use other recycling and disposal facilities?

If B is checked, you must fill out Sections 1 & 2 of a Detailed Recycling Plan form and have it approved prior to the permit being issued. For a Detailed Recycling Plan form contact Public Works at 781-5252. For more information and a list of certified facilities read the **Requirements for Managing Project Waste** on the back of this form.

### LEGAL DECLARATION

I, the owner of record of this property, or authorized agent, have accurately completed this form and declare that all statements herein are true. I acknowledge the responsibility for recycling my project's waste and the penalty for non-compliance. I agree to comply with the requirement of the County Construction & Demolition Debris Recycling Ordinance

Property owner/Agent signature \_\_\_\_\_

Date \_\_\_\_\_

Prior to a construction permit being issued, this form must be signed and faxed to 805-788-2345, or mailed to

Solid Waste Coordinator, Public Works Department  
County Government Center, Room 207  
San Luis Obispo CA 93408

Please allow one week for receipt and approval prior to permit issuance.

TO EXPEDITE THE PROCESSING OF YOUR RECYCLING PLAN, DO **NOT** SEND IT TO THE PLANNING DEPARTMENT -- PLEASE SEND OR FAX IT TO PUBLIC WORKS AT THE ABOVE NUMBER / ADDRESS

**Seven days prior to Final Inspection you must submit receipts from all of the recycling and landfill facilities that received waste from your project. Final Inspection approval will be delayed until the receipts are submitted and approved. Anticipate when you will need Final Inspection approval.**

# Requirements for Managing Project Waste

Under WASTE MANAGEMENT in your Construction Permit Application you must select either:

- A) use an Integrated Waste Management Authority (IWMA)-certified construction and demolition waste recycling facility? or
- B) use other recycling and disposal facilities?

Your choice means:

**A) use an IWMA-certified construction and demolition waste recycling facility.** Check this if all of your construction and demolition waste is going to one of the following facilities.

C&D Recycling Facility at Cold Canyon Landfill	805-549-8332
C&D Recycling Facility at Chicago Grade Landfill	805-466-2985
North SLO County Recycling	805-434-0043
API (roll-off/debris box company)	805-928-8689
R&R (a roll-off/debris box company)	805-929-8000
Recycling Facility at the Paso Robles Landfill	805-238-2028
Santa Maria Transfer Station	805-922-9255
Bedford Enterprises/SMART	805-922-4977

By using one of the above IWMA-certified recycling facilities for all of your construction and demolition (C&D) waste, you have met the requirement to recycle 50% of your waste. You can either hire a hauling company or haul your C&D waste yourself to one of these facilities.

**B) use other recycling and disposal facilities.** Check this if your C&D waste is NOT going to the C&D recycling facilities listed above. If you choose this option, before your building permit can be issued you need to fill out an extra form (a Detailed Recycling Plan) that shows how you will recycle 50% of your C&D waste. The form is available from the Public Works Department (805-781-5252).

**Receipts.** With both Option A or Option B, at the end of your project you must submit all the original receipts from any recycling and/or disposal facility that received waste from your project. (Be sure that the receipts from Cold Canyon Landfill, Chicago Grade Landfill, Paso Robles Landfill and the Santa Maria Transfer Station indicate that you used the C&D recycling area.) Your receipts must be submitted and approved **before you can receive the Final Building Inspector Approval.** If you select Option B, before you receive the Final Inspector Approval you also need to fill out another part of the Detailed Recycling Plan that shows you recycled the required amount of project waste.

**County Recycling Ordinance.** County ordinance requires that you recycle 50% (by weight) of the waste your construction or demolition project generates. Waste includes anything you discard from the site, such as wood scraps, cardboard, drywall, flashing, paint or other finishing products, tools, concrete, asphalt, plastic bags, remnants of insulation, etc.

Fifty percent (by weight) of the total discards from your project must be recycled if the project is \$50,000 or greater in value (as noted on your permit) or if demolition is 1,000 square feet or more.

Before you receive a construction permit you must tell the County how you will handle the project's waste stream. As noted above, there is a place to do this on the Construction Permit Application.

Failure to achieve the recycling goal could result in delays in receiving Final Inspection Approval and result in a **penalty equal to 2%** of your project's value. Penalties must be paid before receiving Final Building Inspector Approval.

## Construction Material Recyclers and Facilities

This is for informational purposes only and is not a recommendation or endorsement by the County of San Luis Obispo, nor should this list be considered complete. Fees apply. Call for locations, hours, currently accepted materials, and fee information.

### Atascadero

C&D Recycling Facility - Chicago Grade Landfill \*

(805) 466- 2985

Open M-Sat 7:30am-3pm; Sun 9-3pm. Sorting facility may be closed intermittently, call for more information.

Accepts appliances, scrap metal, clean concrete, asphalt, roofing tile, brick, wood & green waste. **(IWMA - Certified)**

Heilman Salvage

(805) 466-4893

Open W-Sat. 9am-5pm

Accepts auto parts, plastic, and scrap metals.

### Cambria

Winsor Construction

(805) 927-3321

Open M-F 8am-4:30pm

Accepts green waste, asphalt and concrete.

### Cayucos

Negranti Construction

(805) 995-3357

Open M-F 8am-4pm

Accepts asphalt, brick, tile/porcelain, concrete.

### Nipomo

Gator Crushing & Recycling

(805) 995-1097

Open M-F 8am-4pm

Accepts asphalt, brick, tile/porcelain and concrete.

Santa Maria Transfer Station \*

(805) 922-9255

**(IWMA Certified)**

RoXsand

(805) 357-2288

Open M-F 7am-4pm

Recycles concrete, asphalt, concrete block

### Paso Robles

A-1 Metals and Salvage

(805) 238-3545

Open M-F 8am-5pm; Sat. 8am-2pm

Accepts appliances, auto parts, and scrap metal.

Paso Robles Recycling

(805) 238-4678

Open T-Sat. 9am-4:45 pm

Accepts cardboard and some metals.

\* **IWMA-Certified means the Integrated Waste Management Authority has certified that the facility recycles 50% of the waste it receives.**

Viborg Sand & Gravel  
(805) 238-4368  
Open M-F 7am-4:30pm, Sat 8am-Noon  
Accepts concrete, asphalt, roofing tile and bricks.

Paso Robles Landfill  
(805) 238-2028  
Open M-Sat - 8am-3pm  
Accepts appliance, scrap metal, clean concrete, asphalt, roofing tile, brick, wood and green waste. **(IWMA-Certified)**

#### **San Luis Obispo**

C&D Recycling Facility at Cold Canyon Landfill \*  
(805) 549-8332  
Open M-Sun. 8am-3pm  
Accepts appliances, asphalt, auto batteries, brick, tile/porcelain, cardboard, plastic, rebar, scrap metals, ceramic toilets (no metal), wood pallets, and yard trimmings. **(IWMA - Certified)**

Pacific Coast Lumber  
(805) 543-5533  
Open M-F 8am-5pm; Sat. 9am-1pm  
Accepts wood and trees.

R. Burke Corporation  
(805) 543-8568  
Open M-F 8am-4pm  
Accepts porcelain toilets, broken concrete, asphalt, rock, and brick.

#### **Templeton**

Granite Construction  
(805) 434-2376  
Accepts concrete and asphalt.

North SLO County Recycling \*  
(805) 434-0043  
Open M-F 7am-4pm, Sat 7-1pm  
Accepts mixed construction debris including concrete and asphalt, brick, tile/porcelain, ceramic toilets, drywall, scrap metals, appliances, cardboard, green waste (yard trimmings) lumber, plywood and wooden pallets. **(IWMA - Certified)**

Rossi Transportation  
(805) 434-2884  
Open M-F 8am-5pm  
Accepts yard trimmings 2"-3" diameter, 6'length max; no stumps, palms, or yuccas.

### **Out of County**

#### **Santa Maria**

Bedford Enterprises/SMART \*  
(805) 922-4977  
Open M-F 8:30am-4:30pm; Sat. varies  
Accepts construction debris.

\* **IWMA-Certified means the Integrated Waste Management Authority has certified that the facility recycles 50% of the waste it receives.**

# El Reciclaje Requerido en Sitios de Construcción

**C**omenzando el 1ro de enero del 2005, el Condado le requiere reciclar el 50% del desecho que produce su construcción o proyecto de demolición. El desecho incluye lo que sea que usted descarte del sitio, tal como los pedacitos de madera, el cartón, destellar, la pintura u otros productos terminantes, herramientas, la tabla roca , el cemento, el asfalto, bolsas de plástico, los restos de aislamiento, etc.

El cincuenta por ciento (por peso) del suma desecha de su proyecto debe ser reciclado si el proyecto es \$50.000 en el valor o más (como notado en su permiso) o si la demolición es 1.000 pies cuadrados o más grande. Hay compañías (algunos son enumerados aquí) que pueden reciclar para usted, o usted lo puede hacer.

## ¿Acarréelo usted? ¿O no?

**A**ntes de recibir un permiso de edificio usted debe de informarle al Condado cómo usted manejará la corriente del desecho del proyecto.

Sus opciones son: a) utilizar uno o más de las ocho facilidades de Autoridad Integrada certificada del tratamiento de desechos (IWMA) las facilidades o, b) utilizar alguna otra facilidad.

**D**e cualquier manera, a fines de su proyecto usted debe someter todos los recibos de la facilidad antes de que usted reciba su Aprobación Final Inspeccion de construccion.

Si usted decide utilizar una facilidad que no es IWMA-certificado, entonces usted necesita llenar una forma supplemental (el Plan Detallado de Reciclaje) antes de que su permiso sea publicado. A fines del proyecto, 7 días antes de la Aprobación Final de Inspección de Edificio, usted necesitará llenar otra parte de la forma que muestra cómo usted recicló 50% del desecho del proyecto. Usted debe someter todos los recibos del desecho/reciclaje.

The form is titled 'RECYCLING PLAN' and is intended for building permit applications for projects 5,000 square feet or larger or \$50,000 value. It contains several sections:
 

- SECTION I:** Project Information (Project Number, Site Address, Project Start/End Dates, Permit Type, etc.)
- SECTION II:** Material Types (Concrete, Brick, Block, etc.)
- SECTION III:** Disposal Method (Recycling, Landfill, etc.)
- SECTION IV:** Other Information (Notes, etc.)

 The form includes checkboxes for various material types and disposal methods, and a section for the contractor's signature and date.

Detallado Reciclando forma de Plan (no está de escala)

**S**i usted acarrea el desecho usted mismo o emplea a un transportista, usted puede alcanzar el 50% de requisito del reciclaje utilizando una facilidad reciclaje IWMA-certifica. Las ocho facilidades son listadas aquí.

1. Recycling Facility at cold Canyon Landfill\*  
\*Associated with Coastal Roll-Off  
San Luis Obispo 805-543-8332
2. Recycling Facility at Chicago Grade Landfill  
Atascadero 805-466-2985
3. North SLO County Recycling  
Templeton 805-434-0043
4. Recycling Facility at Paso Robles Landfill  
Paso Robles 805-238-2028
5. Santa María Transfer Station  
325 Cuyama Lane Nipomo 805-929-9255
6. Bedford/SMART  
Santa María 805-922-4977

Las siguientes dos facilidades son certificadas también pero no están abiertas al público. Los clientes utilizan la roll-off/acarreando compañía asociada con la facilidad.

7. API Roll-Off Services 805-929-8689
8. R&R Roll-Off 805-929-8000

Para evitar el tener que llenar la forma Detallada del Plan de Reciclaje, asegúrese de obtener que sus cargas lleguen a una de estas facilidades, y asegúrese de conseguir el recibo que demuestra que usó la parte de reciclaje de la facilidad. **Siete días** antes de que su proyecto este listo para la inspección final, usted debe de entregar los recibos originales de todas las facilidades de reciclaje y los vertederos que usted utilizó.

**L**as compañías de Acarrear- cada una de estas compañías (y números 7 & 8, arriba) son permitidas operar en cualquier lugar del condado no incorporado. Ellos manejan las cargas mezcladas del desecho; llame para precios y disponibilidad

Coastal Roll-Off	805 543-0473 **
Atascadero Waste (WMI)	805 466-3636
Mid-State Solid Waste	805 434-9112 ***
Paso Robles Roll-Off	805 238-4897
San Miguel Roll-Off	805 239-1266

\*\*Asociado con Cold Canyon Landfill

\*\*\*Asociado con North SLO County Recycling

Para evitar el tener que llenar una forma del Plan Detallado de Reciclaje, es su responsabilidad en decirle a su compañía de acarrea para llevarlo a una facilidad IWMA-certificada. Otras facilidades están disponibles en el condado; son enumerados en el volante "Materiales de Construcción Receladores y Facilidades"

## ¡No Permita que esto le suceda a usted!

**L**a falta de lograr la meta del 50% de reciclaje podrá resultar en las demoras en la Aprobación Final recipiente de la Inspección **y una pena igualara al 2% del valor de su proyecto=s**. Todas multas deben ser pagadas antes de la Aprobación de la Inspección Final del edificio.

Para información y ultimas modificaciones llame:

Integrated Waste Management Authority  
805-782-8530

C&D Recycling Program Hotline  
805-781-5259

County Public Works  
Solid Waste Coordinator 805-781-5259

Si usted no utiliza una facilidad de reciclaje certificado usted necesitará estimar la cantidad de malgasta su proyecto hará. El diagrama siguiente lo ayudará a estimar sus cargas esperadas del desecho.

### Generación de Desecho C&D por Tipo Del Proyecto

#### Tipo de Proyecto

#### Aproximado Desecho

##### Comercial

Adiciones	27 lb. / p cuad.
Demolición	70 lb. / p cuad.
Nueva Construcción	13 lb. / p cuad.
Mejor arrendador	10 lb. / p cuad.

##### Residencia de Familia Múltiple

Adiciones	4.5 lb. / p cuad.
Demo y otro	16 lb. / p cuad.
Const. Nuevo	9.5 lb. / p cuad.

##### Residencia de Familia Única

Adiciones	33 lb. / p cuad.
Demolición	83 lb. / p cuad.
Residencias al gusto	7.5 lb. / p cuad.
Nueva residencia	3.2 lb. / p cuad.
Remodelación	39 lb. / p cuad.



## Reciclaje Requerido en Sitios de Proyectos de Construcción y Demolición

La ordenanza del Condado de San Luis Obispo requiere que los proyectos de construcción y demolición que sean 1,000 p cuados o más grande de tamaño o que sean valorados en \$50.000 o más sean reciclados al 50% del desecho del proyecto. Cada dueño del proyecto debe de decidir en el manejo del reciclaje que mejor concuerde con el proyecto y su operación de contratista. Como descrito abajo, hay dos maneras del manejo/disposición del desecho y el reciclaje. *Nota: IWMA significa Integrated Waste Management Authority*

**A) Utilice una construcción certificada por el IWMA y facilidad de reciclaje de desecho de demolición.** Hay ocho facilidades en el condado que son IWMA certificadas para reciclar por lo menos 50% del desecho que ellos reciben.

C&D Recycling Facility at Cold Canyon Landfill	805-549-8332
C&D Recycling Facility at Chicago Grade Landfill	805-466-2985
North SLO County Recycling	805-434-0043
API Roll Off Company	805-928-8689
R&R Roll-Off Company	805-929-8000
C&D Recycling Facility at Paso Robles Landfill	805-238-2028
Santa Maria Transfer Station	805-922-9255
Bedford Enterprises/SMART	805-922-4977

En demostrando que usted utilizó las facilidades, como descrito arriba, IWMA-CERTIFICO de reciclaje para todo el desecho de su construcción y la demolición (C&D), usted ha cumplido el requisito de reciclar 50% de su desecho. Usted puede acarrear su desecho de C&D usted mismo a uno de estas facilidades o emplear una compañía que acarrea para hacerlo. De cualquier manera, asegúrese **de conseguir recibos para las áreas del reciclaje** de Cold Canyon Landfill, Paso Robles Landfill o Chicago Grade Landfill si usted los utiliza.

**B) Utilice otras facilidades del reciclaje y la disposición.** Hay muchos otros negocios en el condado que reciclará materiales específicas de sitios de construcción y demolición. Si usted lleva el desecho de su proyecto a uno o más negocios/facilidades (por ejemplo, el cemento a un reciclado concreto, los metales a un reciclado de la chatarra, la madera a una facilidad del abono, el cartón a un reciclado del cartón, etc.) usted necesita llenar una forma extra (el Plan Detallado de Reciclaje) antes de que su permiso de edificios puede ser publicado. Cuándo completas, la forma del Plan Detallado de Reciclaje que facilidades demuestra cuales facilidades usted utilizará para reciclar por lo menos el 50% (por el peso) de su desecho de C&D.

Cuándo su proyecto termine, **someta sus recibos de desecha 7 días de trabajo antes** de necesitar la Aprobación Final de Inspector de Edificio. Note: usted es responsable de **TODO** el desecho dejando el sitio.

**Nota: Muy Importante - Recibos.** Al finalizar su proyecto usted debe de someter todos los recibos originales de cualquier facilidad de reciclaje y/o disposición que recibió desecho (inclusive los escombros de muro sin cemento y techado) de su proyecto. Si utilizó el Cold Canyon Landfill, Chicago Grade Landfill o el Paso Robles Landfill, asegúrese de que sus recibos indiquen que utilizó el área de reciclaje de C&D. Usted debe avisarle a su contratista que usted necesitará los recibos originales para todo el desecho, y hacer arreglos para conseguir los de la compañía de muro sin cemento y recibos de techador si ellos acarrearon su propio desecho. Los recibos deben ser sometidos y aprobados antes de poder recibir la Aprobación Final de Inspector de Edificios. Someta sus recibos 7 días de trabajo antes de su Inspección Final de Edificio.

Si la meta del reciclaje no es realizada o usted falla en proveer recibos, una multa igualada al 2% del valor del proyecto será valorada. Las multas deben de ser pagadas antes de recibir la Aprobación Final de Inspección de Edificio.

**Ordenanza de Reciclaje de condado.** El desecho incluye lo que sea desechado del sitio, tal como los pedacitos de madera, el cartón, la tabla roca, destellar, la pintura u otros productos terminantes, los instrumentos, el estuco, el cemento, el asfalto, los restos de aislamiento, bolsas de plástico, etc. Consiga recibos de disposición y reciclaje de todos los subcontratistas que pueden llevar su propio desecho. ¡El pedacito del muro sin cemento y el techado mosaicos son muy reciclables!

¿**Permanecen preguntas** sobre el reciclaje de su proyecto? Llame a María Whittlesey en el Departamento Publico del Condado al 805-781-5259.

# After the Storm

For more information contact:

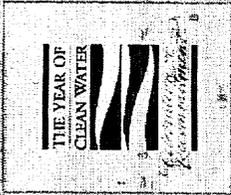
*SLO County Partners for Water  
Quality*

Call Sammy the Steelhead at 788-FISH  
or log on to [www.yourstormwater.org](http://www.yourstormwater.org)

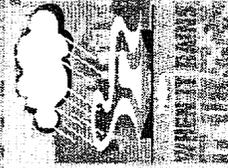
or visit

[www.epa.gov/npdes/stormwater](http://www.epa.gov/npdes/stormwater)

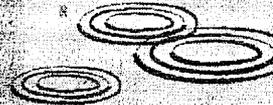
[www.epa.gov/nps](http://www.epa.gov/nps)



*2007 Clean Water Act Anniversary*  
*Understanding Stormwater*



# The effects of pollution

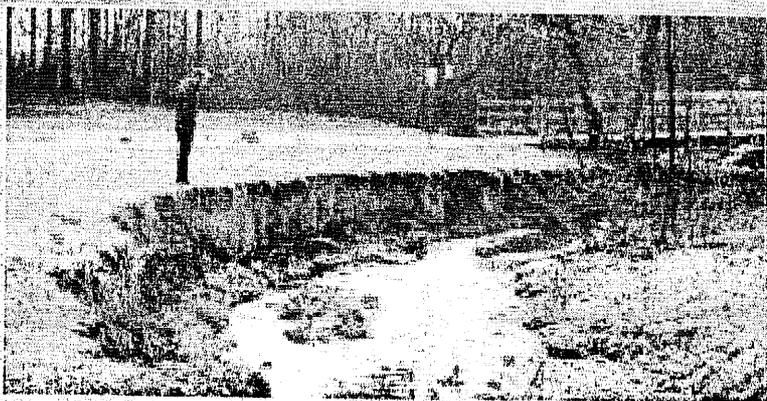


## What is stormwater runoff?



Stormwater runoff occurs when precipitation from rain or snowmelt flows over the ground. Impervious surfaces like driveways, sidewalks, and streets prevent stormwater from naturally soaking into the ground.

## Why is stormwater runoff a problem?



Stormwater can pick up debris, chemicals, dirt, and other pollutants and flow into a storm sewer system or directly to a lake, stream, river, wetland, or coastal water. Anything that enters a storm sewer system is discharged untreated into the waterbodies we use for swimming, fishing, and providing drinking water.

Polluted stormwater runoff can have many adverse effects on plants, fish, animals, and people.

- ◆ Sediment can cloud the water and make it difficult or impossible for aquatic plants to grow. Sediment also can destroy aquatic habitats.
- ◆ Excess nutrients can cause algae blooms. When algae die, they sink to the bottom and decompose in a process that removes oxygen from the water. Fish and other aquatic organisms can't exist in water with low dissolved oxygen levels.
- ◆ Bacteria and other pathogens can wash into swimming areas and create health hazards, often making beach closures necessary.
- ◆ Debris—plastic bags, six-pack rings, bottles, and cigarette butts—washed into waterbodies can choke, suffocate, or disable aquatic life like ducks, fish, turtles, and birds.
- ◆ Household hazardous wastes like insecticides, pesticides, paint, solvents, used motor oil, and other auto fluids can poison aquatic life. Land animals and people can become sick or die from eating diseased fish and shellfish or ingesting polluted water.



- ◆ Polluted stormwater often affects drinking water sources. This, in turn, can affect human health and increase drinking water treatment costs.

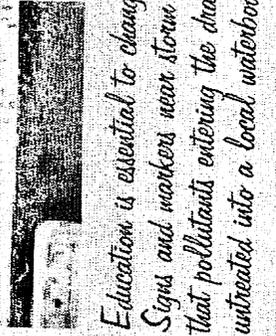
# Stormwater Pollution Solutions



## Auto care

Washing your car and degreasing auto parts at home can send detergents and other contaminants through the storm sewer system. Dumping automotive fluids into storm drains has the same result as dumping the materials directly into a waterbody.

- ◆ Use a commercial car wash that treats or recycles its wastewater, or wash your car on your yard so the water infiltrates into the ground.
- ◆ Repair leaks and dispose of used auto fluids and batteries at designated drop-off or recycling locations.



*Education is essential to changing people's behavior. Signs and markers near storm drains warn residents that pollutants entering the drains will be carried untreated into a local waterbody.*

*Recycle or properly dispose of household products that contain chemicals, such as insecticides, pesticides, paint, solvents, and used motor oil and other auto fluids. Don't pour them onto the ground or into storm drains.*

## Lawn care

Excess fertilizers and pesticides applied to lawns and gardens wash off and pollute streams. In addition, yard clippings and leaves can wash into storm drains and contribute nutrients and organic matter to streams.

- ◆ Don't overwater your lawn. Consider using a soaker hose instead of a sprinkler.
- ◆ Use pesticides and fertilizers sparingly. When use is necessary, use these chemicals in the recommended amounts. Use organic mulch or safer pest control methods whenever possible.
- ◆ Compost or mulch yard waste. Don't leave it in the street or sweep it into storm drains or streams.
- ◆ Cover piles of dirt or mulch being used in landscaping projects.



## Septic systems

Leaking and poorly maintained septic systems release nutrients and pathogens (bacteria and viruses) that can be picked up by stormwater and discharged into nearby waterbodies. Pathogens can cause public health problems and environmental concerns.

- ◆ Inspect your system every 3 years and pump your tank as necessary (every 3 to 5 years)
- ◆ Don't dispose of household hazardous waste in sinks or toilets.



## Pet waste

Pet waste can be a major source of bacteria and excess nutrients in local waters.

- ◆ When walking your pet, remember to pick up the waste and dispose of it properly. Flushing pet waste is the best disposal method—Leaving pet waste on the ground increases public health risks by allowing harmful bacteria and nutrients to wash into the storm drain and eventually into local waterbodies.



## Residential landscaping

**Permeable Pavement**—Traditional concrete and asphalt don't allow water to soak into the ground. Instead these surfaces rely on storm drains to divert unwanted water. Permeable pavement systems allow rain and snowmelt to soak through, decreasing stormwater runoff.

**Rain Barrels**—You can collect rainwater from rooftops in mosquito-proof containers. The water can be used later on lawn or garden areas.

**Rain Gardens and Grassy Swales**—Specially designed areas planted with native plants can provide natural places for rainwater to collect and soak into the ground. Rain from rooftop areas or paved areas can be diverted into these areas rather than into storm drains.

**Vegetated Filter Strips**—Filter strips are areas of native grass or plants created along roadways or streams. They trap the pollutants stormwater picks up as it flows across driveways and streets.



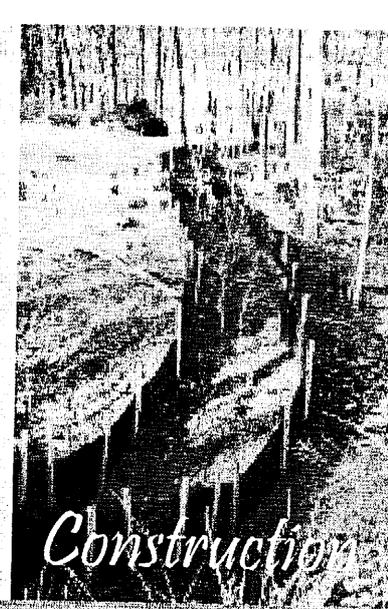


Dirt, oil, and debris that collect in parking lots and paved areas can be washed into the storm sewer system and eventually enter local waterbodies.

- ◆ Sweep up litter and debris from sidewalks, driveways and parking lots, especially around storm drains.
- ◆ Cover grease storage and dumpsters and keep them clean to avoid leaks.
- ◆ Report any chemical spill to the local hazardous waste cleanup team. They'll know the best way to keep spills from harming the environment.

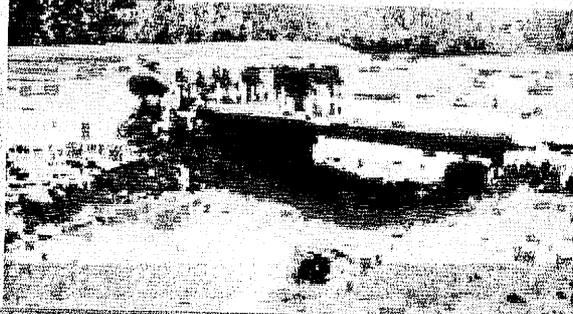
Erosion controls that aren't maintained can cause excessive amounts of sediment and debris to be carried into the stormwater system. Construction vehicles can leak fuel, oil, and other harmful fluids that can be picked up by stormwater and deposited into local waterbodies.

- ◆ Divert stormwater away from disturbed or exposed areas of the construction site.
- ◆ Install silt fences, vehicle mud removal areas, vegetative cover, and other sediment and erosion controls and properly maintain them, especially after rainstorms.
- ◆ Prevent soil erosion by minimizing disturbed areas during construction projects, and seed and mulch bare areas as soon as possible.



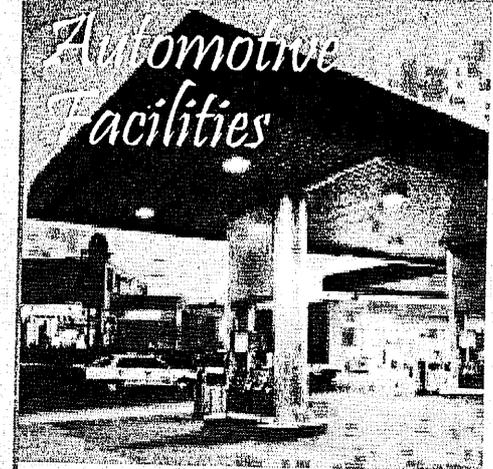
Lack of vegetation on streambanks can lead to erosion. Overgrazed pastures can also contribute excessive amounts of sediment to local waterbodies. Excess fertilizers and pesticides can poison aquatic animals and lead to destructive algae blooms. Livestock in streams can contaminate waterways with bacteria, making them unsafe for human contact.

- ◆ Keep livestock away from streambanks and provide them a water source away from waterbodies.
- ◆ Store and apply manure away from waterbodies and in accordance with a nutrient management plan.
- ◆ Vegetate riparian areas along waterways.
- ◆ Rotate animal grazing to prevent soil erosion in fields.
- ◆ Apply fertilizers and pesticides according to label instructions to save money and minimize pollution.



Improperly managed logging operations can result in erosion and sedimentation.

- ◆ Conduct preharvest planning to prevent erosion and lower costs.
- ◆ Use logging methods and equipment that minimize soil disturbance.
- ◆ Plan and design skid trails, yard areas, and truck access roads to minimize stream crossings and avoid disturbing the forest floor.
- ◆ Construct stream crossings so that they minimize erosion and physical changes to streams.
- ◆ Expedite revegetation of cleared areas.



Uncovered fueling stations allow spills to be washed into storm drains. Cars waiting to be repaired can leak fuel, oil, and other harmful fluids that can be picked up by stormwater.

- ◆ Clean up spills immediately and properly dispose of cleanup materials.
- ◆ Provide cover over fueling stations and design or retrofit facilities for spill containment.
- ◆ Properly maintain fleet vehicles to prevent oil, gas, and other discharges from being washed into local waterbodies.
- ◆ Install and maintain oil/water separators.

# Recycling Required at Construction Sites

**B**eginning January 1, 2005, the County requires you to recycle 50% of the waste your construction or demolition project makes. Waste includes anything you discard from the site, such as wood scraps, cardboard, flashing, paint or other finishing products, tools, drywall, concrete, asphalt, plastic bags, remnants of insulation, etc.

Fifty percent (by weight) of the total discards from your project must be recycled if the project is \$50,000 in value or more (as noted on your permit) or if the demolition is 1,000 square feet or larger. There are companies (some are listed here) that can recycle for you, or you can do it yourself.



## Haul it yourself? Or not?

**B**efore you receive a building permit you must tell the County how you will handle the project's waste stream.

Your choices are: a) use one or more of the eight certified Integrated Waste Management Authority (IWMA) facilities or, b) use some other facility.

**E**ither way, at the end of your project you must submit all the receipts from the facility before you receive your Final Building Inspector Approval.

If you decide to use a facility that is not IWMA-certified, then you need to fill out an extra form (Detailed Recycling Plan) before your permit is issued. At the end of the project, 7 days before Final Building Inspector Approval, you will need to fill out another part of the form that shows how you recycled 50% of the waste from the project. You must submit all the waste/recycling receipts.

If you haul the waste yourself or hire a hauler, you can meet the 50% recycling requirement by using an IWMA-certified recycling facility. The eight facilities are listed here.

1. Recycling Facility at Cold Canyon Landfill \*  
\* Associated with Coastal Roll-Off  
San Luis Obispo 805-543-8332
2. Recycling Facility at Chicago Grade Landfill  
Atascadero 805-466-2985
3. North SLO County Recycling  
Templeton 805-434-0043
4. Recycling Facility at Paso Robles Landfill  
Paso Robles 805-238-2028
5. Santa Maria Transfer Station  
325 Cuyama Lane Nipomo 805-929-9255
6. Bedford/SMART  
Santa Maria 805-922-4977

The next two facilities are also certified but not open to the public. Customers use the roll-off/hauling company associated with the facility.

7. API Roll-Off Services  
805-928-8689
8. R&R Roll-Off  
805-929-8000

To avoid needing to filling out the Detailed Recycling Plan form, be sure your loads go to one of these facilities, and be sure to get the receipt that shows you used the recycling part of the facility. **Seven days** before your project is set for Final Inspection, you must send the original receipts in for all of the recycling facilities and landfills you used.

**DETAILED RECYCLING PLAN**

For use in conjunction with all Building Permit Applications for projects 1,000 square feet or larger or \$50,000 value.

**SECTION 1: Project Information**

Project Name: \_\_\_\_\_  
 Project Address: \_\_\_\_\_  
 Project City/County: \_\_\_\_\_  
 Project Start Date: \_\_\_\_\_  
 Project End Date: \_\_\_\_\_  
 Applicant Name: \_\_\_\_\_  
 Applicant Address: \_\_\_\_\_  
 Applicant Phone: \_\_\_\_\_  
 Applicant Email: \_\_\_\_\_

**SECTION 2: Project Description**

Project Type: \_\_\_\_\_  
 Project Value: \_\_\_\_\_  
 Project Area: \_\_\_\_\_  
 Project Description: \_\_\_\_\_

**SECTION 3: Recycling Plan**

Recycling Method: \_\_\_\_\_  
 Recycling Facility Name: \_\_\_\_\_  
 Recycling Facility Address: \_\_\_\_\_  
 Recycling Facility Phone: \_\_\_\_\_  
 Recycling Facility Website: \_\_\_\_\_

**SECTION 4: Waste Stream**

Waste Type: \_\_\_\_\_  
 Waste Quantity: \_\_\_\_\_  
 Waste Description: \_\_\_\_\_

**SECTION 5: Compliance**

Compliance Status: \_\_\_\_\_  
 Compliance Details: \_\_\_\_\_

**SECTION 6: Signatures**

Project Manager Signature: \_\_\_\_\_  
 Project Manager Name: \_\_\_\_\_  
 Project Manager Title: \_\_\_\_\_  
 Project Manager Address: \_\_\_\_\_  
 Project Manager Phone: \_\_\_\_\_  
 Project Manager Email: \_\_\_\_\_

Building Inspector Signature: \_\_\_\_\_  
 Building Inspector Name: \_\_\_\_\_  
 Building Inspector Title: \_\_\_\_\_  
 Building Inspector Address: \_\_\_\_\_  
 Building Inspector Phone: \_\_\_\_\_  
 Building Inspector Email: \_\_\_\_\_

Detailed Recycling Plan form (not to scale)

**H**auling companies - each of these companies (and numbers 7 & 8, above) is permitted to operate anywhere in the unincorporated county. They handle mixed loads of waste; call for prices and availability.

Coastal Roll-Off	805 543-0473 **
Atascadero Waste (WMI)	805 466-3636
Mid-State Solid Waste	805 434-9112 ***
Paso Robles Roll-Off	805 238-4897
San Miguel Roll-Off	805 239-1266

\*\*Associated with Cold Canyon Landfill

\*\*\*Associated with North SLO County Recycling

To avoid needing to fill out a Detailed Recycling Plan form, it is your responsibility to tell your hauling company to take it to an IWMA-certified facility. Other facilities are available in the county; they are listed on the flyer *"Construction Material Recyclers and Facilities"*

## Don't let this happen to you!

**F**ailure to achieve the 50% recycling goal could result in delays in receiving Final Inspection Approval **and a penalty equal to 2% of your project's value**. All penalties must be paid before Final Building Inspector Approval.

For additional information and updates:

Integrated Waste Management Authority  
805-782-8530

C&D Recycling Program Hotline  
805-781-1585

County Public Works  
Solid Waste Coordinator 805-781-5259

If you don't use a certified recycling facility you will need to estimate the amount of waste your project will make. The following table will help you estimate your expected waste loads.

### C&D Waste Generation by Project Type

<u>Type of Project</u>	<u>Appx. Waste</u>
<b>Commercial</b>	
Additions	27 lbs / sq ft
Demolition	70 lbs / sq ft
New Construction	13 lbs / sq ft
Tenant Improvement	10 lbs / sq ft
<b>Multi-Family Residential</b>	
Additions	4.5 lbs / sq ft
Demo & Other	16 lbs / sq ft
New Const	9.5 lbs / sq ft
<b>Single Family Residential</b>	
Additions	33 lbs / sq ft
Demolition	83 lbs / sq ft
New Custom	7.5 lbs / sq ft
New Tract	3.2 lbs / sq ft
Remodel	39 lbs / sq ft





# The Planning Network

## Pat Beck, Assistant Director Moving on. . .



So, by now, you know that I am retiring after nearly 30 years with the County (and if you're like me you are sick of hearing about it). I gave notice that I would be leaving in a year so that the Director could be thinking about when and how to fill the position and also so that I could mentally adjust to the idea of leaving.

Imagine how lucky I am that after nearly 30 years I still enjoy my job (well most of the time) and my "work family." When you have been somewhere this long you have seen marriages, divorces, the birth of children and even grandchildren and occasionally a loss from death. It really feels like I am leaving my *other* family behind and I know I will miss all of you.

As I look back, the lessons I hope I leave behind are:

We are all much stronger when we are working together rather than pulling apart. There will always be times that we are at the top of our game and things are going our way, but these are offset by the hard times and working together is critical.

Most ideas are better when you are listening to and incorporating the view of others - if only because there is a great sense of commitment from the larger group and that is how things get done. *(This was a hard one for me and I am still working on it).*

We need to be there for each other when times get tough - because we are family and whatever you can give always comes back many fold. I can think of hard times I have had over these thirty years and so many of you were there for me. So keep an eye out for your co-workers and be a friend when you can.

Keep your mind open to new ways of doing things because there are always opportunities to make things work better - even if some of them don't get accepted or put to use.

Stay true to our mission:

*"Promoting the wise use of land," "Helping to Build Great Communities"* because the work you do is important to the future of the county. You help people build their dream homes or businesses, you help protect the resources of the county, you help the community see a vision of what can be and sometimes help them achieve it.

I bid you all a fond farewell and will be watching to see what great places you head.

### Inside this issue:

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A few Pat Comments	3
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Erosion Control	5
Inspection Tips	5
Current Planning Tips	6
Automated Services	7
Upcoming Events	8

The Planning and Building Department's Mission Statement:

*Promoting the Wise Use of Land*

*Helping to Build Great Communities*

We're on the web!  
[WWW.SLOPLANNING.ORG](http://WWW.SLOPLANNING.ORG)

## Meet the Staff—Lisa Simpson

Every quarter, a different staff member will be featured.



I was born in one of the most beautiful places on earth: Alaska. My father was an ironworker in Anchorage, working on the pipeline when I was born. I was his first child. We did not stay there very long before my father's line of work took us to Phoenix, Arizona. While we were in Phoenix, my mother and father decided that I needed someone to play with, and so they gave me my dear younger sister. Soon we headed north, to Olympia, Washington, where my father would help construct a new nuclear power plant.

It was another nuclear power plant that brought our family here to California's lovely Central Coast, 22 years ago. Our first California abode was an R.V. park in Pismo. I still think my mother put up the best Christmas tree that year.

After moving around a lot as a child, good fortune brought me to Atascadero during my senior year of high school, where I met my wonderful husband. I was instantly in love. He, however, was much more interested

in his skateboard! Ten years and a confession of love later, I can finally call him my own! Last summer, we wed at our charming little church by the lake where we now live with our two wiggly doggies.

My work experience might seem as varied as all of the places I've lived. After graduating high school, I went to work for San Luis Sourdough. I spent two enjoyable years there, and I still love the bread! I also worked at warehouses and drove forklifts, did vegetation clearance for PG&E, and helped clean up crude oil in Cayucos. I finally got my break into an office environment when my father encouraged me to apply at a finance company, making loans. With the accounting experience I gained, I was able to attain temporary employment with the County as an Account Clerk. I learned accounts payable, accounts receivable, and worked the travel desk. Alas, I needed a stable spot and found a permanent position as an Administrative Assistant for the Planning and Building Department.

I really enjoy being a member of this Department because there are so many opportunities to learn and grow. I have had the opportunity to work in various divisions of the Department, including Building, Records Management, and the Environmental Division. I am happy to be here and enjoy my favorite job, being a wife. I hope to be a mother, someday in the near future.

### Employee of the Quarter

Jennifer Jimenez



Anyone in the Department can nominate a co-worker for this tribute. You can submit a nomination via e-mail to the EOQ Committee at the announced opportunity and provide some reasoning for the choice. Please keep in mind that the employee of the quarter nominations should be a non-managerial staff person. Management staff "host" the program by contributing funds and it is their desire to recognize employees outside of management positions.

The Committee is made up of staff from all divisions of our Department and selects the new employee of the quarter. The Committee is also responsible for planning and carrying out the party for the chosen employee every quarter. The Committee members change every year to a new group of volunteers. If you would like to volunteer in the near future, please contact Tony Navarro at 781-5787.

## A Few "Pat" Comments from her Colleagues....



To list everything Pat has given this organization would take more time and patience than any of us could spare. So this is just a "Thank You" for always being available to the public, elected officials and staff; "Thank You" for always being eager to help resolve a problem; "Thank You"

for being the conscience and heart of the department; and "Thank You" for being the inspiration to so many staff. We are zealously grateful not only for everything you have done for this Department, but also the County. It has definitely been an honor and a privilege to work with you — Victor Holanda, Director



Rather than just express my own sentiments of loss about Pat retiring, I thought back over the last several years to the many difficult situations, experiences and problems that Pat and I have been involved with and the resulting attitude of each of the participants. In every instance, they all walked away with the feeling that Pat genuinely

cared about their issue and was working towards a resolution that was the best possible solution. Pat embraces a "win-win" attitude in every situation and exemplifies the "approachable manager." As a manager, I hope to attain the level of professionalism and inspiration leading my Division that Pat has illustrated leading our Department.

Cheryl Journey, Chief Building Official



Pat has been a mentor for many of the Planning Department staff, including me, over the last 30 years. She is the ultimate multi-tasker, successfully juggling a wide variety of tasks throughout the day while still remaining cool, calm and collected. She is always willing to

roll up her sleeves and do what it takes to get the job done, regardless of whether it is solving a complex planning issue or simply making enough copies of materials at the last minute for late-comers to a public meeting.

When Pat is feeling especially reflective or just needs a quiet moment, she can be found sitting on the Bryce, Barney and Bill Memorial Bench in front of the Permit Center. She facilitated it being built there in memory of our departed colleagues. As the department's chief of staff for a number of years, she has "made a difference" and will be sorely missed!

John Euphrat, Public Information Division Manager



"Pat does kind things unnoticed, commands respect by doing and gives of herself without martyring ...She is truly amazing!"

Thank you PB!! Chris Macek, Secretary



"I remember back around 1980 working as a 'customer' with a young Pat Beck on a condominium project. It struck me at the time how knowledgeable and helpful she was. It made my job a lot easier, and the project was a success."

Charles Riha, Plans Examiner III



"Pat Beck is hard working and dedicated and she has been great to work with. Her presence will be greatly missed."

Kerry Brown, Senior Planner



We know we speak for everybody else in the Department when we say, "We'll Miss You a Whole Bunch!"

Karen Nall, Senior Planner  
John Nall, Principal Environmental Specialist



Pat Beck is one of those rare people who can make you feel comfortable when discussing work, teenagers, fun or personal matters. I've talked to her about all sorts of things and somehow she puts a positive spin on any topic. I really admire her - she's been more of a friend to me than a co-worker. I am sure gonna miss the sound of those flip-flops around the office. I wish you all the best Pat!

John Kelly, Supervising Mapping Systems Specialist



Pat Beck has been my mentor for most of the 23 years that I have worked at the County. Not only has she provided me with professional guidance, she has also provided me with a strong model for professional women in the workplace. The memories I will hold most dear, are not our lunchtime conversations about some planning, management or organizational issue, they are the memories of camping trips, lunchtime discussions about decorating, parties at her house with the Current Planning gang, laughing at some silly thing that tickled both of our funny bones and girl talk after lights out in a shared room at a conference. So although I don't know what I will do without her daily guidance and presence here at work, I know that the relationship will continue and I will never lose my "mentor" and more importantly, my friend.

Kami Griffin, Supervising Planner

## “Green Is In”

By Ryan Hostetter

Did you know that in the United States buildings account for:

- 36% of total energy use/65% of electricity consumption
- 30% of greenhouse gas emissions
- 30% of raw materials use
- 30% of waste output/136 million tons annually
- 12% of potable water consumption (figures from [www.usgbc.org](http://www.usgbc.org))

What can we do about it?

Every project can incorporate design techniques that can reduce the amount of energy it uses and waste it creates. The Department of Planning and Building is beginning to look into programs that help educate the public about how they can build a structure with materials that are not harmful to your health, drastically reduce energy use, and help reduce the amount of material going into our landfills.

On January 23rd the Board of Supervisors adopted a Memorandum of Understanding with “SLO Greenbuild,” which is a non-profit organization comprised of local builders, architects, engineers, landscape architects, planners, and other members of the community. SLO Greenbuild provides educational resources for anyone in the public interested in learning how to incorporate greener building techniques into their project. Keep an eye out for a kiosk coming soon to the permit center that will include samples of green materials, brochures, pictures, and simple ideas for incorporating greener building techniques in your project.

Available Now: Anyone can sign up for a FREE peer review of their project by SLO Greenbuild. The peer review will incorporate suggestions and a checklist for including green technology into your project. This service is available to anyone in the public. To sign up please email [peer-review@slogreenbuild.org](mailto:peer-review@slogreenbuild.org) or check out [www.slogreenbuild.org](http://www.slogreenbuild.org) for more information.

### PG&E Flex Your Power Low Cost Winter Energy Savers

- Set the thermostat as low as comfortably possible in the winter.
- Keep the fireplace damper closed when the fireplace is not in use. Closing the damper prevents up to 8% of furnace-heated air from going up the chimney.
- Reduce hot water use by installing low-flow showerheads and faucet aerators. Older showerheads deliver four to five gallons of water per minute.
- A new, two-and-a-half-gallon per-minute showerhead will reduce your water consumption by one-third to one-half. A top-quality, low-flow showerhead will cost \$10 to \$20 and will quickly pay for itself in energy saved.
- Test for air leaks by holding a lit incense stick next to windows, doors, electrical boxes, plumbing fixtures, electrical outlets, ceiling fixtures, attic hatches and other locations where there is a possible air path to the outside. If the smoke stream travels

- horizontally, you have located an air leak that may need caulking, sealing or weather stripping.
- Clean furnace filters monthly. Dirty filters restrict airflow and increase energy use. Keep the furnace clean, lubricated and properly adjusted to save up to 5% of heating costs.
- Turn off decorative outdoor gas lamps; just eight gas lamps burning year round use as much natural gas as it takes to heat an average-size home during an entire winter.
- Use an automatic timer to help you avoid leaving the holiday lights on all night or during the daylight hours. Make sure that the timer is rated to handle the total wattage of the lights.
- Replace large, traditional decorative holiday lights with new miniature lights, which use about 70% less energy and last much longer than the larger bulbs. If you prefer the brilliance of the larger lights, switch to 5-Watt bulbs, which use about 30% less energy than 7- to 10-Watt bulbs.

## Update—Secondary Dwelling Design Competition

The Secondary Dwelling Design Competition kick-off meeting held on January 18th, 2007 brought together approximately 25-30 local architects to discuss competition guidelines. Program sponsors, Leonard Grant, President of the AIA Central Coast, and Marguerite Bader, Chairman of the Workforce Housing Coalition, attended and provided opening comments and thanks to the architects for their contribution of time in this effort to help address the affordable housing crisis. The County is excited about the level of interest that local architects are expressing in the competition, and looks forward to receiving conceptual plans in March.

Once stock plans are available to the public, homeowners in the unincorporated areas of San Luis Obispo County will have the opportunity to use these plans free of charge (other than duplicating costs). This competition is an effort to increase the affordable housing stock in the County and encourage infill in urban areas.

Competition details and guidelines can be viewed on the main page of the Planning and Building Department website at [www.sloplanning.org](http://www.sloplanning.org). For any further questions about the Secondary Dwelling Design Competition, contact Morgan Torell, Planner II, at (805) 781-5113 or [mtorell@co.slo.ca.us](mailto:mtorell@co.slo.ca.us), or Chuck Stevenson, AICP, Division Manager, Long Range Planning, at (805) 781-5197 or [cstevenson@co.slo.ca.us](mailto:cstevenson@co.slo.ca.us)



# TIPS FROM THE INSPECTORS

## How to Ace Your Foundation Inspection

The footing/foundation inspection involves more than trenches, rebar and anchors; we also look for compliance with the approved plans concerning location of structures, utilities, minimum setbacks and soil conditions. Here are some simple things to keep in mind to help you pass that footing or foundation inspection:

- Have the **approved plans**, permit, **inspection record card**, and original copy of all **required reports** as indicated under the "Special Requirements" and "Prior to Foundation" at the bottom of the "Construction Permit" on site. If you will not be there for the inspection, put them in a location easily spotted by the inspector.
- No **standing water**, **loose/disturbed soil**, **vegetation** or **debris** in the footing excavation.
- **Rebar** and **hardware**, as sized and detailed in the approved plans, secured in place and meeting minimum clearances.
- Concrete encased electrode (**ufer ground**) and electrical **conduit sweeps** installed appropriately.
- Properly **sleeve pipes** running through the footings perpendicular to the forms. No **gas pipe** allowed beneath the structure unless sleeved and vented per approved standards.
- Have **stamped revisions** for engineered structural details that have been built differently than shown on the approved plans.

## Erosion & Sedimentation News from RWQCB

### REQUIREMENTS OF THE GENERAL PERMIT

are to be implemented on a year-round basis, not just during the part of the year when there is a high probability of a precipitation event.

### CONSTRUCTION SITE VISUAL INSPECTIONS

are required prior to anticipated storm events and after actual storm events. During extended storm events, inspections must be made during each 24-hour period.

Goals of the inspections are to identify areas contributing to a storm water discharge to evaluate whether or not measures to reduce pollutant loadings identified in the SWPPP are adequate and properly installed and functioning in accordance with the terms of the General Permit to determine whether additional control practices or corrective maintenance activities are needed.

**STORM WATER POLLUTION PREVENTION PLANS (SWPPP)** must be on site at all times and available to the Regional Water Quality Control Board (RWQCB) upon request.



Poor – Silt fence overwhelmed by sediment. Needs maintenance.

### ITEMS TO CHECK AT YOUR SITE:

Storm Drain Inlet Protection – is it in place and functioning correctly?

Slopes – is there erosion control on the slope and sediment control at the base of slope?

Site Perimeter – is there sediment and erosion control in place?

Washout Areas – Do your subcontractors know where to wash out concrete, paint, and plaster? Are they using the washout area?

Maintenance – Are the Best Management Practices for sediment and erosion control being maintained or replaced as needed?

### CHECK YOUR SITE! DON'T BE UNPREPARED.

Make sure gutters are swept and storm drain inlets are well protected.

Make sure sediment and erosion control Best Management Practices are in place and in good condition. Check stockpiles, site perimeters, and slopes.

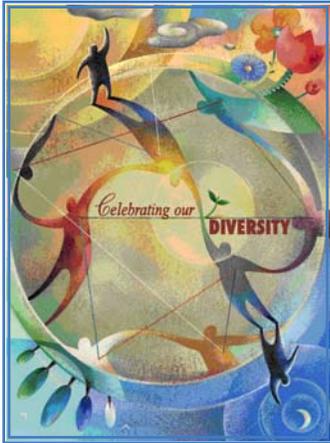


Poor – No sediment/erosion control on stockpile

## Celebrating Diversity in Planning

## Mobile Home Parks

by Ted Bench



Rene Dubos, the French environmentalist and humanist who coined the phrase, “Think globally, act locally” also once said, “Human diversity makes tolerance more than a virtue, it makes it a requirement for survival.” Racial and cultural diversity is particularly important in the planning field because of planning’s roots in advocating for equity, reform, and social justice in all communities. And the effectiveness and validity of a planning agency hinges on the ability of its professionals

to reflect, represent, and advocate for all members of the community. Based on membership records, the American Planning Association (APA) has significantly lower percentages of minority members than the US population at large. Since the first National APA Diversity Summit was held in 2004, momentum has been building to address the under representation of minority members in the planning field.

This momentum has spread to our state and to the Central Coast. In 2006, the California State APA (CALAPA) Board recognized the need for a Membership Inclusion Program to address the lack of diversity in the planning field. As part of the program, each California APA section appointed a Membership/Diversity Officer to serve on the Board of Directors. I, along with Heather Allen of Santa Barbara County, have been appointed as co-Membership/Diversity Officers for the Central Coast chapter. Among other endeavors, we intend to help coordinate events for workshops on diversity issues and pursue education/outreach to Central Coast area schools about the planning field.

I welcome your ideas and suggestions for meeting our diversity goals on the central coast! Please contact me at 788-2788 or [bpedrotti@co.slo.ca.us](mailto:bpedrotti@co.slo.ca.us).

Written by Brian Pedrotti

Mobile home parks are unique communities where many residents on limited incomes have bought housing that they can afford and have often built a supportive network with their neighbors. The County could never replace such an affordable community if a park was to close. While mobile home owners have property rights, so do mobile home park owners. Sometimes an aging park triggers questions about what is best for the community-at-large. Other times a park owner simply wants to close a park and use the land for other purposes. The County is considering the adoption of an ordinance that would regulate the closure or conversion of any mobile home park. Here are a few facts:

- A. There are 40 existing mobile home parks in the unincorporated areas of the County, with a total of over 2,600 spaces.
- B. No new mobile home parks have been built within the County for more than ten years, and the existing mobile home parks are at or close to full occupancy.
- C. The County has received a subdivision application for one mobile home park. Pre-application meetings have been held regarding the conversion or closure of two other mobile home parks.



## Current Planning — Tips to Speed Processing

Want to make sure your project is processed as quickly as possible? Follow these tips and speed your application along!

- Provide clear and precise directions to your project site and include any gate codes needed to access the site.
- Schedule a pre-application meeting for difficult or complicated projects. Submit any reports that were noted as needed in the pre-application meeting with your application (e.g. biology, archeology, etc.).
- Read the Land Use Ordinance and related design plans *before* designing your project
- Submit a *complete* and *detailed* project description.
- Submit up to date site plans that show all structures on the site, the location of trees, wells, septic systems, building heights, setbacks and any utility trenching.
- Locate your project away from oak trees, creeks, steep slopes, and below ridge lines.
- Turn in *all* additional information requested for your project, *at one time*. Include the project name and file number with the submittal.
- Be open to staff’s suggestions, we want to process your project quickly.



# Electronic Referrals

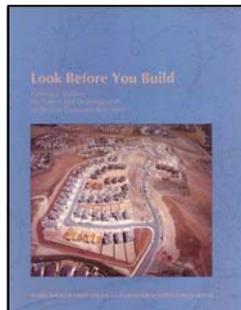
by Taryn Jamison

At the end of January, the Department of Planning and Building began using a system of electronic project referrals for new land use and land-division projects. This allows us to send an email to referral agencies and Community Advisory Councils to notify them that there is a referral for a proposed project ready for their review and response. It also provides a link to the webpage location. The webpage lists newly submitted projects in three folders organized by the site's geographic location within the county and the appropriate geographic team (Coastal, North County or South County). On the webpage, a referral agency or Community Advisory Council can find electronic versions of items such as the project application, land-use category map, assessor's parcel map, aerial, and site plans, as well as any other pertinent information regarding the proposed project. If an agency or Community Advisory Council wishes, they can respond to the project referral by email. This new system has allowed agencies and communities to receive referrals more quickly after initial submittal and respond back to the Department more easily and efficiently. Although this process is still within its introductory phase, the feedback has been positive.

## Look Before You Build

The U.S. Geological Survey published a great book written on geologic hazards, in non-technical language. It includes useful suggestions on how to use geologic information to reduce those hazards.

I encourage you to take a look at it. "Look Before You Build" can be downloaded for free at <http://pubs.usgs.gov/circ/1995/c1130>



## Automated Services Available

Our automated services can help you to find information, get forms and applications, apply for a permit or schedule a building inspection.

On our website, you can:

- apply for certain types of building permits
- schedule an inspection
- check the zoning of a parcel
- look at zoning maps
- download many forms and documents



We also provide an automated telephone system (in English and Spanish) where you can:

- schedule an inspection
- cancel or reschedule an inspection
- listen to inspection results, zoning information, and plan review information (or receive a FAX of the information)
- receive many forms and documents via FAX

Visit our website at <http://www.sloplanning.org> or call our automated phone system at (805) 788-2076.

## Map Image Website Update

The Geographic Technology and Design Section is pleased to announce that we have completed the migration of our Map Image Website from the Cal Poly Library over to the official County servers. We were able to reformat the entire site so that it has the same look and feel as all the other County pages. County website visitors will be more assured that they are on an official County site.

On the Planning and Building page, you will notice the Zoning and Maps quick link at the bottom of the list on the left side of the page.

<http://www.slocounty.ca.gov/planning/zoning/htm>

This takes you to our new Zoning and Maps page which has a link to our Map Image Download Center.

The Map Image Download Center is organized into five sections each containing links to our most requested PDF maps:

Natural Hazard Disclosure Maps	Miscellaneous County Maps
Flood Hazards	Political Boundaries
Fire Hazards	County Features
Earthquake Hazards	Public Facilities
	Economy
Natural Resource Maps	Land Use and Zoning
Vegetation Resources	
Agricultural Resources	
Water/Minerals	
Preserved Land	Safety Elements Maps
Species	
Habitat	



Planning and Building  
County Gov. Center  
San Luis Obispo, CA  
93408

Phone:  
(805) 781-5600  
Email:  
Planningnetwork  
@co.slo.ca.us



## Upcoming Events...

- March 16th** Conceptual plans due for Secondary Dwelling Design Competition
- April 2007** Community Advisory Council Training—City/County Library, SLO
- April 29 - May 2** Association of Environmental Professionals Conference
- May 5th** Waterfest '07 — for more info contact Kaila Dettman 544-9096
- July 11-13** Coastal Commission Meeting—Embassy Suites, 333 Madonna Road, SLO

Newsletter brought  
to you by the  
Communications  
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Department of  
Planning and  
Building

Please submit ideas for  
the next issue to  
**Jennifer Jimenez**  
jjimenez@co.slo.ca.us

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receive this newsletter  
by e-mail, send a  
message to  
Planningnetwork  
@co.slo.ca.us with  
“newsletter” in the  
subject line.*

## Did you know. . .

There are seven required elements for a General Plan: Land Use, Open Space, Housing, Safety, Noise, Circulation, and Conservation. Each City or County must adopt these seven elements. A City or County can also adopt optional elements. In San Luis Obispo County we have five optional elements: Economic, Energy, Offshore Energy, Agriculture, and Parks and Recreation. You can find these elements on our webpage at [www.sloplanning.org](http://www.sloplanning.org).

## Meet the New Staff!

### Paul Sittig — Current Planning

Paul Sittig has joined the Coastal Planning Team. He is a Central Coast native, having grown up in Santa Barbara and spending the last few years in San Luis Obispo studying City and Regional Planning at Cal Poly. He is engaged to be married in early June of this year and is looking to stay in the area with his wife-to-be. He enjoys photography, the grand outdoors in all its forms, and good literature.



### Brian Papurello — Geologist

We are excited to announce the hiring of Brian Papurello, a Certified Engineering Geologist. Brian will begin work on February 26th with our Environmental Division. Brian, Maria, his wife, and three sons ranging from 13-19 years of age are excited to move back home to the central coast where they can be closer to family who reside in the Santa Maria area.



## Do's and Don't's Around Established Oak Trees

Preserving oak trees provides both an economic and ecologic value to you and the environment. The following is a checklist of some of the things to consider to preserve this valuable resource around your home:

- Avoid the following within the tree dripline/canopy: soil disturbance, soil compaction, summer watering (e.g., no turf), placement of fill, trenching,
- Use an arborist when trimming moderate to large branches,
- Disinfect pruning tools before using to avoid spread of disease,
- Avoid removing more than 10% of the canopy when trimming,
- Use native plants for landscaping under oak that have similar water requirements,
- Avoid the planting of vines,
- Locate leach lines well outside of tree canopy,
- When replacing pool and spa water, do not discharge used water under tree canopy,
- Retain native understory plants, when possible.



**Attachment 9 Examples of Low Impact Development Public Education and Outreach Materials**

# Low Impact Development (LID)

## A Sensible Approach to Land Development and Stormwater Management



An educational program for land use decision makers that addresses the relationship between land use and natural resource protection.



## What is Low Impact Development (LID)?

LID is an alternative method of land development that seeks to maintain the natural hydrologic character of the site or region. The natural hydrology, or movement of water through a watershed, is shaped over centuries under location-specific conditions to form a balanced and efficient system. When hardened surfaces such as roads, parking lots, and rooftops are constructed, the movement of water is altered; in particular, the amount of runoff increases and infiltration decreases. This results in increased peak flow rate and volume, and pollution levels in stormwater runoff. LID designs with nature in mind: working with the natural landscape and hydrology to minimize these changes. LID accomplishes this through source control, retaining more water on the site where it falls, rather than using traditional methods of funneling water via pipes into local waterways. Both improved site design and specific management measures are utilized in LID designs. LID has been applied to government, residential, and commercial development and redevelopment, and has proven to be a cost-efficient and effective method for managing runoff and protecting the environment.

## Using LID Tools in Residential Development

**NATURAL DRAINAGE FLOW**  
Reduces need for grading and constructed drainage systems by building house in a location that permits preservation of natural pattern of stormwater drainage

**PRESERVED NATIVE VEGETATION**  
Enhances the aesthetic quality of community and improves the evaporation-transpiration rate

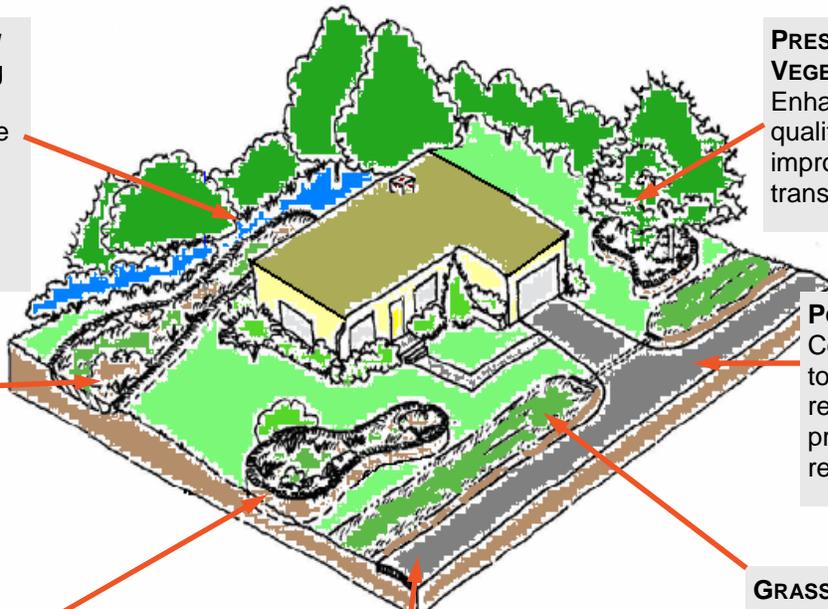
**BIORETENTION CELL OR RAIN GARDEN**  
Depressions that contain soil amendments that promote infiltration of stormwater

**POROUS PAVEMENT**  
Concrete that allows rain to infiltrate, thereby reducing runoff and promoting groundwater recharge

**AMENDED SOIL**  
Soil enriched with sand and organic materials increases the capacity of soil to infiltrate water

**REDUCED HARDSCAPE**  
Narrower streets, sidewalks, and driveways increases pervious areas and open spaces

**GRASSY SWALE**  
Vegetated channels that slow stormwater runoff and promotes infiltration, traps sediment, and helps treat pollutants



## Traditional vs. LID Stormwater Management

Historically, in the U.S., the motto for stormwater management has been “**conveyance**,” move water away from the site where it falls as quickly and efficiently as possible. Traditional management tools include street gutters and curbs, pipes, and canals to remove water from the developed areas. To receive this increased volume, creeks and rivers are re-shaped and lined with concrete. Detention ponds, some with water quality filtration devices, regulate discharge to reduce peak flow impacts on receiving waters. For the most part, these practices reduce flood impacts, but do not completely address water quality, and aquatic and riparian habitat degradation issues.

In contrast with the traditional approaches, the guiding principle of low impact development approaches is not conveyance; it is “**source control and infiltration**”. LID techniques seek to maximize the area available for infiltration so that runoff volume and pollutant concentrations are reduced. This is achieved through a variety of site design and engineered infiltration techniques. Site design techniques include locating open spaces in low-lying areas to serve as a detention/retention basin and avoid development on permeable soils to promote infiltration and groundwater recharge. Engineered techniques include the use of grassy swales, bioretention cells, and porous pavement.

### LID Benefits

#### Water Quality

- Contributes to groundwater recharge through infiltration
- Improves surface water quality
- Protects stream and lake quality from large volumes of polluted runoff

#### Meets Clean Water Act Requirements

- Source control reduces the pollutant level and volume of runoff entering a water body, complying with National Pollutant Discharge Elimination System (NPDES) and anti-degradation policy;
- This also aids in complying with 401 certification requirements

#### Flood Control

- Reduces frequency & severity of floods
- Reduces peak flow volume & velocity

#### Habitat Protection

- Preserves stream & riparian habitats
- Preserves regional trees & vegetation
- Reduces eroded sediment loading into streams & lakes

#### Community Value

- Increases aesthetics and recreational opportunities in protected riparian habitats
- Increases land value by having a cleaner environment
- Increases public/private collaborative partnerships

### LID Challenges

#### Lack of Information

- Many municipal planners, consultants and the general public are unfamiliar with the benefits of LID practices and how to utilize them in different environments.

#### Inflexible Regulations/Ordinances

- Existing rules often lack the flexibility to implement LID solutions

#### Maintenance

- Some LID tools require maintenance by homeowners and local public works departments to function properly

#### Presence of Contaminants

- Use of filtration practices can threaten groundwater quality if high levels of soil contaminants are present.



Stormdrain leading to bioretention cell

Roof runoff drains to grassy swale

[www.main.nc.us/riverlink/content/12chap/chap12.htm](http://www.main.nc.us/riverlink/content/12chap/chap12.htm)

## Economic Issues

The **economic benefits** of LID include:

- Reduced costs of stormwater infrastructure, including curbs and gutters
- Reduced stormwater utility fees
- Increased land value
- Decreased spending on current and future environmental conservation programs

Specific cost savings vary on a case by case basis. There can be **additional costs**:

- Higher installation costs for certain soil types and gradients
- Increased landscape maintenance costs

Issue	Savings
Higher Lot Value	\$3000 more per lot
Lower Cost Per Lot	\$4800 less cost per lot
Enhanced Marketability	80% of lots sold in first year
Added Amenities	23.5 acres of green-space/parks
Recognition	National, state, and professional
Total Economic Benefit	Over \$2,200,000 added to profit

The above table, from **Gap Creek residential subdivision**, Sherwood, AR, illustrates the financial benefits of using LID methods. *Tyne & Associates, North Little Rock, AR*

## Addressing LID Implementation Challenges

### Solutions

#### Clay Soils/Limited Space

The combination of clay soils and small lot sizes can work well together. As clays are naturally less pervious, less engineering and land is required to achieve predevelopment infiltration rates. Use integrated stormwater management techniques, a combination of traditional and LID approaches. Significant stormwater runoff reduction can still be achieved.

#### Local Codes Aren't LID-friendly

Revise local codes & ordinances to support use of LID techniques. Check out the Center for Watershed Protection's website for suggested guidelines ([www.cwp.org/COW\\_worksheet.htm](http://www.cwp.org/COW_worksheet.htm)).

#### Don't know what would work and where

Educate planning & public works staff. Numerous references are available on the use of LID in a variety of settings (see Online References).

### Some communities that have found solutions

**Hercules** has modified stormwater management guidelines that fit LID principles, city codes that allow administrative approval for LID projects, and limited street lengths.

**Contra Costa** incorporated LID measures into their Standard Urban Stormwater Management Plan (SUSMP) for new development (<http://www.cccleanwater.org/construction/nd.php>). **Sacramento**, likewise, is publishing their own design manual in Fall, 2006 that includes LID measures.

**San Diego** has new parking standards for intensive commercial zones that include smaller parking spaces and driveways, plus new guidelines requiring reduced imperviousness for parking spaces.

**Santa Monica** encourages LID by requiring that all new developments and substantial remodels submit an "Urban Runoff Mitigation Plan", and reduce projected runoff for the site by 20%. The city recommends LID technologies.

## LID as a Re-design Strategy

**Retrofit a Parking Lot to increase permeability.** Over sixty-five percent of impervious areas are associated with "habitat for cars". Using porous pavement in parking lots is a simple way to increase infiltration and reduce runoff. When the US Navy Yard in Washington, D.C. needed to repave its parking lot, they used porous pavers. They also added bioretention cells to the landscaped areas and disconnected downspouts. The re-design did not alter the amount of parking spots, but reduced peak runoff and pollution, thus protecting and helping to restore the Anacostia and Potomac Rivers and the Chesapeake Bay.



Porous pavement covers about 1/3 of each parking space in the D.C. Navy Yard parking



LID street design: vegetated swales, no curbs, and narrower streets promote infiltration of stormwater.

**Alter street design to increase infiltration.** In a landmark project in Seattle, the Street Edge Alternative or SEA project involved building vegetated swales, bioretention cells, and narrower streets without curbs to promote an effective drainage and filtration system. The system reduced peak runoff for the 2 year flood event by 98%, and is capable of conveying the 25 year flood event. The local watershed provides spawning habitat for endangered salmon. The project was so successful that similar ones are being planned throughout the city.

**Replace lawns with rain gardens.** Rain gardens are small bioretention cells landscaped with plants, trees, and grasses. They are a particularly good way for individual homeowners to enhance their landscaping while protecting water quality. By planting easy-care native wildflowers, hardy perennials and grasses, attractive gardens can be constructed that have the added environmental benefits. More information on rain gardens is available at: <http://www.healthylandscapes.org/raingarden.htm>. Information on plants compatible for use in a California rain garden is posted at:

[http://www.bbg.org/gar2/topics/design/2004sp\\_raingardens.html](http://www.bbg.org/gar2/topics/design/2004sp_raingardens.html).



Rain garden in a small backyard that collects runoff from roof and patio.

# LID as a Design Strategy

LID is more than a collection of engineered tools. It is a comprehensive design technique incorporating site planning and integrated management measures.

LID design principles include:

- Extensive site assessment of hydrology, topography, soils, vegetation and water features;
- Higher density, clustered housing, preserving open spaces to facilitate infiltration and protect habitats;
- Street layout that minimizes road length and width, calming traffic while allowing safe access of emergency vehicles.

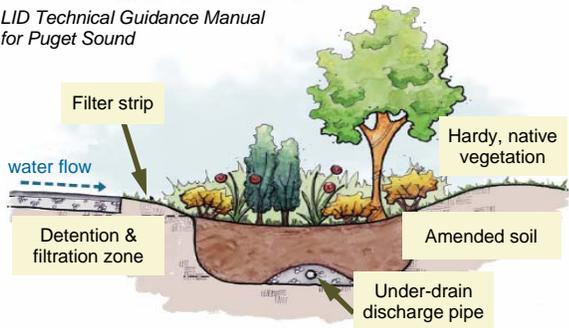
*LID Technical Guidance Manual for Puget Sound*



In this example, LID design reduces imperviousness by changing the cul-de-sac design, reducing street width and lot size, and instead clustering houses around common green spaces that also serve as infiltration sites and preserving natural features.

## Examples of LID

*LID Technical Guidance Manual for Puget Sound*



### Basic Components of a Bioretention Cell

To see how to engineer bioretention cells with the proper gradient and components visit:  
[www.lowimpactdevelopment.org/epa03/biospec.htm](http://www.lowimpactdevelopment.org/epa03/biospec.htm)



**Rain Gardens** and grass swales between houses are used at Douglas Ranch, Granite Bay, CA to catch and filter runoff from roofs and driveways before entering a local stream.



**Curb Cuts** permit stormwater to flow into grassy swales to reduce roadway contaminants that flow into nearby waterways. They can also be used in *existing* landscaped areas.



**Hollywood Driveways** have a dividing strip of grass in order to reduce the amount of impervious surface. Another way to reduce driveway space is to share one with a neighbor.

### Online Resources

Low Impact Development Center  
 U.S. Environmental Protection Agency  
 Stormwater Manager's Resource Center  
 National NEMO Network  
 LID Urban Design Tools  
 National Association of Home Builders  
 California Stormwater Quality Association

[www.lowimpactdevelopment.org](http://www.lowimpactdevelopment.org)  
[www.epa.gov/owow/nps/urban.html](http://www.epa.gov/owow/nps/urban.html)  
[www.stormwatercenter.net](http://www.stormwatercenter.net)  
[www.nemonet.uconn.edu](http://www.nemonet.uconn.edu)  
[www.lid-stormwater.net](http://www.lid-stormwater.net)  
[www.toolbase.org/index-toolbase.asp](http://www.toolbase.org/index-toolbase.asp)  
[www.cabmphandbooks.com](http://www.cabmphandbooks.com)

Prepared by Office of Environmental Health Hazard Assessment & the California Water & Land Use Partnership (CA WALUP)  
 Written by E. Ruby & D. Gillespie, student interns, OEHHA. For more information contact Barbara Washburn: [bwashburn@oehha.ca.gov](mailto:bwashburn@oehha.ca.gov).

CA WALUP is an educational program for land use decision makers addressing the relationship between land use and natural resource protection. The CA WALUP is a Charter Member of the National NEMO Network. CA WALUP website: <http://cawalup.usc.edu>



# Protecting Water Quality from **URBAN RUNOFF**

## Clean Water Is Everybody's Business

In urban and suburban areas, much of the land surface is covered by buildings and pavement, which do not allow rain and snowmelt to soak into the ground. Instead, most developed areas rely on storm drains to carry large amounts of runoff from roofs and paved areas to nearby waterways. The stormwater runoff carries pollutants such as oil, dirt, chemicals, and lawn fertilizers directly to streams and rivers, where they seriously harm water quality. To protect surface water quality and groundwater resources, development should be designed and built to minimize increases in runoff.

### How Urbanized Areas Affect Water Quality

#### Increased Runoff

The porous and varied terrain of natural landscapes like forests, wetlands, and grasslands traps rainwater and snowmelt and allows them to filter slowly into the ground. In contrast, impervious (nonporous) surfaces like roads, parking lots, and rooftops prevent rain and snowmelt from infiltrating, or soaking, into the ground. Most of the rainfall

The most recent National Water Quality Inventory reports that runoff from urbanized areas is the leading source of water quality impairments to surveyed estuaries and the third-largest source of impairments to surveyed lakes.

*Did you know that because of impervious surfaces like pavement and rooftops, a typical city block generates more than 5 times more runoff than a woodland area of the same size?*

and snowmelt remains above the surface, where it runs off rapidly in unnaturally large amounts.

Storm sewer systems concentrate runoff into smooth, straight conduits. This runoff gathers speed and erosional power as it travels underground. When this runoff leaves the storm drains and empties into a stream, its excessive volume and power blast out streambanks, damaging streamside vegetation and wiping out aquatic habitat. These increased storm flows carry sediment loads from construction sites and other denuded surfaces and eroded streambanks. They often carry higher water temperatures from streets, roof tops, and parking lots, which are harmful to the health and reproduction of aquatic life.

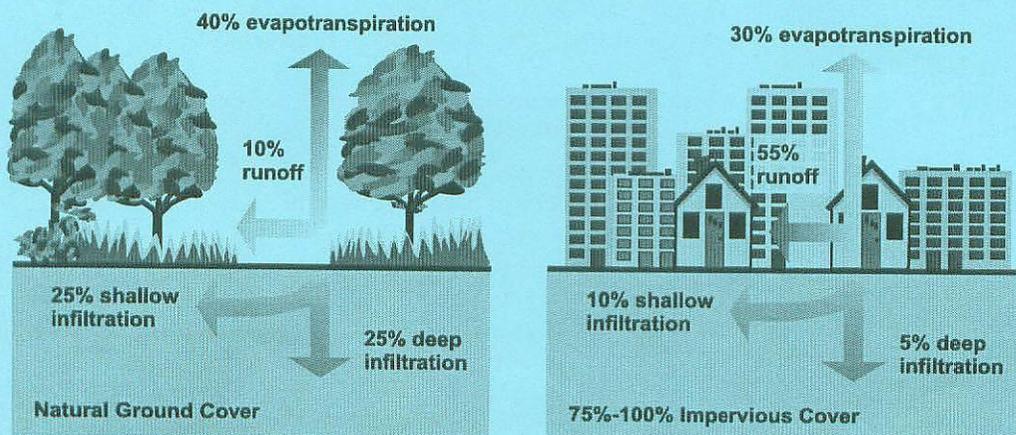
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot survive when these conditions prevail.

#### Increased Pollutant Loads

Urbanization increases the variety and amount of pollutants carried into streams, rivers, and lakes. The pollutants include:

- Sediment
- Oil, grease, and toxic chemicals from motor vehicles
- Pesticides and nutrients from lawns and gardens
- Viruses, bacteria, and nutrients from pet waste and failing septic systems
- Road salts
- Heavy metals from roof shingles, motor vehicles, and other sources
- Thermal pollution from dark impervious surfaces such as streets and rooftops

These pollutants can harm fish and wildlife populations, kill native vegetation, foul drinking water supplies, and make recreational areas unsafe and unpleasant.



*Relationship between impervious cover and surface runoff. Impervious cover in a watershed results in increased surface runoff. As little as 10 percent impervious cover in a watershed can result in stream degradation.*

---

## Managing Urban Runoff What Homeowners Can Do

To decrease polluted runoff from paved surfaces, households can develop alternatives to areas traditionally covered by impervious surfaces. Porous pavement materials are available for driveways and sidewalks, and native vegetation and mulch can replace high maintenance grass lawns. Homeowners can use fertilizers sparingly and sweep driveways, sidewalks, and roads instead of using a hose. Instead of disposing of yard waste, they can use the materials to start a compost pile. And homeowners can learn to use Integrated Pest Management (IPM) to reduce dependence on harmful pesticides.

In addition, households can prevent polluted runoff by picking up after pets and using, storing, and disposing of chemicals properly. Drivers should check their cars for leaks and recycle their motor oil and antifreeze when these fluids are changed. Drivers can also avoid impacts from car wash runoff (e.g., detergents, grime, etc.) by using car wash facilities that do not generate runoff. Households served by septic systems should have them professionally inspected

and pumped every 3 to 5 years. They should also practice water conservation measures to extend the life of their septic systems.

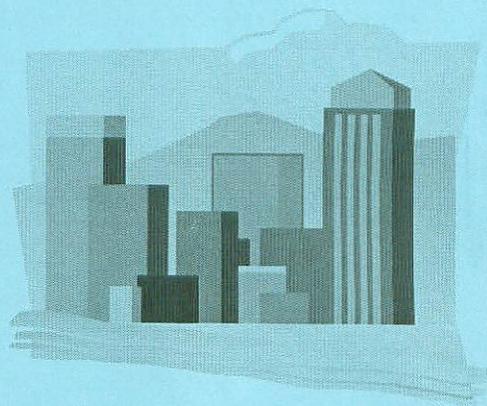
### Controlling Impacts from New Development

Developers and city planners should attempt to control the volume of runoff from new development by using low impact development, structural controls, and pollution prevention strategies. Low impact development includes measures that conserve natural areas (particularly sensitive hydrologic areas like riparian buffers and infiltrable soils); reduce development impacts; and reduce site runoff rates by maximizing surface roughness, infiltration opportunities, and flow paths.

### Controlling Impacts from Existing Development

Controlling runoff from existing urban areas is often more costly than controlling runoff from new developments. Economic efficiencies are often realized through approaches that target "hot spots" of runoff pollution or have multiple benefits, such as high-efficiency street sweeping (which addresses aesthetics, road safety,

and water quality). Urban planners and others responsible for managing urban and suburban areas can first identify and implement pollution prevention strategies and examine source control opportunities. They should seek out priority pollutant reduction opportunities, then protect natural areas that help control runoff, and finally begin ecological restoration and retrofit activities to clean up degraded water bodies. Local governments are encouraged to take lead roles in public education efforts through public signage, storm drain marking, pollution prevention outreach campaigns, and partnerships with citizen groups and businesses. Citizens can help prioritize the clean-up strategies, volunteer to become involved in restoration efforts, and mark storm drains with approved "don't dump" messages.



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## Related Publications

### Turn Your Home into a Stormwater Pollution Solution!

[www.epa.gov/nps](http://www.epa.gov/nps)

This web site links to an EPA homeowner's guide to healthy habits for clean water that provides tips for better vehicle and garage care, lawn and garden techniques, home improvement, pet care, and more.

### National Management Measures to Control Nonpoint Source Pollution from Urban Areas

[www.epa.gov/owow/nps/urbanmm](http://www.epa.gov/owow/nps/urbanmm)

This technical guidance and reference document is useful to local, state, and tribal managers in implementing management programs for polluted runoff. Contains information on the best available, economically achievable means of reducing pollution of surface waters and groundwater from urban areas.

### Onsite Wastewater Treatment System Resources

[www.epa.gov/owm/onsite](http://www.epa.gov/owm/onsite)

This web site contains the latest brochures and other resources from EPA for managing onsite wastewater treatment systems (OWTS) such as conventional septic systems and alternative decentralized systems. These resources provide basic information to help individual homeowners, as well as detailed, up-to-date technical guidance of interest to local and state health departments.

### Low Impact Development Center

[www.lowimpactdevelopment.org](http://www.lowimpactdevelopment.org)

This center provides information on protecting the environment and water resources through integrated site design techniques that are intended to replicate preexisting hydrologic site conditions.

### Stormwater Manager's Resource Center (SMRC)

[www.stormwatercenter.net](http://www.stormwatercenter.net)

Created and maintained by the Center for Watershed Protection, this resource center is designed specifically for stormwater practitioners, local government officials, and others that need technical assistance on stormwater management issues.

### Strategies: Community Responses to Runoff Pollution

[www.nrdc.org/water/pollution/storm/stoinx.asp](http://www.nrdc.org/water/pollution/storm/stoinx.asp)

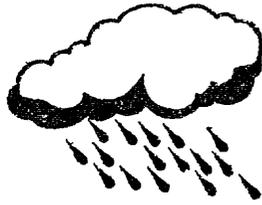
The Natural Resources Defense Council developed this interactive web document to explore some of the most effective strategies that communities are using around the nation to control urban runoff pollution. The document is also available in print form and as an interactive CD-ROM.

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## For More Information

U.S. Environmental Protection Agency  
Nonpoint Source Control Branch (4503T)  
1200 Pennsylvania Avenue, NW  
Washington, DC 20460

[www.epa.gov/nps](http://www.epa.gov/nps)



**LET IT  
SOAK!**

**LEARN HOW LOW IMPACT DEVELOPMENT  
(LID) CAN BENEFIT YOUR COMMUNITY:  
[WWW.EPA.GOV/NPS/LID](http://WWW.EPA.GOV/NPS/LID)**



*For a demo on how LID soaks up runoff pollution, dip in water.*



# How Urbanization Affects the Water Cycle



An educational program for land use decision makers that addresses the relationship between land use and natural resource protection.

## Why is the Water Cycle Important?

The water cycle, also known as the hydrological cycle, is the continuous exchange of water between land, waterbodies, and the atmosphere. Approximately 97% of the earth's water is stored in the oceans, and only a fraction of the remaining portion is usable freshwater. When precipitation falls over the land, it follows various routes. Some of it

### Impervious Cover (IC):

all hard surfaces that do not allow water to penetrate the soil, such as rooftops, driveways, streets, swimming pools, and patios

evaporates, returning to the atmosphere, some seeps into the ground, and the remainder becomes surface water, traveling to oceans and lakes by way of rivers and streams. Impervious surfaces associated with urbanization alter the natural amount of water that takes each route. The consequences of this change are a decrease in the volume of water that percolates into the ground, and a resulting increase in volume and decrease in quality of surface water. These hydrological changes have significant implications for the quantity of fresh, clean water that is available for use by humans, fish and wildlife <sup>1</sup>.

## MORE WATER FASTER

### DEVELOPED LANDS

Rain pours more quickly off of city and suburban landscapes, which have high levels of impervious cover

### NATURAL LANDS

Trees, brush, and soil help soak up rain and slow runoff in undeveloped landscapes

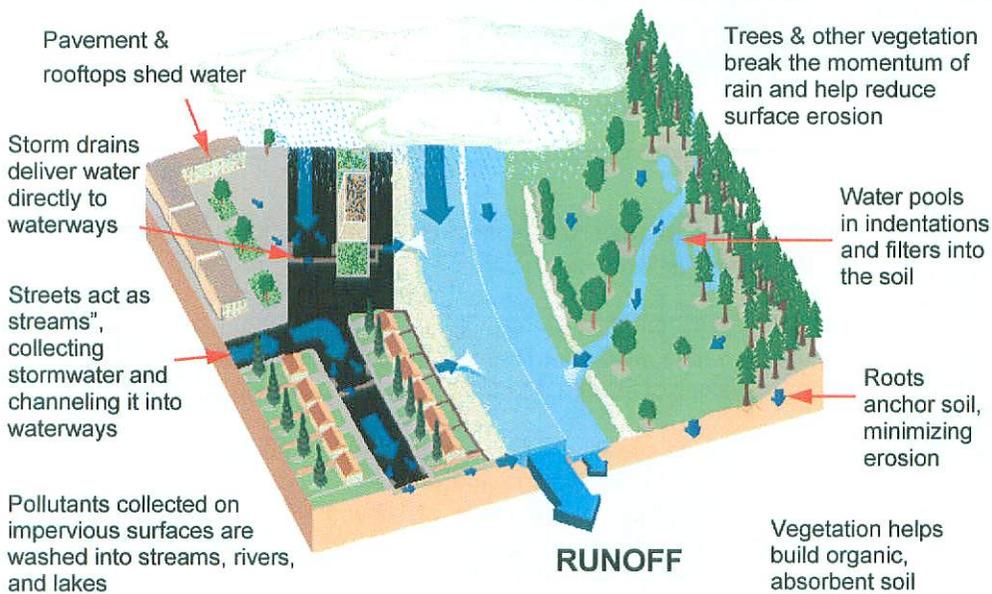


Figure 1 (left) illustrates how impervious cover and urban drainage systems increase runoff to creeks and rivers. The larger volume, velocity and duration of flow acts like sandpaper on stream banks, intensifying the erosion and sediment transport from the landscape and stream banks. This often causes channel erosion, clogged stream channels, and habitat damage.

Channelized rivers and streams exhibit similar problems accommodating large peak runoff volumes and supporting aquatic ecosystems <sup>4,5</sup>.

Graphic Sacramento Bee<sup>2</sup>

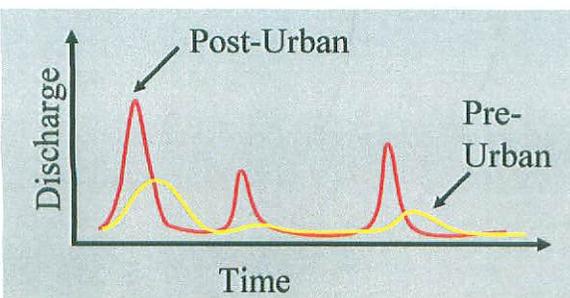
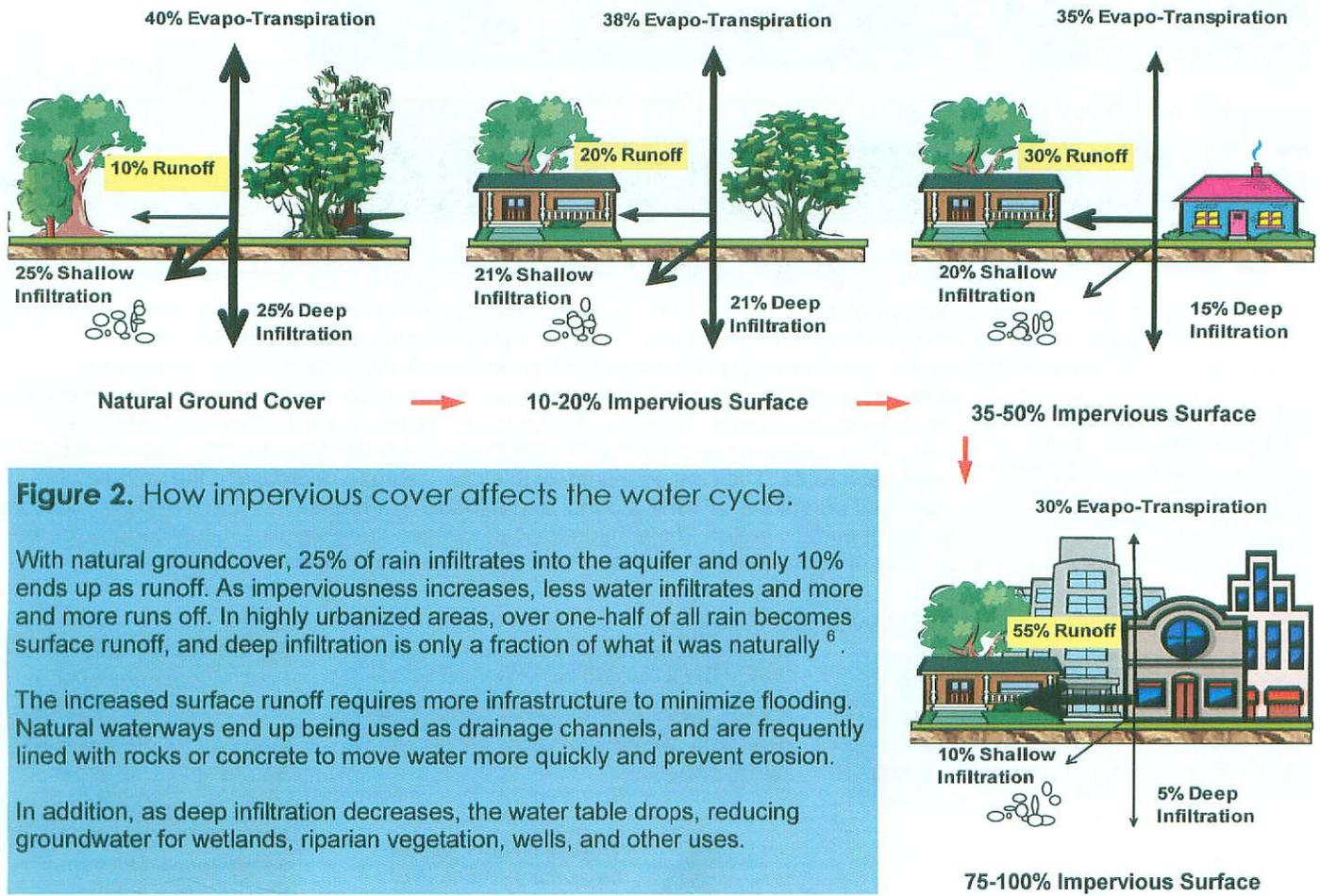


Figure 2 The hydrograph (left) illustrates stormwater peak discharges in a urban watershed (red line) and a less developed watershed (yellow line). In watersheds with large amounts of impervious cover, there is a larger volume and faster rate of discharge than in less developed watersheds, often resulting in more flooding and habitat damage.

Adapted from Santa Clara Hydromodification Management Plan <sup>3</sup>



**Figure 3. Relationship between imperviousness and stream quality.**

In most cases, when impervious cover (IC) is less than 10% of a watershed, streams remain healthy. Above 10% impervious cover, common signs of stream degradation are evident. They include<sup>1,4</sup>:

- Excessive stream channel erosion (bed and bank)
- Reduced groundwater recharge
- Increased size and frequency of 1-2 year floods
- Decreased movement of groundwater to surface water
- Loss of streambank tree cover
- Increased contaminants in water
- Increased fine sediment in stream bed
- Overall degradation of the aquatic habitat

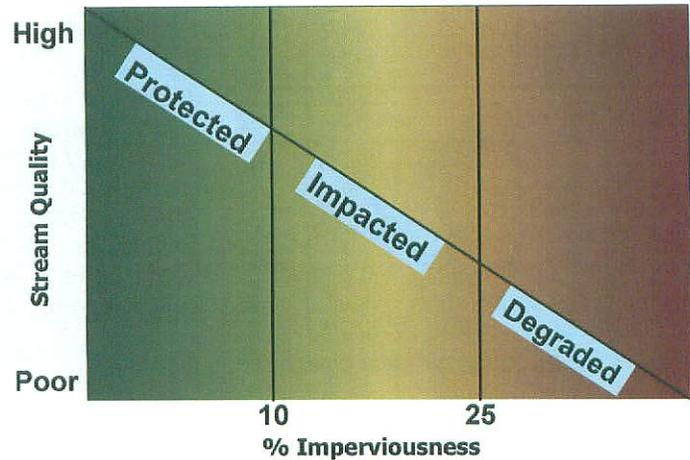


Pictures from different reaches of Secret Ravine Creek, Placer County, California



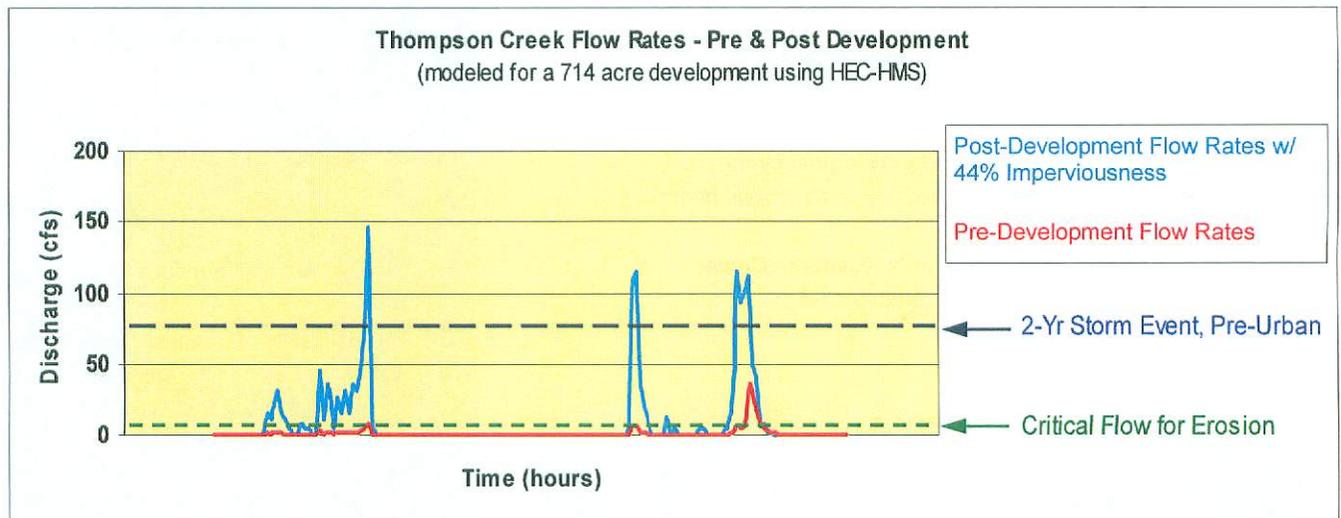
**Figure 4.** Conceptual relationship between IC and stream habitat quality.

Between 10 – 25% imperviousness, major alterations in stream morphology occur that significantly reduce habitat quality. At greater than 25% impervious cover, streams suffer from loss of habitat, floodplain connectivity, and bank stability, as well as decreased water quality<sup>1</sup>.



## California Examples

**S**tudies on urban streams across California have consistently found similar patterns of degradation. For example, in Los Penasquitos Creek in San Diego County, watershed development grew from 9% to 37% urbanization between 1966-2000. From 1973-2000, the total annual urban runoff in the upper watershed increased by 4% per year, resulting in more than a 100% increase in runoff for the measured time period. The flood magnitude for the 1-2 year storm also increased by more than 5 fold from 1965-2000<sup>7</sup>.



**Figure 5.** Comparison of Pre- and Post-Development Flow Conditions, Thompson Creek, Santa Clara Valley, CA.

The impact of 44% impervious cover on a variety of hydrological parameters on Thompson Creek were predicted during a random seven-day period. 50 years worth of data was used in the modeling process. The most obvious difference between the pre and post development conditions is the significantly greater volume of runoff generated after development, as seen in the above graph. Whereas pre-development flows were typically at flow rates that would not cause bank erosion (green line), post-development flows mainly exceeded the flow needed to destabilize stream banks. Further, post-development flows, in contrast to pre-development flows, would regularly exceed the historic 2-year storm event.

The impacts of these altered conditions are degradation of the aquatic habitat and increased frequency of flood events. In the Thompson Creek sub-watershed, hydrologists also found that the increased imperviousness associated with development approximately doubled stormwater runoff for peak discharges for 2, 5, and 10-year storm event. Results in this watershed and elsewhere have shown that the 0 – 10 year storms are the events that overwhelmingly alter the shape and size of streams. Thus, doubling of the rate of runoff will have significant impacts on aquatic resources as well as the risk of flooding<sup>3</sup>.



## In a Nutshell

Increased impervious cover associated with urbanization alters the natural cycling of water. Changes in the shape and size of urban streams, followed by decreased water quality, are the most visible effects of increased imperviousness. Greater frequency and severity of flooding, channel erosion, and destruction of aquatic habitat commonly follow watershed urbanization. Alterations in the aquatic environment associated with these hydrological changes greatly compromise the normal functioning of our waterways.

## Resources on the Web

### Center for Watershed Protection

[www.cwp.org](http://www.cwp.org)

### State Water Resources Control Board( NPS Encyclopedia)

[www.waterboards.ca.gov/nps/encyclopedia.html](http://www.waterboards.ca.gov/nps/encyclopedia.html)

### National NEMO Network

<http://nemonet.uconn.edu/>

### Low Impact Development Center

[www.lowimpactdevelopment.org/](http://www.lowimpactdevelopment.org/)

### EPA information on hydrological cycle

[www.epa.gov/seahome/groundwater/src/cycle.htm](http://www.epa.gov/seahome/groundwater/src/cycle.htm)

### The Stormwater Manager's Resource Center

[www.stormwatercenter.net](http://www.stormwatercenter.net)

## References

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- 3 Santa Clara Valley Urban Runoff Pollution Prevention Program Hydromodification Management Plan, 2005. Posted at: [http://ci7e.secsites.net/hmp\\_final\\_draft/](http://ci7e.secsites.net/hmp_final_draft/)
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## California WALUP Partners

California Coastal Commission

Office of Environmental Health  
Hazard Assessment, Cal/EPA

USC Sea Grant

State Water Resources Control Board

California Association of  
Resource Conservation Districts

Local Government Commission

UC Davis Extension

UC Santa Barbara

NOAA Coastal Services Center

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