

Current Issues in Storm Water and Wetland Regulation in California

January 29, 2008

Written Materials

OVERVIEW AND BRIEF HISTORY

By

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and Kate J. Hart**

A. History of Water Quality Protection

- Pre-enactment of comprehensive state and federal legislation
 - Prior to the enactment of state and federal water quality laws, water users depended on common-law rights such as nuisance or abatement suits to maintain usable water quality.
 - The general rule was that a user (such as a riparian right holder) was entitled to have the water at his point in the stream in essentially its natural state and free from any material pollution.
 - Minor degradation was permissible and therefore not actionable, so long as the water had not lost its suitability for the intended purpose, be it drinking or irrigation.
- Federal regulation of water quality
 - Federal Water Pollution Control Act (“FWPCA”) – 1948
 - Recommended that states develop uniform water quality standards.
 - FWPCA goals were hard to meet because it focused on the quality of the receiving waters and the “end of the stream” rather than the site of polluted discharge. It proved very difficult to start at the end of the stream and trace back to the source of the pollution, let alone apportion fault to multiple polluters.
 - The law continued virtually unchanged until 1972, and depended on the individual states to set appropriate standards.
 - Clean Water Act (“CWA”) (33 U.S.C. § 1251 et seq.) - 1972
 - Modeled on California’s Porter-Cologne Water Quality Control Act. (Wat. Code, § 13000 et seq., enacted in 1969.)
 - The purpose of the CWA is to restore and maintain the chemical, physical, and biological integrity of the Nation’s waters. (33 U.S.C. § 1251(a).)
 - Section 301(a) of CWA generally prohibits the discharge of pollutants into waters of the United States except in accordance with the requirements of one of the two permitting programs established under CWA: Section 404, which regulates the discharge of dredged and fill material; or section 402, which regulates all other pollutants under the National Pollutant Discharge Elimination System (“NPDES”) permit program.

- Federal EPA administers the CWA, but states are responsible for implementation.
- State regulation of water quality
 - Initial attempts at regulation
 - The California Constitution was amended in 1928 to require that the water resources of the state be put to their fullest beneficial use and that the waste, unreasonable use, or unreasonable method of use of water was to be prevented.
 - State Department of Public Health was responsible for preventing harmful discharges into the waters of California. The Department had the authority to deny a permit for discharge of waste or construction of a waste treatment or disposal facility if it believed the discharge would create a public nuisance or endanger the public health. Additionally, the department had the authority to investigate disposal facilities and order changes in their method of operation, design or even location.
 - In 1947, the California legislature appointed an Interim Fact-Finding Commission on Water Pollution, chaired by Assemblyman Randal Dickey. The Commission spent eighteen months on hearings and investigations, presenting its findings to the 1949 legislature in a comprehensive report. In response to the commission's reports, the legislature made several changes to existing water law. First and foremost among these changes was the Dickey Water Pollution Act of 1949 ("Dickey Act"), which created the State Water Pollution Control Board and nine regional boards, which still exist today. While the water boards were given control over various aspects of water quality, including economic ones, the power to abate an actual nuisance posing harm to the public health remained vested in the State Department of Public Health.
 - Another bill passed at the same time creating a revolving State Water Pollution Control Fund for the purpose of giving loans to municipalities to build sewer and storm drainage facilities as approved by the State Board. Additional bills authorized the then Division of Water Resources (now the Department of Water Resources) and the Department of Fish & Game to investigate all sources of pollution and report findings to the appropriate Regional Water Pollution Control Board.
 - None of the bills authorized continued monitoring of a discharger.
 - In 1951, an amendment to the Dickey Act provided that dischargers must maintain and furnish such technical reports as the Regional Board may specify. The result of this amendment was that it gave the regional boards the statutory power to require self-monitoring programs, a huge step for continued enforcement. However, because at the time the requirement was not enforceable through injunctions or misdemeanor charges, the self-monitoring requirements lacked the teeth they have today.

- Porter-Cologne Water Quality Control Act (“Porter-Cologne Act”) (Wat. Code, § 13000 et seq.) - 1969
 - Under the Porter-Cologne Act, the State Water Resources Control Board (“SWRCB”) has the ultimate say over state water quality policy. The State Board also oversees the nine Regional Boards. The Regional Boards issue waste discharge requirements (“WDRs”), initiate enforcement actions against violators, and monitor local water quality.
 - The goal of the Act is to obtain the highest reasonable water quality, while giving consideration to the demands on the waters and the values involved.

B. Storm Water Chess Set: The Players and the Issues

- Definition of Storm Water
 - The Environmental Protection Agency defines storm water as “Storm water runoff, snow melt, runoff, and surface runoff and drainage.” (40 C.F.R. § 122.26(b)(13).)
- Regulation of Storm Water Generally
 - The CWA requires authorization by a National Pollutant Discharge Elimination System (“NPDES”) permit in order to discharge any pollutant into waters of the United States from a point source.
 - Initially, storm water discharges were exempt from the requirements of CWA as determined by EPA.
 - The District of Columbia Court of Appeals in *Natural Resources Defense Council, Inc. v. Costle* (1970) 568 F.2d 1369 ruled that EPA could not exempt storm water discharges from the NPDES permitting program.
 - In 1987, the following amendments relating to storm water were made to the CWA:
 - A section was added specifically authorizing the regulation of storm water discharges (33 U.S.C. § 1342(p)); and
 - Two different standards were created for the regulation of storm water discharges – one for industries (which includes construction activities) and one for municipalities.
 - In California, Best Management Practices (“BMPs”) provides the foundation for storm water regulation. BMPs are defined as “schedules of activities, prohibitions of practices, maintenance procedures and other management practices to prevent or reduce the pollution of waters of the United States. BMPs include treatment requirements, operating procedures, and practices to control plant site runoff, spillage or leaks, sludge or waste disposal, or drainage from raw material storage.” (40 C.F.R. § 122.2.)

- In 1996, the State Board sanctioned MS4 permit language stating that permittees would not be in violation of the permit if receiving water limitation exceedances are followed up with certain actions.
- In 1998, MS4's are not required by the CWA and the California Water Code to strictly comply with water quality standards. (SWRCB Order No. WQ 98-01)
- Regional Board water quality control plans ("Basin Plans") have water quality objectives to ensure reasonable protection of beneficial uses and prevent nuisance. (Water Code § 13241.) SWRCB Plan or Policy supersedes Basin Plan. WQOs can be numeric or narrative.
- Regional Boards issue waste discharge requirements ("WDRs") after prescribing requirements for nature of the discharge in relation to the condition of the disposal area of receiving water. (Water Code §§ 13263 and 13377.) Water quality control plan should be implemented considering beneficial uses, objectives reasonably required for their protection, other discharges, nuisance and factors in 13241.
- The following are factors that should be considered when issuing permits and Water Quality Orders ("WQOs"):
 - Local environmental characteristics including available water quality;
 - Past, present and probable future beneficial uses of waters;
 - Conditions reasonably achieved with coordinated control of all factors affecting area water quality;
 - Economic considerations;
 - Need for housing; and
 - Need to develop and use recycled water. (Water Code §§ 13262 and 13241.)
- In 2005, California Supreme Court held that section 13241 factors must be considered in NPDES permitting when the State imposes restrictions more stringent than those required under federal law. (*City of Burbank v. SWRCB* (2005) 35 Cal.4th 613.)
- Industrial and Construction Storm Water
 - Construction discharges are one category of industrial discharge. Permitting has been separate for construction due to unique aspects of grading land and temporary nature of projects. EPA's early coverage threshold of five acre disturbance was considered arbitrary, and now, it is half-acre disturbance.

- The State Water Resources Board adopted a State-Wide NPDES General Permit for Industrial Discharges and Construction Discharges.
- Proposed amendments to the General Permit drafted in 2004 include the following:
 - Numeric benchmark exceedance trigger “corrective action” and monitoring until two events do not exceed;
 - Sampling for 303(d) constituents and refers to separate total maximum daily load (“TMDL”) actions;
 - Benchmarks include 100mg/1 TSS, 1 mg/1 iron, other metals;
 - State-wide desire to support revisions that don’t include numeric limits;
 - Mandatory minimum BMPs including cover erosion control, run-on diversion, excessive inspection; and
 - Additional inspections before each rainfall.
- Industrial storm water must comply with NPDES permits containing the technology-based effluent limitations. “Technology-based” means the best available technology economically achievable (“BAT”) for toxic pollutants and Best Conventional pollutant control Technology (“BCT”) for conventional pollutants. (33 U.S.C. § 1342(p)(3)(A).)
- Municipal Storm Water
 - NPDES permits regulate municipal storm water and are restricted by the following requirements:
 - “may be issued on a system- or jurisdiction-wide basis;
 - shall include a requirement to effectively prohibit non-storm water discharges into the storm sewers; and
 - shall require controls to reduce the discharge of pollutants to the maximum extent practicable, including management practices, control techniques and system, design and engineering methods, and such other provisions as the Administrator or State determines appropriate for the control of such pollutants.” (33 U.S.C. § 1342(p)(3)(B)(i)-(iii).)

Act	Regulatory Agency	Purpose
Porter-Cologne Water Quality Control Act	SWRCB and RWQCBs	Comprehensive program to protect California's waters. The RWQCBs are responsible for developing Basin Plans and regulating all pollutant or nuisance discharges that may affect either surface water or groundwater. Any person proposing to discharge waste within any region must file a report of waste discharge with the appropriate regional board.
Clean Water Act Section 401; Federal Action Impact on State Water	SWRCB and RWQCBs	Section 401 of CWA requires each federal agency authorizing an activity that could affect state water quality to obtain state certification that the proposed activity will not violate state and federal water quality standards. Section 401 is triggered by any activity that requires the need for a permit from a federal agency for a project that could affect state water quality, including section 404/section 10 permits from USACE.
Clean Water Act Section 402; NPDES Program	SWRCB and RWQCBs	Section 402 of the Clean Water Act authorizes states to develop an NPDES program to permit “point source” discharges of pollutants into surface waters of the United States. Discharge from any point source is unlawful unless the discharge is in compliance with a NPDES permit.
Clean Water Act Section 303(d); TMDLs	SWRCB and RWQCBs; federal EPA	Requires each state to identify waters that will not meet applicable water quality standards after implementation of technology-based point source controls, and to rank the identified waters, taking into account the severity of pollution and designated beneficial uses of the waters. Also establishes a process to set TMDLs for these waters to provide for more stringent water quality-based controls when required federal, state, or local controls are inadequate to achieve water quality standards.
Clean Water Act Section 404; Wetland Regulation	EPA and USACE	Requires a permit to dispose of dredge or fill material in the nation’s waters. The permit program is run by the Army Corps of Engineers (“USACE”) in conjunction with environmental guidelines created by EPA. Two types of permits are generally issued: standard (individual) and general (nationwide).

**Why Storm Water?
The Growing Awareness of the Consequences of
Runoff:
HYDROMODIFICATION**

By

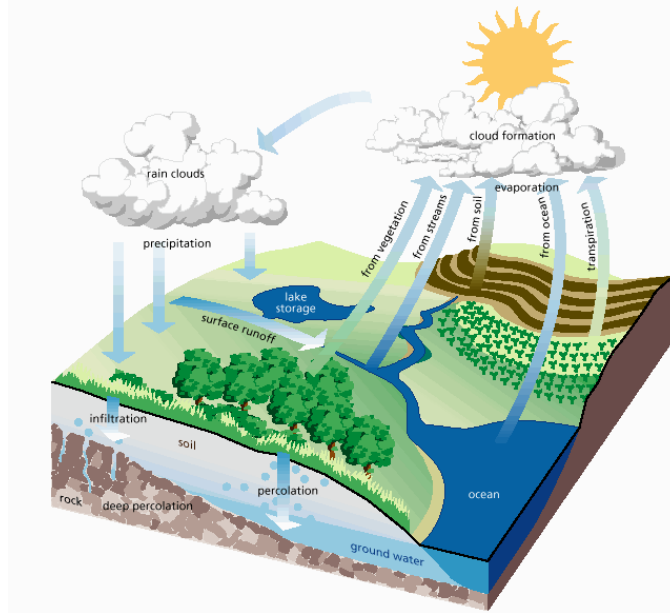
Bill Christner, Jr.

A. Hydromodification

1. What is it?

- a. Any change to the landscape that alters the natural flow of water.
- b. EPA definition: “alteration of the hydrologic characteristics of surface waters, which in turn could cause degradation of water resources.”

(1) Changes to the hydrologic cycle



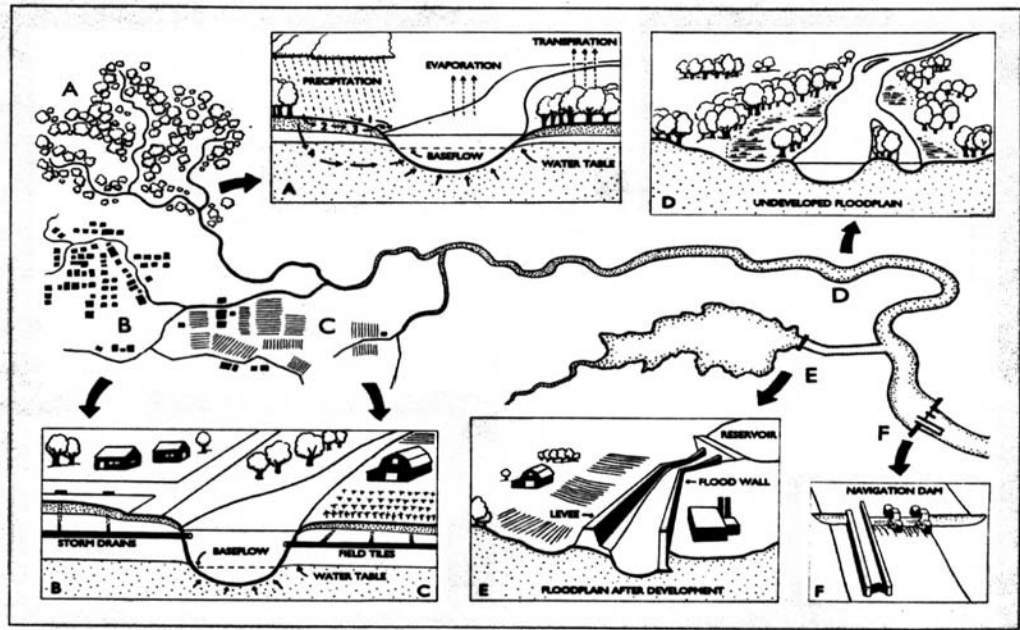
2. The Hydrologic Cycle

- a. Precipitation
- b. Infiltration
 - (1) Shallow
 - (2) Deep
- c. ET, evapotranspiration: the sum of two processes, evaporation and transpiration.
 - (1) Evaporation: the process of liquid water becoming water vapor, including vaporization from water surfaces, land surfaces, and snow fields, but not from leaf surfaces.
 - (2) Transpiration: process by which water that is absorbed by plants, usually through the roots, is evaporated into the atmosphere from the plant surface, such as leaf pores.
- d. Surface Runoff: that portion of precipitation which is not intercepted by vegetation, absorbed by the land surface or evaporated, and thus flows overland into a depression, stream lake or ocean. It can carry pollutants from the air and land into receiving waters.

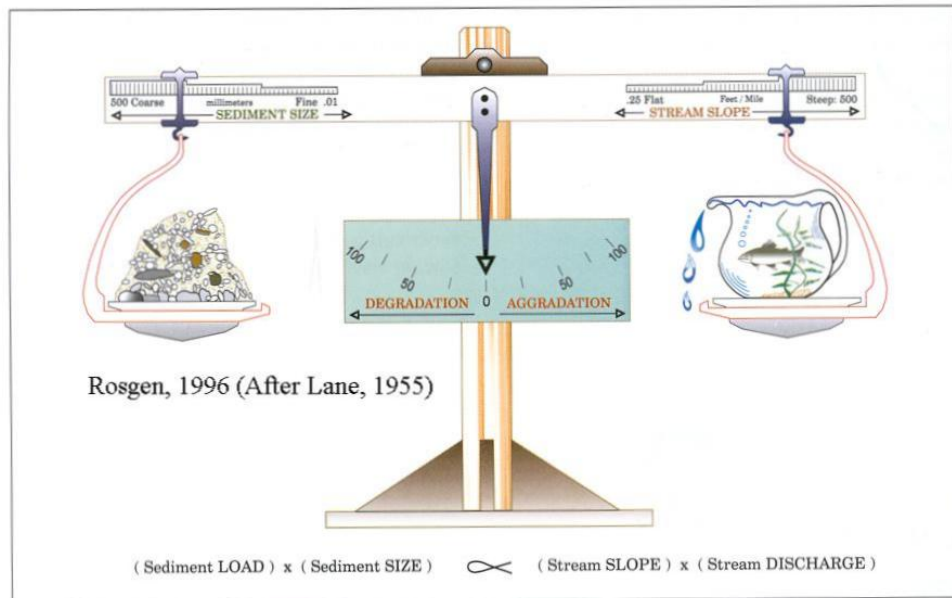
3. Hydrologic Cycle

- a. Inputs = Outputs +/- ΔS
 - (1) What do we (can we) change?
 - (2) All changes impact vegetation
 - a. Changes to vegetation result in changes to:
 - i. ET
 - ii. Infiltration
 - iii. Runoff

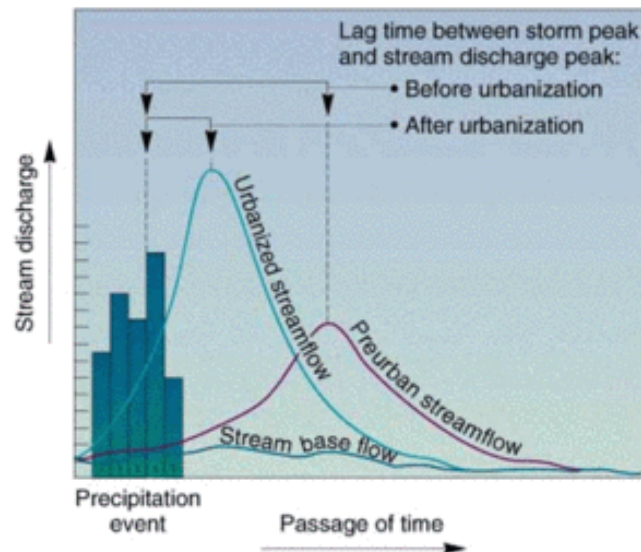
4. How does Man alter/change the Hydrologic Cycle?



- a. Precipitation
 - (1) Debate about impacts (Global Warming)
 - a. Some areas experience increases while other areas experience decreases
- b. ET and Infiltration both decrease
 - (1) Native plants/vegetation changed to:
 - a. Crops
 - i. Annuals
 - ii. Perennials
 - b. Homes
 - c. Industrial/commercial
 - i. Logging
 - ii. Dams
 - iii. Mining
 - 1. hard rock
 - 2. gravel
- c. Decreases to ET and Infiltration = Increased Runoff
 - (1) The same amount of precipitation now generates more runoff in a shorter period of time
 - a. The system becomes “flashy”
 - b. Creates “Hungry Waters”
 - c. This impacts our waterways (creeks, streams, lakes, etc)

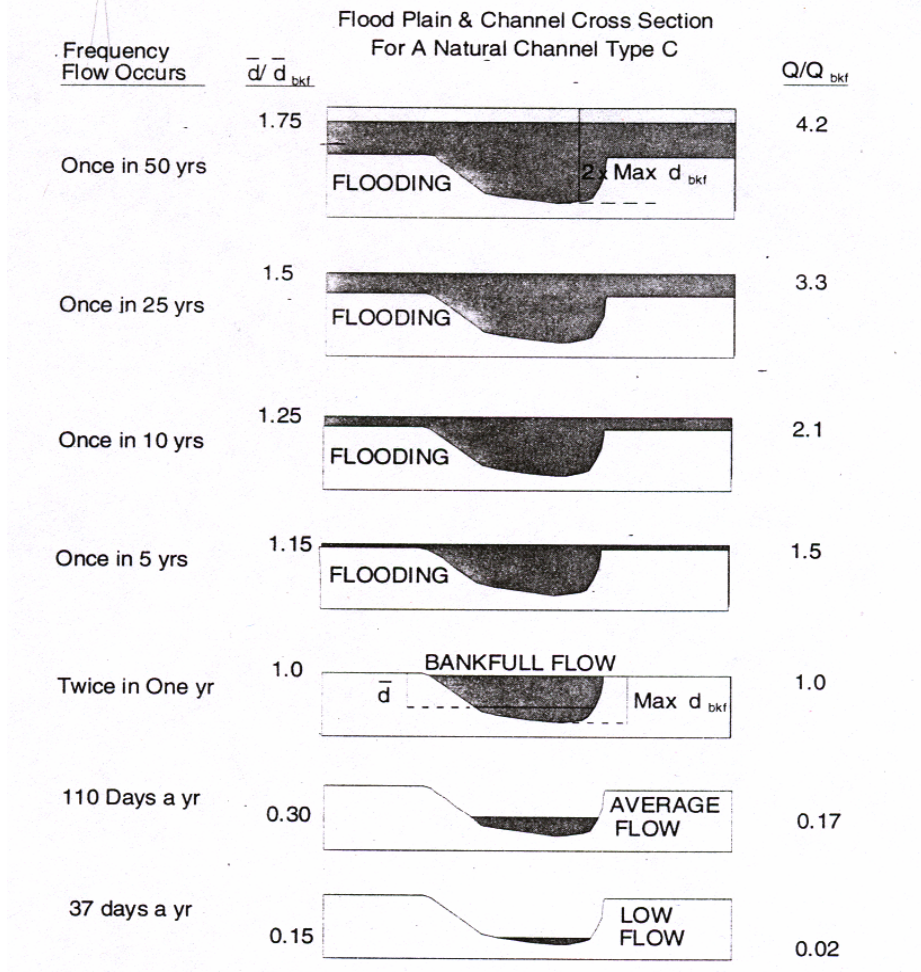


- (2) Sediment load and size are proportional to stream slope and discharge (Q)
- a. Change the Q and you will change sediment load, size, and/or stream slope
 - i. This results in channel degradation, aka: erosion



5. Fluvial Geomorphology
 - a. Alluvial channels exist in a state of dynamic equilibrium
 - (1) They maintain a “stable” shape
 - a. Dimension
 - b. Pattern
 - c. Profile
 - b. Size and shape of stream channels is influenced by several factors?
 - (1) Bankfull discharge (Q_{bkt})
 - (2) Basin size
 - (3) Substrate
 - (4) Precipitation

- (5) Slope/Aspect
- (6) Vegetation
- (7) Geology
- c. Bankfull Discharge (Q_{bkt}), aka: channel forming discharge, channel maintaining discharge, ordinary high water mark
 - (1) Q_{bkt} has a specific recurrence interval of 1.5 – 2.5 years
 - (2) Increased runoff increases the discharge associated with the Q_{bkt}



- (3) Stream channels adjust to these increases by adjusting the channel:
 - a. width
 - b. depth
 - c. sinuosity
 - d. slope
 - e. sediment size (D_{50})
- 6. Conclusion, Hydromodification:
 - a. Increases the amount of impervious area
 - b. Increases RO
 - c. Increases the Q_{peak}
 - d. Shorter time-to-peak
 - e. Changes/increases Q_{bkt}
 - f. Produces a flashier response
 - g. Decreases infiltration
 - (1) Less water getting to underground aquifers

**Why Storm Water?
The Growing Awareness of the Consequences of
Runoff:
THE WATERSHED EXPERIENCE &
IMPACTS ON HUMAN HEALTH AND
SPECIES**

By

Gregg Bates

“When it comes to polluted runoff, local isn't a city or county, it is the watershed.”
-- Jim Mayer, Changing the Course of California's Water

Storm water issues are analogous to air quality issues. The difference is that we all live in the medium of air but we don't see the water in our communities as intimately as the air. It's easy to argue that we need clean air because it's obvious that we'll choke and be unhealthy if we don't have it. It's more challenging for people to see the importance of clean water in our communities – streams, lakes and rivers. The original Clean Water Act was a response to burning rivers and floating sewage which we don't have so much any more. So sometimes clean water regulations can seem like pesky regulations promoted by unreasonable environmentalists who want to shut down development. But clean water is vital to us all and it begins in our local communities.

The following quotes sum up the importance of thinking about storm water in a watershed context:

“Where do rivers start?
in threads in hills and gather to here-
but the river is all of it everywhere,
all flowing at once,
all one place.”
-- Gary Snyder

“Freshwater ecosystems are the critical link between land and sea, in effect forming the planet's circulatory system; virtually every human action is eventually reflected in them.”
-- Worldwatch paper 128

“Officials estimate that 50 million gallons of oil disappear from automobiles in California each year--burned in exhaust, dripped on the roadway or dumped by mechanics--nearly twice as much oil as spilled by the Exxon Valdez.”
-- Jim Mayer, Changing the Course of California's Water

The impact of impervious cover due to development on the landscape

Impervious cover (IC) resulting from watershed development changes the drainage pattern of storm water (hydrograph). The urban type hydrograph that results from impervious cover causes erosion and sedimentation which is probably the biggest factor degrading most streams.

IC causes bigger peaks in the hydrograph and flashier cycles. That pattern causes increased erosion which results in both down cutting and lateral erosion in the channel. Down cutting (incision) lowers the water table and reduces moisture available to riparian vegetation causing it to weaken and be overrun by invasives. Lateral erosion destroys riparian vegetation which in an urban setting with narrow riparian corridors is a very significant loss.

Down cutting results in containment of a larger range of flows and is a self feeding cycle since containment creates pressure that leads to still more erosion. Contained flows result in more scouring of instream habitat for salmonids, benthic macroinvertebrates and other animals. Streams often go to bedrock or are flooded with sediment. Deeper channels reduce the range of flows that go over bank to the flood plain thus depriving it of its natural source of replenishment. Though IC may increase flooding due to very large storm events, it markedly decreases the annual over-bank flows from smaller storm events. That decrease is probably the biggest factor degrading channel morphology and causing an unhealthy, unproductive stream corridor.

Impervious surfaces also decrease percolation to groundwater contributing to a drop in the water table. Lowering of the deep water table by pumping, lowering of the shallow water table due to channel incision, and the increase in impervious surface has completely altered the natural hydrograph of streams. State Department of Water Resources data show the groundwater basin below parts of the watershed in Antelope and West Placer County has dropped about 45 feet since the 1950's. As groundwater drops, contaminants that find their way into it become more concentrated.

A more natural regime of percolation and gradual release soften the peak of the hydrograph and lengthen it. That lengthens the time that water flows in the stream channel. Lack of percolation combined with the lower groundwater result in an unnatural condition of drier streams for longer periods.

A stream is more than just a channel for rainwater. It is a complex, living system where the composition, shape and slope of the streambed interact with the dissolved nutrients and organic matter in flowing water to create an environment rich in plant and animal life. A stream in good health provides prime habitat--a place to live, feed, and rear young--for a great variety of fish, insects, plankton, and other animals. Streamside plants provide food for insects, which are food for fish, which nourish streamside predators from birds to large mammals--including people.

-- Stream Care, Santa Cruz County

Study: Stream Ecological Responses to Urbanization in Three Contrasting Metropolitan Regions of the United States

C.M. Tate, T.F. Cuffney, M.R. Meador, T.M. Short, and M.G. Potapova
U.S. Geological Survey
National Water-Quality Assessment (NAWQA) Program

Some conclusions of the study:

Geomorphological response to increasing urban intensity (scale):

- Segment sinuosity decreased
- The number of pools and riffles decreased and pool and riffle habitat spacing increased.
- Channel depth increased in the NECB but no response in width/depth ratio for MOBL and GRSL (reach).
- Benthic habitat quality declined as sedimentation and substrate embeddedness increased.

Chemical response to increasing urban intensity:

- Specific conductance and the number of pesticides detected increased in all settings.
- Total nitrogen and total phosphorus increased in NECB
- Total phosphorus increased in GRSL.

Invertebrate communities respond to urbanization in predictable ways in all regions.

- Increasing invertebrate community degradation was associated with increasing urban intensity.
- The number of tolerant invertebrate species increased with increased urban intensity.

Hydrologic responses varied in different metropolitan regions.

Hydrologic connectivity within and among drainage networks determined whether large-scale land-use patterns directly or indirectly affected the physical characteristics of streams along the urban gradient.

**Section 404 of the Clean Water Act:
MITIGATION OPPORTUNITIES AND
CHALLENGES**

By

Loren Clark

Placer County Case Study: Placer County Conservation Plan Programmatic 404 Compliance

Contents:

- Clean Water Act Section 404 Permit Process For Projects In Western Placer County That Exceed Three Acres of Wetland Impact - Prepared by Placer County
- DRAFT Avoidance Criteria for Aquatic Resources within the PCCP - Valley Floor
- The Placer County Aquatic Resource Program (CARP) Compared to the Current Situation
- A Proposed Methodology for a “Regional LEDPA” Determination: Permitting under CWA Section 404 in Western Placer County Prepared by EPA Region IX
- Regional LEDPA Concept Figure Prepared by Tim Vendlinski, EPA Region IX
- West Placer County Wetlands, Riparian Areas and Vernal Pool Complexes
- Placer County Conservation Plan Permit Procedures

Clean Water Act Section 404 Permit Process For Projects In Western Placer County That Exceed Three Acres of Wetland Impact

Prepared by Placer County

Overview

In recognition of the need to satisfy environmental protection requirements while responding to the demand for growth in western Placer County, the County has embarked upon a comprehensive planning effort for the western County. The centerpiece of this effort is preparation of a habitat conservation plan and natural communities conservation plan, entitled the “Placer County Conservation Plan” or “PCCP.” The PCCP will provide an avenue for projects in the western County to comply with the federal Endangered Species Act (ESA) and the state Natural Community Conservation Planning over the next fifty years.

Many areas of the western County that provide habitat for species protected by the ESA also contain aquatic features that are protected by the Clean Water Act (CWA), such as vernal pools. Accordingly, another part of the County’s planning effort is the development of the County Aquatic Resources Plan or “CARP,” which will protect these aquatic resources and is intended ultimately to allow the County to authorize projects under CWA section 404. However, unlike the PCCP, which has no upper limit on the size of project that the County can authorize, the County will only be able to authorize projects which have impacts of up to three acres of waters under the CARP.

Mindful of the fact that there are several proposed projects in the western County that could affect more than three acres of waters, the County has met with the two federal agencies charged with implementing the CWA section 404 program, the U.S. Environmental Protection Agency (EPA) and U.S. Army Corps of Engineers (Corps), to discuss the process for obtaining CWA section 404 authorizations for western County projects with three acres or more of impacts. As explained below in greater detail, what has emerged from those discussions is that such projects will be able to tier from the National Environmental Policy Act (NEPA) and CWA analyses that will be performed for the PCCP and the CARP, provided that they otherwise meet the conditions established in the PCCP and the CARP. This should eliminate the need for additional off-site alternatives analysis at the project level, provide project proponents with greater flexibility with regard to onsite avoidance, and generally result in expedited processing of individual permit applications for such projects.

Discussion

The individual permit process under CWA section 404 consists of a series of steps: submission of a permit application; public notice (and in some cases a public hearing); compliance with a variety of legal provisions outside of section 404 (such as state water quality certification, NEPA, ESA, etc.); and the issuance of a record of decision or statement of findings and permit, as appropriate. A key part of this process is determining whether the proposed discharge activity would comply with the guidelines promulgated by EPA pursuant to CWA section 404(b)(1), which are set forth at 40 C.F.R. Part 230 (“the Guidelines”). If the activity complies with the Guidelines, the Corps will grant a permit “unless issuance would be contrary to the public interest.” 33 C.F.R. sec. 323.6(a).

As a general rule, the Guidelines provide that activities resulting in the discharge of dredged or fill material will not be permitted if there is a practicable alternative to the proposed discharge that would have a less adverse impact on the aquatic ecosystem, so long as the alternative does not present other significant environmental consequences. 40 C.F.R. sec. 230.10(a). Thus, the Corps must analyze a range of alternatives and determine that the proposed activity is the least environmentally damaging practicable alternative or “LEDPA” before it can grant a permit authorizing the discharges. An area not owned by the project applicant that could be reasonably obtained to satisfy the basic purpose of the proposed activity may be considered as part of the alternatives analysis. 40 C.F.R. sec. 230.10(a)(2). Unless clearly demonstrated otherwise, the Corps will assume that there are practicable alternatives to discharge activities that occur in, but are not dependent upon being in or having access to, a wetland or other “special aquatic site.” 40 C.F.R. sec. 230.10(a)(3).

In addition to this alternatives analysis, the Guidelines also require the Corps to determine if the proposed discharge will result in violations of certain laws such as the ESA or other regulatory requirements, cause or contribute to significant degradation of waters, and whether it will include appropriate and practicable steps to minimize potential adverse impacts on the aquatic ecosystem. 40 C.F.R. sec 230.10(b) through (d).

Compliance with the Guidelines is required for programmatic permits as well as for individual permits. 33 C.F.R. sec. 320.1(a)(1). Accordingly, the Corps will need to conduct an alternatives analysis and ensure compliance with NEPA before it can determine whether to grant the County a programmatic permit, as contemplated in the CARP. However, the Corps need not prepare two separate alternatives analyses to satisfy both the Guidelines and NEPA, as the Guidelines provide that in most cases, the alternatives analysis required for NEPA will provide the information necessary for the alternatives analysis required by the Guidelines. 40 C.F.R. sec. 230.10(a)(4). Here, the County anticipates that the CARP and the PCCP will be analyzed in the same environmental impact statement (EIS), with the FWS as the lead agency and the Corps as a cooperating agency, and that the EIS's alternatives analysis will be sufficiently complete in order to satisfy the Corps's alternative analysis obligations under the Guidelines as well as NEPA.

Moreover, the Corps can rely on and tier from the EIS's alternatives analysis in reviewing subsequent individual permit applications for projects that fall within the PCCP and the CARP's parameters. In fact, the Guidelines require the Corps to consider such an analysis. 40 C.F.R. sec. 230.10(a)(5) ("To the extent that practicable alternatives have been identified and evaluated under a Coastal Zone Management Plan . . . or other planning process, such evaluation shall be considered by the permitting authority as part of the consideration of alternatives under the Guidelines.") This will generally eliminate the need for additional alternatives analysis and even project-level EISs as part of the individual permitting process for such projects, which will significantly reduce processing times for individual permit applications. The Corps and the County can further streamline permitting for larger projects by developing joint procedures that will ensure that the substantive requirements of the CWA individual permitting process are fulfilled while avoiding duplicative public notice and comment procedures and the like. 33 C.F.R. sec. 325.2(e)(2).

Also, if the PCCP/CARP EIS's preferred alternative is the LEDPA and complies with the Guidelines' other requirements, the Corps should have considerably more flexibility in dealing with questions of onsite avoidance for projects that meet the PCCP and the CARP's avoidance and mitigation parameters.

The first premise here is that it would be environmentally superior to establish a system of large connected reserves as the key component in establishing a "regional LEDPA" and meeting avoidance, minimization, and mitigation requirements under the Guidelines. Under this scenario, tens of thousands of acres of vernal pool landscapes, riparian forests, and oak woodlands would be protected at a watershed/ecosystem scale rather than requiring applicants to avoid small, isolated patches of habitat that are difficult to protect and manage in the long-term.

The second premise is that even though tens of thousands of acres would also be dedicated to future suburban development, this development would be designed to incorporate rigorous protection for riparian corridors while employing Low Impact Development Strategies (LIDS) to minimize impervious surfaces and adverse environmental impacts.

Provided the administrative record supports these premises, and the Corps finds that the PCCP/CARP mitigation parameters satisfy the Guidelines' requirements regarding avoidance of significant degradation of waters and minimization of impacts, the Corps should be able to subsequently rely on these findings to adopt a flexible approach to relatively streamlined permitting individual projects under the umbrella of a regional LEDPA.

DRAFT
**Avoidance Criteria for Aquatic
Resources within the PCCP - Valley Floor**

The following draft avoidance criteria would be applied to all discretionary projects located in the Valley portion of the Phase 1 PCCP. A separate avoidance strategy for the Foothills and low impact development (LID) measures are currently being prepared and will be presented at a later date. The numbers included below represent placeholders for discussion purposes.

Avoidance within the development area is focused on maintaining hydrologic connectivity, ensuring effective storm water management, and improving water quality. For high priority resources, these avoidance strategies also provide a mechanism for maintaining wildlife habitat and movement within the development footprint.

In general, the resources listed below will be avoided and incorporated into the County reserve system. Buffers are measured from the centerline of the creek, outward on each side of the creek; corridors are measured from buffer edge to buffer edge (i.e. a 200 ft. buffer is equal to a 400 ft. corridor around a stream). In most cases, aquatic features not specified below will not be incorporated into the PCCP reserve system and will not be subject to further onsite analysis.

- **Major streams and tributaries:** The following draft list includes all of the named streams in western Placer County. These streams are divided into three watershed categories: Priority 1, Priority 2, or Priority 3. Priority 1 watersheds include those major streams and associated tributaries which support the greatest potential for sustaining east/west wildlife movement, provide essential habitat for salmon/steelhead, and have the greatest potential for contiguous incorporation into the PCCP reserve system. Priority 2 streams and associated tributaries support essential habitat for salmon/steelhead and provide valuable wildlife habitat; however, not to the extent of Priority 1 streams. Priority 3 watersheds include the remaining streams and tributaries in the Phase 1 area. Within each watershed, the major and minor tributaries are listed. This list represents streams in the Phase 1 area from north to south. Tributaries are named from downstream to upstream. Major streams are in boldface type; major tributaries are in italics; minor named tributaries are in standard font.

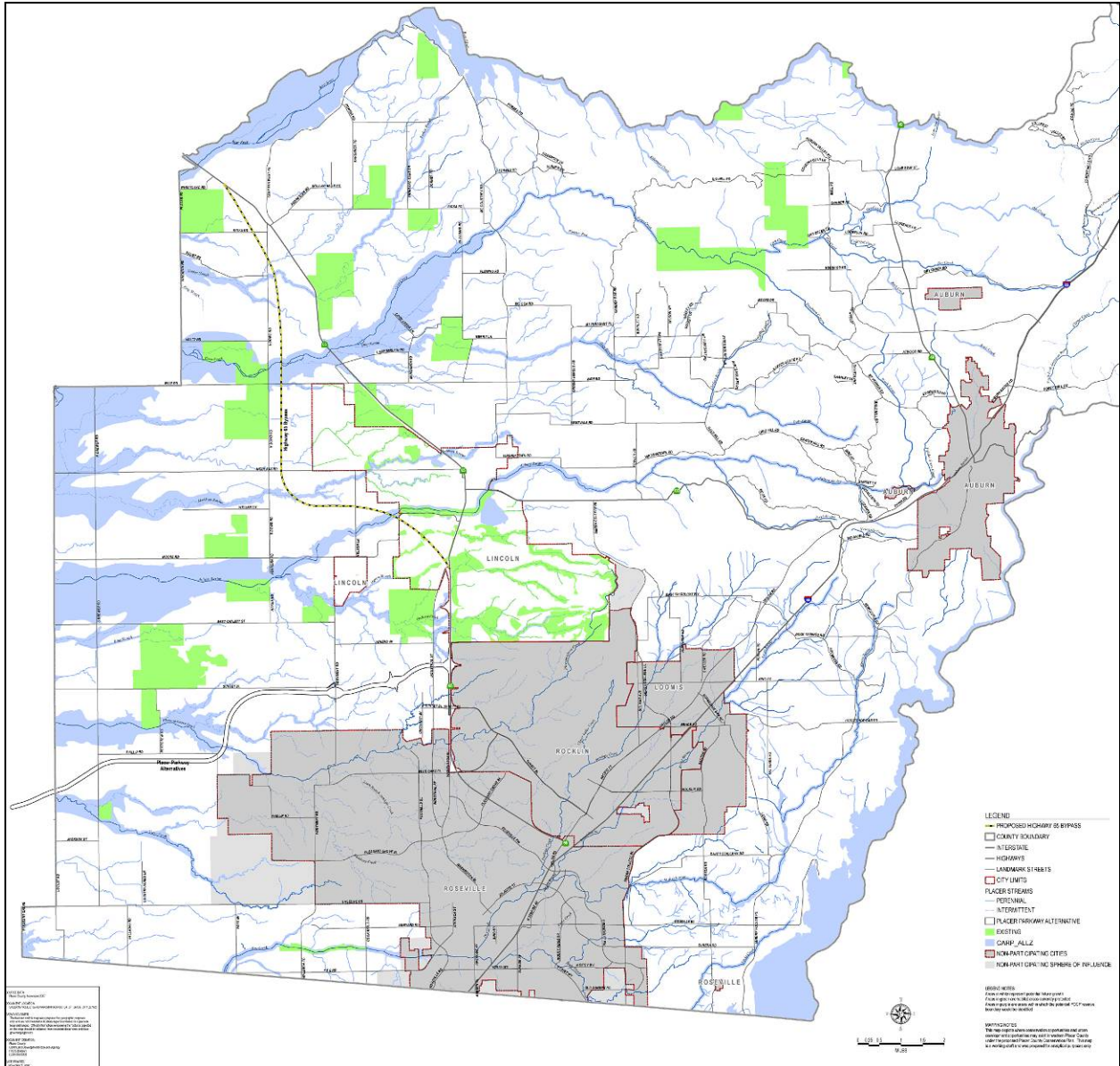
Stream Name	Type	Watershed Priority	Buffer (ft)	Corridor (ft)
Bear River	Major Stream	Priority 1	600	1200
Aldermann Creek	Minor Tributary	Priority 3	100	200
<i>Yankee Slough</i>	Major Tributary	Priority 1	200	400
Coon Creek – Valley	Major Stream	Priority 1	600	1200
Orr Creek	Minor Tributary	Priority 2	100	200
Dry Creek	Minor Tributary	Priority 2	100	200
Rock Creek	Minor Tributary	Priority 2	100	200
Deadman Canyon	Minor Tributary	Priority 2	100	200
Whiskey Run	Minor Tributary	Priority 2	100	200
<i>Doty Ravine</i>	Major Tributary	Priority 2	200	400
Caps Ravine	Minor Tributary	Priority 3	100	200
Sailors Ravine	Minor Tributary	Priority 2	100	200
Markham Ravine	Major Stream	Priority 2	100	200
Auburn Ravine – Valley	Major Stream	Priority 1	600	1200
<i>Orchard Creek</i>	Major Tributary	Priority 1	200	400
Ingram Slough	Minor Tributary	Priority 3	100	200
Dutch Ravine	Minor Tributary	Priority 2	100	200
Georges Ravine	Minor Tributary	Priority 3	100	200
North Ravine	Minor Tributary	Priority 3	100	200
Baltimore Ravine	Minor Tributary	Priority 2	100	200
King Slough	Major Stream	Priority 3		
Pleasant Grove Creek – Valley	Major Stream	Priority 3	400	800
Kaseberg Creek	Minor Tributary	Priority 2	100	200
South Branch	Minor Tributary			
Curry Creek	Major Stream	Priority 3	100	200
Dry Creek	Major Stream	Priority 2	300	600
<i>Antelope Creek</i>	Major Tributary	Priority 2	200	400
<i>Clover Valley Creek</i>	Major Tributary	Priority 2	100	200
<i>Secret Ravine</i>	Major Tributary	Priority 1	200	400
Red Ravine	Minor Tributary	Priority 3	100	200
Miners Ravine	Minor Tributary	Priority 1	200	400
Cirby Creek	Major Stream	Priority 2	100	200
<i>Linda Creek</i>	Major Tributary	Priority 2	200	400
<i>Strap Ravine</i>	Major Tributary	Priority 2	100	200
American River	Major Stream	Priority 1		
Coon Creek – Foothills	Major Stream	Priority 1	200	400
Auburn Ravine – Foothills	Major Stream	Priority 1	200	400
Pleasant Grove Creek – Foothills	Major Stream	Priority 1	100	200

- **Unnamed tributaries, intermittent streams, ephemeral streams, and swales:** It is difficult to determine specific avoidance measures for these features using coarse GIS data or having no mapping data at all. Avoidance with buffers of 50 ft. or less, low impact development strategies (LIDS), and realignment or relocation may be used to achieve the stated goals of hydrologic connectivity, storm water management, and improving water quality.

The following aquatic resource buffers will be incorporated when these features occur within stream buffers or when incorporating the specified buffer for that feature connects the aquatic resource to a stream buffer system.

- **Flowing springs:** 100 feet buffer, 200 ft. corridor when swales have surface or shallow subsurface hydrologic connectivity to a stream or wetland adjacent to a stream.
- **Long-duration seeps:** 100 ft buffer, 200 ft. corridor.
- **In-Stream Ponds:** The buffer will equal the buffer applied to the stream class in which the pond occurs.
- **Placer Mining Tailings Wetlands and Riparian Vegetation:** These areas may be some distance from a stream channel. They are characterized by a fairly dense canopy of cottonwoods and willows, and they provide habitat values substantially different from the surrounding habitats. These areas can be delineated by mapping the cottonwood/willow canopy, and will have 100 ft upland buffers, 200 ft upland corridors.

CARP Boundaries and Existing Conservation Areas



CARP Process Compared to the Current Situation

FAQ	Current Situation	CARP Proposal
How many permits do I need?	Two to three (404, 401, 1602). Impacts to waters of the US require both a federal 404 permit and a state 401 water quality certification (these are now issued by two different agencies). In addition, a 1602 agreement will be required for impacts to creeks, streams, and lakes.	One. (The CARP permit covers the three permits now required.)
Is a Wetland Delineation required?	Yes. No mandatory time frames. Verifications typically take 180 to 720 days.	Yes, except for very small discharges approved by the County for Category 1 permits. Delineations will be verified within 30 days of the submission of a WD meeting County standards.
What kind of application is required?	Currently you must fill out three applications (the 1602 application has an additional form that must be filled out). The applications are between two and five pages long. However, they typically do not provide enough information for regulators to make decisions, and the agency may make requests for additional information. This can substantially lengthen the time to permit issuance.	The County application is substantially longer, and takes more time to assemble. However, when it is completed, it will provide County staff all the information needed to issue or deny a permit. The extra time needed to provide this information substantially shortens the time needed to process the application compared to current conditions.
Are fees required?	The Corps has no fees for Nationwide Permits. They charge a small fee for Individual Permits. Fees for 401 and 1602 applications are dependent on the size or cost of the project. These range between \$500 and \$2,250 for a 401 application and between \$200 and \$4,000 for a 1602 application. Both could be higher for very large projects.	The County will charge fees for processing permits and it is not known what the fee structure will be. It is very probable that the County fees will be higher than those for the current situation. However, the guaranteed time frame for permit issuance is likely to offset the cost of the fees.

<p>Is pre-discharge notification required for impacts below <1/10th acre?</p>	<p>No.¹ However, the applicant must still obtain a 401 certification, regardless of the size of the discharge, and may need a 1602 agreement with CDFG as well.</p>	<p>Yes. Permits will generally be issued in 30 days or less for ministerial actions by the County.</p>
<p>But if I keep my impacts below 1/10th acre, I don't need a Corps permit, so why do I need a County permit?</p>	<p>All impacts to waters of the US require a Corps permit. For small discharges an applicant may use an existing NWP as long as the project can meet the terms and conditions of the permit. A clause in the conditions allows applicants to notify the Corps following the discharge rather than before if the impacts are less than 1/10th acre. Nevertheless, a permit is still required, and there is a risk to this strategy (see footnote 1 below).</p>	<p>All projects affecting aquatic resources in Placer County requires a permit. There is no post-discharge clause in the County program. However, the County has three permit categories, and will generally issue a Category 1 permit within 30 days.</p>
<p>Is pre-discharge notification required for 1/10th to 3 acres of impact?</p>	<p>Yes. Corps regulations specify permit issuance within 45 days of a complete application. In practice, the Corps can take six months to two years or more to verify a NWP.</p>	<p>Yes. Category 1 permits are usually issued in 30 days and Category 2 permits are within 75 days after the receipt of a complete application. Category 3 permits are tied to the CEQA process and will have no set time frames. However, the CARP process is parallel to CEQA process and permits will usually be issued simultaneously with a CEQA NOD.</p>
<p>Will I still have to deal with endangered species issues?</p>	<p>Yes. Applicants can use Section 7 or Section 10 of the Endangered Species Act to obtain permits for "taking" species. Section 7 requires consultation between the Corps and the U.S. Fish and Wildlife Service, and Section 10 requires preparation of a Habitat Conservation Plan. Either route can cause substantial delays in project scheduling.</p>	<p>Yes. However, the County PCCP, of which the CARP is a part, will expedite the process of resolving endangered species issues. At this time, that process is still under discussion.</p>

¹ Although current Corps regulations allow for post-discharge notification for discharges of less than 1/10th acre (except for open water), all NWPs are issued at the Corps' discretion. This option carries the inherent risk that the Corps could require the applicant to provide a PCN or IP application at the last minute. This could delay small projects substantially, perhaps six months or more. The CARP eliminates this risk.

<p>Will I still have to deal with cultural resources?</p>	<p>Yes. Currently, the Corps often enters into 106 consultations with SHPO, and this can take three to 12 months, sometime more, to complete.</p>	<p>Yes. It is unlikely that the County will be able to obtain a programmatic SHPO concurrence for projects. However, the County is hoping to work with SHPO to provide an expedited process for complying with Section 106.</p>
<p>Is mitigation required?</p>	<p>Yes. Currently the Corps requires on-site avoidance and minimization for all projects. In addition, the Corps is usually requiring that all unimpacted wetlands be placed in a separate open space parcel that is given over to a third party for management and supplied with an endowment sufficient to pay for long-term management.</p>	<p>Yes. Except in the case of high priority resources, mitigation will be payment into the County conservation fund. Under the CARP, there will be much less on-site avoidance than is currently required. The County has identified high priority resources, and, in most cases, these must be avoided and provided with the recommended buffers and set-backs. Mitigation ratios for direct and indirect impacts have not been determined. The County plan also eliminates the need for open space lots, third party conservators, and endowments that are usually part of Corp mitigation.</p>
<p>Will the cost of mitigation under the CARP be comparable to the current situation?</p>	<p>Under the current situation, applicants have some give-and-take with the agencies over what mitigation ratios will be. An added complication under current conditions sometimes forces applicants to pay twice for the same resource. For example, applicants buying credits in the USFWS conservation fund, must also obtain wetland credits because the Corps is not a party to that fund.</p>	<p>Mitigation ratios will probably be higher under the CARP. However, some of the uncertainty about mitigation will be removed, and all mitigation can be taken care of at one time. The higher ratios also fund the staffing required to provide an expedited process that can provide permits in a timely fashion.</p>

<p>What happens if I want to lessen my mitigation obligation by avoiding some wetlands?</p>	<p>Currently the Corps would require that those wetlands be protected in perpetuity. Wetlands would not be allowed on private lots. Where wetlands cannot be protected, the Corps usually counts those wetlands as impacted and requires mitigation for indirect impacts.</p>	<p>The County has a site assessment method that will be used to determine whether wetlands offered as on-site mitigation meet the standards for the County conservation plan. If they don't meet the standards, they will be counted as impacted, and mitigation will be required, although the extent of mitigation for indirect impacts is unknown at this time. This situation is not really different from current conditions, but it does relieve landowners of the open space, third party, endowment burden.</p>
<p>How will this affect my project design?</p>	<p>The current Corps requirement for open space lots, third parties, and endowments can have a substantial effect on project design. Depending on the type, number, and location, projects could lose a substantial number of lots to accommodate the open space and buffer requirements of a 404 permit from the Corps.</p>	<p>The County preference for off-site mitigation rather than on-site avoidance can substantially affect project design. Except for high priority resources, the County expects very little on-site avoidance for discharges requiring a CARP permit. As a result, the need for open space, third parties, and endowments lessens or disappears.</p>

**A Proposed Methodology for a “Regional LEDPA” Determination:
Permitting under CWA Section 404 in Western Placer County
Prepared by EPA Region IX
(drafted 2/22/2006)²**

Planning and Permitting at a Regional Scale

The Placer County Conservation Plan (PCCP) is a strategy and regulatory framework designed to guide permitting for large-scale development in the County over the next fifty years while establishing a network of conservation areas to protect sensitive natural and cultural resources. The PCCP covers ~270,000 acres in northern and western Placer County, although the primary focus is on the ~221,000 acres in the western County. Many areas of the western County provide habitat for species listed under the federal Endangered Species Act (ESA), and encompass aquatic features regulated under the Clean Water Act (CWA), including vernal pools. Many, if not most, of the farms and ranches in western Placer County have been bought by real estate speculators and development companies.

The PCCP includes methods for integrating compliance procedures for Section 404 of the CWA, Section 10 of the ESA, and the California’s Natural Communities Conservation Planning Act (NCCPA). A key element of the PCCP will be a County Aquatic Resources Plan (CARP) intended to ultimately allow the County to authorize projects under Section 404 of the CWA for projects impacting 3.0 acres or less of jurisdictional waters. Presumably, the Corps would establish a Programmatic General Permit (PGP) allowing the County to assume this permitting role. Currently, under the standard permitting process, the Corps requires permit applicants to follow an Individual Permit (IP) process if their proposed projects will directly impact 0.5 acres or more of jurisdictional waters.

The Regional LEDPA Concept

The most unique aspect of the PCCP envisioned by an ad hoc, five-agency workgroup of regulators³ is that permittees within Placer County would be allowed a flexible approach to developing tens of thousands of acres as long as the County establishes a “regional” least environmentally damaging practicable alternative (LEDPA)⁴. Under this scenario, certain parcels would be identified for protection as part of a regional network of conservation reserve areas (the “conservation envelope”), while certain other parcels would be identified for development (the “development envelope”).

Under the standard permitting approach by which State and federal agencies currently regulate development in Placer County, large vernal pool landscapes and stream environments are being “sliced and diced” (i.e., fragmented) in compliance with conventional rules for on-site avoidance, minimization, and mitigation. This fragmentation exposes remaining conservation sites to myriad threats associated with their isolation within a matrix of suburban sprawl while foreclosing options for “natural” disturbance (e.g. burning and grazing) needed to maintain the health, biodiversity, and productivity of landscapes set-aside via “avoidance” measures or for mitigation.

One key premise underlying the proposed PCCP methodology is that establishing a regional LEDPA would be environmentally superior to the practice of establishing project-specific LEDPAs on a case-by-case, permit-by-permit basis.

² This document was drafted by Tim Vendlinski (EPA’s Wetlands Regulatory Office) who benefited greatly from the wisdom and writings of his colleagues at EPA and on the five-agency workgroup.

³ The ad hoc, five-agency workgroup is composed of CDFG (Jeff Finn), the Sacramento Corps District (Tom Cavanaugh), FWS (Ken Sanchez and Eric Tattersall, NOAA Fisheries (John Baker), and EPA (Erin Foresman, Hugh Barroll, and Tim Vendlinski). Participants from the workgroup meet frequently with the County and their consultants at Resources Law Group and Northfork Associates.

⁴ This paper incorporates by reference a succinct description of EPA’s Federal Guidelines (40 CFR 230), and the Corps’ implementing regulations (33 CFR 323) released by Sylvia Quast at RLG entitled: *Clean Water Act Section 404 Permit Process For Projects in Western Placer County That Cannot Be Authorized Under The County’s Aquatic Resource Plan*; plus the classic treatment of “impact avoidance” published in the journal *Wetlands: Wetlands Protection Through Impact Avoidance: A Discussion of the 404(b)(1) Alternatives Analysis* (Yocom, Leidy, and Morris, 1989).

The regional LEDPA would view the ~221,000-acre landscape in the western County as the regulatory unit for which a LEDPA must be formulated. **Establishing a system of large, connected conservation reserve areas under the regional LEDPA is necessary if the regulated community as a whole is to comply with avoidance requirements of the Federal Guidelines promulgated under CWA §404(b)(1).** This crucial regulatory concept has been misunderstood by some in the regulated community who propose bypassing the avoidance step altogether in favor of developing suburbs and infrastructure on intact vernal pool landscapes in exchange for re-contouring the westward ricelands to create vernal pools as mitigation⁵. Such an approach would not comply with the Federal Guidelines under the standard permitting process, and does not comply with the same Guidelines under the proposed methodology for a regional LEDPA determination.

Under the regional LEDPA methodology, tens of thousands of acres of vernal pool grasslands, riparian forests, and oak woodlands would be protected at a watershed/ecosystem scale within the conservation envelope in exchange for a more flexible regulatory framework for developing tens of thousands of acres within the development envelope. Degraded parcels connecting priority conservation parcels would be targeted for enhancement and restoration as part of a regional compensatory mitigation strategy. On 4 January 2006, the five-agency workgroup met and considered maps prepared by Placer County/ECORP Consulting Inc. for eight alternative “Conservation Reserve Areas.”⁶ The workgroup agreed that Alternatives 2, 4, 6, or 7 would be acceptable as the Regional LEDPA, and they further agreed to consider hybridization of these acceptable alternatives. Alternatives 1, 3, 3A, 5, and 8 were rejected as inconsistent with the goals and regulations of under CWA, ESA, and NCCPA.

It appears the draft General Plan for the City of Lincoln now under review would establish open space across ~40% of the incorporated area. However, the City could potentially achieve its housing goal (for 30,000-50,000 new units) more economically if their standards for housing density were adjusted upward from the base of 4-6 units/acre to the 12 units/acre recommended by SACOG (figures quoted by Jeff Finn, pers. comm.). This would relieve development pressure on the ecologically-sensitive, intact vernal pool landscapes in the western County, and provide opportunities for achieving sustainability goals established under the SACOG Blueprint for “smart growth” and “new urbanism.”⁷

A second key premise of the proposed PCCP methodology is that even though tens of thousands of acres are “released” for conversion within the development envelope, the agencies would require applicants to incorporate Low Impact Development

⁵ Some in the regulated community are advocating an approach whereby they would be allowed to develop the remaining intact vernal pool landscapes in western Placer County in exchange for re-creating vernal pools on the ricelands that straddle the borderlands of Placer and Sutter counties. This proposal is not acceptable because: (1) CWA compliance requires applicants to first avoid existing wetlands before considering compensatory mitigation; (2) created vernal pools cannot necessarily replace the unique bio-geo-chemistry of intact vernal pools; and (3) the existing ricelands already perform important functions as surrogates for the natural wetlands they replaced in the Central Valley.

⁶ *Conservation Reserve Area Maps – Alternatives 1-3A &4-8* (Placer County/ECORP Consulting Inc., 9 DEC 2005).

⁶ *Ecological Planning and Urban Village Design* (Randall Fleming, UCD, 2000)

<http://www.sacregionblueprint.org/sacregionblueprint/>

<http://www.calthorpe.com/>

<http://www.cnu.org/>

<http://www.urban-advantage.com/>

<http://www.epa.gov/smartgrowth/>

⁷http://www.usc.edu/org/seagrant/calnemo/Factsheet_1a.pdf

Nonpoint Education for Municipal Officials (NEMO)

<http://www.lowimpactdevelopment.org/>

⁸ Currently, the five-agency group is considering requirements for stream setbacks measuring a minimum of 100 feet outward from the edge of each bank (for a total of 200 feet + the width of the stream channel), or the width of the 100-year FEMA floodplain, whichever is greater.

⁹ *A Conceptual-Level Strategy for Avoiding, Minimizing, & Preserving Aquatic Resource Habitat in the Sunrise-Douglas Community Plan Area* (June 2004).

Strategies (LIDS)⁸ into their site plans along with mandatory stream setbacks protecting riparian corridors for the major creeks flowing east to west, and some “adjacent wetlands”⁹.

The function of the LIDS is to mitigate for the direct, secondary, and cumulative impacts of on-site development, **and** to improve upon, pre-construction environmental conditions (thereby reversing historical environmental damage and degradation). The LIDS should be designed to produce post-construction environmental conditions that represent a boost in ecological health and function. In short, this methodology allows for the filling of some on-site jurisdictional waters as long as the lost functions and values can be re-created and amplified elsewhere. The PCCP’s developments strategies for the “greenfields” in the western County (i.e., existing farms, rangelands, and natural areas within the development envelope) should build upon and surpass the planning and permitting principles previously formulated by the federal agencies in the last five to ten years to guide development in south Sacramento County¹⁰.

Together, the LIDS and the stream setbacks will help minimize adverse impacts from the intrusion of new impervious surfaces, installation of storm drains, construction of wastewater treatment facilities and transportation infrastructure, landscaping, and other human activities. **Establishing the LIDS and the stream setbacks under the regional LEDPA is necessary if the regulated community as a whole is to comply with minimization requirements of the Federal Guidelines¹¹.**

A Proposed Methodology for Avoidance & Minimization under a Regional LEDPA

Perhaps the most important incentive for applicants under the PCCP framework is the “streamlining” of requirements for on-site avoidance, minimization, and mitigation. The LIDS and mandatory creek setbacks will replace the standard IP process which requires applicants to: (1) prepare an “alternatives analysis” for each project examining alternative off-site locations and alternative on-site configurations; (2) prove each preferred alternative is the LEDPA by examining potential direct, secondary, and cumulative impacts; and (3) avoid on-site aquatic resources and minimize environmental damage to the maximum extent practicable. If the existing, standard regulatory framework prevails, the IP process would be repeated over and over again by every applicant on every parcel slated for development until build-out is reached in the western County.

Under a binding regional LEDPA agreement, the Corps and EPA would waive the regulatory rules requiring each applicant to prepare an alternatives analysis for their individual project(s) as the parcels proposed for development are automatically considered the most suitable places to develop (and the least environmentally damaging) because all stakeholders already agreed to protect the lands deemed most sensitive and ecologically productive under a regional network of conservation reserve areas.

In exchange for the agencies waiving the rules requiring applicants to prepare project-by-project alternatives analyses, applicants would agree to implement the on-site LIDS and to establish the stream setbacks described above. In exchange for the applicants agreeing to implement the on-site LIDS and to establish the stream setbacks, the agencies would allow the permittees to eliminate most of the jurisdictional waters within the development envelope occurring outside the boundaries of the stream setbacks for the major creeks flowing east to west.

The on-site jurisdictional waters in question are principally: (1) vernal pools; (2) swales and seasonal wetlands other than “classic” vernal pools; and (3) un-named tributaries to the prominent creeks that flow east to west toward the Feather and Sacramento rivers. With the regional LEDPA methodology, LIDS, and stream setbacks governing avoidance, minimization, and mitigation, applicants would be required to avoid and protect the jurisdictional waters referenced in the previous paragraph if they occur within stream setbacks measuring a minimum of 100 feet outward from the edge of each bank (for a total of 200 feet plus the width of the stream channel), or the width of the 100-year FEMA floodplain boundary, whichever is greater. Variances to this standard approach could be made by regulatory agencies in consultation with applicants on a case-by-case basis as long as variances are granted with an appropriate level of scientific rationale and justification.

Conceptual Scenarios of On-site Avoidance and Minimization

¹⁰ Existing regulations clearly describe available strategies to minimize the adverse effects of discharges of fill into waters at *Subpart H: Actions to Minimize Adverse Effects* (40 CFR 230.70 et seq.).

The following conceptual scenarios attempt to describe how the on-site avoidance and minimization methodology might work in conjunction with LIDS for parcels within the “development envelope”; please see **Figure 1** for a crude illustration of these scenarios:

(i) A freshwater spring deemed ecologically important, but positioned beyond both the 100-foot stream setback, and the 100-year FEMA floodplain boundary, might be targeted for protection within an on-site conservation boundary. As a trade-off, the regulatory agencies might allow the developer to proportionally reduce the width of a nearby stream setback.

(ii) An “adjacent wetland” that is not a vernal pool, and does not support listed species, occurs beyond the 100-year FEMA floodplain boundary, but straddles the boundary of the 100-foot stream setback. In this case, the agencies and the applicant might choose to incorporate protection of this wetland within the protected stream corridor. As a trade-off, the regulatory agencies might allow the developer to proportionally reduce the width of a nearby stream setback.

(iii) A vernal pool larger than 3.0 acres -- a “playa” pool -- occurs beyond the 100-foot stream setback, and is not considered an “adjacent wetland.” The pool is positioned in the middle of a development site; however, it supports an abundance and diversity of listed species. The regulatory agencies would need to make a site specific call on whether to require preservation of the pool as a stand-alone conservation site, or whether to permit the conversion of the pool into development. Under this scenario, agencies might choose to permit development and require the harvesting of flora and fauna for translocation to parcels within the “conservation envelope” where degraded pools are being enhanced or restored under a compensatory mitigation strategy.

(iv) Numerous, small vernal pools are scattered across a site within the “development envelope.” The pools are arrayed so that some are connected and others are not. In this case, the regulatory agencies would require the implementation of LIDS as appropriate, and authorize the grading/filling of these wetlands in exchange for compensatory mitigation within the “conservation envelope.” Before the wetlands are filled, the agencies might require harvesting of flora and fauna for translocation.

(v) An un-named tributary/ditch traverses the development parcel, and flows into a primary creek flowing east to west toward the Sacramento River. While the tributary contributes substantial freshwater input into the primary creek, the flows are polluted by surrounding uses (e.g., agricultural drainage, suburban run-off). Also, the bio-geo-chemical functions of the tributary have been impaired by historical human activities (e.g., channelization, a decrepit impoundment, an agricultural diversion, a perched culvert, and/or introduction/infestation by invasive flora and fauna). While the tributary/ditch is a significant topographical feature, the agencies could allow the developer to bury this linear feature to maximize buildable space, and re-direct the flows through a newly constructed, open-air channel built with state-of-the-art creek restoration principles (e.g., contouring a sinuous channel, installing vegetated “step-pools” and energy dissipaters per guidance from NOAA fisheries, constructing a wetland treatment system).¹²

Compensatory Mitigation Strategies

To compensate for the unavoidable impacts to on-site jurisdictional waters, a municipal system should be established whereby “mitigation credits” could be purchased by permittees, and the revenue generated by the sale of these credits would be used to purchase, enhance, and/or restore parcels deemed priorities for the regional network of conservation reserve areas. Mitigation revenues should also be invested in a stewardship endowment and/or revolving fund for perpetual operation and maintenance of the regional network. Willing sellers within the “conservation envelope” would be paid fair market value for conservation easements on, or fee title to, their properties.

Mitigation fees for developers would be indexed to inflation and revised frequently so the “buying power” of the mitigation credits and revenues remains constant in terms of acreage over the fifty-year period covered by the PCCP. The regulatory agencies would work with the municipal governments to ensure the fees are spent to establish a balanced “portfolio” of conservation reserve areas. Sometimes, the money would be spent on preserving intact landscapes. Alternatively, the money

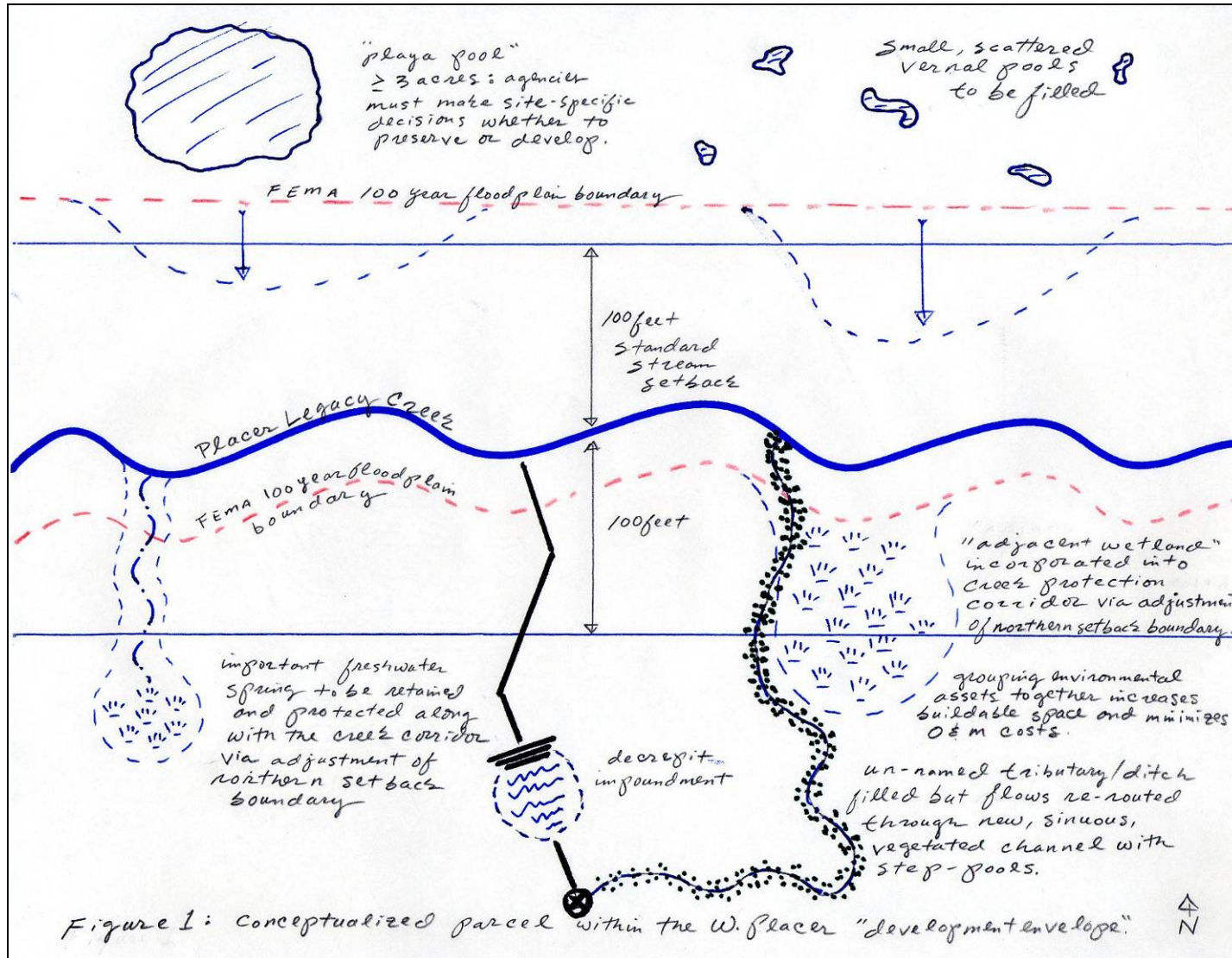
¹² http://www.epa.gov/watertrain/stream_class/
http://www.lib.berkeley.edu/WRCA/227_05.html
<http://search.epa.gov/s97is.vts>

could be spent buying “missing pieces” of the conservation puzzle; that is, lands connecting large, intact parcels but in need of enhancement and/or restoration. Losses of on-site jurisdictional waters within the development envelope would be compensated by increasing the reach and extent of waters on the parcels that are enhanced or restored within the conservation envelope.

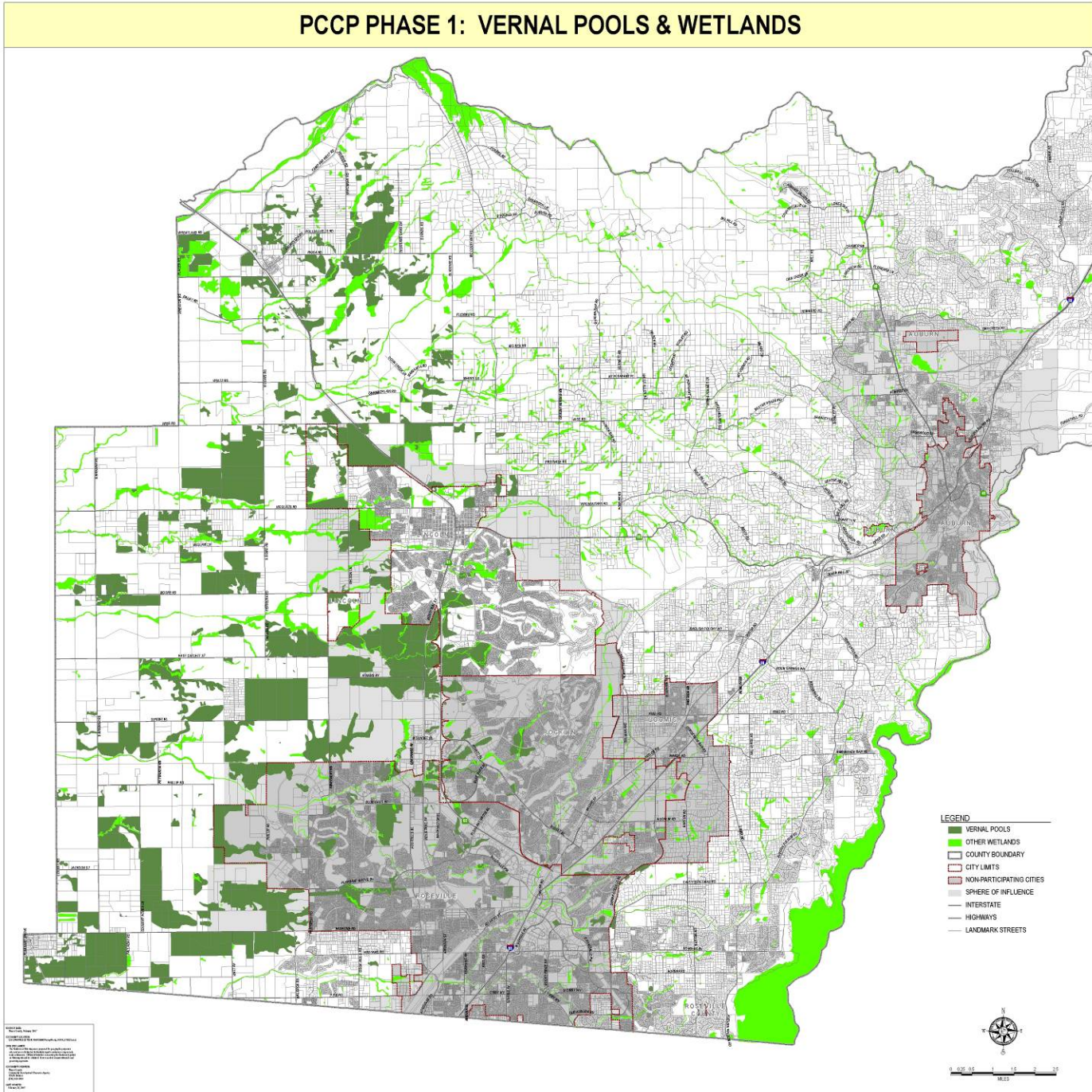
Compensation ratios should be calculated to achieve no-net-loss of aquatic resources, and ideally, a net gain of ecosystem functions at a regional scale. The starting point for the PCCP’s compensatory mitigation framework should be recent regulatory guidance issued by the U.S. Army Corps of Engineers, and an interagency approach designed to integrate and tailor CWA and ESA mitigation strategies to local environmental and economic conditions in South Sacramento County.¹³

¹²U.S. Army Corps of Engineers’ Regulatory Guidance Letter (RGL 02-2) *Guidance on Mitigation Projects for Aquatic Resource Impacts Under the Corps Regulatory Program Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act of 1899* (24 December 2002); **and** EPA’s *Compensatory Mitigation Methodology for the Sunrise-Douglas Community Plan Area* (P. Jones et al., circa 2004).

Regional LEDPA Concept
Figure Prepared by Tim Vendlinski, EPA Region IX



West Placer County Wetlands, Riparian Areas and Vernal Pool Complexes



Placer County Conservation Plan Permit Procedures

Applicant obtains application package from County, including information regarding delineation standards and other aspects of process.

Applicant submits to County the Initial Project Application (IPA), including basic information regarding proposed project activity and site.

County Staff assists applicant in determining what portions of Environmental Impact Assessment Questionnaire (EIAQ) applicant must complete in order to provide detailed information regarding proposed activity and potentially affected resources:

- None
- Basic EIAQ
- Supplemental EIAQ Addressing Aquatic Resources
- Full EIAQ Addressing All Resources

Applicant completes appropriate portions of EIAQ and submits to County.

County Staff determines the appropriate CEQA document:

County Staff determines whether an aquatic resources permit may be required.

County Staff determines whether authorization under the HCP/NCCP may be required.

County Staff determines whether other County authorizations may be required.

Possible highly-expedited review for extremely minor projects.

If aquatic resources permit may be required, applicant prepares and submits Supplemental Application for Aquatic Resources to County, including proposed delineation.

If HCP/NCCP authorization may be required, applicant prepares and submits appropriate information to County.

County confirms proposed delineation, including checking against aerial photos and site visits as appropriate.

County submits County-confirmed delineation to USACE, together with IPA, EIAQ, and other portions of Supplemental Application for Aquatic Resources, commencing USACE verification period.

Applicant's project application to County is deemed complete.

CEQA documentation prepared.

USACE is deemed to have verified the delineation at the earliest to occur of:

- USACE transmits verification to County; or
- X days elapse after County submits verification to USACE (if submitted delineation has been confirmed by County employee trained and accepted by USACE).
- X plus 60 days elapse after County submits verification to USACE (if submitted delineation has not been confirmed by County employee trained and accepted by USACE).

County review of other aspects of project is completed, including species, habitat, water quality, historic and other resources.

CEQA documentation is completed.

County provides notice to federal and state agencies concerned.

**NPDES Phases 1 and 2:
CONSTRUCTION RELATED STORM
WATER ISSUES**

By

Heather Hansen

◆ **Brief Introduction**

- Introduction of M&P and myself
- Why we are talking about this
 - Many contractors are tired of hearing about this. However, storm water regulations are not going away. Don't fight it, embrace it!

◆ **Past**

- Early stages of NPDES
 - Why and how it started
- Local enforcement/involvement from cities and counties
- Local involvement from contractors
- Fines and penalties

◆ **Present**

- How the program has evolved
- Local enforcement/involvement from cities and counties
 - General attitude of regulators
 - Jurisdiction sometimes makes local laws more stringent than State requirements (and they are allowed to do so)
- Local involvement from contractors
- Fines and penalties

◆ **Future**

- Changes to the new permit
 - When it will be in effect
 - Major changes and how they will affect contractors
- BMP's: comparisons and troubleshooting
 - Sediment basin sizing
 - Fiber wattle vs. silt fence
 - Specifications regarding hydroseed
 - BMP general maintenance
 - Thinking ahead
- Tips on how to deal with regulators
 - Don't give them a reason to visit your site
 - If they do visit your site, be nice!
 - Don't try to hide anything, be up-front and honest

- Work with them, not against them
- Make sure your SWPPP is up to date and on-site at all times
- Educate yourself (everyone here is doing that by attending today)

**Development Challenges – Planning and
Entitlements:
SITE-SPECIFIC EXAMPLES**

By

Gregory J. Bardini

Examples:

- An Integrated Planning and Design Approach to Stormwater Management
- Recap Storm Water Quality Components
- Regional Management
- Specific Plan - Integrated Design
 - Panhandle Specific Plan, Sacramento, CA
 - Gold Rush Ranch Specific Plan, Sutter Creek, CA

Water Quality

- Sediment
- Excess Nutrients
- Debris
- Oils and Solvents

Storm Water Quality

- Source Controls
- Runoff Reduction Measures
- Treatment Controls

Case Studies

- West Roseville Specific Plan, Roseville, CA
 - Typical Drainage Outfalls
 - Treatment Train – Mechanical Device and Grassy Swales
- Laguna Vega, Sacramento, CA
 - Extended Dry Basin
 - Wetland Basin

**Development Challenges – Planning and
Entitlements:
Seeing the big picture-public interest
viewpoint**

By

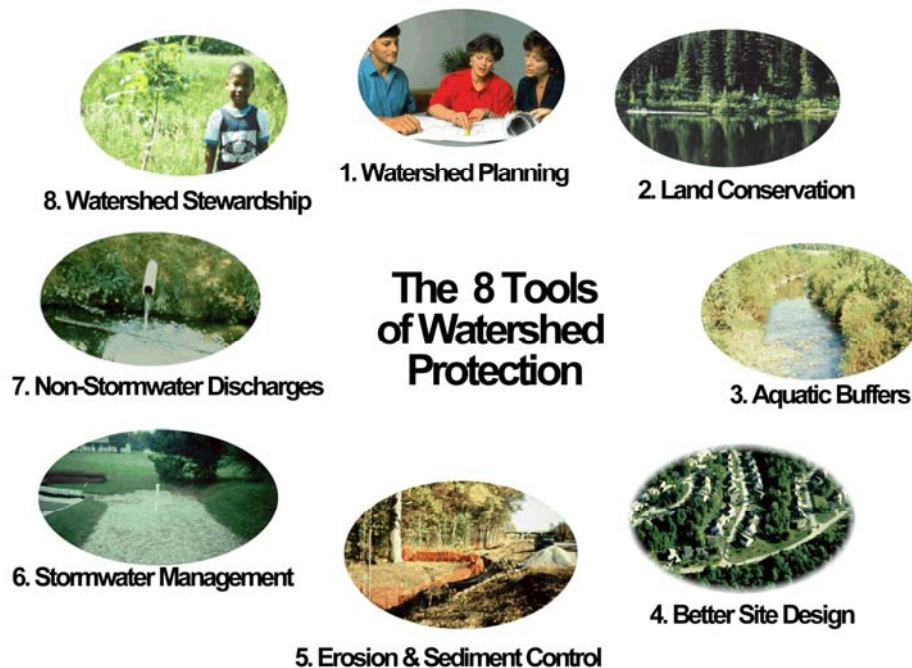
Gregg Bates

“Some things are too important to be left to business or government”
-- unknown

Dry Creek is important to the survival of salmon and steelhead

- Genetic and geographic diversity
- Variable conditions make every population important – Large, stable river systems are a source for recolonization of smaller unstable streams, and vice versa.
- Restoration should focus on increasing population diversity as well as increasing absolute numbers.
- Source: D.R. McEwan, CDFG Steelhead Coordinator

Dry Creek Conservancy Mission: To facilitate watershed conservation, restoration, and education within the American Basin located in the counties of Placer, Sutter, and Sacramento and surrounding areas, and including the Dry Creek, Pleasant Grove, Auburn Ravine, and Coon Creek watersheds.



-- Center for Watershed Protection

Three ways to promote sustainable communities

I. LID

From the State Water Resources Control Board website:

On January 20, 2005, the State Water Resources Control Board adopted sustainability as a core value for all California Water Boards' activities and programs, and directed California Water Boards' staff to consider sustainability in all future policies, guidelines, and regulatory actions.

Low Impact Development (LID) is a sustainable practice that benefits water supply and contributes to water quality protection. Unlike traditional storm water management, which collects and conveys storm water runoff through storm drains, pipes, or other

conveyances to a centralized storm water facility, LID takes a different approach by using site design and storm water management to maintain the site's pre-development runoff rates and volumes. The goal of LID is to mimic a site's predevelopment hydrology by using design techniques that infiltrate, filter, store, evaporate, and detain runoff close to the source of rainfall. LID has been a proven approach in other parts of the country and is seen in California as an alternative to conventional storm water management. The Water Boards are advancing LID in California in various ways:

- Regulation through site-specific and general permits;
- Providing advocacy and outreach to local governments through the Water Board's Training Academy and regional workshops;
- Researching how to incorporate LID language into Standard Urban Storm Water Mitigation Plan (SUSMP) requirements;
- Funding LID related projects through the consolidated grants program; and
- Funding through CWA 319 funds to provide for further researching applicability of Impervious Surface Analysis Tool (ISAT) for land use planners and for the California Water and Land Use partnership (CaWaLUP) Center at U.C. Davis.

The Water Boards are key partners of the CaWaLUP, a collaborative effort made up of representative staff from government agencies, non-profits, and academia, which aims to improve how water resource implications of land use are considered in California's local government decisions. For more information please go to <http://cawalup.usc.edu/>.

LID Tools in Residential Development

AMENDED SOIL

Soil enriched with sand and organic materials increases the capacity of soil to infiltrate water.

GRASSY SWALE

Vegetated channels that slow storm water runoff and promote infiltration, traps sediment, and helps treat pollutants.

NATURAL DRAINAGE FLOW

Reduces need for grading and constructed drainage systems by building house in a location that permits preservation of natural pattern of storm water drainage.

BIORETENTION CELL OR RAIN GARDEN

Depressions that contain soil amendments that promote infiltration of storm water.

POROUS PAVEMENT

Concrete that allows rain to infiltrate, thereby reducing runoff and promoting groundwater recharge.

PRESERVED NATIVE VEGETATION

Enhances the aesthetic quality of the community and improves the evaporation/transpiration rate.

REDUCED HARDSCAPE

Narrower streets, sidewalks, and driveways increases pervious areas and open spaces.

II. Watershed-Based NPDES permitting



Benefits of Watershed-Based NPDES Permitting

*Patrick Bradley, USEPA Water Permits Division
Jenny Molloy, USEPA Water Permits Division
Robert Steidel, City of Richmond, Department of Public Utilities
Federico Maisch, Greeley & Hansen*

Wednesday, July 19, 2006

This Webcast is sponsored by EPA's Watershed Academy



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1

What Is Watershed-Based Permitting?

An **approach** to NPDES permitting that results in permits:

- Designed to attain watershed goals due to the consideration of **all** sources/stressors in a watershed or basin
- Developed via a watershed planning framework to communicate with stakeholders and integrate permit development among monitoring, water quality standards, TMDL, nonpoint sources, source water protection and other programs



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3

Expected Benefits & Challenges

◆ Benefits

- Better quality NPDES permits
- Emphasis on environmental results due to watershed planning
- Promotes watershed monitoring plans
- Encourages efficiencies and targets resources
- Increased stakeholder involvement

◆ Challenges

- Expanded stakeholder involvement
- Integrating nonpoint sources
- Transition costs



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4

III. Retrofitting

Urban Subwatershed Restoration Manual Series
Urban Stormwater Retrofit Practices Manual 3
August 2007

Stormwater retrofits help restore watersheds by providing storm water treatment in locations where practices previously did not exist or were ineffective. They are typically installed within the stream corridor or upland areas to capture and treat storm water runoff before it is delivered to receiving waters. Retrofits are the primary practice used to restore subwatersheds since they can remove pollutants, promote more natural hydrology and minimize stream channel erosion. This manual provides detailed guidance on how to effectively retrofit subwatersheds.

Some recommendations from the Low Impact Development Center

Recommendations for Regulations

- Incorporate volume and hydrologic performance requirements into regulations.
- Create regulatory certainty.
- Provide incentives for developers that use LID (e.g., streamline review process or move stormwater plans to the top of the stack).
- Maryland offers six different stormwater credits for green practices.

Low Impact Development Center 2007

Incentives for LID Outside of Regulatory Structure

- Chicago and Portland offer density and building square footage bonuses, respectively, for buildings with green roofs.
- Offer discounts for stormwater or other utility fees for on-site or LID management practices – full-cost pricing is critical.
- Subsidized downspout disconnection programs.
- In January 2006, Chicago provided 20 \$5,000 grants for residential and small-scale commercial green roofs and received 123 applications.

Low Impact Development Center 2007

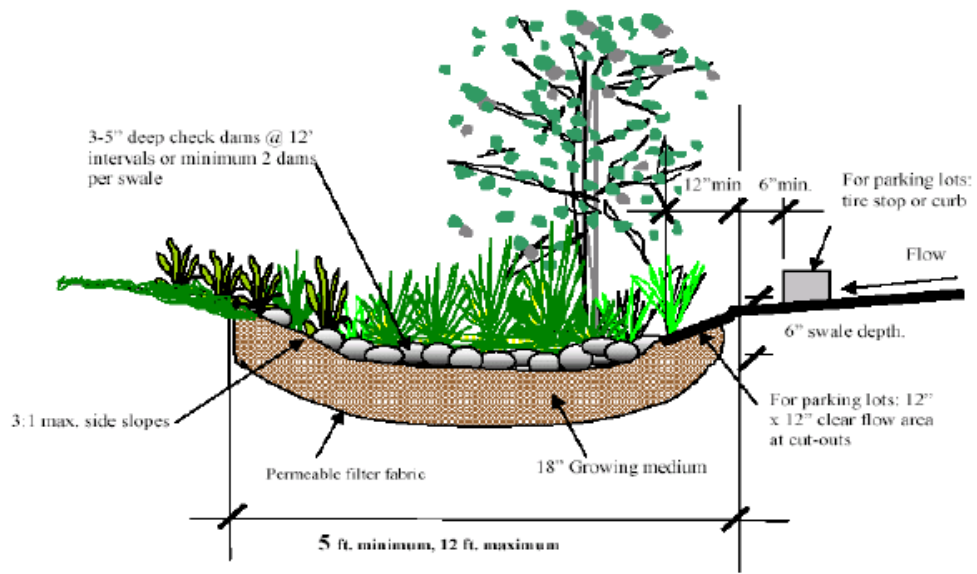


Figure 3.3.2: Vegetated Swale Section Not to Scale

Source: City of Portland Stormwater Management Manual, September 2002