

ATTACHMENT 10

DISADVANTAGED COMMUNITY ASSISTANCE



COSUMNES, AMERICAN, BEAR & YUBA RIVER
INTEGRATED REGIONAL WATER MANAGEMENT



CABY Integrated Regional Water Management Plan Proposition 84, Round 2 Implementation Grant

Attachment 6. Disadvantaged Community Assistance

Introduction

This Proposition 84 Implementation Grant and associated project development process represent a rare opportunity for DACs to implement system improvements.

Two projects in this proposal address critical water supply and water quality needs needs of disadvantaged communities (DACs) within the CABY region—the Camptonville Water System Improvement Project, and Wolf Creek Watershed: Restoration, Stormwater Source Control and Flood Management .

The Disadvantaged Communities related to each project are:

1. **Town of Camptonville:** Project - Camptonville Water System Improvement Project.
2. **City of Grass Valley:** Project - Wolf Creek Watershed: Restoration, Stormwater Source Control and Flood Management.

Attached is documentation for both these DACs including:

- Information that supports the determination of each DAC including a map showing the project service area is congruent with a DAC.
- Census Data that represents the community
- A letter of support from a DAC representative
- A description of the critical water supply and or water quality needs of the two identified DACs
- Other supporting documentation.



CABY INTEGRATED REGIONAL WATER MANAGEMENT PLAN
PROPOSITION 84, ROUND 2 IMPLEMENTATION GRANT



1 CAMPTONVILLE WATER SYSTEM IMPROVEMENT PROJECT

DISADVANTAGED COMMUNITY ASSISTANCE – CAMPTONVILLE WATER SYSTEM PROJECT

Summary: The Camptonville Water System Improvement Project is eligible for Disadvantaged Community Assistance. The community is a DAC recognized by DWR. The project boundaries and the area to be served by the project lay within the DWR DAC boundary. The project proposes to solve critical water supply needs of the community. For this project, we are requesting a waiver of the matching funds requirement.

DAC status: The community of Camptonville is recognized by DWR as a DAC, with the following GIS attributes:

FID	292
NAME 10	Camptonville
GEOID	0610676
INTPTLAT10	+39.4521980
INTPTLON10	-121.0488640
POP	188
MHI	27,031
BLOCK GROUP	3
CENSUS TRACT	411
PLACE_AREA	559.205

Alignment of the Project and the DAC: A map of the project is attached. This map shows the project boundaries, the service area of the water system, key road and geographic features of the area.

These features are drawn on an image of the DAC map taken from

<http://www.water.ca.gov/irwm/grants/resourceslinks.cfm>, Map 6, available at this address:

<http://www.arcgis.com/apps/OnePane/basicviewer/index.html?&extent={%22xmin%22:-15253099.084006676,%22ymin%22:3180141.190380277,%22xmax%22:-11293049.522609318,%22ymax%22:5459799.1219567675,%22spatialReference%22:{%22wkid%22:102100}}&appid=5b7cd4543b744742af278059197f6cc4>

The project area and the area served by the project lies entirely within the DAC boundaries as shown on the attached map. The MHI for the water system service area is \$27,031.00.

Letter of Support: Camptonville lies in Yuba County, in the 3rd State Assembly District, the 4th State Senate District and the 3rd US Congressional District. A letter from 3rd District Assemblyman Dan Logue expressing support for the Camptonville Community Services District "Camptonville Water System Improvement Project", and for the use of Prop 84 funding for this project, is attached.

Description of Critical Water Supply Needs: The Camptonville Water System, built in it's current form in 1992, diverts surface waters (primary source) and ground water (secondary source) to a slow-sand filter and treatment plant. Treated water is stored in a 64,000 gallon steel tank and is delivered to a 72 metered customer service area. The water permit requires compliance with Title 22 of the California Code of Regulations, hereinafter referred to as the "Standards".

Modification of the Camptonville Water System is necessary for the system to meet primary drinking water standards: The water system fails to meet the Standards in three ways: First, the existing water treatment plant lacks basic process instrumentation and control devices needed for water treatment operators to produce water in accordance with the Standards. These needed devices are non-existent, consequently there is no available data that operators or regulators can use to determine compliance. Second, the existing slow-sand filter is not large enough to meet the maximum daily demand without exceed statutory flow limits. This puts the plant out of compliance with the State's Waterworks Standards as defined in Title 22 of the CRC. Third, the existing treated water storage tank is not large enough to fulfill proper chlorination "contact time" when subjected to periodic but radical volume drawdowns caused by high consumer demand, undetected leaks or drought conditions, as illustrated below. A history of non-compliance can be assembled from the

plant records.

Infrastructure renovations to the Camptonville Water System are necessary to assure continued reliability of the minimum quality and quantity of water: The service area's maximum daily demand (MDD) for treated water is about 100,000 gallons. The service area's needed fire flow (NFF) is about 120,000 gallons. The "average" day minimum tank volume needed to provide minimum "contact time" is about 60% of tank volume or 40,000 gallons, assuming average temperature, ph. and flow conditions. The existing 64,000 gallon treated water storage tank cannot supply the maximum daily demand of 100,000 gallons; it cannot supply the needed fire flow of 120,000 gallons, and as noted above, a mere 25% of the maximum daily demand can easily drop tank volume below the minimum volume needed to properly chlorinate the water. In drought conditions, when the surface water source supply diminishes historically to a flow of 10 gallons per minute, the ability of the existing tank to reliably provide adequate supply or water quality to the community is *further* jeopardized.

While there are currently no standing court orders to correct or modify the system in any way, studies have been completed that documents the system's inability to meet specific requirements of Division 4 of Title 22 of the California Code of Regulations:

Existing Studies: A Yuba County Environmental Health Department Small Water System Inspection Report, dated September 5, 2012. A Camptonville Water System Evaluation and Improvement Study, by GEI Consultants, Inc., dated December, 2012. A Public Health Compliance Evaluation Report by Sauers Engineering, Inc., dated March 2013 documents the water system's applicable drinking water standards and the water system's deficiencies with respect to those standards.

Matching Fund Waiver Request: As allowed by DWR, a waiver of matching funds is requested for this project. The project proponent, Camptonville Community Services District, has secured nearly 12% of the total project in matching funds but is unable to meet the entire 25% matching funds requirement.

Assembly
California Legislature



DAN LOGUE
ASSEMBLYMEMBER, THIRD DISTRICT

February 12, 2013

Director Mark Cowin
California Department of Water Resources

RE: Camptonville Community Services District

Dear Director Cowin:

As Assemblyman for the Third Assembly District, I am pleased to support the Camptonville Community Services District (CCSD), who are actively pursuing funding to complete a Water System Improvement Project. They are seeking \$800,000 in grant monies from Prop 84 funding which will be used in overhauling their water treatment and storage facilities.

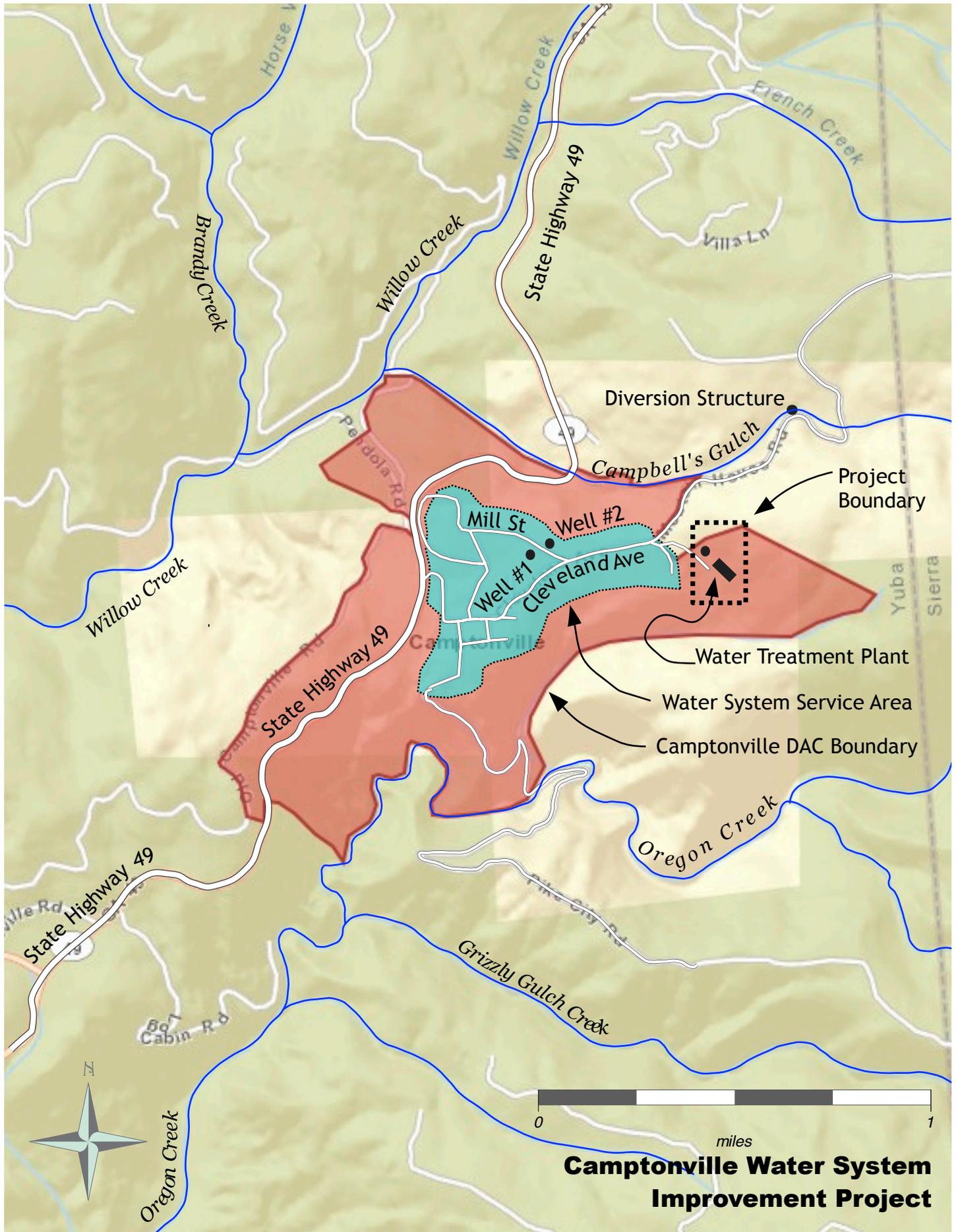
Safe and reliable drinking water is a basic need for a healthy society. These improvements are necessary for the health and safety of Camptonville area residents who are also constituents within the Third Assembly district. I am hopeful that you will give their application your serious consideration.

Thank you for giving this matter your attention and please do not hesitate to contact me with any questions.

Sincerely,

Dan Logue

Dan Logue
Assemblyman, 3rd District



Camptonville Water System Improvement Project



CABY INTEGRATED REGIONAL WATER MANAGEMENT PLAN
PROPOSITION 84, ROUND 2 IMPLEMENTATION GRANT



WOLF CREEK WATERSHED:
RESTORATION, STORM WATER
5 SOURCE CONTROL AND
FLOOD MANAGEMENT

DISADVANTAGED COMMUNITY ASSISTANCE – WOLF CREEK WATERSHED PROJECT

Summary: The project entitled *Wolf Creek Watershed: Restoration, Stormwater Source Control, and Flood Management* is eligible for Disadvantaged Community Assistance. The project will be implemented in Grass Valley, CA, which is a DAC recognized by DWR. The project boundaries and the area to be served by the project lay within the DWR DAC boundary. The project proposes to solve critical water quality needs of the community. For this project, we are requesting a waiver of the matching funds requirement.

DAC status: The community of Grass Valley is recognized by DWR as a DAC, with the following GIS attributes:

FID	246
NAME 10	Grass Valley
GEOID	0630798
INTPTLAT10	+39.2236859
INTPTLON10	-121.0550036
POP	12,860
MHI	35,843
BLOCK GROUP	1
CENSUS TRACT	5.02
PLACE_AREA	3035.59

Alignment of the Project and the DAC: A map of the project is attached. This map shows the project boundaries and the DAC boundary. These features are drawn on an image of the DAC map taken from <http://www.water.ca.gov/irwm/grants/resourceslinks.cfm>, Map 6, available at this address: <http://www.arcgis.com/apps/OnePane/basicviewer/index.html?&extent={%22xmin%22:-15253099.084006676,%22ymin%22:3180141.190380277,%22xmax%22:-11293049.522609318,%22ymax%22:5459799.1219567675,%22spatialReference%22:{%22wkid%22:102100}}&appid=5b7cd4543b744742af278059197f6cc4>

Letter of Support: A letter of support from the City of Grass Valley, which is also a partner in the project, is attached.

Description of Grass Valley

Grass Valley is a disadvantaged community located in the Sierra Nevada Foothills. Its population is 12,860. It is the second largest community in Nevada County. Its median household income is \$35,843 per year (see attached Census documentation). The MHI of Grass Valley is \$12,863 below what is required for a community to be considered a DAC. The City of Grass Valley is a partner in the project and was extensively involved in project design.

Critical Water Quality Needs of the City of Grass Valley

This project meets two critical water quality needs of the disadvantaged community of Grass Valley: 1) Wastewater treatment necessary to abate or prevent surface or groundwater contamination and 2) Management of flood flows that threaten the habitability of dwellings. The project will address these needs through floodplain reconnection and green infrastructure stormwater management.

These critical needs were determined through:

- Description and documentation of the release of partially treated wastewater into Wolf Creek and its tributaries during storms

- 303d and TMDL listings
- Regular issues with flooding of businesses and residences

How the Project Will Address the DAC's Needs

The capacity of Grass Valley's antiquated sewer system is easily exceeded during heavy rain events causing the discharge of partially treated wastewater into Wolf Creek and its tributaries. For example, on December 2, 2012 a downtown sewer discharged 1,800 gallons of sewage to Wolf Creek directly related to 4 inches of rain that fell over two days (See attachments). During 2012, Grass Valley had five raw sewage spills that were listed as violations by the State Water Resource Control Board. These overflows jeopardize the health of Grass Valley's residence and have forced the State of California to list Wolf Creek on the 303(d) list for Fecal Coliform.

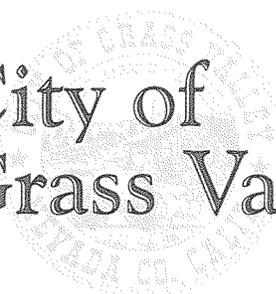
This project will directly reduce the risk of sewer overflows by implementing green infrastructure techniques including: floodplain reconnection, downspout disconnection, rain barrels, and pervious pavement. According to the EPA, green infrastructure is proven to reduce peak flows during storm events by providing infiltration through soil which reduces the burden on the sewer system. In addition to the initial implementation the project provides, it lays a strong foundation for expanding green infrastructure in Grass Valley by training local contractors to pour pervious pavement and creating education materials local residents can use to control stormwater runoff on individual properties. As implementation of these activities increases, incidences of sewer overflow will decrease significantly. Without this project, the City will be forced to continue discharging wastewater into its waterways during heavy rain events in the foreseeable future.

Additionally, as shown in Grass Valley flood maps (attached), a significant number of Grass Valley's residents are at risk from flooding. The main focus area of our project is Zone A. Just this year, several residents in this zone experienced flooding in a 7-year rain event. The project will help manage flood flows by reconnecting a local waterway with its floodplain and with green infrastructure techniques. The EPA states, "Impervious surfaces like roads, parking lots, and rooftops prevent rain from infiltrating into the ground. Most of the rainfall remains above the surface, where it runs off rapidly in unnaturally large amounts." All aspects of the project will allow rainwater to reach pervious surfaces that are able to infiltrate rainfall. Infiltrating this water will greatly reduce the stress on Grass Valley's waterways that causes flooding.

Matching Fund Waiver Request: As allowed by DWR, a waiver of matching funds is requested for this project.

Attachments: The following documents are attached as backup documentation:

1. Map showing the DAC boundary and the project area
2. Census data for the City of Grass Valley
3. City of Grass Valley flood map
4. Photos that illustrate the extent of flooding in Grass Valley
5. 303(d) report for Wolf Creek and tributaries
6. Letters between the City of Grass Valley and the Central Valley Regional Water Quality Board illustrating the sewer overflow issue
7. EPA documentation regarding green infrastructure and stormwater management



City of Grass Valley

PUBLIC WORKS DEPARTMENT

Engineering Division

March 21, 2013

Zaffar Eusuff
California Department of Water Resources
1416 9th Street
Sacramento, CA 94236

Subject: Letter of support - *Wolf Creek Watershed* project

Dear Mr. Eusuff,

The City of Grass Valley is pleased to write this letter of support for the *Restoration, Stormwater Source Control, and Flood Management in Wolf Creek Watershed* project. The City of Grass Valley is a partner in the project and has been an integral part of the project design process.

Each winter, Grass Valley experiences flooding and the City's wastewater treatment facilities often cannot keep up with the extensive stormwater that infiltrates into the system. This has resulted in critical water quality issues that negatively affect the health, safety, and economic well-being of Grass Valley residents.

The proposed project will provide an opportunity for the City to implement forward-thinking, cost-effective solutions to the flooding and pollution problems. In the short term, the project will allow stormwater to infiltrate into the soil, reducing both peak volumes and the transport of pollutants into local creeks, which will alleviate pressure on the sewer system, improve water quality, and help to reduce flooding. The project also lays a foundation for future expansion of green infrastructure stormwater source control. By training local contractors, reaching out to homeowners, and conducting a watershed assessment to identify high-priority sites for additional stormwater and pollution control, this project will allow Grass Valley to become a leader for innovative solutions in the region.

This project will not only address a critical water quality problem in a disadvantaged community, it also represents a significant step forward in the management of stormwater, and will result in benefits to the city, its citizens, and the environment. We urge you to support this worthwhile project.

Sincerely,

CITY OF GRASS VALLEY
Public Works Department



Timothy M. Kiser, PE
Public Works Director/City Engineer

c: File CABY

125 East Main Street ♦ Grass Valley, California 95945 ♦ (530) 274-4373 ♦ Fax (530) 274-4399
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State & County QuickFacts

Grass Valley (city), California

People QuickFacts	Grass Valley	California
Population, 2011 estimate	12,840	37,683,933
Population, 2010 (April 1) estimates base	12,860	37,253,956
Population, percent change, April 1, 2010 to July 1, 2011	-0.2%	1.2%
Population, 2010	12,860	37,253,956
Persons under 5 years, percent, 2010	5.9%	6.8%
Persons under 18 years, percent, 2010	20.4%	25.0%
Persons 65 years and over, percent, 2010	23.5%	11.4%
Female persons, percent, 2010	55.9%	50.3%

White persons, percent, 2010 (a)	89.4%	57.6%
Black persons, percent, 2010 (a)	0.4%	6.2%
American Indian and Alaska Native persons, percent, 2010 (a)	1.6%	1.0%
Asian persons, percent, 2010 (a)	1.5%	13.0%
Native Hawaiian and Other Pacific Islander, percent, 2010 (a)	0.1%	0.4%
Persons reporting two or more races, percent, 2010	3.9%	4.9%
Persons of Hispanic or Latino origin, percent, 2010 (b)	10.4%	37.6%
White persons not Hispanic, percent, 2010	83.7%	40.1%

Living in same house 1 year & over, percent, 2007-2011	69.9%	84.2%
Foreign born persons, percent, 2007-2011	7.1%	27.2%
Language other than English spoken at home, percent age 5+, 2007-2011	11.0%	43.2%
High school graduate or higher, percent of persons age 25+, 2007-2011	86.5%	80.8%
Bachelor's degree or higher, percent of persons age 25+, 2007-2011	24.8%	30.2%
Veterans, 2007-2011	1,174	1,997,566
Mean travel time to work (minutes), workers age 16+, 2007-2011	16.1	27.0

Housing units, 2010	6,637	13,680,081
Homeownership rate, 2007-2011	41.7%	56.7%
Housing units in multi-unit structures, percent, 2007-2011	44.3%	30.8%
Median value of owner-occupied housing units, 2007-2011	\$326,100	\$421,600
Households, 2007-2011	5,783	12,433,172
Persons per household, 2007-2011	2.15	2.91
Per capita money income in the past 12 months (2011 dollars), 2007-2011	\$24,302	\$29,634
Median household income, 2007-2011	\$35,843	\$61,632
Persons below poverty level, percent, 2007-2011	20.6%	14.4%

Business QuickFacts	Grass Valley	California
Total number of firms, 2007	2,253	3,425,510
Black-owned firms, percent, 2007	F	4.0%
American Indian- and Alaska Native-owned firms, percent, 2007	S	1.3%
Asian-owned firms, percent, 2007	S	14.9%
Native Hawaiian and Other Pacific Islander-owned firms, percent, 2007	F	0.3%
Hispanic-owned firms, percent, 2007	S	16.5%
Women-owned firms, percent, 2007	23.9%	30.3%

Manufacturers shipments, 2007 (\$1000)	D	491,372,092
Merchant wholesaler sales, 2007 (\$1000)	47,772	598,456,486
Retail sales, 2007 (\$1000)	635,386	455,032,270
Retail sales per capita, 2007	\$51,674	\$12,561

Accommodation and food services sales, 2007 (\$1000)	55,041	80,852,787
Geography QuickFacts	Grass Valley	California
Land area in square miles, 2010	4.74	155,779.22
Persons per square mile, 2010	2,711.4	239.1
FIPS Code	30798	06
Counties		

(a) Includes persons reporting only one race.

(b) Hispanics may be of any race, so also are included in applicable race categories.

D: Suppressed to avoid disclosure of confidential information

F: Fewer than 100 firms

FN: Footnote on this item for this area in place of data

NA: Not available

S: Suppressed; does not meet publication standards

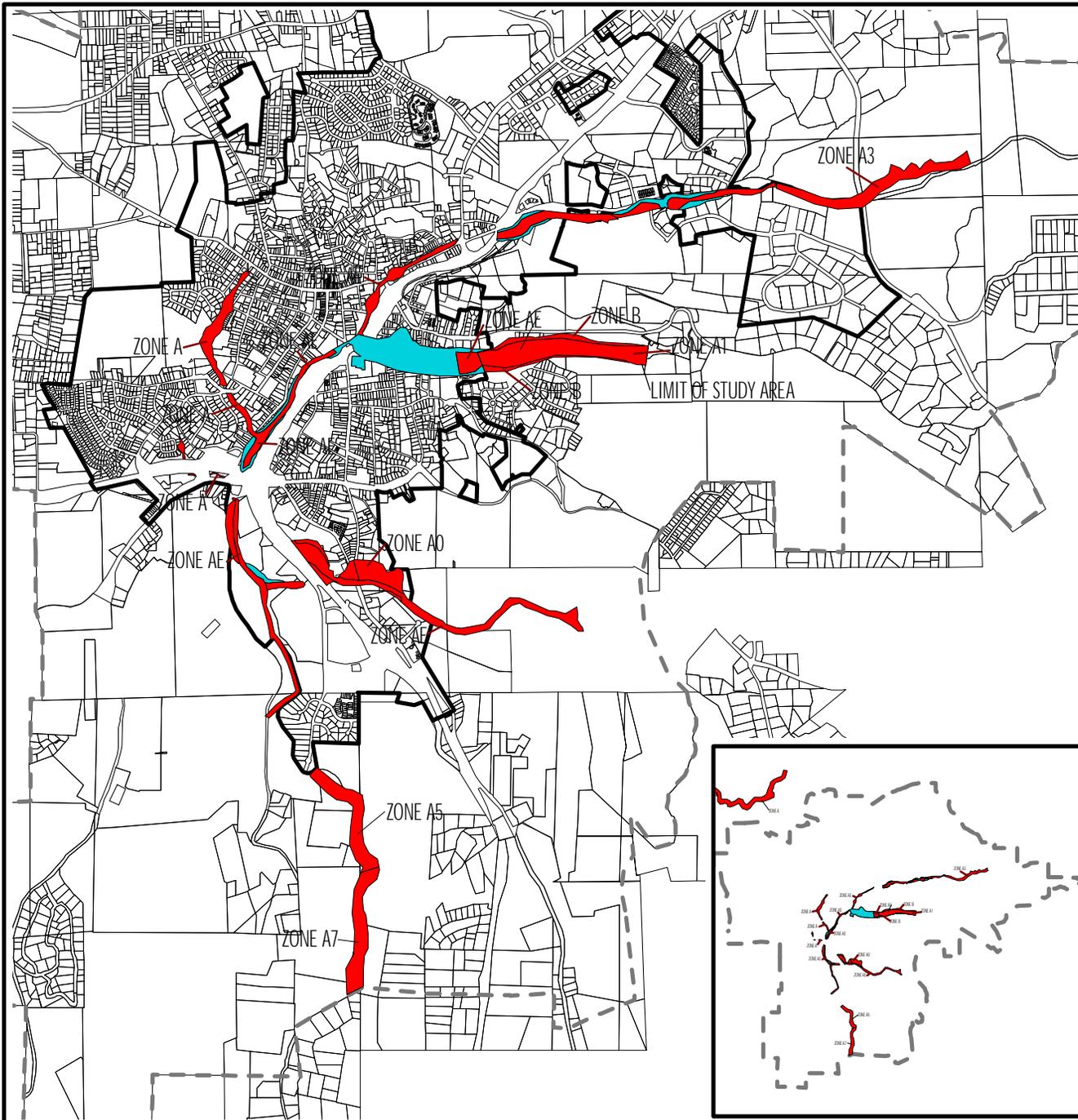
X: Not applicable

Z: Value greater than zero but less than half unit of measure shown

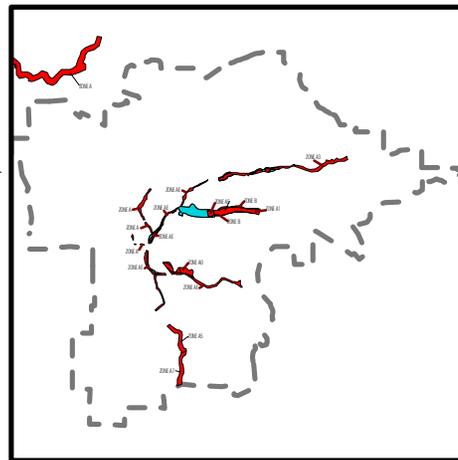
Source U.S. Census Bureau: State and County QuickFacts. Data derived from Population Estimates, American Community Survey, Census of Population and Housing, County Business Patterns, Economic Census, Survey of Business Owners, Building Permits, Consolidated Federal Funds Report, Census of Governments
Last Revised: Thursday, 10-Jan-2013 10:24:31 EST

CITY OF GRASS VALLEY 2020 GENERAL PLAN

Flood Zones
Figure 7-3



- Flood Inundation Zone**
- █ SPECIAL FLOOD HAZARD AREAS INUNDATED BY 100-YEAR FLOOD
 - A - No base flood elevations determined
 - AE - Base flood elevations determined
 - AO - Flood depths of 1 to 3 feet
 - A1 to A30 - Areas of 100 year flood
 - B - Areas between 100 and 500 year flood
 - █ OTHER FLOOD AREAS
 - X - Areas of 500 year Flood
 - OTHER AREAS
 - X - Areas outside 500 year flood plain
 - Planning Area
 - City Limits



Source: Flood Insurance Rate Map, Feb 5, 1997



Photos taken by John R. Hart for The Union newspaper on December 2, 2012



Photo taken by Daniel Swartendruber

Final California 2010 Integrated Report(303(d) List/305(b) Report)

Supporting Information

Regional Board 5 - Central Valley Region

Water Body Name: Wolf Creek (Nevada County)
Water Body ID: CAR5163201020011212113551
Water Body Type: River & Stream

DECISION ID 7074 **Region 5**
Wolf Creek (Nevada County)

Pollutant: Fecal Coliform
Final Listing Decision: List on 303(d) list (TMDL required list)
Last Listing Cycle's Final Listing Decision: List on 303(d) list (TMDL required list)(2006)
Revision Status: Original
Sources: Source Unknown
Expected TMDL Completion Date: 2019
Impairment from Pollutant or Pollution: Pollutant

Conclusion: 303(d) listing decisions made prior to 2006 were not held in an assessment database. The Regional Boards will update this decision when new data and information become available and are assessed.

RWQCB Board Staff Decision: N/A

SWRCB Board Staff Decision: After review of this Regional Board decision, SWRCB staff recommend the decision be approved by the State Board.

USEPA Action (if applicable): USEPA approved the listing of this water body as a water quality limited segment requiring a TMDL for this pollutant.

Line of Evidence (LOE) for Decision ID 7074, Fecal Coliform Wolf Creek (Nevada County) **Region 5**

LOE ID: 4584
Pollutant: Fecal Coliform
LOE Subgroup: Pollutant-Water
Matrix: Water
Fraction: Not Recorded
Beneficial Use: Water Contact Recreation
Number of Samples: 0

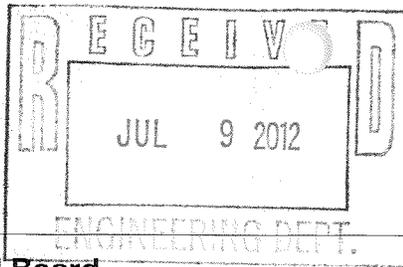
Number of Exceedances: 0

Data and Information Type: Not Specified
Data Used to Assess Water Quality: Unspecified--This LOE is a placeholder to support a 303(d) listing decision made prior to 2006.
Data Reference: [Placeholder reference pre-2006 303\(d\)](#)

Water Quality Objective/Criterion: Unspecified
Objective/Criterion Reference: [Placeholder reference pre-2006 303\(d\)](#)

Evaluation Guideline: Unspecified
Guideline Reference: [Placeholder reference pre-2006 303\(d\)](#)

Spatial Representation: Unspecified
Temporal Representation: Unspecified
Environmental Conditions: Unspecified
QAPP Information: Unspecified
QAPP Information Reference(s):



EDMUND G. BROWN, JR.
GOVERNOR

MATTHEW RODRIGUEZ
SECRETARY FOR ENVIRONMENTAL PROTECTION

File
copy
Original
Joyce Smith / Edwards
ACHC

Central Valley Regional Water Quality Control Board

6 July 2012

Timothy Kiser
Public Works Director
City of Grass Valley
125 East Main Street
Grass Valley, CA 95945

CERTIFIED MAIL
7010 3090 0001 4843 2084

ADMINISTRATIVE CIVIL LIABILITY COMPLAINT R5-2012-0537, CITY OF GRASS VALLEY, NEVADA COUNTY

Enclosed is an Administrative Civil Liability Complaint (Complaint) which alleges violations of Waste Discharge Requirements Order R5-2009-0067 and Water Code section 13385 for the discharge of 71,510 gallons of raw sewage from the sanitary sewer system. The Complaint recommends an administrative civil liability in the amount of **one hundred ten thousand eight hundred fifty dollars (\$110,850)**.

The Discharger may:

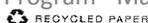
- Pay the proposed administrative civil liability and waive its right to a hearing (Option #1 on the attached waiver form);
- Ask that the hearing be postponed to facilitate settlement discussions or for other reasons (Options #2 or #3 on the attached waiver form); or
- Contest the Complaint and/or enter into settlement discussions without signing the enclosed waiver.

If the Central Valley Water Board does not receive a signed waiver by **6 August 2012**, a hearing will be scheduled for the **3/4/5 October 2012** Board meeting in Rancho Cordova. This hearing will be governed by the attached Hearing Procedure, which has been approved by the Board Chair for use in adjudicating matters such as this one. Any objections to the Hearing Procedure must be received by David Coupe, whose contact information is listed in the Hearing Procedure, by **5 p.m. on 20 July 2012**.

If the Discharger chooses to sign the waiver and pay the assessed civil liability, this will be considered a tentative settlement of the violations. The settlement will be considered final pending a 30-day public comment period, starting from the date this Complaint is issued. Interested parties may comment on the proposed action during this period by submitting written comments to the Central Valley Water Board staff person listed below. Should the Central Valley Water Board receive new information or comments during this comment period, the Executive Officer may withdraw the Complaint, return payment, and issue a new complaint. If the Central Valley Water Board does not hold a hearing on the matter, and if the terms of the final settlement are not significantly different from those proposed in the

KARL E. LONGLEY ScD, P.E., CHAIR | PAMELA C. CREEDON, EXECUTIVE OFFICER

11020 Sun Center Drive #200, Rancho Cordova, CA 95670 | www.waterboards.ca.gov/centralvalley



enclosed Complaint, then there will not be additional opportunities for public comment on the proposed settlement.

In order to conserve resources, this letter transmits paper copies of the documents to the Discharger only. Interested persons may download the documents from the Central Valley Water Board's Internet website at: http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/. Copies of these documents can also be obtained by contacting or visiting the Central Valley Water Board's office weekdays between 8:00 AM and 5:00 PM.

If you have any questions or comments regarding the Administrative Civil Liability Complaint, please contact Lucio Orellana at (916) 464-4660 or lorellana@waterboards.ca.gov.



WENDY WYELS, Supervisor
Compliance and Enforcement Section

Enclosure: ACL Complaint R5-2012-0537
Hearing Procedure
Waiver Form

cc w/o enc: Kenneth Landau, Central Valley Water Board, Rancho Cordova
AnnaKathryn Benedict, Office of Enforcement, State Water Board, Sacramento
David Coupe, Office of Chief Counsel, c/o San Francisco Bay Regional Water Quality
Control Board, Oakland
Wesley Nicks, Nevada County Environmental Health, Nevada City
Walter Bailey, Nevada City

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ADMINISTRATIVE CIVIL LIABILITY COMPLAINT R5-2012-0537

IN THE MATTER OF

CITY OF GRASS VALLEY
SANITARY SEWER OVERFLOWS
NEVADA COUNTY

This Administrative Civil Liability Complaint is issued to the City of Grass Valley (hereafter "Discharger") pursuant to California Water Code section 13385, which authorizes the imposition of administrative civil liability. This Complaint is based on findings that the Discharger violated provisions of Waste Discharge Requirements ("WDRs") Order R5-2009-0067 (NPDES CA0079898).

The Executive Officer of the Central Valley Regional Water Quality Control Board ("Central Valley Water Board") finds the following:

Background

1. The Discharger owns and operates a wastewater collection, treatment, and disposal system. The wastewater treatment plant (WWTP) provides sewerage service for the City of Grass Valley, and also treats water that discharges from an abandoned mine portal (Drew Tunnel) located within the WWTP property. Treated wastewater is discharged to Wolf Creek, tributary to the Bear River, both of which are considered waters of the United States.
2. On 12 June 2009, effective 31 July 2009, the Central Valley Water Board issued WDRs Order R5-2009-0067, which rescinded WDRs Order R5-2003-0089 and prescribes requirements for the discharge of wastewater from the Discharger's WWTP. The WDRs contain, among other items, prohibitions, effluent limitations, and monitoring and reporting requirements with which the Discharger must comply.
3. On 2 May 2006, the State Water Board issued Order 2006-0003-DWQ, the *Statewide General Waste Discharge Requirements for Sanitary Sewer Systems*. The General Order prohibits discharges from, and prescribes requirements for, sanitary sewer systems. The Discharger obtained coverage under the General Order as of 25 July 2006 and is required to operate and maintain its sewage collection system in compliance with the permit.
4. WDRs Order R5-2009-0067 includes Prohibition III.A, which states: "*Discharge of wastewater at a location or manner different from that described in the Findings is prohibited.*"

Chronology of Relevant Events¹

5. On 19 October 2011, the Discharger notified the Central Valley Water Board of a sanitary sewer overflow (SSO) that occurred at a lift station at 100 Joyce Drive. After investigation², the Discharger reported that the SSO started on 18 October 2011 and that approximately 67,000 gallons of raw sewage was released from the lift station. The Discharger was able to recover approximately 60 gallons of the spill; however, an estimated 66,940 gallons of reached Wolf Creek. The spill was due to human error during upgrades to the lift station. When the crew left for the night, a power switch was not turned on and therefore there lift station pumps were unable to operate. In addition, the battery backup system for the auto dialer did not function because the battery terminals were corroded. The spill was reported and stopped after the crew reported to work the next morning.
6. On 16 March 2012, the Discharger notified the Central Valley Water Board of an SSO that occurred from a manhole near 450 Mill Street. The Discharger determined that 120 gallons of raw sewage was spilled over an hour period. The spill reached a storm drain which empties into Wolf Creek. According to the spill report, the spill was a result of excessive quantities of rain in a short period of time, and infiltration into the sewer system that exceeded the sewer system's capacity.
7. On 16 March 2012, the Discharger notified the Central Valley Water Board of another SSO that occurred from a manhole near 450 Mill Street. The Discharger determined that 900 gallons of raw sewage spilled over an hour period. The spill reached a storm drain which empties into Wolf Creek. According to the spill report, the spill was the result of a rain event that exceeded the Discharger's sewer system capacity.
8. On 19 March 2012, the Discharger notified the Central Valley Water Board of an SSO that occurred from a private lateral cleanout near 535 East Main Street. The Discharger determined that 3,600 gallons of raw sewage spilled. The Discharger was able to recover approximately 50 gallons, but 3,550 gallons reached a storm drain that connects to Matson Creek and Wolf Creek. The spill lasted for 2.5 days, and was a result of a plugged main line. According to the spill report, a large rain event occurred during this period which may have contributed to the event.

Regulatory Authority and Alleged Violations

9. As described above, the Discharger discharged untreated sewage to waters of the United States in violation of Prohibition III.A of WDRs Order R5-2009-0067.

¹ Findings 5 through 8 are summarized from the electronic self monitoring reports submitted by the Discharger to the CIWQS Sanitary Sewer Overflow Database. These reports are available to the public at http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml#sso.

² Described in the Discharger's 9 January 2012 response to the Board's 12 December 2012 Notice of Violation.

10. Water Code section 13376 states, in part:

A person who discharges pollutants or proposes to discharge pollutants to the navigable waters of the United States ... shall file a report of the discharge in compliance with the procedures set forth in Section 13260..." and "The discharge of pollutants...except as authorized by waste discharge requirements [NPDES permit]...is prohibited.

11. Order R5-2009-0067 does not allow the discharge of raw sewage. Therefore, by failing to file a report of waste discharge as set forth in Water Code section 13276 for these four SSOs, and failing to obtain an NPDES permit authorizing these four SSO discharges prior to the causing the discharges described in the above Findings, the Discharger has violated Water Code sections 13376 and 13385(a)(1) and/or section 13385(a)(2). Water Code section 13385(c) authorizes the imposition of administrative civil liability for such violations.
12. The Discharger violated WDRs Order R5-2009-0067 Prohibition III.A and Water Code section 13385(a)(2) during the four discharges described in Findings 5 through 8, above. The Discharger is liable pursuant to Water Code section 13385(c).

REGULATORY CONSIDERATIONS

13. The *Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, contains implementation plans and policies for protecting waters of the basin, and incorporates by reference plans and policies adopted by the State Water Resources Control Board.
14. Surface water drainage from the plant is to Wolf Creek, which is a tributary to the Bear River.
15. The Basin Plan designates the beneficial uses of the Bear River as municipal and domestic supply; agricultural supply; hydropower generation; water contact recreation; noncontact water recreation; warm freshwater habitat; cold freshwater habitat; ground water recharge; freshwater replenishment; migration of aquatic organisms; spawning, reproduction and/or early development; and wildlife habitat.
16. Administrative civil liabilities may be sought and imposed for violations of a discharger's WDR permit and/or applicable Board orders pursuant to the procedures described in Water Code section 13323. This Administrative Civil Liability Complaint alleges the Discharger's acts and/or failure to act constitutes violations of the WDRS R5-2009-0067, and seeks administrative civil liabilities under Water Code section 13385.
17. Issuance of this Administrative Civil Liability Complaint to enforce Division 7, Chapter 5.5 of the Water Code is exempt from the provisions of the California Environmental Quality Act (Pub. Resources Code § 21000 et seq.), in accordance with California

Code of Regulations, title 14, sections 15307, 15308, 15321(a)(2) and all applicable law.

CALCULATION OF CIVIL LIABILITIES UNDER WATER CODE SECTION 13385

18. California Water Code section 13385 states, in relevant part:

(a) A person who violates any of the following shall be liable civilly in accordance with this section:

(1) Section 13375 or 13376.

(2) A waste discharge requirement

(c) Civil liability may be imposed administratively by the state board or a regional board pursuant to Article 2.5 (commencing with Section 13323) of Chapter 5 in an amount not to exceed the sum of both of the following:

(1) Ten thousand dollars (\$10,000) for each day in which the violation occurs.

(2) Where there is a discharge, any portion of which is not susceptible to cleanup or is not cleaned up, and the volume discharged but not cleaned up exceeds 1,000 gallons, an additional liability not to exceed ten dollars (\$10) multiplied by the number of gallons by which the volume discharged but not cleaned up exceeds 1,000 gallons.

(e) At a minimum, liability shall be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation.

19. **Maximum Civil Liability for Discharge to Surface Waters:** Per Water Code section 13385, civil liability administratively imposed by the Central Valley Water Board may not exceed \$10,000 per violation per day, plus \$10 per gallon for each gallon of waste discharged over 1,000 gallons. The Discharger spilled 71,510 gallons of raw sewage over a six day period. As shown in Attachment A to this Complaint, over the seven days of spills, a total of 68,490 gallons were discharged in excess of 1,000 gallons per spill event. Therefore, at \$10 per gallon for discharges in excess of 1,000 gallons, and at \$10,000 per day for each day of the discharge, the maximum administrative civil liability that may be assessed pursuant to section 13385 is **seven hundred fifty four thousand nine hundred dollars (\$754,900)**.

20. **Minimum Civil Liability for Discharge to Surface Waters:** Pursuant to Water Code section 13385(e), civil liability, at a minimum, must be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation. The Joyce Drive sanitary sewer overflow was due to human error and the failure to adequately maintain the backup system for the autodialer. The three other spills were due to a lack of capacity within the collection system. The economic benefit gained by non-compliance has been calculated using the US EPA's BEN model. The economic benefit is calculated to be approximately **twenty five**

thousand five hundred sixty one dollars (\$25,561), which becomes the minimum civil liability which must be assessed pursuant to section 13385.

PROPOSED ADMINISTRATIVE CIVIL LIABILITY

21. Pursuant to Water Code section 13385, subdivision (e), in determining the amount of any civil liability imposed under Water Code section 13385, subdivision (c), the Board is required to take into account the nature, circumstances, extent, and gravity of the violations, whether the discharges are susceptible to cleanup or abatement, the degree of toxicity of the discharges, and, with respect to the violator, the ability to pay, the effect on its ability to continue its business, any voluntary cleanup efforts undertaken, any prior history of violations, the degree of culpability, economic benefit or savings, if any, resulting from the violations, and other matters that justice may require.
22. On 17 November 2010, the State Water Board adopted Resolution No. 2009-0083 amending the Water Quality Enforcement Policy (Enforcement Policy). The Enforcement Policy was approved by the Office of Administrative Law and became effective on 20 May 2010. The Enforcement Policy establishes a methodology for assessing administrative civil liability. The use of this methodology addresses the factors that are required to be considered when imposing a civil liability as outlined in CWC sections 13327 and 13385(e). The entire Enforcement Policy can be found at: http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/enf_policy_final11179.pdf
23. The recommended administrative civil liability was derived from the use of the penalty methodology in the Enforcement Policy, and Water Code sections 13327 and 13385(e), as explained in detail in Attachment B. The proposed civil liability takes into account such factors as the Discharger's culpability, history of violations, ability to pay and continue in business, and other factors as justice may require.
24. As described above, the maximum penalty for the violations is \$754,900 and the minimum penalty is \$25,561. The Enforcement Policy requires that the minimum liability imposed be at least 10% higher than the economic benefit so that liabilities are not construed as the cost of doing business and that the assessed liability provides a meaningful deterrent to future violations. Based on consideration of the above facts, after applying the penalty methodology, and considering the Discharger's ability to pay, the Executive Officer of the Central Valley Water Board proposes that civil liability be imposed administratively on the Discharger in the amount of **\$110,850**. The specific factors considered in this penalty are detailed in Attachment B.
25. Notwithstanding the issuance of this Complaint, the Central Valley Water Board retains the authority to assess additional penalties for violations of the requirements of the Discharger's waste discharge requirements for which penalties have not yet been assessed or for violations that may subsequently occur.

CITY OF GRASS VALLEY IS HEREBY GIVEN NOTICE THAT:

1. The Executive Officer of the Central Valley Water Board proposes that the Discharger be assessed an Administrative Civil Liability in the amount of **one hundred ten thousand eight hundred fifty dollars (\$110,850)**. The amount of the proposed liability is based upon a review of the factors cited in CWC sections 13327 and 13385, as well as the State Water Resources Control Board's 2010 Water Quality Enforcement Policy, and includes consideration of the economic benefit or savings resulting from the violations.
2. A hearing on this matter will be conducted at the Central Valley Water Board meeting scheduled on **3/4/5 October 2012**, unless one of the following occurs by **6 August 2012**:
 - a) The Discharger waives the hearing by completing the attached form (checking the box next to Option #1) and returning it to the Central Valley Water Board, along with payment for the proposed civil liability of **one hundred ten thousand eight hundred fifty dollars (\$110,850)**; or
 - b) The Central Valley Water Board agrees to postpone any necessary hearing after the Discharger requests to engage in settlement discussions by checking the box next to Option #2 on the attached form, and returns it to the Board along with a letter describing the issues to be discussed; or
 - c) The Central Valley Water Board agrees to postpone any necessary hearing after the Discharger requests a delay by checking the box next to Option #3 on the attached form, and returns it to the Board along with a letter describing the issues to be discussed.
3. If a hearing is held, the Central Valley Water Board will consider whether to affirm, reject, or modify the proposed Administrative Civil Liability, or whether to refer the matter to the Attorney General for recovery of judicial civil liability.
4. If this matter proceeds to hearing, the Executive Officer reserves the right to amend the proposed amount of civil liability to conform to the evidence presented, including but not limited to, increasing the proposed amount to account for the costs of enforcement (including staff, legal and expert witness costs) incurred after the date of the issuance of this Complaint through completion of the hearing.


PAMELA C. CREEDON, Executive Officer

6 July 2012

Date

**WAIVER FORM
FOR ADMINISTRATIVE CIVIL LIABILITY COMPLAINT**

By signing this waiver, I affirm and acknowledge the following:

I am duly authorized to represent the City of Grass Valley (hereafter Discharger) in connection with Administrative Civil Liability Complaint R5-2012-0537 (hereafter Complaint). I am informed that California Water Code section 13323, subdivision (b), states that, "a hearing before the regional board shall be conducted within 90 days after the party has been served. The person who has been issued a complaint may waive the right to a hearing."

(OPTION 1: Check here if the Discharger waives the hearing requirement and will pay in full.)

a. I hereby waive any right the Discharger may have to a hearing before the Central Valley Water Board.

b. I certify that the Discharger will remit payment for the proposed civil liability in the full amount of **one hundred ten thousand eight hundred fifty dollars (\$110,850)** by check that references "ACL Complaint R5-2012-0537" made payable to the *State Water Pollution Cleanup and Abatement Account*. Payment must be received by the Central Valley Water Board by **6 August 2012**.

c. I understand the payment of the above amount constitutes a proposed settlement of the Complaint, and that any settlement will not become final until after a 30-day public notice and comment period. *Should the Central Valley Water Board receive significant new information or comments during this comment period, the Central Valley Water Board's Executive Officer may withdraw the complaint, return payment, and issue a new complaint. I also understand that approval of the settlement will result in the Discharger having waived the right to contest the allegations in the Complaint and the imposition of civil liability.*

d. I understand that payment of the above amount is not a substitute for compliance with applicable laws and that continuing violations of the type alleged in the Complaint may subject the Discharger to further enforcement, including additional civil liability.

(OPTION 2: Check here if the Discharger waives the 90-day hearing requirement in order to engage in settlement discussions.) I hereby waive any right the Discharger may have to a hearing before the Central Valley Water Board within 90 days after service of the complaint, but I reserve the ability to request a hearing in the future. I certify that the Discharger will promptly engage the Central Valley Water Board Prosecution Team in settlement discussions to attempt to resolve the outstanding violation(s). By checking this box, the Discharger requests that the Central Valley Water Board delay the hearing so that the Discharger and the Prosecution Team can discuss settlement. It remains within the discretion of the Central Valley Water Board to agree to delay the hearing. Any proposed settlement is subject to the conditions described above under "Option 1."

(OPTION 3: Check here if the Discharger waives the 90-day hearing requirement in order to extend the hearing date and/or hearing deadlines. Attach a separate sheet with the amount of additional time requested and the rationale.) I hereby waive any right the Discharger may have to a hearing before the Central Valley Water Board within 90 days after service of the complaint. By checking this box, the Discharger requests that the Central Valley Water Board delay the hearing and/or hearing deadlines so that the Discharger may have additional time to prepare for the hearing. It remains within the discretion of the Central Valley Water Board to approve the extension.

Timothy M. Kiser Public Works Director/
(Print Name and Title) City Engineer

[Signature]
(Signature)

7/25/2012
(Date)

Attachment A: Table of Total Maximum Penalty Calculations
Attachment B: Penalty Calculations

lo/wsw: 5 July-12

**Attachment A to Administrative Civil Liability Complaint No. R5-2012-0537
City of Grass Valley Wastewater Treatment Plant and Collection System, Nevada County**

CWC section 13385 Liability Assessment for Wastewater Spills to Surface Waters

Event	Dates and times of spill	Volume Spilled and Entered Surface Water	Spill (Days)	Liability at \$10,000/day	Liability in Gallons >1,000 Gallons	Liability (\$) at \$10/Gallon	Total
Spill Event 1	10/18/11 at 1100 hours to 10/19/11 at 0935 hours	66,940	2	\$20,000	65,940	\$659,400	\$679,400
Spill Event 2	3/16/12 at 1400 hours to 3/16/12 at 1500 hours	120	1	\$10,000	0	\$0	\$10,000
Spill Event 3	3/16/12 at 1900 hours to 3/16/12 at 2000 hours	900	1	\$10,000	0	\$0	\$10,000
Spill Event 4	3/16/12 at 2100 hours to 3/19/12 at 1005 hours	3,550	3	\$30,000	2,550	\$25,500	\$55,500
Total		71,510	7	\$70,000	68,490	\$684,900	\$754,900

Attachment B – ACL Complaint No. R5-2012-0537
Specific Factors Considered for Administrative Civil Liability
City of Grass Valley Wastewater Treatment Plant and Collection System

The State Water Board's *Water Quality Enforcement Policy* (Enforcement Policy) establishes a methodology for determining administrative civil liability by addressing the factors that are required to be considered under California Water Code section 13385(e). Each factor of the nine-step approach is discussed below, as is the basis for assessing the corresponding score. The Enforcement Policy can be found at:
http://www.waterboards.ca.gov/water_issues/programs/enforcement/docs/enf_policy_final111709.pdf.

The following steps are used in determining administrative civil liability for four sanitary sewer overflows from the collection system.

Step 1 – Potential for Harm for Discharge Violations

The “potential harm to beneficial uses” factor considers the harm that may result from exposure to the pollutants in the illegal discharge, while evaluating the nature, circumstances, extent, and gravity of the violation(s). A three-factor scoring system is used for each violation or group of violations: (1) the potential for harm to beneficial uses; (2) the degree of toxicity of the discharge; and (3) whether the discharge is susceptible to cleanup or abatement.

Factor 1: Harm or Potential Harm to Beneficial Uses.

This factor evaluates direct or indirect harm or potential for harm from the violation. A score between 0 and 5 is assigned based on a determination of whether the harm or potential for harm to beneficial uses ranges from negligible (0) to major (5). The designated beneficial uses of Wolf Creek and the Bear River that could be impacted by the unauthorized discharge include municipal and domestic supply; agricultural supply; hydropower generation; water contact recreation; noncontact water recreation; warm freshwater habitat; cold freshwater habitat; ground water recharge; freshwater replenishment; migration of aquatic organisms; spawning, reproduction and/or early development of warm freshwater aquatic organisms; and wildlife habitat.

Discharges to surface water typically must be treated to a higher standard to prevent discharges from being harmful or toxic to aquatic life. Toxicity is the degree to which a substance can damage a living or non-living organism. Toxicity can refer to the effect on a whole organism, such as an animal, bacterium, or plant, as well as the effect on a substructure of the organism, such as a cell or an organ. The main sanitary sewer overflow (Joyce Drive lift station) occurred during a dry period so there was less dilution in Wolf Creek than would have been expected during a storm event, and therefore a higher potential for toxicity. In this case the potential harm to beneficial uses was determined to be “moderate,” which is defined as “impacts are observed or reasonably expected and impacts to beneficial uses are moderate and likely to attenuate without appreciable acute or chronic effects). Therefore, a score of 3 is assigned for this factor.

Factor 2: The Physical, Chemical, Biological or Thermal Characteristics of the Discharge.

A score between 0 and 4 is assigned based on a determination of the risk or threat of the discharged material. “Potential receptors” are those identified considering human, environmental, and ecosystem exposure pathways. The sanitary sewer overflows were raw sewage, and as such contained highly elevated concentrations of coliform organisms and

other substances which are known to cause disease to humans. Because the discharged material possessed "an above-moderate risk or a direct threat to potential receptors", a score of 3 was assigned for this factor.

Factor 3: Susceptibility to Cleanup or Abatement.

A score of 0 is assigned for this factor if 50% or more of the discharge is susceptible to cleanup or abatement. A score of 1 is assigned if less than 50% of the discharge is susceptible to cleanup or abatement. This factor is evaluated regardless of whether the discharge was actually cleaned up or abated by the discharger. In this case, less than 50% of the discharge was susceptible to cleanup or abatement as the wastewater entered Wolf Creek. Therefore, a factor of 1 is assigned.

Final Score – "Potential for Harm"

The scores of the three factors are added to provide a Potential for Harm score for each violation or group of violations. In this case, a **final score of 7** was calculated. The total score is then used in Step 2, below.

Step 2 – Assessment for Discharge Violations

This step addresses administrative civil liabilities for the spills based on both a per-gallon and a per-day basis.

1. Per Gallon Assessments for Discharge Violations

When there is a discharge, the Central Valley Water Board is to determine an initial liability amount on a per gallon basis using on the Potential for Harm score and the Extent of Deviation from Requirement of the violation.

The Potential for Harm Score was determined in Step 1, and is 7. The Extent of Deviation is considered "moderate" because the WDRs indirectly prohibit the discharge of discharge of raw sewage to surface waters. In particular, the WDRs prohibit the discharge of wastewater in a manner or location different from that described in the Findings. The Findings only describe the discharge of tertiary treated wastewater, not raw sewage. Therefore, the SSOs have partially compromised the Prohibition. Table 1 of the Enforcement Policy (p. 14) is used to determine a "per gallon factor" based on the total score from Step 1 and the level of Deviation from Requirement. For this particular case, the factor is 0.200. This value is multiplied by the volume of discharge and the per gallon civil liability, as described below.

As described in Attachment A, this Complaint assesses penalties for four SSOs with a total of 71,510 gallons. Water Code section 13385(c)(2) states that the civil liability amount is to be based on the number of gallons discharged but not cleaned up over 1,000 gallons, which for this Complaint, is 65,940 gallons. The maximum civil liability allowed under Water Code section 13385 on a per gallon basis is \$10/gallon.

The Per Gallon Assessment is calculated as $(0.2 \text{ factor from Table 1}) \times (65,940 \text{ gallons}) \times (\$10 \text{ per gallon})$. The value is \$131,880. For ease of calculation, this number has been rounded to \$130,000.

2. Per Day Assessments for Discharge Volumes

When there is a discharge, the Central Valley Water Board is to determine an initial liability amount on a per day basis using the same Potential for Harm and the Extent of Deviation from Requirement that were used in the per-gallon analysis. The "per day" factor (determined from Table 2 of the Enforcement Policy) is 0.200.

The sanitary sewer overflows that are the subject of this enforcement action occurred for a total of four days. Therefore, the Per Day Assessment is calculated as (0.200 factor from Table 2) x (6 days) x (\$10,000 per day). The value is \$12,000.

Initial Liability Amount: The value is determined by adding together the per gallon assessment and the per day assessment. For this case, the total is \$130,000 + \$12,000 for a total initial liability amount of **\$142,000**.

Step 3 – Per Day Assessment for Non-Discharge Violation

The Enforcement Policy states that the Central Valley Water Board shall calculate an initial liability for each non-discharge violation. In this case, this factor does not apply because all of the violations are related to the discharge of wastewater, and the liability was determined in Step 2.

Step 4 – Adjustment Factors

There are three additional factors to be considered for modification of the amount of initial liability: the violator's culpability, efforts to cleanup or cooperate with regulatory authority, and the violator's compliance history. After each of these factors is considered for the violations involved, the applicable factor should be multiplied by the proposed amount for each violation to determine the revised amount for that violation.

Culpability

Higher liabilities should result from intentional or negligent violations as opposed to accidental violations. A multiplier between 0.5 and 1.5 is to be used, with a higher multiplier for negligent behavior. The Discharger was given a multiplier value of 0.75. The 18 October 2011 spill resulted from an inadvertent operator error; however, if proper maintenance had been completed, then the backup alarm system would have functioned properly and the magnitude of the spill would have been significantly reduced. The three other spills occurred from rain events that overwhelmed the collection system. It is appropriate to use a culpability multiplier of 0.75 for this adjustment factor.

Cleanup and Cooperation

This factor reflects the extent to which a discharger voluntarily cooperated in returning to compliance and correcting environmental damage. A multiplier between between 0.75 and 1.5 is to be used, with a higher multiplier when there is a lack of cooperation. Although the Discharger was only able to clean up 110 gallons from the four spills, the Discharger cooperated by providing prompt notification of the discharge events. Therefore, the Discharger was given a multiplier value of 0.9.

History of Violation

When there is a history of repeat violations, the Enforcement Policy requires a minimum multiplier of 1.1 to be used. The Discharger does not appear to have a long history of sanitary sewer overflows relating to storm events nor has it been assessed a significant number of mandatory minimum penalties for effluent limit violations. Therefore, the Discharger was given a neutral multiplier value of 1.0.

Step 5 - Determination of Total Base Liability Amount

The Total Base Liability is determined by applying the adjustment factors from Step 4 to the Initial Liability Amount determined in Step 2.

Total Base Liability Amount for Sanitary Sewer Overflows: This value is calculated as the Initial Liability Amount (\$142,000) X Adjustment Factors (0.75) (0.9) (1) and is equal to \$95,850.

Step 6 - Ability to Pay and Ability to Continue in Business

The ability to pay and to continue in business factor must be considered when assessing administrative civil liabilities. The U.S.EPA's model MUNIPAY was used to analyze the economic and financial condition of Grass Valley, and to quantify the City's ability to pay a penalty. Based on the balance of the City's unassigned Enterprise Fund balance as of 30 June 2011, Grass Valley has the ability to pay a penalty amount over \$225,000 and up to \$3,000,000.

Step 7 – Other Factors as Justice May Require

If the Central Valley Water Board believes that the amount determined using the above factors is inappropriate, the amount may be adjusted under the provision for "other factors as justice may require," but only if express findings are made to justify this.

Costs of Investigation and Enforcement Adjustment

The costs of investigation and enforcement are "other factors as justice may require", and should be added to the liability amount. Staff of the Central Valley Water Board has spent over 100 hours associated with the investigation of the discharges and preparation of the enforcement action. The State Water Board Office of Enforcement has directed that all regions are to use a value of \$150 per hour for staff costs. For this case, staff time through preparation of the Complaint is \$15,000. The Enforcement Policy states that staff costs are to be added to the liability amount.

Step 8 – Economic Benefit

Pursuant to Water Code section 13385(e), civil liability, at a minimum, must be assessed at a level that recovers the economic benefits, if any, derived from the acts that constitute the violation. In general, the discharges were due to operator error and inflow/infiltration within the collection system. The Discharger has stated that it budgets \$200,000 to \$300,000 per year to line pipes and reduce inflow and infiltration. The U.S.EPA's model BEN was used to evaluate the economic benefit derived from delaying or avoiding compliance with existing environmental

regulations. Using the model, the economic benefit of noncompliance is calculated to be \$25,561.

Final adjusted liability

The final adjusted liability is \$95,850 plus \$15,000 in staff costs, or \$110,850.

Step 9 – Maximum and Minimum Liability Amounts

The maximum and minimum amounts for discharge violation must be determined for comparison to the amounts being proposed. These values are calculated in the ACL Complaint, and the values are repeated here.

Maximum Liability Amount: \$754,900

Minimum Liability Amount: the minimum liability is equal to the economic benefit, which estimated to be \$25,561.

Step 10 – Final liability Amount

The final liability amount consists of the added amounts for each violation, with any allowed adjustments, provided amounts are within the statutory minimum and maximum amounts. Without further investigation of the discharge, calculation of economic benefits, and additional staff time, the proposed Administrative Civil Liability is **\$110,850**.

Central Valley Regional Water Quality Control Board

HEARING PROCEDURE
FOR ADMINISTRATIVE CIVIL LIABILITY COMPLAINT
R5-2012-0537

ISSUED TO
CITY OF GRASS VALLEY
NEVADA COUNTY

SCHEDULED FOR 3/4/5 OCTOBER 2012

PLEASE READ THIS HEARING PROCEDURE CAREFULLY. FAILURE TO COMPLY WITH THE DEADLINES AND OTHER REQUIREMENTS CONTAINED HEREIN MAY RESULT IN THE EXCLUSION OF YOUR DOCUMENTS AND/OR TESTIMONY.

Overview

Pursuant to Water Code section 13323, the Executive Officer has issued an Administrative Civil Liability (ACL) Complaint to the City of Grass Valley (Discharger), alleging violations of Water Code section 13385 for the discharge of 71,510 gallons of raw sewage from the sanitary sewer system. The ACL Complaint proposes that the Central Valley Water Board impose administrative civil liability in the amount of \$110,850. A hearing is currently scheduled to be conducted before the Board during its 3/4/5 October 2012 meeting.

The purpose of the hearing is to consider relevant evidence and testimony regarding the ACL Complaint. At the hearing, the Central Valley Water Board will consider whether to issue an administrative civil liability order assessing the proposed liability (or a higher or lower amount), or will reject the proposed liability, or will continue the hearing to a later date. If less than a quorum of the Board is available, this matter may be conducted before a hearing panel. The public hearing will commence at 8:30 a.m. or as soon thereafter as practical, or as announced in the Board's meeting agenda. The meeting will be held at:

11020 Sun Center Drive, Suite 200, Rancho Cordova, California.

An agenda for the meeting will be issued at least ten days before the meeting and posted on the Board's web page at:

http://www.waterboards.ca.gov/centralvalley/board_info/meetings.

Hearing Procedure

The hearing will be conducted in accordance with this Hearing Procedure, which has been approved by the Board Chair for the adjudication of such matters. The procedures governing adjudicatory hearings before the Central Valley Water Board may be found at California Code of Regulations, title 23, section 648 et seq., and are available at

<http://www.waterboards.ca.gov>

Copies will be provided upon request. In accordance with section 648(d), any procedure not provided by this Hearing Procedure is deemed waived. Except as provided in section 648(b) and herein, Chapter 5 of the Administrative Procedures Act (Gov't Code, § 11500 et seq.) does not apply to this hearing.

The Discharger shall attempt to resolve objections to this Hearing Procedure with the Prosecution Team BEFORE submitting objections to the Advisory Team.

Hearing Participants

Participants in this proceeding are designated as either "Designated Parties" or "Interested Persons." Designated Parties may present evidence and cross-examine witnesses and are subject to cross-examination. Interested Persons may present non-evidentiary policy statements, but may not cross-examine witnesses and are not subject to cross-examination. Interested Persons generally may not present evidence (e.g., photographs, eye-witness testimony, monitoring data). At the hearing, both Designated Parties and Interested Persons may be asked to respond to clarifying questions from the Central Valley Water Board, staff, or others, at the discretion of the Board Chair.

The following participants are hereby designated as Designated Parties in this proceeding:

1. Central Valley Water Board Prosecution Team
2. The City of Grass Valley

Requesting Designated Party Status

Persons who wish to participate in the hearing as a Designated Party must request designated party status by submitting a request in writing so that it is received no later than the deadline listed under "Important Deadlines" below. The request shall include an explanation of the basis for status as a Designated Party (i.e., how the issues to be addressed at the hearing affect the person, the need to present evidence or cross-examine witnesses), along with a statement explaining why the parties listed above do not adequately represent the person's interest. Any objections to these requests for designated party status must be submitted so that they are received no later than the deadline listed under "Important Deadlines" below.

Primary Contacts

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Prosecution Team:

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Discharger

Timothy Kiser
Public Works Director, City of Grass Valley
125 East Main Street
Grass Valley, CA 95945
Phone: (530) 274-4350; fax (530) 274-4399
E-mail: timk@cityofgrassvalley.com

Separation of Prosecutorial and Advisory Functions

To help ensure the fairness and impartiality of this proceeding, the functions of those who will act in a prosecutorial role by presenting evidence for consideration by the Board (the "Prosecution Team") have been separated from those who will provide legal and technical advice to the Board (the "Advisory Team"). Members of the Advisory Team are: Kenneth Landau, Assistant Executive Officer; and David Coupe, Senior Staff Counsel. Members of the Prosecution Team are: Pamela Creedon, Executive Officer; Frederick Moss, Assistant Executive Officer; Wendy Wyeles, Environmental Program Manager; Lucio Orellana, Water Resources Control Engineer; and AnnaKathryn Benedict, Staff Counsel.

Any members of the Advisory Team who normally supervise any members of the Prosecution Team are not acting as their supervisors in this proceeding, and vice versa. Pamela Creedon regularly advises the Central Valley Water Board in other, unrelated matters, but is not advising the Central Valley Water Board in this proceeding. Other members of the Prosecution Team act or have acted as advisors to the Central Valley Water Board in other, unrelated matters, but they are not advising the Central Valley Water Board in this proceeding. Members of the Prosecution Team have not had any ex parte communications with the members of the Central Valley Water Board or the Advisory Team regarding this proceeding.

Ex Parte Communications

Designated Parties and Interested Persons are forbidden from engaging in ex parte communications regarding this matter. An ex parte communication is a written or verbal communication related to the investigation, preparation, or prosecution of the ACL Complaint between a Designated Party or an Interested Person and a Board Member or a member of the Board's Advisory Team. However, if the communication is copied to all other persons (if written) or is made in a manner open to all other persons (if verbal), then the communication is not considered an ex parte communication. Communications regarding non-controversial procedural matters are also not considered ex parte communications and are not restricted.

Hearing Time Limits

To ensure that all participants have an opportunity to participate in the hearing, the following time limits shall apply: each designated party shall have a combined 30 minutes to present evidence (including evidence presented by witnesses called by the designated party), to cross-examine witnesses (if warranted), and to provide a closing statement. Each interested person shall have 3 minutes to present a non-evidentiary policy statement. Participants with similar interests or comments are requested to make joint presentations, and participants are requested to avoid redundant comments. Participants who would like additional time must submit their request to the Advisory Team so that it is received no later than the deadline listed under "Important Deadlines" below. Additional time may be provided at the discretion of the Advisory Team (prior to the hearing) or the Board Chair (at the hearing) upon a showing that additional time is necessary. Such showing shall explain what testimony, comments, or legal argument requires extra time, and why it could not have been provided in writing by the applicable deadline.

A timer will be used, but will not run during Board questions or the responses to such questions, or during discussions of procedural issues.

Submission of Evidence and Policy Statements

The Prosecution Team and all other Designated Parties (including the Discharger) must submit the following information in advance of the hearing:

1. All evidence (other than witness testimony to be presented orally at the hearing) that the Designated Party would like the Central Valley Water Board to consider. Evidence and exhibits already in the public files of the Central Valley Board may be submitted by reference, as long as the exhibits and their location are clearly identified in accordance with California Code of Regulations, title 23, section 648.3. Board members will not generally receive copies of materials incorporated by reference unless copies are provided, and the referenced materials are generally not posted on the Board's website.
2. All legal and technical arguments or analysis.
3. The name of each witness, if any, whom the designated party intends to call at the hearing, the subject of each witness' proposed testimony, and the estimated time required by each witness to present direct testimony.
4. The qualifications of each expert witness, if any.

Prosecution Team: The Prosecution Team's information must include the legal and factual basis for its claims against each Discharger; a list of all evidence on which the Prosecution Team relies, which must include, at a minimum, all documents cited in the ACL Complaint, Staff Report, or other material submitted by the Prosecution Team; and the witness information required under items 3-4 for all witnesses, including Board staff.

Designated Parties (including the Discharger): All Designated Parties shall submit comments regarding the ACL Complaint along with any additional supporting evidence not cited by the Central Valley Water Board's Prosecution Team no later than the deadline listed under "Important Deadlines" below.

Rebuttal: Any Designated Party that would like to submit evidence, legal analysis, or policy statements to rebut information previously submitted by other Designated Parties shall submit this rebuttal information so that it is received no later than the deadline listed under "Important Deadlines" below. "Rebuttal" means evidence, analysis or comments offered to disprove or contradict other submissions. Rebuttal shall be limited to the scope of the materials previously submitted. Rebuttal information that is not responsive to information previously submitted may be excluded.

Copies: Board members will receive copies of all submitted materials. The Board Members' hard copies will be printed in black and white on 8.5"x11" paper from the Designated Parties' electronic copies. Designated Parties who are concerned about print quality or the size of all or part of their written materials should provide an extra nine paper copies for the Board Members. For voluminous submissions, Board Members may receive copies in electronic format only. Electronic copies will also be posted on the Board's website. Parties without access to computer equipment are strongly encouraged to have their materials scanned at a copy or mailing center. The Board will not reject materials solely for failure to provide electronic copies.

Other Matters: The Prosecution Team will prepare a summary agenda sheet (Summary Sheet) and will respond to all significant comments. The Summary Sheet and the responses shall clearly state that they were prepared by the Prosecution Team. The Summary Sheet and the responses will be posted online, as will revisions to the proposed Order.

Interested Persons: Interested Persons who would like to submit written non-evidentiary policy statements are encouraged to submit them to the Advisory Team as early as possible, but they must be received by the deadline listed under "Important Deadlines" to be included in the Board's agenda package. Interested Persons do not need to submit written comments in order to speak at the hearing.

Prohibition on Surprise Evidence: In accordance with California Code of Regulations, title 23, section 648.4, the Central Valley Water Board endeavors to avoid surprise testimony or evidence. Absent a showing of good cause and lack of prejudice to the parties, the Board Chair will likely exclude evidence and testimony that is not submitted in accordance with this Hearing Procedure. Excluded evidence and testimony will *not* be considered by the Central Valley Water Board and will not be included in the administrative record for this proceeding.

Presentations: Power Point and other visual presentations may be used at the hearing, but their content shall not exceed the scope of other submitted written material. These presentations must be provided to the Advisory Team at or before the hearing both in hard copy and in electronic format so that they may be included in the administrative record.

Witnesses: All witnesses who have submitted written testimony shall appear at the hearing to affirm that the testimony is true and correct, and shall be available for cross-examination.

Evidentiary Documents and File

The ACL Complaint and related evidentiary documents are on file and may be inspected or copied at the Central Valley Water Board office at 11020 Sun Center Drive, Rancho Cordova, CA 95670. This file shall be considered part of the official administrative record for this hearing. Other submittals received for this proceeding will be added to this file and will become a part of

the administrative record absent a contrary ruling by the Central Valley Water Board's Chair. Many of these documents are also posted on-line at:

http://www.waterboards.ca.gov/centralvalley/board_decisions/tentative_orders/index.shtml

Although the web page is updated regularly, to assure access to the latest information, you may contact Wendy Wyels (contact information above) for assistance obtaining copies.

Questions

Questions concerning this proceeding may be addressed to the Advisory Team attorney (contact information above).

IMPORTANT DEADLINES: ACLC R5-2012-0537

All required submissions must be received by 5:00 p.m. on the respective due date.

6 July 2012	<ul style="list-style-type: none"> ▪ Prosecution Team issues ACL Complaint, Hearing Procedure, and other related materials.
20 July 2012	<ul style="list-style-type: none"> ▪ Objections due on Hearing Procedure. ▪ Deadline to request "Designated Party" status. <p><u>Electronic or Hard Copies to:</u> All other Designated Parties, All known Interested Persons, Pros. Team Attorney, Adv. Team Attorney</p> <p><u>Electronic and Hard Copies to:</u> Pros. Team Primary Contact, Adv. Team Primary Contact</p>
6 August 2012	<ul style="list-style-type: none"> ▪ Deadline to submit opposition to requests for Designated Party status. <p><u>Electronic or Hard Copies to:</u> All other Designated Parties, All known Interested Persons, Pros. Team Attorney, Adv. Team Attorney</p> <p><u>Electronic and Hard Copies to:</u> Pros. Team Primary Contact, Adv. Team Primary Contact</p>
6 August 2012	<ul style="list-style-type: none"> ▪ Discharger's deadline to submit <i>90-Day Hearing Waiver Form</i>. <p><u>Electronic or Hard Copy to:</u> Pros. Team Primary Contact, Adv. Team Primary Contact</p>
13 August 2012*	<ul style="list-style-type: none"> ▪ Advisory Team issues decision on requests for designated party status. ▪ Advisory Team issues decision on Hearing Procedure objections.
13 August 2012*	<ul style="list-style-type: none"> ▪ Prosecution Team's deadline for submission of information required under "Evidence and Policy Statements," above. <p><u>Electronic or Hard Copies to:</u> All other Designated Parties, All known Interested Persons</p> <p><u>Electronic and Hard Copies to:</u> Adv. Team Primary Contact, Adv. Team Attorney</p>
30 August 2012*	<ul style="list-style-type: none"> ▪ Remaining Designated Parties' (including the Discharger's) deadline to submit all information required under "Evidence and Policy Statements," above. This includes all written comments regarding the ACL Complaint. ▪ Interested Persons' comments are due. <p><u>Electronic or Hard Copies to:</u> All other Designated Parties, All known Interested Persons, Pros. Team Attorney, Adv. Team Attorney</p> <p><u>Electronic and Hard Copies to:</u> Pros. Team Primary Contact, Adv. Team Primary Contact</p>
10 September 2012* [†]	<ul style="list-style-type: none"> ▪ All Designated Parties shall submit any rebuttal evidence, any rebuttal to legal arguments and/or policy statements, and all evidentiary objections. ▪ Deadline to submit requests for additional time. ▪ If rebuttal evidence is submitted, all requests for additional time (to respond to the rebuttal at the hearing) must be made within 3 working days of <i>this</i> deadline. <p><u>Electronic or Hard Copies to:</u> All other Designated Parties, All known Interested Persons, Pros. Team Attorney, Adv. Team Attorney</p> <p><u>Electronic and Hard Copies to:</u> Pros. Team Primary Contact, Adv. Team Primary Contact</p>
17 September 2012*	<ul style="list-style-type: none"> ▪ Prosecution Team submits Summary Sheet and responses to comments. <p><u>Electronic or Hard Copies to:</u> All other Designated Parties, All known Interested Persons</p> <p><u>Electronic and Hard Copies to:</u> Adv. Team Primary Contact, Adv. Team Attorney</p>
3/4/5 October 2012*	<ul style="list-style-type: none"> ▪ Hearing

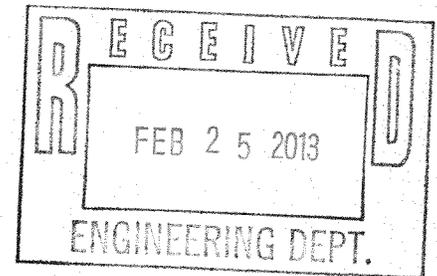
* The Water Code gives Dischargers the right to a hearing before the Board within 90 days of receiving the Complaint, but this right can be waived (to facilitate settlement discussions, for example). By submitting the waiver form, the Discharger is not waiving the right to a hearing; unless a settlement is reached, the Board will hold a hearing prior to imposing civil liability. However, if the Board accepts the waiver, all deadlines marked with an "*" will be revised if a settlement cannot be reached.

[†] This deadline is set based on the date that the Board compiles the Board Members' agenda packages. Any material received after this deadline will not be included in the Board Members' agenda packages.

Central Valley Regional Water Quality Control Board

19 February 2013

Trisha Tillotson
Grass Valley City
125 Main Street
Grass Valley, CA 95945



NOTICE OF VIOLATION, RAW SEWAGE SPILLS, STATEWIDE GENERAL WASTE DISCHARGE REQUIREMENTS (WDRs) FOR SANITARY SEWER SYSTEMS, WATER QUALITY ORDER 2006-0003-DWQ, GRASS VALLEY CITY CS, WDID No.5SSO10958, NEVADA COUNTY.

The Grass Valley City CS, which is owned and operated by Grass Valley City (Enrollee), is regulated under Waste Discharge Requirements (WDRs) Water Quality Order No. 2006-0003-DWQ (Sanitary Sewer Systems WDRs). Central Valley Water Board staff reviewed the certified reports submitted to the database by the legally responsible official regarding the Category 1 SSO(s) that occurred between 1 July 2012 and 31 December 2012. The SSO(s) are summarized in the following table.

CIWQS Violation ID	Date of Spill	Spill ID	Volume Spilled (gallons)
931809	06/01/2012	784424	159
938854	11/04/2012	787834	13440
940656	12/02/2012	788998	1800
940655	12/12/2012	788997	50
940719	12/16/2012	789051	1200

CIWQS violation reports are publicly available at
http://www.waterboards.ca.gov/water_issues/programs/ciwqs/publicreports.shtml#sso

Category 1 SSOs are defined as discharges of sewage resulting from a failure in an Enrollee's sanitary sewer system that: 1) Equals or exceeds 1000 gallons, or 2) Results in a discharge to a drainage channel and/or surface water, or 3) Enters a storm drain system and is not fully captured and returned to sanitary sewer system.

The SSO(s) identified above are in violation of WDR Order 2006-003-DWQ as described below:

- Discharge Prohibition No. 2 of the WDRs states: "Any SSO that results in a discharge of untreated or partially treated wastewater that creates a nuisance as defined in California Water Code Section 13050(m) is prohibited."

- Furthermore, if the spill(s) reached surface waters, then the Enrollee has violated Discharge Prohibition No. 1, which states: *"Any SSO that results in a discharge of untreated or partially treated wastewater to waters of the United States is prohibited."*
- The Provisions section of the WDRs states: *"The Enrollee must comply with all conditions of this Order. Any noncompliance with this Order constitutes a violation of the California Water Code and is grounds for enforcement action."*

The Enrollee should take the appropriate actions to prevent future SSO occurrences, take all feasible steps to remediate the consequences of any future overflows and implement the provisions of the Sanitary Sewer Systems WDRs.

These violations are subject to possible further enforcement action by the Central Valley Water Board, including administrative enforcement orders, administrative assessment of civil liability in amounts up to \$10,000 per day, referral to the State Attorney General for injunctive relief, and referral to the District Attorney for criminal prosecution.

If you have any questions regarding this Notice of Violation, please contact Lucio Orellana at 916-464-4660 or lorellano@waterboards.ca.gov



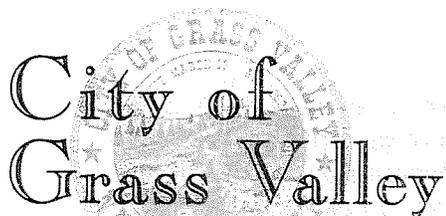
WENDY WYELS, Supervisor
Compliance and Enforcement Section

cc: Russell Norman, State Water Board, SSO Program, rnorman@waterboards.ca.gov
James Fischer, State Water Board, Office of Enforcement, jfischer@waterboards.ca.gov

NOV

PUBLIC WORKS DEPARTMENT

Facilities / Streets Maintenance
Parks and Recreation
Water / Wastewater Operations



December 27, 2012

Mr. Lucio Orellana
Water Resource Control Engineer
NPDES Compliance and Enforcement Unit
California Regional Water Quality Control Board
Central Valley Region
11020 Sun Center Drive – Suite 200
Rancho Cordova, CA 95670-6114

Subject: City of Grass Valley Wastewater Treatment Plant (SSO Event ID #788654) and 450 Mill Street (SSO Event ID #788998) Spill Report (2 December 2012)

Dear Mr. Orellana:

This written submission is in response to a storm-related spill that occurred at the City of Grass Valley (City) Wastewater Treatment Plant (Plant) and a storm-related sanitary sewer overflow (SSO) that occurred at 450 Mill Street on the morning of Sunday, 2 December 2012.

Description of Spills

The following sections describe the spills that occurred at the Plant and at 450 Mill Street.

Wastewater Treatment Plant

Between 0830 and 1100 hours on 2 December 2012, the primary clarifiers at the Plant overtopped and spilled approximately 450,000 gallons of partially-treated wastewater and stormwater due to extended periods of heavy precipitation. Clear Creek Consultants, a contractor with Newmont USA Limited (Newmont), maintains a precipitation gage at the Plant that measures total precipitation in 15-minute intervals. Between 30 November and 2 December 2012, there was approximately 8.8 inches of precipitation at the Plant. The majority of the precipitation over the three days came in four waves as summarized in the table below. Precipitation intensity peaked between 0900 and 0930 hours on 2 December 2012 when 0.76 inches fell during the 30-minute period.

Precipitation Period	Total Precipitation (in)	15-minute Precipitation Intensity Range (in)
11/29/12 22:15 – 11/30/12 14:45	3.78	0.01 – 0.19
11/30/12 20:30 – 12/01/12 00:30	0.65	0.01 – 0.08
12/01/12 06:30 – 12/01/12 12:30	0.91	0.01 – 0.08
12/01/12 19:45 – 12/02/12 12:00	3.62	0.01 – 0.44

125 East Main Street ♦ Grass Valley, California 95945 ♦ (530) 274-4350 ♦ Fax (530) 274-4399

At the time of the spill, there was approximately 21.5-24 million gallons per day (MGD) of flow entering the primary clarifiers. The primary effluent pumps, which convey primary effluent to secondary treatment, have a capacity of 6-7 MGD. These pumps were designed to limit the amount of flow to protect the biological treatment process from washing out. A washed out biological treatment system would require weeks to restart, and result in operational issues for the tertiary treatment system. This could result in a significant period of discharge of partially-treated effluent to Wolf Creek.

Plant staff took appropriate steps to mitigate the spill, and recovered approximately 136,500 gallons. Approximately 313,500 gallons of partially-treated wastewater and stormwater entered Wolf Creek, which is adjacent to the Plant. During the spill, the flow in Wolf Creek measured greater than 450 cubic feet per second (cfs), or 290 MGD. Normal average flow in Wolf Creek is approximately one-tenth the flows observed during the storm (precipitation) period. Due to unsafe conditions created by these very high flows, Plant staff was unable to collect water quality samples in Wolf Creek during the spill. The City subsequently collected samples on 3 December 2012 in Wolf Creek above and below the points where the spill entered the creek. The analytical results are presented in the table below.

Location in Wolf Creek	Ammonia as N (mg/L) ⁽¹⁾	Total Coliform (MPN/100 mL)	Fecal Coliform (MPN/100 mL)	E. Coli (MPN/100 mL)
Upstream Receiving Water Station (RSW-001)	<0.10	16,000	110	110
Approximately 400 feet below spill point	0.331	16,000	300	300

(1) Samples were analyzed using SM 4500 NH3 with a reporting limit of 0.10 mg/L.

450 Mill Street Sanitary Sewer Overflow

Between approximately 0930 and 1030 hours on 2 December 2012, wastewater spilled from a manhole at 450 Mill Street resulting from the significant precipitation event described above. An eyewitness noticed the SSO on 2 December 2012, but did not report the SSO until 3 December 2012. City crews during and after the storm event of 2 December 2012 did not see evidence of an SSO at the manhole. Based on eyewitness observations, the City assumed a spill did occur and estimated that 1,800 gallons overflowed from the manhole to the storm drainage system, which drains to Wolf Creek.

Since the SSO was not reported until after the incident, water quality samples were not taken.

Steps Taken to Minimize Effect of Spill

The following sections discuss the steps taken by City staff to minimize the effect of the spills at the Plant and at 450 Mill Street.

Wastewater Treatment Plant

In responding to the Plant spill, the City implemented its Sewer Overflow Emergency Response Plan. In anticipation of continuing high flows and significant anticipated precipitation, the following steps were taken by Plant staff to minimize the potential effect of the spill at the Plant:

- In an effort to maintain control of Plant processes, Plant staff took steps to optimize flow through the Plant while still meeting National Pollutant Discharge Elimination System (NPDES) permit discharge requirements.
- Due to the precipitation through 30 November 2012 and the expectation of forecasted precipitation, the Plant staff brought the Primary Clarifier #2 on-line at 0710 hours on 30 November 2012. This provided approximately 291,000 gallons of additional treatment capacity and process storage.
- Plant staff contained as much of the spill as possible such that it could be pumped and returned to the Plant for proper treatment and disposal.
- The City contracted with two waste haulers, Navo and Urke, who provided three trucks to pump partially-treated wastewater and stormwater from the primary clarifier spill to Aeration Basin #2 beginning at 1000 hours on 2 December 2012. Approximately 66,500 gallons of the spill were pumped to Aeration Basin #2. This volume was later routed back through the Plant for full treatment and disposal.
- Plant staff used portable pumps to pump partially treated wastewater and stormwater from the primary clarifier spill to the filtrate equalization tank beginning at 0830 hours on 2 December 2012. Approximately 70,000 gallons of the spill were pumped to the filtrate equalization tank. This volume was later routed back through the Plant for full treatment and disposal.
- Plant staff conducted clean-up efforts of the spill area to mitigate the effects of the spill.

450 Mill Street Sanitary Sewer Overflow

Since the SSO at 450 Mill Street was not reported until after the incident, no mitigation measures were taken to minimize the effect of the SSO, because no signs of a spill were apparent at the time the City received notice of the potential spill. However, steps were taken to mitigate the risk and extent of future spills at this location, as noted below.

Corrective Steps

The following corrective steps will be taken by City staff to prevent and mitigate the effects of potential future Plant spills and SSOs in the collection system.

Wastewater Treatment Plant

The City notified the California Emergency Management Agency (CAL-EMA) of the Plant spill at 0915 hours on 2 December 2012. CAL-EMA sent out automatic notifications to all parties of concern, including the California Department of Fish and Game and the Nevada Irrigation

District. The City notified Regional Water Board staff (Lucio Orellana) of the Plant spill at 0925 hours on 2 December 2012. The City notified the Nevada County Department of Environmental Health (Dave Slaughter) of the Plant spill at 0935 hours on 2 December 2012. The Nevada County Department of Environmental Health conducted reverse 911 phone calls to notify property owners along Wolf Creek warning of high flows and the spill. The Nevada County Department of Environmental Health also issued a press release to the media.

The spill was caused in part by the City's current arrangement to accept and treat mine drainage emanating from the Drew Tunnel, which is an abandoned mine portal owned by Newmont. The Drew Tunnel discharge has caused repeated problems for the City's treatment plant in the past, especially during periods of high precipitation. Since the Drew Tunnel discharge can negatively impact wastewater treatment operations, water quality, and NPDES permit compliance due to its cold temperature and metal content if it is introduced directly into the wastewater treatment process, the Drew Tunnel discharge is stored in the equalization basins, which have a capacity of 6.1 million gallons, and is metered into the Plant to prevent upset, interference, or other operational or regulatory issues. Based on a settlement agreement reached between the City and Newmont USA in January 2009, the City anticipates that Newmont will divert the Drew Tunnel discharge from the Plant by May 2014.

Clear Creek Consultants maintains a flow meter that measures the Drew Tunnel discharge to the Plant. The typical Drew Tunnel discharge is between 0.3 and 1.0 MGD. During storm events, Drew Tunnel can introduce even larger volumes of water. Clear Creek Consultants provided flow data, which is summarized in the table below, for the period of 27 November to 3 December 2012.

Date	Daily Drew Tunnel Flow (MGD)	15-minute Interval Flow Range (MGD)
11/27/12	0.80	0.69 – 0.95
11/28/12	0.83	0.70 – 0.95
11/29/12	0.83	0.64 – 0.96
11/30/12	0.62	0.00 – 1.08 ⁽¹⁾
12/01/12	0.82	0.71 – 0.96
12/02/12	0.95	0.75 – 1.38
12/03/12	0.80	0.58 – 0.90

(1) Discharge from the Drew Tunnel to the Plant was shut off/diverted to Wolf Creek between 0930 and 1530 hours.

Drew Tunnel discharge, in addition to excess flows from the primary clarifiers, secondary clarifiers, and filters, are conveyed to the equalization basins for storage through a 24-inch overflow pipe, which has a capacity of 6-7 MGD. While the equalization basins only reached approximately three-quarters of capacity during the spill, the overflow pipe was at capacity, which prevented additional flow from the primary clarifiers from being conveyed to the equalization basins. During the spill period (0830 and 1100 hours), discharge from Drew Tunnel

ranged from 0.75 to 1.11 MGD. Based these flow data, the discharge from the Drew Tunnel impacted the overflow pipe, and significantly reduced Plant staff's ability to divert excess flows from the primary clarifiers to the equalization basins to mitigate the spill.

As part of its investigation as well as regular maintenance, the City will conduct a camera investigation of the overflow pipe to evaluate its structural integrity as well as identify any other potential issues.

450 Mill Street

The sewer system at 450 Mill Street is in steep terrain, which can significantly affect the flow rate of wastewater through the line at this location. To minimize future incidents at this location, the City plans to evaluate this manhole to determine if it needs to be rehabilitated or replaced. The City will continue to train staff on its Sewer Overflow Emergency Response Plan to ensure that SSOs are properly reported and addressed.

Other Corrective Actions

In addition to the corrective actions presented for each of the spill locations above, the City has made substantial recent Capital Improvement investments to enhance the reliability and dependability of all components of its collection system including retrofit of all lift stations. The City is also currently updating its Wastewater Master Plan to evaluate its wastewater system, identify deficiencies, prioritize capital improvements to the wastewater system, and develop a hydraulic model of the wastewater system. The City is committed to making investments in its infrastructure to ensure that these systems operate in a safe and reliable manner in accordance with industry standards. However, the City believes the spill of the primary clarifiers was unavoidable due to the sustained flow resulting from significant precipitation that occurred in combination with the excessive flows from the Drew Tunnel discharge.

If you have any questions, or need further information, please contact me at (530) 274-4351.

Sincerely,
CITY OF GRASS VALLEY
Public Works Department



Timothy M. Kiser, P.E.
Public Works Director/City Engineer

cc: Mike Busse, Chief TPO/Utilities Superintendent
Trisha Tillotson, Sr. Civil Engineer/Deputy Director PW
Michael Colantuono, Attorney for City of Grass Valley
Gorman Lau, Larry Walker Associates



Green infrastructure can help reduce and prevent combined sewer overflows, protecting water quality in our waterways.

Combined Sewer Overflows

This factsheet is the second in a series of six on integrating green infrastructure concepts into permitting, enforcement, and water quality standards actions.

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Evaluating the Potential of Green Infrastructure for CSO Control	Page 3
Developing Quantitative Implementation Targets	Page 4
Incorporating Green Infrastructure Approaches into Long-Term Control Plans	Page 5

Integrating Green Infrastructure Concepts into Permitting, Enforcement, and Water Quality Standards Actions

This factsheet is the second in a series of six factsheets in the U.S. EPA Green Infrastructure Permitting and Enforcement Series (http://water.epa.gov/infrastructure/greeninfrastructure/gi_regulatory.cfm#permittingseries). This series describes how EPA and state permitting and enforcement professionals can incorporate green infrastructure practices and approaches into National Pollutant Discharge Elimination System (NPDES) wet weather programs, including stormwater permits, Total Maximum Daily Loads (TMDLs), combined sewer overflow (CSO) long-term control plans (LTCPs), and enforcement actions. This series builds upon EPA's continued investment in green infrastructure and low impact development. Existing EPA authority, guidance, and agreements enable EPA Regions and state agencies to work with permittees to include green infrastructure measures as part of control programs.

For additional resources on green infrastructure, go to the EPA Green Infrastructure Web page: <http://water.epa.gov/infrastructure/greeninfrastructure/index.cfm>.

Key green infrastructure guidance issued to date can be found at: http://water.epa.gov/infrastructure/greeninfrastructure/gi_policy.cfm.



Combined Sewer Overflows (CSOs)

Introduction

Green infrastructure can reduce the volume of water going into combined systems during precipitation events, which may reduce numbers and volumes of overflows. Green infrastructure can also slow the delivery of wet weather flows to sewer systems, helping to mitigate peak flows while providing filtration through soil for some portion of the release into the sewer system, thereby reducing pollutant

EPA GUIDANCE: CONSIDER SOURCE CONTROLS

Existing EPA guidance states that, as part of the "Identification Control Alternatives" for inclusion in CSO LTCPs, CSO communities must consider source controls, which are defined specifically to include green infrastructure approaches (Combined Sewer Overflows Guidance for Long-Term Control Plan, EPA 832-B-95-002, at pp. 3-31 – 3-33).

loads. The implementation of green infrastructure practices may allow communities to downsize certain grey infrastructure components of their CSO control plans. This may provide some CSO communities with significant cost savings.

Under the Clean Water Act and EPA's 1994 CSO Control Policy, most CSO communities are required to develop and implement a Long-Term Control Plan (LTCP) to restore and protect water quality. National

Pollutant Discharge Elimination System (NPDES) permits and administrative or judicial orders establish requirements for developing and implementing LTCPs. There is also existing guidance on development and implementation of LTCPs (see sidebar below).

Existing Guidance on Development and Implementation of LTCPs

PERMITTING: http://cfpub.epa.gov/npdes/home.cfm?program_id=5
ENFORCEMENT: <http://www.epa.gov/compliance/resources/policies/civil/cwa/cosso-guidelines-enf.pdf>

CSO POLICY: <http://cfpub.epa.gov/npdes/cso/cpolicy.cfm>

Evaluating the Potential of Green Infrastructure for CSO Control

In many cases planning for the use of green and grey infrastructure will be most effective if both elements are integrated throughout the planning and engineering design processes. Therefore, it is recommended that communities carry out integrated green/grey planning to identify opportunities to use green infrastructure in cost-effective combinations with grey infrastructure. This can help lower upfront and/or operational costs. If, for example, a community does engineering analyses to plan grey infrastructure, sized to achieve high levels of control, and then adds green infrastructure as a layer near the end of the planning process, the community may conclude that green infrastructure does not appreciably increase the level of control. However, if planning specifically encompasses green and grey infrastructure together throughout the process, it is likely the planning will reveal many opportunities to use green infrastructure to keep water out of the system in some or all sewersheds. By capitalizing on opportunities to place green infrastructure in sewersheds, communities may be able to reduce the size of grey infrastructure controls.

This is not meant to imply that grey infrastructure controls are not needed; in most communities green infrastructure alone will not resolve CSO problems for large storms.

Depending on land uses, land owners, and other variables, some sewersheds are well-suited for green solutions whereas others may provide less opportunity. Therefore, stormwater reduction analyses typically should be considered sewershed by sewershed. Estimating the

maximum or optimal amount of green infrastructure that can be implemented in a sewershed requires an analysis of land use and technical/environmental factors such as soil types and topography, as well as institutional considerations, such as the need to develop incentives to facilitate implementation of green infrastructure features on private property.

Development of CSO LTCs involves analysis of the financial capability of the community and analysis of alternatives for reducing CSO frequencies, volumes, and pollutant loads. Historically, grey infrastructure approaches and operational enhancements have been the key components of LTCs. Recently, there has been greater interest in using green infrastructure approaches, often in combination with grey infrastructure and operational enhancements, to meet CSO control needs. This approach may have the advantage of distributing the cost of control more broadly, rather than relying solely on utility ratepayers. For example, if a green streetscapes project is implemented it may be possible to cost-share between the stormwater or CSO authority and a transportation organization. In other cases a school or park district may cost-share with the local stormwater/CSO authority. Additionally, several recent CSO consent decrees have required the retrofitting of sizeable areas with green infrastructure as part of holistic approaches to CSO reduction.

(See [Supplement 1](#)).

Case Study of the Impacts of Trees and Green Roofs on Stormwater Runoff

Various organizations and communities have recently conducted studies to estimate the potential for reducing flows into combined sewer systems through systematic use of green infrastructure practices. In 2007, Casey Trees and LimnoTech, with funding from EPA, conducted a modeling study of the impacts of trees and green roofs on stormwater runoff in the Washington, DC area (<http://caseytrees.org/programs/policyadvocacy/>). The Casey Trees modeling estimated, upon completion of implementation of green infrastructure projects:

- For an average year, the intensive greening scenario would prevent over 1.2 billion gallons of stormwater from entering the sewer systems, resulting in a reduction of over 1 billion gallons in discharges to local rivers.
- For an average year, the moderate greening scenario would prevent over 311 million gallons of stormwater from entering the sewer systems, resulting in a reduction of 282 million gallons in discharges to local waterways.
- With the intensive greening scenario, installing 55 million square feet of green roofs in the Combined Sewer System (CSS) area would reduce CSO discharges by 435 million gallons, or 19%, each year.

The initial round of modeling focused only on green roofs and enhancing the urban tree canopy. Further work was then done to model the effects of other green infrastructure components in the Washington D.C. service area. Other communities and regional sewer authorities that have incorporated green infrastructure controls in their CSO planning include New York, Cincinnati, Louisville, , Omaha, San Francisco, Kansas City, and Cleveland.



Figure 1: A bioretention cell absorbs runoff.

Developing Quantitative Implementation Targets

Once a community has evaluated the potential of green infrastructure practices for CSO control, and determined green infrastructure practices can be a cost-effective component of an LTCP, it is important to identify the locations for green infrastructure implementation and to quantify the projected level of green infrastructure implementation. A community can identify what green infrastructure of what size/capacity can be put where in a sewershed, and can then determine what level of reduction that will achieve in terms of wet weather flows entering the sewer system. The new flow information can then be used in the sizing of grey infrastructure. See [Supplement 3](#) for a summary of tools and calculators that are available to help quantify the impacts of green infrastructure.

Once a community has completed a desktop analysis identifying priority sewersheds for green infrastructure implementation, a more detailed analysis must be completed to establish a quantitative green infrastructure implementation target. A discussion of alternative analysis methodologies is beyond the scope of this document. In general, however, the methodology should first develop a set of green infrastructure scenarios, and then assess the outcomes associated with each scenario. The scenario that best meets the community's needs may be adopted as an implementation target. Ideally, the methodology should allow the community to compare the cost-effectiveness of each alternative in meeting CSO control targets, and the range of environmental benefits provided by each alternative. The checklist on Page 5 provides a general methodology for establishing a quantitative green infrastructure implementation target. Note that this is only one of many approaches that a community might take.

The implementation target identified may call for many decentralized green infrastructure practices. In a permit or enforcement action, it will be important to include appropriate provisions to ensure the decentralized practices (many of which will not be on land owned/controlled by the sewer authority) are properly installed, preserved over time, and maintained.

Many communities have identified municipally-owned properties and road right-of-ways, and other parcels that may be well-suited for green infrastructure practices, (e.g., corporate campuses, school campuses, and vacant parcels where there is no near-term demand for redevelopment). These communities have quantified the flow volumes that could be managed at these sites, and then incorporated the results into planning of the complementary grey infrastructure controls.

Also, important factors in some sub-watersheds may be the preservation or enhancement of natural green infrastructure, including features like riparian buffers, forest preserves, floodplains, wetlands, and parks. In estimating flows coming out of a sewershed, the capacity of such areas to absorb stormwater flows needs to be considered. It may be appropriate to incorporate the need to preserve, and in some cases enhance such areas in a LTCP.

In some urban areas, a city or sewer authority may determine that it will focus on relatively larger green infrastructure practices, perhaps at the block scale, and will set up ownership and operation of the sites and practices under the direct control of the city



Figure 2: Stormwater park at Saylor Grove in Philadelphia

or sewer authority. An example of this would be where a city constructs “stormwater parks” to store and infiltrate wet weather flows (see Figure 2). With an approach like this, the capacity of the practice can be readily determined, much like a detention pond, and green infrastructure plans and commitments can reflect the number, locations, and sizing of the larger-scale green practices. Stormwater parks can be planned at strategic locations in the sewer network, and where they fit well into the fabric of the community area. Using larger scale green infrastructure practices, where the city or sewer authority retains control over the practices, may be advantageous for a community in terms of assuring the practices are properly built, preserved, and maintained.

Adaptive management approaches can be used during LTCP implementation to ensure green infrastructure measures are being implemented and are working to the degree expected (see further discussion below). Closely monitoring green infrastructure implementation and performance is important to ensure the projected levels of storage and control are being achieved. Mid-course adjustments can be made if necessary. The monitoring of implementation and performance coupled with the use of adaptive management approaches — making adjustments to future efforts based on lessons learned — can help alleviate possible uncertainty or perceived risks about implementing green solutions as part of a CSO control program.

A General Methodology for Establishing a Quantitative Green Infrastructure Implementation Target

- Select a sample set of sewersheds that are generally representative of the service area as a whole, in terms of land uses, land ownership, soils, and topography.
- Characterize existing land use/land cover in the subwatersheds; this can often be done using aerial photographs and/or a community's geographic information system (GIS) coverages.
- Create templates for the various land uses in the sewersheds (e.g., typical single family residential lot, typical commercial/office site). Estimate the pervious and impervious areas for the templates.
- Identify green infrastructure opportunities for the different land use categories (templates) in the sewersheds, taking into account space needs, soil types, and slopes.
- Estimate the total green infrastructure that could be implemented in the sewershed by extrapolating from the templates to the sewershed as a whole. This estimate should take into account current and future zoning and institutional considerations, such as acceptance by property owners of green infrastructure features on private property. The level of buy-in to the green infrastructure program on the part of local property owners is an important variable, and needs to be explicitly considered in CSO planning. The estimate should also consider public properties and parks that may be good candidates for green infrastructure practices.
- Examine the cost-effectiveness of green infrastructure approaches. Will the green solutions reduce upfront or operational costs? Experiment with various combinations of green and grey infrastructure to determine what combination results in the lowest costs.
- Estimate the green infrastructure opportunities for the CSO service area as a whole by extrapolating from the sample set of sewersheds studied.
- Estimate the stormwater volumes that can be kept out of the system by the green infrastructure, taking into account the level of estimated implementation and the size of the practices. Also consider if there should be a margin of safety to reflect actual green implementation that may vary from projections, especially for sites not under the direct control of the sewer authority.

Incorporating Green Infrastructure Approaches into Long-Term Control Plans

Green infrastructure components should be explicitly identified and accompanied by compliance schedules in LTCPs along with grey infrastructure components. A list of the items that should be included in a LTCP if a community chooses to utilize green infrastructure measures is provided in the checklist on Page 6.

The timing for green infrastructure implementation should be expressly considered in CSO planning. Some green infrastructure benefits will probably be realized sooner than those for grey solutions, while others may take longer. It is important to achieve a reasonable balance while keeping in mind the overall environmental objectives. Discussion of these items and how they will be addressed in the LTCP should be done jointly between the community carrying out implementation and the permitting/enforcement authority.

As a companion to LTCP implementation, CSO communities planning for significant green infrastructure implementation should:

- Develop strategies or standard operating procedures (SOPs) for green infrastructure implementation;
- Consider approaches for dealing with legal and institutional issues including updating codes and ordinances;
- Consider changes to fee structures to incentivize green infrastructure;

- Consider how they will work to systematically install green infrastructure on different types of sites, e.g., municipally-owned public sites, schools, park district sites, corporate sites, and residential properties. The issues that will be encountered in putting rain gardens in parks or schools will be very different from the issues to be dealt with in getting green roofs on public and private buildings.

SOPs can help communities plan for and implement effective approaches to place green infrastructure at different types of sites within their service area.

Preservation of green infrastructure sites and practices

In addition to including provisions for operation and maintenance of green infrastructure practices, permits, and enforcement actions also need to consider mechanisms to assure green infrastructure is preserved (i.e., that a site or green infrastructure practice is not changed or removed at some point in the future). For example, language in a general permit issued by Ohio EPA specifies that protection (preservation) of infiltration areas shall be by binding conservation easements that identify a third party management agency, such as a homeowner or condominium association, political jurisdiction, or third party land trust. See: http://www.epa.state.oh.us/dsw/permits/GP_ConstructionSiteStormWater_Darby.aspx.



Including Green Infrastructure in LTCPs

Green infrastructure components should be explicitly identified and accompanied by compliance schedules in LTCPs along with grey infrastructure components.

The following should be included in an LTCP with green infrastructure:

- The planned (and quantified) level of green infrastructure implementation (what will be installed where, e.g., number of infiltration practices to be installed and associated sizes/capacity);
- Key implementation steps (actions);
- Sequencing (ensure green and grey elements fit together; also in many cases it may work well to start in upstream areas and work toward downstream areas);
- Schedule;
- Methods and milestones for tracking and reporting on green infrastructure implementation (are the green infrastructure practices going in as planned and scheduled);
- Requirements to assure appropriate operation and management (O&M) of the green infrastructure;
- Methods for monitoring the performance and effects of green infrastructure implementation (e.g., are individual practices working as planned, are collections of practices in a sewershed keeping flows out of the sewer system as projected);
- Provisions for adaptive management/corrective actions if green infrastructure performance (at the site scale and/or the sewershed scale) does not meet expectations

Green for Grey Substitutions

In some cases much of the foundational planning and engineering work on CSO controls may have focused on grey infrastructure practices, but well into CSO planning work the idea of incorporating green infrastructure into the LTCP may have been raised. In these types of situations it may be appropriate in a permit or enforcement action to include provisions that would govern a possible substitution of green infrastructure control measures

for grey infrastructure control measures. The Consent Decrees dealing with CSOs in the Kansas City, Missouri and Cleveland, Ohio areas are examples of agreements that include provisions for green for grey substitutions. [Supplement 2](#) provides example language which addresses some of the issues that may be associated with green for grey substitutions.

Monitoring and Evaluating Green Infrastructure Performance

Permits and enforcement actions that include green infrastructure measures should include provisions for evaluating the performance and effects of installed green infrastructure control measures. These provisions would be an essential component of post-construction monitoring required for CSO control practices. It may also be appropriate to include requirements for corrective action implementation if green infrastructure practices do not perform as projected.

Following is example language to address post-construction monitoring for green infrastructure practices: [<http://www.ohioenvironmentallawblog.com/uploads/file/NEORS20Green20infrastructure20CO.pdf>]

“The Sewer District shall submit a plan for performing green infrastructure post-construction monitoring (“GIPCM”) at two scales: (a) site or practice scale; and (b) sewershed scale. The monitoring shall be planned to evaluate the performance and effectiveness of the green infrastructure control measures, as further defined below. Once approved by EPA and the State, the District shall implement the GIPCM program in accordance with the approved GIPCM plan. The District shall submit green infrastructure post-construction monitoring reports providing the results of the GIPCM programs to EPA and the State.

a. The site or practice scale GIPCM program shall evaluate the effectiveness of the green infrastructure control measures on a site-specific scale. The GIPCM plan shall set forth the ways the various types of green infrastructure control measures to be implemented (e.g., constructed wetland, etc.) will function to control wet weather flows (e.g., through storage, infiltration, and/or evapotranspiration), and the monitoring/assessment methods that will be used to evaluate the performance and effectiveness of the various types of practices. The GIPCM plan shall set forth the District’s methods and procedures for evaluating the performance of green infrastructure control measures on a site-specific scale, such as monitoring practices during and after rain events to gauge storage and/or infiltration performance. The GIPCM plan shall establish procedures for conducting performance evaluations on the fully constructed and operating green infrastructure control measures. Under the site-specific program, performance evaluations shall assess the effectiveness of the practices in terms of the functions the green infrastructure control measure was intended to fulfill (e.g., storage, infiltration). Each site-specific green infrastructure control measure (or a representative sample if similar practices are installed at similar sites) shall be monitored for a minimum of 12-months immediately following implementation.

b. The sewershed-specific GIPCM program shall set forth the steps the District shall take to

evaluate the performance and effectiveness of green infrastructure measures on a sewershed scale. Examples of such methods and procedures include collecting rainfall and wet weather flow data sufficient in scope and detail to allow: (i) characterization of the performance of the green infrastructure measures in a sewershed, and (ii) hydrologic adjustment of the sewershed portion of the collection system model to determine the impacts of the green infrastructure measures on system performance within the subject sewershed. The District shall adjust the hydrologic model parameters directly related to the green infrastructure control measures as necessary to accommodate changes in model parameterization caused by shifts in runoff hydrology from the green infrastructure measures. The District shall then use both the appropriate CSO model without the green infrastructure measures, and the model that includes the green infrastructure measures, to simulate the sewershed’s typical year performance both with and without the green infrastructure measures in order to demonstrate the CSO volume reduction.

c. If the green infrastructure post-construction monitoring report submitted by the District fails to demonstrate that the green infrastructure control measures have met the performance criteria specified for such control measures, then within 180 days of submission of the report, the District shall submit to EPA and the State a corrective action proposal. The corrective action proposal shall define the green or grey infrastructure enhancements/expansions to be carried out to address performance shortcomings and ensure the performance criteria are met. The proposal shall include a schedule for completion of all corrective action measures and an updated post-construction monitoring plan to evaluate whether the corrective actions have resulted in the performance criteria being met. The performance criteria for the green infrastructure sites/practices must be achieved within [XX] years of entry of the Consent Decree.”



Green street projects raise the possibility of cost sharing between the stormwater or CSO authority and the transportation department.

Green Infrastructure Permitting and Enforcement Series

This series on integrating green infrastructure concepts into permitting, enforcement, and water quality standards actions contains six factsheets plus four supplemental materials that can be found at http://water.epa.gov/infrastructure/greeninfrastructure/gi_regulatory.cfm#permittingseries.

Factsheets

1. Potential Challenges and Accountability Considerations
2. Combined Sewer Overflows
3. Sanitary Sewer Overflows
4. Stormwater
5. Total Maximum Daily Loads
6. Water Quality Standards

Supplemental Materials

1. Consent Decrees that Include Green Infrastructure Provisions
2. Consent Decree Language Addressing Green for Grey Substitutions
3. Green Infrastructure Models and Calculators
4. Green Infrastructure in Total Maximum Daily Loads (TMDLs)



For additional resources on green infrastructure, go to the EPA Green Infrastructure Web page: <http://www.epa.gov/greeninfrastructure/>.

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.

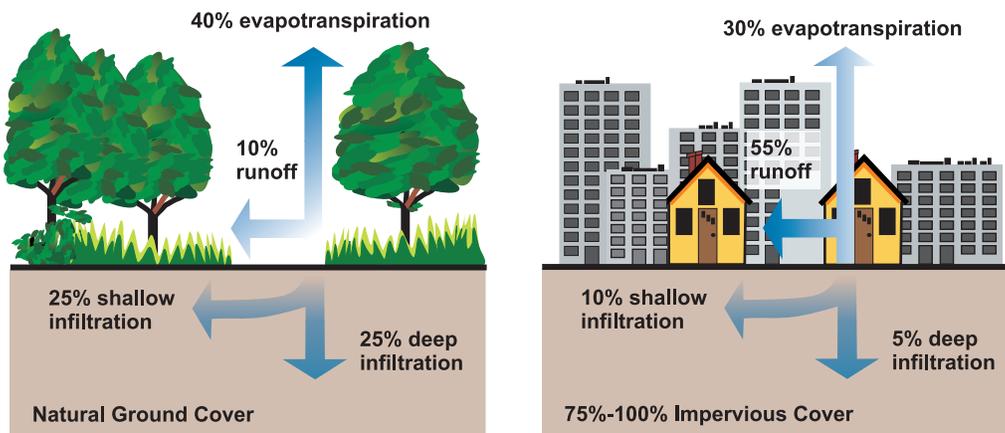
The loss of infiltration from urbanization may also cause profound groundwater changes. Although urbanization leads to great increases in flooding during and immediately after wet weather, in many instances it results in lower stream flows during dry weather. Many native fish and other aquatic life cannot 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.
CABY Headwaters Resilience and Adaptability Program - March 2013

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.



Related Publications

Turn Your Home into a Stormwater Pollution Solution!

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

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

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

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

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

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.

For More Information

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

www.epa.gov/nps

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