

San Diego Water Board Practical Vision

Recovery of Stream, Wetlands, and Riparian Systems



The first rule of intelligent tinkering is to save all the parts.

Paul Ehrlich

Trout, Turtles, And Toads **What Is Recovery?**

Looks can be deceiving. A stream, wetlands, or riparian area that appears unattractive, damaged, dry, or even dead to some people might actually function well and help to sustainably support communities of native plants and animals. On the other hand, a stream, wetlands, or riparian area that “looks good” to some observers might actually be so degraded – or be part of a larger system that is so degraded – that some native species are extirpated.

For native species, it is not looks but the health of ecosystems that is important, and ecosystems are healthy to the degree that they are natural. Native species are adapted to the natural characteristics of the habitats in which they naturally occur, including the natural variability in and natural disturbances to those habitats. Nevertheless, some native species may not be able to adapt to changes in or loss of those habitats caused by anthropogenic influences.

So what is recovery? It is important to think of recovery in ecological terms, in terms of the health of natural biological communities. Stream, wetlands, and riparian systems in the San Diego Region can be considered to have recovered to the degree that they are healthy. The measurement of health is the degree that they support viable self-sustaining communities, populations, and distributions of the

Recovery of Stream, Wetlands, and Riparian Areas

native species that naturally occurred in those systems, including and especially those native species that have been severely affected by anthropogenic influences.

Southern California steelhead (an anadromous form of rainbow trout), southwestern pond turtle, and arroyo toad are three species that have been severely affected by anthropogenic influences. They are among the species native to the San Diego Region that are well adapted to and that rely on the natural characteristics of stream, wetlands, and riparian systems in the region. All three are special status species because their populations and distributions have severely declined as a result of anthropogenic changes in or loss of their habitats. Recovery of these and several other special status native species and recovery of stream, wetlands, and riparian systems is inextricably linked. In the San Diego Region it is necessary for recovery of these species in order to conclude that stream, wetlands, and riparian systems have recovered.

Doing What Is Most Important

Recovery of stream, wetlands, and riparian systems in the San Diego Region cannot be accomplished just through protection by preventing further degradation and loss. So much degradation and loss has already occurred that restoration is also needed for recovery. Since restoration can take various forms, it will be important to use limited resources to do what is most important for recovery. (Also see “Healthy Waters” Practical Vision chapter.)

In order to do what is most important for recovery, it is necessary to understand which factors are most limiting and to address those most limiting factors. There are a variety of potentially limiting factors generally associated with various anthropogenic modifications. The chemical, physical, hydrological, biological; and other factors may be more or less limiting for different biological communities and different species in different places. Until and unless the most limiting factors are addressed, addressing other factors may contribute little or nothing to recovery.

It will be critically important for the San Diego Water Board to work collaboratively with other entities to answer the following questions:

- Which biological communities and which species are most vulnerable?
- Which places are most important for those communities and species?
- Which factors are most limiting for those communities and species in those places?
- Which actions would most effectively address those limiting factors?

The San Diego Water Board by itself cannot do everything that needs to be done to ensure recovery of vulnerable biological communities and species. Recovery of such communities and species are dependent on the San Diego Water Board and other entities to take coordinated, timely, strategic, and effective actions to protect,

restore, and maintain the health of the ecosystems in which these communities and species naturally occur.

It's About More Than Water Pollution and Regulation

Clearly, prevention and remediation of water pollution is an important part of protecting and restoring the integrity of waters in the San Diego Region, but the San Diego Water Board is not limited to dealing only with the chemical integrity of waters. The San Diego Water Board also has a role in protecting and restoring the physical, hydrological, and biological integrity of the waters in the region. In some cases, the most severe adverse effects on the habitats, ecosystems, special status species, and functions of stream, wetlands, and riparian systems result from anthropogenic modifications of the natural physical, hydrological, and/or biological characteristics of those systems, not simply modifications of their chemical characteristics. It is important to understand which factors are most limiting to the health of stream, wetlands, and riparian systems – and to focus recovery efforts on those factors.

It is also clear that regulation is an important part of protecting and restoring the integrity of waters in the region, but the San Diego Water Board is not limited to using only regulatory approaches. The Board also has the ability to use non-regulatory approaches. In some cases, the best ways – or the only ways – to protect or restore the integrity of stream, wetlands, and riparian systems are through non-regulatory approaches. It is important to consider which tools and approaches – and which combinations of tools and approaches – are most needed and most likely to be effective in recovery efforts – and to use the appropriate tools and approaches.

The Problem of Type Conversion

Damage to stream, wetlands, and riparian systems is often expressed in terms of total combined acreage (X percentage of wetlands have been lost) or total combined stream miles (Y percentage of stream miles have been lost). These expressions don't necessarily take into account, or don't always make obvious the damage in the form of type conversion, the conversion of one type of system or area to another. There are many different types of stream, wetlands, and riparian systems and areas, and different natural biological communities and native species rely on different types and combinations of systems and areas. For example, anthropogenic erosion, sedimentation, and hydrological modifications can cause a salt marsh wetland to be converted to a freshwater wetland. That conversion represents a loss of habitat for communities and species that rely on salt marsh, even if there is no loss in total combined wetland acreage. Similarly, if anthropogenic channelization and hydrological modifications cause an ephemeral stream to be converted to a perennial stream, that conversion represents damage or loss of habitat for communities and species that rely on ephemeral streams, even if there is no loss in total combined stream miles or total combined riparian habitat acreage. Type

conversion, therefore, represents a form of damage to stream, wetlands, and riparian systems that is not always adequately recognized or clearly expressed.

Measuring Progress and Success

A variety of management actions are likely to be necessary for recovery of stream, wetlands, and riparian systems in the San Diego Region. These may include regulatory requirements, land use practices, mitigation, and restoration projects, among others. Although these actions are likely to be necessary, they are simply tools and merely using such tools does not constitute or ensure recovery.

Evaluating progress and success in the recovery of stream, wetlands, and riparian systems must go beyond counting how many actions have been taken. Monitoring and assessment of ecosystem health will be needed to produce information that is essential not only for meaningful evaluation of recovery progress and success, but also to inform and guide recovery work.

Since recovery of stream, wetlands, and riparian systems is inextricably linked to recovery of southern California steelhead, southwestern pond turtle, arroyo toad, and other special status native species, the status and trends of the populations and distributions of these species must be among the indicators. These may be the best and most meaningful indicators of progress and success in the recovery of stream, wetlands, and riparian systems.

The Southern California Wetlands Recovery Project: A Model for Collaboration

The Southern California Wetlands Recovery Project (WRP), a partnership of state and federal agencies with interests in and responsibilities for wetlands, has been successful in enabling many acres of southern California wetlands, particularly coastal wetlands, to be protected and restored. Although some of the member agencies, such as the San Diego Water Board, have regulatory authority, others do not and the efforts of WRP have been limited to non-regulatory activities.

Nevertheless, in order for recovery efforts to be effective and efficient, there is a need for coordination of the regulatory activities of different agencies and for coordination of regulatory activities with non-regulatory activities. WRP provides a useful model and starting point for such coordination.

Background

Healthy stream, wetlands, and riparian systems in the San Diego Region are essential to a number of important beneficial uses and other functions. This practical vision is about the health – or integrity – of these systems and especially about their physical, hydrological, and biological integrity. “Recovery” involves both protecting what has remained relatively unscathed and restoring the extent and functionality of all kinds and parts of damaged and lost stream, wetlands, and riparian systems, including floodplains.

Recovery of Stream, Wetlands, and Riparian Areas

The San Diego Water Board has an important role to play in protection and restoration of the chemical, physical, hydrological, and biological integrity of waters in the San Diego Region. Although much of the work of the San Diego Water Board has focused on the chemical integrity of waters; the physical, hydrological, and biological integrity are no less important. Indeed, the most severe and long lasting adverse effects on the habitats, ecosystems, beneficial uses, and functions of stream, wetlands, and riparian systems are not just caused by changes in chemical characteristics. They are degraded by changes in physical characteristics (from dredging, filling, and channelization), changes in hydrological characteristics (from hardscaping of watersheds, surface water storage and diversion, and groundwater pumping), and changes in biological characteristics (from the presence of non-native invasive species and loss of native species).

The adverse effects of anthropogenic physical and hydrological modifications are generally long-lasting, in part because the associated land uses, structures, facilities, and infrastructure are long lasting. The adverse effects of anthropogenic biological modifications resulting from non-native invasive species are not only long-lasting but may actually worsen and spread over time, as by definition these species are invasive. Since these adverse effects are often long-lasting, the cumulative effects of even relatively small incremental damage and loss can be substantial. Recovery seldom occurs naturally, even over time scales ranging from decades to centuries. Opportunities for restoration are few and sometimes fleeting. Taking advantage of such opportunities can be challenging. For all these reasons, and because of the extent and degree of historical degradation, it is extremely important to both protect stream, wetlands, and riparian systems and make the most of the opportunities to restore them.

Aspirational Goals

By the year 2030, meaningful progress will have been made in recovery of stream, wetland, and riparian systems throughout the San Diego Region so that, by comparison to the year 2010:

1. Substantial and measureable progress will have been made in recovery of southern California steelhead, southwestern pond turtle, arroyo toad, and other special status species that rely on the natural characteristics of stream, wetlands, and riparian systems; the populations and distributions of all such species will have increased by at least 25% region-wide.
2. The extent of each type of naturally occurring wetlands will have increased by at least 10% in every watershed and by at least 25% region-wide.
3. The physical and biological integrity of each type of naturally occurring wetlands will have improved by at least 10% in every watershed and by at least 25% region-wide.

Recovery of Stream, Wetlands, and Riparian Areas

4. Streams and their floodplains will have been reconnected and natural habitat will have been restored to riparian areas along at least 10% of the length of previously channelized streams in every watershed and by at least 25% region-wide.
5. Key invasive non-native species will have been eradicated from at least 10% of the length of previously infested streams in every watershed and by at least 25% region-wide.

Practical Vision Statement

Five years from now, efforts to protect and restore stream, wetlands, and riparian systems in the San Diego Region will be measurably more effective than they are now, and the effectiveness of such efforts will continue to increase over time. Ten years from now, there will be measurable improvements in the extent and health (i.e., integrity) of stream, wetlands, and riparian systems.

Mission Statement

For this practical vision, the San Diego Water Board's mission is to initiate, develop, support, encourage, participate in, and implement regulatory and non-regulatory approaches that more effectively protect and restore the health (i.e., integrity) of all kinds of stream, wetlands, and riparian systems in the San Diego Region.

Values Statement

The San Diego Water Board values effective stewardship, good public service, trustworthiness, integrity, and transparency. Since the San Diego Water Board's overarching purpose – its very reason for being – is to protect and restore the health (i.e., integrity) of waters in the San Diego Region, the Board greatly values healthy waters, including healthy stream, wetlands, and riparian systems.

Where We Are in 2013

The integrity of stream, wetlands, and riparian systems in the San Diego Region continues to be adversely affected by actions taken in the past and continues to be threatened by actions proposed for the future. Mitigation and restoration work has not always been effective. Staff and funding available for protection, restoration, and mitigation are very scarce.

The San Diego Water Board's effectiveness in protecting and restoring stream, wetlands, and riparian systems is hampered by a number of factors. The five "Projects for Practical Vision Success" outlined below are intended to address these factors.

Why this Practical Vision is a Priority

Healthy stream, wetlands, and riparian systems are a priority for the San Diego Water Board because they are essential to a number of important beneficial uses and other functions. At least since beginning of European settlement in the San Diego Region, such systems have been damaged and destroyed by a number of anthropogenic influences, such as those associated with transportation facilities, flood control and drainage, and land development and use. Recognition of the widespread and extensive degradation and loss of wetlands in California led to Executive Order W-59-93, signed by then Governor Wilson in 1993, which established the California Wetlands Conservation Policy, including the goal to:

“Ensure no overall net loss and achieve a long-term net gain in the quantity, quality, and permanence of wetlands acreage and values in California in a manner that fosters creativity, stewardship and respect for private property.”

The federal government has a similar “no net loss” policy goal for wetlands. The State Water Board is currently developing a statewide policy for protection of wetlands and riparian areas.

Damage and destruction of stream, wetlands and riparian systems results in diminishment, degradation, and loss of vital environmental functions and societal benefits provided by such areas, including:

- Groundwater recharge
- Water quality enhancement
- Nutrient export and cycling
- Flood water storage and attenuation
- Habitat and ecosystems
- Aesthetics and recreation

Groundwater Recharge

Groundwater recharge occurs in natural stream, wetlands, and riparian systems. Modification of such systems often reduces groundwater recharge. For example, groundwater recharge is reduced by narrowing streams, placing streams in concrete channels, narrowing floodplains, and covering floodplains with impervious surfaces. ***Restored stream, wetlands, and riparian systems increase groundwater recharge.***

Water Quality Enhancement

The capacity of stream, wetlands, and riparian systems to naturally enhance water quality through pollutant assimilation, transformation, and sequestration

is reduced when such systems are modified. For example, streams in concrete channels or underground pipes have little if any capacity to assimilate pollutants and streams that have been narrowed or deepened have less capacity for photo- and aerobic oxidation of pollutants due to reduced surface areas and higher flow velocities. ***Restored stream, wetlands, and riparian systems increase water quality enhancement capacity.***

Nutrient Export and Cycling

Natural and balanced nutrient export and cycling is a crucial function in the ecological health of a watershed. The capacity of stream, wetlands, and riparian systems for natural biochemical and geochemical processes is reduced when such systems are modified. For example, narrowed streams and smaller floodplains have less capacity for such processes because less floodplain area and higher water velocities reduce residence time. ***Restored stream, wetlands, and riparian systems improve nutrient export and cycling.***

Flood Water Storage and Attenuation

Natural stream, wetlands, and riparian systems help maintain lower flood elevations. For example, when a stream is narrowed or a floodplain is filled, elevations of flood waters rise. Flood water velocities also increase in response to a narrowed stream and/or a filled floodplain. Higher flood water velocities create shear and if shear forces are high enough, erosion occurs. While erosion is natural, anthropogenic-induced erosion can destabilize stream banks and damage infrastructure (roads, bridges, pipelines, etc.), habitats, and ecosystems. ***Restored stream, wetlands, and riparian systems increase flood water storage and attenuation.***

Habitat and Ecosystems

Habitats and ecosystems of stream, wetlands, and riparian systems have been damaged and/or destroyed by a variety of anthropogenic actions, facilities, and other influences, including transportation corridors, flood control and drainage, land development and use (agricultural, urban, industrial, etc.), modification of hydrological regimes, fish passage barriers, and invasive non-native species. ***Restored stream, wetlands, and riparian systems improve ecosystem functions and habitat for native species.***

Aesthetics and Recreation

Opportunities for aesthetic and recreational enjoyment by the public are lost or diminished when stream, wetlands, and riparian systems are degraded or lost. Activities such as bird watching, photography, hiking, picnicking, and fishing, as well as scientific study and other educational activities, are dependent upon or

enhanced by the presence of natural areas. ***Restored stream, wetlands, and riparian systems increase aesthetic and recreational opportunities.***

Projects for Practical Vision Success

The five “projects” described below are categories of actions the San Diego Water Board can and should take to improve and leverage the effectiveness of efforts to protect and restore stream, wetlands, and riparian systems in the San Diego Region. These five categories are:

1. Stronger Policy.
2. More Incentives and Better Outreach.
3. Comprehensive Assessment.
4. Earlier Input.
5. Improved Collaboration.

1. Stronger Policy

a. Project Description

Revise the Basin Plan and/or take other actions as appropriate to ensure that the San Diego Water Board’s authority and rationale for protection and restoration of stream, wetlands, and riparian systems are sufficient and clearly stated, and are consistent with and complementary to other applicable plans and policies.

b. Project Goals

This project is intended to provide a stronger, more robust foundation to support protection and restoration of stream, wetlands, and riparian systems. The ultimate goal is to increase the extent and improve the health of all kinds of such systems in the San Diego Region.

c. Desired Outcomes

- i. Basin Plan Information Section.
Adopt and obtain approval of a new section of the Basin Plan that provides information about the importance of stream, wetlands, and riparian systems and provides other support for San Diego Water Board efforts to protect and restore such systems. This would include but not be limited to information about:
 - a. Beneficial uses and other functions of such systems.

Recovery of Stream, Wetlands, and Riparian Areas

- b. History and current status of such systems in the San Diego Region.
- c. Causes of degradation of such systems.
- d. The need for and benefits of protection and restoration.

The current paucity of such information in the Basin Plan might give the erroneous impression that the San Diego Water Board does not consider stream, wetlands and riparian systems to be important.

ii. Basin Plan Standards.

Adopt and obtain approval of Basin Plan standards for stream, wetlands, and riparian systems. These would be analogous to water quality standards for other types of waters but would focus on physical, hydrological, and biological (habitat and ecosystem) characteristics; they would reflect the characteristics of natural, un-degraded stream, wetlands, and riparian systems, and could be different for different types of areas (e.g., perennial vs. non-perennial streams).

iii. Policy And Implementation Plan.

Adopt and obtain approval of a policy and implementation plan supporting the protection and restoration of stream, wetlands, and riparian systems, including clear articulation of the San Diego Water Board's roles in protecting and restoring such systems. A similar item is on the "short list" developed through the 2011 Basin Plan Review process.

iv. Clean Water Act §401 Certification Guidance.

Adopt and obtain approval of guidance for the Clean Water Act (CWA) §401 Certification process that provides applicants with clear expectations of acceptable projects with respect to avoidance, minimization, and mitigation of project impacts. This guidance would also include sound criteria for use in evaluating the success of mitigation projects (establishment, restoration, and enhancement). This item is on the "short list" developed through the 2011 Basin Plan Review process.

d. **Values And Underlying Contradictions**

By providing a more cohesive message in support of stream, wetlands, and riparian systems protection and restoration, this project reflects the following values:

- i. Environmental protection (an appreciation of what the San Diego Water Board strives to protect).

Recovery of Stream, Wetlands, and Riparian Areas

- ii. Healthy waters (waters that fully support beneficial uses).
- iii. Communication (effective sharing of ideas and information).

Cross-program communication within the office and external communication with stakeholders will be critical for success of the project. This may be challenging given the current office organization and limited staff resources.

e. **Contribution To The Practical Vision**

By strengthening and clarifying the San Diego Water Board's support of stream, wetlands, and riparian system protection and restoration, the project is expected to:

- i. Increase awareness of the importance of such systems among staff and stakeholders; and
- ii. Result in greater effort and more successful efforts to protect and restore such systems.

f. **Schedule / Milestones**

- i. In the First Year:
 - a. Prepare proposed Basin Plan information section.
 - b. Prepare proposed Basin Plan standards.
 - c. Prepare proposed policy and implementation plan.
 - d. Prepare proposed §401 certification guidance.
- ii. Beyond the First Year:
 - a. Receive and respond to comments.
 - b. Present proposed Basin Plan information section for Board adoption.
 - c. Present proposed Basin Plan standards for Board adoption.
 - d. Present proposed policy and implementation plan for Board adoption.
 - e. Present proposed §401 certification guidance for Board adoption and implement.

g. **Resources Needed**

Approximately 1.5 PY are needed for the first year milestones.
Approximately 1.5 PY are needed beyond the first year.

h. **Tasks That Might Not Be Done In Order To Do This Project**

Identification of low priority tasks should be done periodically and systematically on an organization-wide basis, for all programs and all units in

the organization, not for individual “projects for practical vision success” or individual “practical vision chapters.” The amount of important work that needs to be done to protect and restore the health of waters in the in the San Diego Region far exceeds what can be done with the levels of staffing of and funding available. Unimportant work, i.e., work that does not contribute substantially to protecting and restoring the health of waters in the region, needs to be eliminated or minimized. Any and all unimportant work that cannot be eliminated should be designated as low priority and streamlined and/or postponed.

2. More Incentives And Better Outreach

a. Project Description

- i. Encourage, support, and assist in protection and restoration of stream, wetlands, and riparian systems by effectively communicating useful information to appropriate parties (e.g., landowners, local agencies, the development community, consultants, and community groups), including information about:
 - Reasons to protect and restore (benefits and advantages).
 - Opportunities for restoration (see Project 3).
 - Grants and other funding available for protection and restoration.
 - Other incentives and assistance for protection and restoration.
 - Examples of successful protection and restoration.
 - Environmentally sound flood protection and stream channel maintenance.
 - The CWA §401 Certification process and what is expected of applicants.
- ii. Provide incentives for protection and restoration in San Diego Water Board permits and other regulatory actions.
- iii. Support creation of additional incentives for protection and restoration, such as new funding sources.

b. Project Goals

- i. Make sure that appropriate parties are knowledgeable about reasons, opportunities, funding, assistance, and other incentives for protection and restoration.
- ii. Make sure applicants for CWA §401 Certifications know what is expected.

c. Desired Outcomes

- i. Provide more support and initiation of efforts to protect and restore stream, wetlands, and riparian systems.
- ii. Provide more and better protection and restoration of such systems, even before and without regulatory action.
- iii. Receive fewer CWA §401 Certification applications for “bad” projects.
- iv. Receive fewer “bad” applications for CWA §401 Certifications.
 - v. Reduce staff costs spent processing CWA §401 Certification applications.
- vi. Ensure better mitigation is included with CWA §401 Certifications.

d. Values and Underlying Contradictions

Protection and restoration of stream, wetlands, and riparian systems is unlikely to occur unless private and public landowners are aware of the benefits of, advantages of, and other incentives for protection and restoration. Unfortunately many land owners currently have little incentive to protect or restore stream, wetlands, and riparian areas under their control because they may:

- Lack the understanding that there is a need for protection and restoration.
- Know that protection or restoration is needed, but they do not possess the financial and/or knowledge resources to protect or restore.
- Know that restoration is needed, but keep areas in need of restoration in a degraded state so as to have them available for mitigation at a future time.
- Know of the need for protection or restoration but are disinclined to protect or restore because of flood control engineering reasons.

Changing business-as-usual can be difficult to accomplish. Incentives to do things differently are needed to bring about positive changes. Positive changes are unlikely to occur if the available incentives are not sufficient. Even the best incentives will not help if the parties that need to know about them don't know. It behooves the San Diego Water Board to get information about incentives to those who can make a difference.

e. Contribution To The Practical Vision

This project is directly related to the practical vision because it is about motivating other parties to initiate and support protection and restoration, even without and before regulatory action.

f. **Schedule / Milestones**

i. 3-6 Months:

- a. Work with other entities to create fact sheets, informational brochures, PowerPoint presentations, webpages, etc., to educate and inform about permitting processes and protection and restoration, including incentives.
- b. Post the fact sheets etc. on the San Diego Water Board's website.

ii. Beyond 6 Months:

- a. Distribute the fact sheets etc. and/or links thereto as appropriate (e.g., to cities, counties, consultants, and CWA 401 certification applicants).
- b. Periodically meet with and make presentations to representatives of appropriate parties to explain the benefits and advantages of and other incentives for protection and restoration
- c. Update and revise fact sheets etc. as necessary.
- d. Co-sponsor hands-on urban stream and riparian restoration training.

g. **Resources Needed**

Approximately 0.1 PY are needed each year.

h. **Tasks That Might Not Be Done In Order To Do This Project**

Identification of low priority tasks should be done periodically and systematically on an organization-wide basis, for all programs and all units in the organization, not for individual "projects for practical vision success" or individual "practical vision chapters." The amount of important work that needs to be done to protect and restore the health of waters in the in the San Diego Region far exceeds what can be done with the levels of staffing of and funding available. Unimportant work, i.e., work that does not contribute substantially to protecting and restoring the health of waters in the region, needs to be eliminated or minimized. Any and all unimportant work that cannot be eliminated should be designated as low priority and streamlined and/or postponed.

3. **Comprehensive Assessment**

a. **Project Description**

Conduct a comprehensive assessment of the conditions in and characteristics of stream, wetlands, and riparian systems in the San Diego Region. Do watershed-based assessments to locate areas where opportunities exist for restoration, e.g., by daylighting stream sections that have been placed underground, removal of concrete / armoring, and restoring historic floodplains.

This project would provide resource agencies and project proponents with information about opportunities available for restoration of degraded stream, wetlands, and riparian systems in each watershed in the San Diego Region. Knowledge of such opportunities is necessary for well informed decisions about restoration, mitigation, and supplemental environmental projects. The San Diego Water Board would provide leadership and support for and, along with other entities, participate in the assessment.

b. Project Goals

Traditional mitigation opportunities for proposed projects impacting San Diego Region stream, wetlands, and riparian systems become more difficult to find as time goes on. These include use of mitigation banks, in-lieu fee programs, and onsite mitigation space. It is imperative that resource agencies and project proponents have a better understanding of conditions in such systems and identify both traditional and non-traditional opportunities for restoration.

This project would develop assessments of current conditions in stream, wetlands, and riparian systems for the purpose of identifying opportunities for restoration in each watershed and would include identification and mapping of degraded areas in need of restoration.

c. Desired Outcomes

i. Development of Analytical Tools.

The San Diego Water Board and other resource agencies charged with protecting and restoring stream, wetlands, and riparian systems should initially focus on developing better analytical tools (GIS capabilities) to track existing/historical mitigation sites, and provide comprehensive overviews of the characteristics of and conditions in those areas. These capabilities would ensure that the resource agencies would be able to make informed decisions on how best to respond to potential projects impacting stream, wetlands, and riparian systems.

ii. Pilot Watershed Assessment.

Building on the “stronger policy” and “more incentives and better outreach” projects (Projects 1 and 2), the next logical step is to work towards conducting a pilot watershed assessment to aid in developing protocols for the location of restoration opportunities. This will likely be the most difficult element of this project. It will require cooperation and coordination with multiple municipalities, resource agencies and the environmental community at large. Opportunities for potential grant funding to help defray the costs associated with this endeavor should be investigated. Municipalities should be provided incentives to participate in this pilot project, and must

understand that the project will enhance their capabilities in complying with requirements of the Regional Municipal Stormwater Permit.

iii. Region-Wide Assessment.

Lessons learned from the pilot project would enable further watershed-based assessments of opportunities throughout the San Diego Region with the ultimate goal of identifying a multitude of opportunities for stream, wetlands, and riparian system restoration projects.

d. **Values And Underlying Contradictions**

Assessing the potential opportunities for restoration of stream, wetlands, and riparian systems is essential to the mission of the San Diego Water Board. Without thorough analysis of conditions in watersheds and the potential opportunities for restoration, it is likely that these systems will remain degraded, since existing regulatory frameworks for protection have not produced the desired results. Development of watershed-based assessments of restoration opportunities is essential to providing the basis for on-the-ground projects that will restore beneficial uses and other functions to degraded systems.

e. **Contribution To The Practical Vision**

This project provides a toolbox needed to promote and support restoration projects throughout the San Diego Region.

f. **Schedule / Milestones**

i. First Year:

- a. Coordinate with other resource agencies to assess information sharing capabilities.
- b. Foster coordination between resource agencies, municipalities and scientific community on the need for the project.
- c. Select an appropriate watershed for initiation of pilot project.
- d. Investigate funding sources for pilot project.

ii. Beyond First Year:

- a. Secure funding for pilot watershed study.
- b. Implement pilot watershed study.
- c. Promote results of pilot watershed study to encourage broadening of efforts to a region-wide basis.
- d. Work with partners entities to identify restoration opportunities by watershed and jurisdiction.

g. Resources Needed

Approximately 0.5 PY for first year milestones.
Approximately 2.0 PY beyond the first year.

h. Tasks That Might Not Be Done In Order To Do This Project

Identification of low priority tasks should be done periodically and systematically on an organization-wide basis, for all programs and all units in the organization, not for individual “projects for practical vision success” or individual “practical vision chapters.” The amount of important work that needs to be done to protect and restore the health of waters in the in the San Diego Region far exceeds what can be done with the levels of staffing of and funding available. Unimportant work, i.e., work that does not contribute substantially to protecting and restoring the health of waters in the region, needs to be eliminated or minimized. Any and all unimportant work that cannot be eliminated should be designated as low priority and streamlined and/or postponed.

4. Earlier Input

a. Project Description

Actively participate early in planning and environmental review processes . Provide input on the benefits of and opportunities for protection and restoration of stream, wetlands, and riparian systems to government agencies making land use and project planning decisions.

b. Project Goals

Reduce the need for San Diego Water Board regulatory actions. Encourage planning agencies and project planners to recognize the value of stream, wetlands, and riparian systems. Identify the potential affects future projects may have on these systems that are subject to their discretionary action.

c. Desired Outcomes

- i. Dedicate staff to review planning and CEQA documents for the purpose of identifying opportunities for protection and restoration. Staff should advocate for the evaluation of those opportunities and fleshing-out of those deemed viable, with appropriate written and oral comments during planning and environmental review processes.
- ii. For land use plans, urge agencies to establish protection and restoration of stream, wetlands, and riparian systems as a goal. Each municipality adopts a comprehensive, long-term general plan for the physical development of lands in their respective jurisdictions, and of any land outside its boundaries which in the planning agency’s judgment bears relation to its planning. As specified in section 65302, Title 7 of the California Government Code, these general

Recovery of Stream, Wetlands, and Riparian Areas

plans are required to include a conservation element that provides in part for the protection of watersheds. This includes the regulation of land use in stream channels and other areas required for the accomplishment of the conservation plan, and the prevention and control of pollution of streams and other waters. Restoration of stream, wetlands, and riparian systems is consistent with intent of this mandated element of the general plan.

- iii. For local community land use plans, urge agencies to identify opportunities for protection and restoration of stream, wetlands, and riparian systems. Frequently general plans for counties identify local communities that have unique characteristics that the county seeks to maintain. Commenting on community plans provides another opportunity to identify specific restoration projects for local areas.
- iv. For all Major Use Permits, comment on opportunities for protection and restoration of stream, wetlands, and riparian systems. The intent and purpose of a Major Use Permit is to provide for the accommodation of land uses with special site or design requirements, operating characteristics or potential adverse effects on surroundings, through review and, where necessary, the imposition of special conditions of approval. Most city/county zoning designations include a list of land uses that require approval of a Major Use Permit. Before any Major Use Permit can be granted or modified, the local agency usually makes a finding about how the project is consistent with its general plan and its suitability for the surrounding area.
- v. For specific use plans, comment on opportunities for protection and restoration of stream, wetlands, and riparian systems, where applicable. After the county or city has adopted a general plan, the planning agency may, or if so directed by the legislative body, prepare specific plans for the systematic implementation of the general plan for all or part of the area covered by the general plan. A specific plan includes text and a diagram or diagrams which could specify in detail standards and criteria by which development will proceed, and standards for the conservation, development, and utilization of natural resources, where applicable. Identifying opportunities for protection and restoration of stream, wetlands, and riparian systems is essential at this stage of environmental review to avoid the necessity for preparing a supplemental environmental impact report after adoption of the specific plan.

d. Values And Underlying Contradictions

The goal of this project is to ensure that stream, wetlands, and riparian systems support healthy habitats and ecosystems and other beneficial uses and functions. This project involves effectively communicating with local government, the development community, and the public about why that is important.

Recovery of Stream, Wetlands, and Riparian Areas

Some aspects of this project may be controversial, staff will need to be reasonable, diplomatic, polite, patient, firm, and articulate. Assigned staff should be empowered to identify key local planning projects on which efforts should be focused.

e. **Contribution To The Practical Vision**

Providing input on protection and restoration of stream, wetlands, and riparian systems early in the environmental review process for land use plans enhances prospects for achieving effective protection and restoration as part of project planning. The current practice of delaying input until the project proponent requests the San Diego Water Board to take regulatory action complicates or precludes making substantial changes to project proposals.

f. **Schedule / Milestones**

i. 3-6 Months:

- a. Identify schedule for general plan updates.
- b. Identify pending Use Permits.
- c. Identify draft CEQA documents.
- d. Draft initial template response letter.
- e. Surf internet to identify other resources (minimize reinventing the wheel).

ii. 6-9 months:

- a. Draft letter to local agencies introducing topic.
- b. Begin reviewing CEQA and proposed land use modification documents.
- c. Begin attending key local planning commission meetings where protection or restoration of stream, wetlands, or riparian systems is an issue related to an item on agenda.

iii. 1 Year:

- a. Hold a workshop on protection and restoration of stream, wetlands, and riparian systems
- b. Begin tracking successes and failures

iv. Beyond 1 year:

Assist local agencies in developing language for protection and restoration of stream, wetlands, and riparian systems for inclusion in general plans.

g. **Resources Needed**

Approximately 0.3 PY for first year milestones.

Approximately 0.3 PY each year beyond the first year.

There are approximately 500 CEQA documents received each year. Of those 400 are EIRs. The number of EIR documents requiring detailed review and comments related to specific stream, wetlands, and riparian system protection and restoration opportunities is unknown at this time.

h. Tasks That Might Not Be Done In Order To Do This Project

Identification of low priority tasks should be done periodically and systematically on an organization-wide basis, for all programs and all units in the organization, not for individual “projects for practical vision success” or individual “practical vision chapters.” The amount of important work that needs to be done to protect and restore the health of waters in the in the San Diego Region far exceeds what can be done with the levels of staffing of and funding available. Unimportant work, i.e., work that does not contribute substantially to protecting and restoring the health of waters in the region, needs to be eliminated or minimized. Any and all unimportant work that cannot be eliminated should be designated as low priority and streamlined and/or postponed.

5. Improved Collaboration

a. Project Description

Establish new and improved working arrangements and procedures and take other steps as necessary to improve communication, coordination, and collaboration among:

- i. Governmental agencies that have roles (regulatory or otherwise) in protection and restoration of stream, wetlands, and riparian systems;
- ii. Non-governmental organizations that have interests in protection and restoration of such systems; and
- iii. The scientific community that conducts research pertinent to protection and restoration of such systems.

b. Project Goals

- i. Increase each organization’s understanding of the interests, goals, authorities, tools, constraints, and rationale of the other organizations.
- ii. Increase mutual support among organizations.
- iii. Promote and foster interagency coordination, leverage permitting, and align policy development.
- iv. Reduce conflicting regulatory requirements.

Recovery of Stream, Wetlands, and Riparian Areas

- v. Create inter-organizational protection, restoration, and mitigation teams that include biologists, hydrologists, engineers, and others who understand natural functions and restoration techniques.
 - vi. Reduce the time needed to establish regulatory requirements for individual projects that could adversely affect stream, wetlands, and riparian systems.
 - vii. Increase use of the results of scientific studies to guide protection, restoration, and mitigation work.
 - viii. Actively support and participate in non-regulatory protection and restoration efforts.
- c. Desired Outcome**
- i. More and better protection (including increased avoidance of impacts).
 - ii. More and better restoration.
 - iii. More effective mitigation.
 - iv. More strategic, effective, and efficient use of limited staff and funding.
- d. Values And Underlying Contradictions**
- i. Several state and federal agencies have interests in and responsibilities for protection and restoration of stream, wetlands, and riparian systems, but their authorities, tools, processes, and constraints are different.
 - ii. Protection and restoration efforts could be more strategic, effective and efficient if these agencies worked together, but communication, coordination, and collaboration sometimes leaves something to be desired.
 - iii. Non-regulatory protection and restoration efforts often have goals and desired outcomes similar to those associated with regulatory actions, but non-regulatory and regulatory efforts are not always well coordinated.
 - iv. Each entity has a limited budget, constraints, and its own views that must be considered and fit together.
 - v. Non-governmental organizations may be able to avoid some of the obstacles and constraints that governmental agencies have to deal with, but protection and restoration efforts do not always take advantage of this knowledge.
 - vi. Researchers in the scientific community conduct studies pertinent to protection and restoration of stream, wetlands, and riparian systems. Resource agencies and other organizations with interests in protection and restoration of such systems are sometimes not aware of the results of those studies or do not make use of those results to guide their work.

e. Contribution To The Practical Vision

The San Diego Water Board has staff, legal authority, influence, and other tools that can and should be used to protect and restore stream, wetlands, and riparian systems, but it is only one of a number of entities that have such tools and such a role. Collaboration among those entities is critical to strategic, effective, and efficient use of scarce staff and funding and to the success of recovery efforts. Partnerships are essential for effective protection and restoration. The combined knowledge, staff, funding, and commitment of the partners are more likely to be successful in dealing with the many challenges involved in recovery of stream, wetlands, and riparian systems.

f. Schedule / Milestones

i. 3-6 months:

- a. Internally coordinate within San Diego Water Board units to determine priorities, mitigation leverage, and desired outcome.
- b. Meet with California Department of Fish and Wildlife 1600 and Army Corps of Engineers 404 staff to identify opportunities to align permitting strategies and leverage mitigation opportunities.
- c. Meet with environmental groups and jurisdictions with land management authority to identify potential opportunities for restoration.
- d. Meet with local jurisdictions with permitting authority to assess information dissemination and other vehicles for requiring or incentivizing restoration.

ii. 6-9 months:

Identify existing mechanisms that are currently underutilized to immediately effect change (e.g., General 401 Water Quality Certification Order for Small Habitat Restoration Projects, Mitigation Rule implementation, etc.).

iii. 1 year:

- a. Develop working arrangements for coordination among resource agencies.
- b. Develop working arrangements for coordination among resources agencies and non-governmental organizations.
- c. Develop working arrangements for coordination among resources agencies, non-governmental organizations, and the scientific community.

Recovery of Stream, Wetlands, and Riparian Areas

iv. Beyond 1 Year.

- a. Coordinate with other resource agencies, non-governmental organizations, and the scientific community in accordance with established working arrangements.
- b. Align and leverage San Diego Water Board program activities internally, which include, but are not limited to, 401 Water Quality Certifications, Waste Discharge Requirements, Total Maximum Daily Loads, and Compliance Assurance.
- c. Align and leverage California Department of Fish and Wildlife, Army Corps of Engineers and San Diego Water Board permitting and mitigation strategies.
- d. Continue to work with regulatory partners, receptive local jurisdictions and others to reduce adverse effects of stream channel hydrological modification, in stream vegetation management, hydraulic structure maintenance and repair, and stream bank stabilization projects.
- e. Integrate restoration into programmatic permitting mechanisms and mitigation strategies.
- f. Work with municipalities to incorporate stream, wetlands, and riparian system protection and restoration into ordinances, biological objectives, and/or other local mechanisms.
- g. Establish and implement a schedule to routinely locate staff at offices of partner agencies to increase exposure to other programs and optimize potential partnering opportunities.

g. **Resources Needed**

Approximately 0.5 PY each year.

h. **Tasks That Might Not Be Done In Order To Do This Project**

Identification of low priority tasks should be done periodically and systematically on an organization-wide basis, for all programs and all units in the organization, not for individual “projects for practical vision success” or individual “practical vision chapters.” The amount of important work that needs to be done to protect and restore the health of waters in the San Diego Region far exceeds what can be done with the levels of staffing of and funding available. Unimportant work, i.e., work that does not contribute substantially to protecting and restoring the health of waters in the region, needs to be eliminated or minimized. Any and all unimportant work that cannot be eliminated should be designated as low priority and streamlined and/or postponed.