



# **Blue Ribbon Environmental Committee**

**Final Report  
December 2002**



## **EXECUTIVE SUMMARY**

The City of Encinitas is specially blessed with a wealth and diversity of environmental resources. Bounded by the Pacific Ocean, two now-rare estuaries, and a hinterland of relative rural character, the City enjoys a thriving and somewhat unique economy, a vital community of neighborhoods, and an affluent and highly educated citizenry.

The City Council had the foresight to recognize the need for input to optimize the City's environmental efforts. They appointed a cadre of interested citizens, called the Blue Ribbon Environment Committee (BREC) to suggest to the City options for best environmental management of City facilities, services and programs. This report is the result of eleven months of meetings, research and discussion. City staff made presentations and provided important information on current City practices, and BREC members looked at programs in other cities, and states and at U.S. EPA programs.

A big picture focus is of paramount importance when considering the long-term vision and planning needed to prepare the City for the challenges of the future. Our population is projected to grow 25% in the next twenty years; water supplies are problematic; and global warming is ongoing with unknown consequences. It is imperative that the City take the necessary steps to consider what these and other trends mean for the City and its residents, and develop appropriate responses.

Encinitas can take many steps independently to improve its local environment, but the City must not forget the adjoining jurisdictions with which it shares ecosystems, watersheds, an air basin and beachfront, and their commensurate problems. Long-term solutions to some of the most pressing issues confronting the City require an on-going, multi-jurisdictional, shared response. Working within a regional framework will not negate the need for the City to be a leader in finding solutions, but will only bolster the efforts the City puts forward.

While there are numerous recommendations attached to this report, BREC does not feel that the City has been negligent in its operations. On the contrary, we are impressed with the knowledge, enthusiasm, and dedication of the City employees we met. The City is a leader in many of its environmental programs such as storm-water management, pesticide replacement, and recycling. We join the citizens in commending the City for what it has accomplished and, building on the strengths it has demonstrated, we challenge it to go farther.

Everything the City does should be done in the context of sustainability (use of today's resources in such a way that guarantees their productive use tomorrow) and an awareness of the impact of its operations on the environment. A key question should be: what steps can we take to minimize current and future environmental impacts? After we identify those steps, the City needs to commit to implement them if we are to maintain the Encinitas which attracted us in the

first place. By enacting and initiating environmentally sound programs and projects, the City also plays an important role in educating the community and providing an example of how to proceed in an environmentally friendly and responsible way.

While over 110 recommendations were made, BREC members chose 13 key ones for inclusion in this Executive Summary, then evaluated each recommendation for its importance (how much of a positive impact the recommendation would make for the City and region in the long-term), and the cost of implementation. A simple rating of “high”, “medium”, or “low” for both impact and cost was assigned to each recommendation.

BREC suggests that the City make the following 13 key recommendations its first priority.

**A) ESTABLISH A PERMANENT ENVIRONMENTAL COMMISSION**

**Establish a permanent Environmental Commission to develop policies and procedures that will sustain the environmental health of the City of Encinitas and advise the City Council on environmental aspects of issues the Council is considering. High impact and low cost (Report #13)**

**B) ADOPT AN ENVIRONMENTAL MANAGEMENT SYSTEM**

**The City staff should develop a plan for implementing an environmental management system (EMS) with the possible goal of ISO 14001 certification. At other public entities with EMS's, the cost of the system has been more than offset by savings from operational efficiencies. High impact and low cost with potential long-term cost savings (Report #12)**

**C) ISSUE AN ANNUAL REPORT WITH INDICATORS OF PROGRESS**

**Publish an annual report on the environmental health and performance of the City. The report should be developed by staff in conjunction with the permanent Environmental Commission. Medium impact and low cost (Report #15)**

**D) CONDUCT AN ENERGY AUDIT AT CITY FACILITIES**

**Conduct an energy audit at each City facility to assess energy use patterns. The audits could be conducted by SDG&E, or a private consulting firm. Results of the energy audit will indicate areas where additional energy usage efficiencies may be realized. This process might be considered as an initial implementation of an EMS.– Medium impact and low to no cost with the potential for near-term savings (Report #2)**

**E) PROVIDE GUIDELINES FOR NEW DESIGN**

**Explore the use of a green building certification program such as “Leadership in Environmental Design” (LEED) which was developed by the U.S. Green Building Council or the International Performance Measurement & Verification Protocol (IPMVP). Medium impact and low cost (Report #6)**

**F) MINIMIZE WASTE STREAMS**

**Create a formal recycling program for all City operations for standard recyclables (paper, cardboard, 1 & 2 plastics, aluminum, tin and glass) that makes the process uniform, easy and convenient. Medium impact and low cost (Report #16)**

**G) DEVELOP AN ENVIRONMENTALLY PREFERABLE PURCHASING POLICY**

**Develop an Environmentally Preferable Purchasing policy to be followed by all City Departments that provides guidelines on products, vendors, and extra cost allowances that are acceptable if costs are more than equivalent non-environmentally friendly products. Medium impact and low cost (Report #14)**

**H) MAINTAIN INDIGENOUS SPECIES THROUGH CONTROL OF INVASIVE NON-NATIVE PLANTS**

**Implement a comprehensive control program for the ten most invasive non-native plants in the City of Encinitas that includes a ban on their future use in City-owned and managed facilities and property. Initiate a regional watershed-based eradication program that targets City properties. Medium impact and medium cost (Report #7)**

**I) ENCOURAGE INTEGRATED PEST MANAGEMENT**

**Reduce the use of pesticides and eliminate the use of the most hazardous ones on City properties using the principles of Integrated Pest Management. Medium impact and low cost (Report #8)**

**J) REVISE AND THEN ADOPT THE MULTIPLE HABITAT CONSERVATION PLAN**

**The proposed MHCP and Encinitas Subarea Plan needs to be substantially revised and strengthened to reflect the Biologically Preferred Alternative, before the City accepts this extremely important regional natural habitat conservation plan. High impact and medium cost (Report #9)**

**K) ADOPT COMPREHENSIVE BEACH RESTORATION PLANNING**

**The City should approve and implement the Final Draft Comprehensive Coastal Bluff and Shoreline Plan (Draft Plan), dated 6/11/98, including BREC's recommendations. Continue to work with SANDAG, and other governmental agencies (local, regional, state, and federal). High impact and unknown cost (Report #23)**

**L) CONSERVE WATER AND INCREASE EFFICIENT USE PATTERNS**

**Encourage a reduction of water consumption and increased use of reclaimed water to cope with the long-term effects of periodic droughts and reduced water supply from the Colorado River. Additionally, the City may consider revising the water rate structures to encourage conservation. High impact and medium cost initially with long-term potential savings (Report #24 & #25)**

**M) MANAGE STORMWATER AND URBAN RUNOFF**

**Collect monitoring data and correlate for each of the 6 sub-watersheds that comprise the City. Prepare an inventory of areas of impervious cover. Identify and mitigate sources of pollution. High impact and low to medium cost (Report #26)**

We applaud the City for its successes and look forward to further progress. To that end, the environmental issues addressed in this report are those that confront the City now. The challenge facing the City Council is identifying what issues will present themselves in the future and how will the City address them.

## INTRODUCTION

Encinitas is a special place. We Encinitans enjoy a superb natural setting replete with miles of beaches, some of the few remaining Southern California wetlands to the north and south and a diverse landscape, both natural and managed, which is made possible by our Mediterranean climate. In an unfortunate pattern that is oft-repeated in Southern California, these very qualities that attract new residents also provide the impetus for the growth in population and construction which degrades the natural environment to such an extent that much of what drew people here in the first place is lost.

A permanent challenge to both the City of Encinitas and its residents is the thoughtful management of its natural resources such that both human and natural environments flourish. Such efforts are not one-time decisions but rather are important components of a coordinated environmental policy.

Because the contributions to environmental problems can be highly dispersed over wide areas and across long periods of time, it can be difficult to connect the causes to the problems. For these reasons, sound environmental management typically requires a mixture of enlightened government intervention, public-private partnerships, and civic leadership coupled with regional, systemic thinking.

The members of the Blue Ribbon Environmental Committee recognize the challenges associated with trying to maintain the spirit, natural charm, and rural/small town atmosphere of Encinitas in the face of growth and development pressures. Our mandate was to specifically review the practices in “...City-owned and maintained facilities, programs, and services; and develop practical recommendations for consideration by the City Council.” We took this not as a limitation on what we should look at, but as an opportunity to recommend actions which would enable the City to continue to set the example not only to its citizens and businesses but to other municipalities as well. BREC’s feeling is that leadership by the City’s elected officials and employees is much more effective in mobilizing public support for environmentally responsible programs and procedures. By enacting and initiating environmentally sound programs and projects, the City educates the community and provides an example of how to proceed in an environmentally friendly and responsible way.

It is precisely this sort of environmental leadership that both enhances and preserves the quality of life that our City’s residents value so much. Moreover, because so many environmental problems are regional in nature and the result of relatively small contributions by many people and organizations, leadership by the City of Encinitas is particularly important to encourage the broad-based support and participation so often needed in efforts to protect and preserve the quality of our environment. While there is much work to be done for the City of Encinitas to assume and retain the mantle of environmental leadership, BREC is

nonetheless pleased to be able to note a number of positive efforts, both large and small, already undertaken by the City. These include:

- Open space acquisition
- Storm water management leadership role
- Cottonwood Creek restoration project
- Steps to reduce incidences of beach closure
- Escondido Creek MOU
- Leucadia Nuisance Water Collection System
- CalSense irrigation management system
- Beach replenishment
- Acquisition of alternative fuel vehicles in City fleet
- Meeting or exceeding the goal of 50% waste diversion
- Battery recycling program for City employees
- Commitment to convene and act upon the recommendations of BREC

Throughout the Committee's work, it returned to certain overriding themes for environmental leadership which are important to keep in mind when addressing practically all environmental problems. These critical themes are regionalism, sustainability, and community collaboration.

**Regionalism**—Environmental problems more than most challenges facing city government have a tendency to have both causes and effects beyond the boundaries of the City. Because protection of Encinitas' environment so often involves activities beyond our borders, it is imperative that the City collaborate with neighboring jurisdictions in order to manage environmental resources knowledgeably and effectively. As an important step, the City should regularly consult with its neighbors and engage in watershed-based planning, analysis, and implementation of environmental management. For example, it is critical that Encinitas look beyond its borders and throughout the relevant watersheds in its efforts to improve water quality at its beaches and in its creeks.

**Sustainability**—The concept of sustainability is multifaceted and not always easy to define. These difficulties notwithstanding, the City must incorporate a test of environmental sustainability in its decision-making processes. Simply put, the City must examine whether practices can be continued indefinitely without long-term degradation of the City's environment and without contributing to such degradation outside our borders.

**Community Collaboration**—Collective action is essential to the amelioration of many of our environmental problems. Classic examples include conservation of resources, waste reduction, and recycling. If all residents and businesses contribute to efforts to conserve water, generate less waste, and recycle more materials Encinitas can have a substantial effect on our

environment. Through community outreach and education as well as taking a leadership role the City can not only improve its own environmental practices but also leverage its efforts by enhancing the collective actions of its citizens for a better environment.

## **SUMMARY OF BREC**

In January, 2001, it was proposed at the Encinitas City Council's annual goal-setting meeting to create a permanent environmental commission to advise the City Council and the Planning Commission. The Council instead decided to form a temporary group under the auspices of the City Manager. The committee was to meet for approximately six months, but not more than one year. The community was contacted, and over 30 citizens volunteered to participate. Eleven individuals, two per community, plus one "at large," were selected as members of the Blue Ribbon Environmental Committee (Appendix 1). After the second meeting of the group, one member withdrew due to professional commitments. The committee size remained at ten members thereafter.

The Mission Statement of the Committee, as set by the City Council, was:

*To solidify the City's commitment to best management practices by:*

- *Reviewing the City's current environmental practices and policies regarding City-owned and maintained facilities, programs, and services; and*
- *Developing practical recommendations for consideration by the City Council*

*So that:*

*Encinitas continues as a leader in promoting the health interests of her citizens and protecting her natural and wildlife resources.*

The Committee:

- Is a temporary committee set up under the City Manager, not the City Council.
- Would set much of its own agenda, although the basic purpose was to recommend environmental standards and goals for the City.
- Would likely start by reviewing the city's policies on energy use, public landscaping and municipal building designs. It could also delve into City building codes governing private development or move into other uncharted areas.
- Would advise the City Council how it could meet some of the goals it had already set, such as using more native plants, and reducing pesticide and fertilizer use in parks, designing city buildings to take advantage of natural light and ventilation, improving urban runoff systems, renovating Cottonwood Creek, and encouraging more recycling.

- Might venture off into entirely new areas or review building codes.
- Might require an update of the environmental content of the General Plan.

The first meeting of BREC was 8 January, 2002. At that meeting Committee members identified environmental issues for discussion (energy, water quality, soils, air, landscaping, education, community awareness, solid waste, recycling, waste minimization, transportation, City purchasing), determined the committee structure and set the schedule for meetings.

The Committee decided to meet twice monthly as the full Committee and as needed in sub-committee. The sub-committees established were:

- Energy, Air & Transportation
- Water & Soil Conservation and Quality
- Public Policy/City Purchasing/Education
- Trash/Recycling/Solid Waste/Source Reduction/Waste Minimization
- Landscaping/Habitat/Land Stewardship

Appendix 2 is a listing of the membership of the subcommittees.

BREC met from January through November 2002. The agendas and minutes of the meetings are Appendix 3.

## **SUBCOMMITTEE RECOMMENDATIONS**

### **Air/Energy/Transportation**

- 1. Encouraging Bicycle and Pedestrian Transportation**
  - A) Investigate opportunities for traffic calming in neighborhoods, without losing sight of safety and convenience for cyclists and pedestrians.
  - B) Consider the needs of commuting cyclists, as well as recreational riders and pedestrians when designing or altering roads.
  - C) When construction temporarily obstructs a bike lane or otherwise narrows a roadway, post and enforce a 25mph speed limit, with a “caution -- bikes taking lane” warning sign.
  - D) Voice support for any proposed statewide or countywide legislation which encourages bicycle and pedestrian travel.
  
- 2. Energy Usage at City Facilities**
  - A) Conduct an energy audit at each City facility to assess energy use patterns. This process might be considered as a test implementation of Environmental Management System (EMS) procedures.
  - B) Explore the possibility of dividing City Hall into electrical zones so that only public meeting areas may be lit for evening meetings, rather than the entire complex.
  - C) Ask City staff for additional energy-saving suggestions related to their own areas within City Hall.
  - D) Explore alternate methods of providing a suitable work environment for City staff.
  
- 3. Public Works Department Vehicles**
  - A) Implement City policy for purchasing in an environmentally friendly manner in spite of any departmental management and/or staff changes.
  - B) Operate City vehicles as long as is practicable. Protect them from the corrosive effects of salt air.
  - C) As City vehicles reach the end of their useful service lives, replace them with dual fuel, or alternative fuel vehicles where possible.
  - D) Investigate participation in The City of San Diego’s alternative fuels center.
  
- 4. Small Gasoline Engines**
  - A) Lobby for stricter noise and emissions standards at the State and Federal level.
  - B) Require the city’s maintenance contractors to use only the lowest-noise, lowest-emission technology available. Consider other methods, such as manual sweeping and raking.
  - C) Limit gasoline-powered scooters to streets. Restrict their use on sidewalks for safety, noise, and air quality considerations.

## **Landscaping/Habitat/Land Stewardship**

### **5. Firescaping**

- A) Incorporate firescaping guidelines into City landscaping practices and contracts and make this information readily available to the community. Every City facility, especially the fire stations and parks, should be landscaped utilizing recognized firescaping principals.
- B) Thin dense tree stands. Dead or failing trees should be removed and replaced with appropriate tree species at appropriate densities.
- C) Remove “fuel-ladders” as part of maintenance efforts.
- D) Remove flammable invasive non-native plants from natural habitats.

### **6. Guidelines for New Design and Redesign of Existing Structures**

- A) Review current materials and methods specification manuals used by city departments (such as “The Green Book” or CSI specification formats) with the purpose of evaluating/scoring specifications for environmental friendliness.
- B) Set up a design checklist/audit to evaluate proposed designs or redesigns of city facilities. Items to be considered would include: minimal site disruption, waste stream management, life cycle costs of materials, water and conservation measures, use of local or native materials, and intangibles, such as esthetics.
- C) Explore the use of a green building certification program such as Leadership in Environmental Design (LEED), or the International Performance Measurement & Verification Protocol (IPMVP).

### **7. Invasive Non-Native Plants and Algae**

- A) Ban the use of targeted invasive non-native plants in the landscaping of all City properties. Ideally the target list would include all plants on the California Exotic Pest Plant Council List of Exotic Pest Plants of Greatest Ecological Concern in California.
- B) Adopt a comprehensive policy for the identification, mapping, and abatement of targeted invasive non-native plants on City property; start with an eradication program for pampas grass (*Cortaderia selloana*) and giant reed (*Arundo donax*), two of the most problematic invasive plants on City properties.
- C) Require new housing and commercial developments to avoid the use of targeted invasive non-native plants.
- D) Support the efforts of, and actively work with, the San Elijo Lagoon Conservancy, the Cottonwood Creek Conservancy, the Escondido Creek Conservancy, and the Batiquitos Lagoon Foundation in the removal of invasive non-native plants.
- E) Treat infested properties adjacent to wildlands, where possible. This program should be carried out in a coordinated manner with other Cities

and entities, working from the top of the watershed towards the bottom to avoid re-infection of downstream areas from upstream sources.

- F) Encourage private property owners adjacent to natural lands or wildlands to avoid the use of invasive non-native plants.
- G) Discourage the sale of targeted invasive non-native plants within the City of Encinitas to prevent future introductions.
- H) Promote community awareness on the invasive algae *Caulerpa taxifolia*.

#### **8. Landscape Maintenance: Integrated Pest Management**

- A) Practice the principles of Integrated Pest Management (IPM) to the maximum extent possible on City maintained land.
- B) Eliminate the use of the most hazardous pesticides.
- C) Reduce the use of all pesticides through IPM practices.
- D) Institute a pilot program to make one or more City parks or other maintained areas completely pesticide free. Different IPM techniques could be evaluated at these pesticide free parks to determine how effective they are.
- E) Encourage the community to follow the City's example in using less toxic pesticides and reduced amounts, and in employing IPM practices.

#### **9. Multiple Habitat Conservation Plan (MHCP) and Encinitas Subarea Plan (ESP)**

- A) Revise the ESP so the City can assess the merits of both the MHCP's Alternative 2 ("Preferred Alternative" [ 66% of natural habitat] ) and Alternative 3 ("Biologically Preferred Alternative" [ 84% of natural habitat] ).
- B) Revise the habitat maps to provide whole watershed and regional contexts for the MHCP report and for the ESP report. The ESP and MHCP habitat maps should identify all subwatersheds. Habitat acreage information provided is very confusing, and needs to be presented in a more understandable manner.
- C) Calculate the percentage of impervious cover in each subwatershed and use the results to interpret the spatial significance of the proposed MHCP and ESP plans.
- D) Revise the City's General Plan to implement the revised MHCP and ESP, since how and where the City grows in the future is critical to performance of the MHCP and the ESP.
- E) Coordinate with adjacent municipalities and the County to assure 100% cooperation can be secured before future implementation is accepted.
- F) Reevaluate, revise, or delete the "unforeseen circumstances" rule in the ESP.
- G) Since success of the ESP and MHCP depends on the proposed monitoring plan, a detailed description of the proposed monitoring methodology is needed.
- H) Recommended buffer zones are too narrow and need to be expanded.

#### **10. Sustainable Landscaping Program**

- A) Create a Sustainable Landscaping Program for the City of Encinitas that specifies how City-owned and managed landscapes will be designed, constructed and maintained. The main elements of the Sustainable Landscaping Program should include the following components: design, installation and maintenance guidelines; firescaping; irrigation and stormwater management; mulching/composting/ fertilization; integrated pest management; plant palette; trees and the community forest; maintenance; and education.

### **Environmental Policy/Education/Purchasing**

#### **11. Environmental Policy**

- A) Develop and adopt a comprehensive environmental policy for Encinitas that would be incorporated in the General Plan. As a minimum, the environmental policy would include:
- a commitment to continual reduction and prevention of pollution in both the City's own operations and the community at large.
  - a commitment to comply with and exceed the requirements of relevant environmental legislation and regulations.
  - a framework for setting and reviewing environmental objectives and targets.
- B) Periodically review and update the policy.

#### **12. Environmental Management System (EMS)**

- A) Develop and implement an EMS such as ISO 14001.
- B) Contact US EPA to obtain information on EPA seed money to help in establishing an EMS.

#### **13. Establishment of a Permanent Environmental Advisory Commission**

- A) Establish a permanent environmental advisory commission akin to the Planning or Traffic Commission. The mission of the environmental advisory commission would be to develop proposed policies and procedures which will sustain the environmental health of the city, and to advise City Council on environmental issues.
- B) The committee would consist of at least seven voting members appointed by the City Council. Two non-voting positions on the committee would be for students from Encinitas who attend a local high school or college. Members should have expertise in different environmental areas.
- C) Terms for the members to be four years, staggered among the members.

#### **14. Environmentally Preferable Purchasing Policy**

- A) Develop an environmentally preferable purchasing policy to be followed by all City Department. This policy will provide guidance on products that must and can be used, where they can be obtained, and what extra cost is acceptable if these products cost more than equivalent products that are not environmentally friendly.

- B) Publicize the City's efforts to purchase environmentally preferable products, and encourage the public to do the same.

### **15. Annual Report**

- A) Prepare an annual report on the City's environmental performance. The report would include accomplishments during the year, goals for the next year and recommendations for changes in the City's environmental programs.

## **Waste Minimization**

### **16. Waste Minimization**

- A) Establish a formal waste minimization program. Each Department could set up its own program or there could be a combined task force.
- B) Establish a formal program for all City operations that provides recycling for all standard recyclable products, including glass, plastic, aluminum, steel, paper, and construction materials. Make the program uniform, easy and convenient.
- C) Publicize the City's efforts.
- D) Establish an Environmentally Preferable Purchasing policy that mandates the purchase of recycled content products and products that can be all or partly recycled.

### **17. Household Hazardous Waste (HHW)**

- A) Conduct a survey to determine whether the public is sufficiently informed about what household hazardous waste is, and how to dispose of it.
- B) Based on the results of the survey, provide public outreach on this topic, including flyers in public buildings, information at the point of purchase, a section on the City's website, and community events.
- C) Refine the current home pickup service to include more pickups and/or a regular pickup schedule.
- D) Establish a HHW pickup site in Encinitas. The long drives to Vista and Poway, and the limited hours of operation, discourage dropping off HHW.
- E) Update the Encinitas City website concerning HHW.

### **18. Green Waste**

- A) Increase public knowledge on the importance of using the curbside green waste recycling program, and on the backyard composting program run by Solana Recyclers at Quail Botanical Gardens.
- B) Become a partial sponsor of the master composting training program carried out by Solana Recyclers at Quail Botanical Gardens.
- C) Use recycled green waste as compost and mulch on City properties to the fullest extent practical.
- D) Investigate the feasibility of having mulch and/or compost available to City residents at a site within the City. This would be at a re-distribution point where a nominal fee could be charged to cover the expense of the

service. Make citizens aware of where they can obtain recycled mulch and compost from other green waste programs (City of San Diego Miramar landfill and City of Oceanside).

#### **19. eWaste**

- A) Conduct a survey to determine whether the public is sufficiently informed about what eWaste is, and how to dispose of it.
- B) Based on the results of the survey, provide public outreach on this topic, including flyers in public buildings, information at the point of purchase, a section on the City's website, and community events.
- C) Establish a home pickup service, and/or a drop-off site in Encinitas similar to that for household hazardous waste.
- D) Encourage retailers to provide information on proper disposal of old equipment when new equipment is purchased.
- E) Support companies that have established programs to help buyers reuse or recycle old computers and other electronics as part of buying or leasing new models.
- F) Support legislation at the state and federal levels to include the cost of disposal in the purchase price of equipment.

#### **20. Public Recycling**

- A) Establish an additional public recycling drop-off facility to supplement the Solana Recyclers site at 137 N. El Camino Real. The site is well used, which indicates that an additional site in closer proximity to Old Encinitas, Cardiff and Leucadia would provide a valuable service for these communities.
- B) Establish a pilot recycling program at Moonlight Beach and one other public location such as one of the sports parks. The pilot program should be well advertised to make the community and visitors aware of the effort and to reduce the contamination, i.e., trash with the recyclables.
- C) Require recycling at community events, such as Encinitas Day, Oktoberfest, and the Holiday Parade.
- D) Publicize waste minimization/recycling and services that are available. Create a comprehensive fact sheet on recycling and other related services and make it available to the public through multiple avenues, including the City's website. This information could also be available through a telephone hotline that has recorded messages.
- E) Reduce the contamination level, i.e., trash mixed in with recyclables, in the curbside recycling program by increasing public education. Recommend EDCO distributes its quarterly newsletter to all curbside customers (i.e. all renters and multi-family dwellers), not just those receiving a bill.
- F) Promote full recycling for apartments, condominiums, and other multi-family residences.
- G) Consider implementing mandatory recycling for other commercial establishments, such as retail outlets.

- H) Prominently display on all literature, announcements, recycling stations, etc. that the recycling program is a City of Encinitas program, not EDCO's. This will give the effort more credibility and provide some positive publicity for the City.
- I) Review the Encinitas Municipal Code with respect to recycling. Revise as needed to increase waste minimization.

### **21. Solid Waste Reduction at Cottonwood Creek and Moonlight Beach**

- A) Place screens on all storm drains that lead into Cottonwood Creek to catch solid waste in run-off and prevent the deposition into the Creek, onto the beach and into the ocean.
- B) Investigate the sources of solid waste in the watershed and address these sources, with the goal of reducing or eliminating the waste where possible.
- C) Increase the number of trashcans and/or the frequency of collection at Moonlight Beach during peak use periods.
- D) Fence off the end of the alley between Second and Third Street along to stop illegal dumping into the Creek area.

### **22. Helium/Air/Water Balloons**

- A) Ban the intentional release of balloons at any City or private event within the City. The intent is to ensure that people are aware of the negative environmental impacts and choose an environmentally friendly alternative.
- B) Require retailers of balloons to provide a verbal and/or written explanation to purchasers of balloons on the harmful impacts of balloon waste.
- C) Implement an educational outreach program on the harmful impacts of helium/air/water balloons.

## **Water/Soil Conservation & Quality**

### **23. Beach/Cliff Protection**

- A) Approve and implement the Final Draft Comprehensive Coastal Bluff and Shoreline Plan (Draft Plan), dated 6/11/98, with only minor changes.
- B) Acknowledge that shoreline retreat is inevitable. This does not imply we should do nothing, but rather need to plan for the long term implications of this problem.
- C) Institute an on-going program of monitoring City beaches, and the adjacent offshore areas to beyond wave base, as a means of identifying areas where sand preferentially accumulates or erodes. Monitoring events should occur at least quarterly; monthly would be better.
- D) It is undesirable to armor the entire bluff face within City limits.
- E) Continue to work with SANDAG, and other governmental agencies (local, regional, state, and federal) on this issue.
- F) Offshore protection/sand retention devices such as groins, jetties, or breakwaters are not recommended unless proposed as part of a regional sand management plan.

#### **24. Efficient Use and Conservation of Water**

- A) Continue to calculate and charge for infrastructure maintenance, improvements and operations.
- B) Develop sufficient supply sources to provide water during normal and drought years.
- C) Devise and implement a drought rating and notice system to sensitize water users, prepare them for inevitable water-short years, plan voluntary conservation, and mandate conservation necessary to reduce demand.
- D) Maximize direct and indirect use of reclaimed water. Have the fire chief consider the costs and benefits of converting to reclaimed water in the fire mains.
- E) Restore/recharge groundwater ensuring quality and storage capacity.
- F) Revise the rate structure to encourage conservation. Delete the flat rate for residences with agriculture; include a tiered rate structure on agriculture, landscaping, excess use, and construction; include a seasonal demand accommodation structure; and require that the service meter fee pay a greater proportion of the costs.
- G) Increase the infrastructure which carries reclaimed water to make it more available without undue cost to smaller users.
- H) Implement a public water education program focused on household gray water-irrigation reuse, composting, and water conservation.
- I) Mandate sustainable and low-water use landscaping for all new and replanted city landscaping.
- J) Require all new city facilities to install and maintain water saving appliances.
- K) Fund and implement a water efficiency revolving loan program.
- L) Conduct audits of all city water systems. Retrofit all inefficient appliances, and take advantage of gray water reuse opportunities.

#### **25. Meeting Encinitas' Water Supply Needs in the Face of Dwindling Supply**

- A) Reduce water consumption, and increase use of reclaimed water to cope with the long-term effects of drought and reduced water supply from the Colorado River.
- B) Advocate effective agricultural conservation measures in the Imperial Valley, and support water transfers to urban use to ensure the gradual rather than abrupt reduction in California's share of the Colorado River.

#### **26. Stormwater and Urban Runoff Management**

- A) Map the boundaries of each of the subwatersheds present throughout the City and include these boundaries as a common data layer on many of the City's maps.
- B) Conduct an Urban Runoff Assessment and Action Plan for each of the other 6 subwatersheds that comprise the City, similar to the study completed for the Cottonwood Creek subwatershed.

- C) Calculate the percentage of impervious cover for each subwatershed, and correlate results with the storm water and dry weather runoff monitoring data by subwatershed.
- D) Use the results as a basis for planning where to accommodate future growth, as a means for managing urban runoff, and as a mechanism for implementing “smart growth” strategies.
- E) Use the subwatershed as the geographic unit for educating the public about how they can help to “best manage” urban runoff.
- F) Develop a report card of the status and outlook for each subwatershed. Publish annually.

## **FUTURE TOPICS**

BREC's recommendations represent the next step in environmental policy for the City of Encinitas. In a sense, we had the easier task of identifying what needs to be done next. Those that follow us, the City Council and staff, and the permanent environmental commission, if impaneled, have the more difficult task of implementing the recommendations. Topics that will confront the city include:

How sustainably can the City plan, integrate, and serve the expected population increase?

How do BREC's recommendations fit into the existing General Plan?

Which recommendations can be implemented by staff? Which recommendations require changes in administrative policy and/or the Municipal Code?

How can the City implement the MHCP and balance property rights versus the good of the community?

As sea level continues to rise, the cost of protecting the lagoons, beaches, and bluffs will escalate, as will the cost of modifications to protect public infrastructure. How much are we willing to pay, and from where will the money come?

Can the City mitigate the increased air pollution that will accompany growth in the region, including the widening of I-5?

Can the City secure reliable water supplies to service the community?

What will the City do if one or more of the regional or local entities do not go along with regionalism or sustainability? Should the City do anything?

# Table of Contents

## ***Air/Energy/Transportation***

1) Encouraging Bicycle and Pedestrian Modes of Transportation	.....3
2) Energy Usage at City Facilities	.....6
3) Public Works Department Vehicles	.....8
4) Small Gasoline Engines (Leaf-blowers)	.....10

## ***Landscaping/Habitat/Land Stewardship***

5) Firescaping	.....13
6) Guidelines for New Design and Redesign of Existing Structures	.....16
7) Invasive Non-Native Plants and Algae	.....18
8) Landscape Maintenance: Integrated Pest Management/Pesticide Use	...23
9) Multiple Habitat Conservation Plan (MHCP) and Encinitas Subarea Plan	...25
10) Sustainable Landscaping Program	.....33

## ***Environmental Policy/Education/Purchasing***

11) Environmental Policy	.....40
12) Environmental Management System & ISO 14001	.....42
13) Establishment of a Permanent Advisory Commission	.....45
14) Environmentally Preferable Purchasing Policy	.....47
15) Annual Report	.....49

## ***Waste Minimization***

16) Waste Minimization	.....51
17) Household Hazardous Waste	.....53
18) Green Waste	.....55
19) eWaste	.....56
20) Public Recycling	.....58
21) Solid Waste Reduction at Cottonwood Creek and Moonlight Beach	.....64
22) Helium/Air/Water Balloons	.....66

## ***Water/Soil Conservation & Quality***

23) Beach/Cliff Protection	.....69
24) Efficient Use and Conservation	.....73
25) Meeting Encinitas Water Supply Needs	.....76
26) Stormwater and Urban Runoff Management	.....79

<b>1) Topic: Encouraging Bicycle and Pedestrian Modes of Transportation</b>
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**Issue:**

Encouraging bicycle and pedestrian modes of transportation

**Justification:**

Our own General Plan acknowledges the environmental and lifestyle desirability of promoting alternatives to automotive travel. There is an urgent need to reduce the consumption rate of fossil fuels, to reduce greenhouse gas emissions, and to bring air quality into compliance with Federal health standards. The President of the United States has also recently proclaimed that Americans need to get more exercise, and the media have been documenting the amount of time a typical American spends sitting in a car. Encouraging residents and visitors to access downtown Encinitas, Moonlight Beach, and other traffic- and parking-impacted areas on foot or bicycle would greatly enhance our quality of life and support our claims of a healthful lifestyle.

**Problem:**

For various reasons, bicycle and pedestrian travel within Encinitas is significantly lower than it could be with an appropriate set of incentives and accommodations. The City needs to identify and to modify policies and facilities which discourage bicycle or pedestrian travel.

**Background:****Existing Practice/Policy:**

- 1) Many traffic signal loop detectors do not respond to bicycles, although the situation has been improving, and Traffic Engineering has been reasonably responsive to complaints.
- 2) Some intersections have bicycle- and pedestrian-hostile fast, sweeping free right turns, merges, or diverges. To the city's credit, many of the newer intersections are configured to accommodate nonmotorized road users safely and conveniently.
- 3) Pedestrian crossings are restricted or even prohibited entirely (e.g. Saxony at Encinitas Bl.) at many major intersections, forcing pedestrians to take circuitous routes, such as crossing all three remaining sides of an intersection when the desired crossing movement is prohibited. The resulting delay and inconvenience tend to discourage walking.
- 4) Some high-speed streets lack wide shoulders, with or without demarked bicycle lanes.
- 5) Some of the greatest hazards occur during roadway and adjacent construction, such as when bicycle lanes are obstructed on busy, fast arterials.

**Assessment:**

Overall, Encinitas is reasonably hospitable to nonmotorized road users, but it did inherit various pre-existing trouble spots from the County and has yet to ameliorate some of them.

**Data Gaps:**

Minor. A complete inventory of bicycle-insensitive traffic loops, prohibited pedestrian movements, and pedestrian- or bicycle-hostile intersections will eventually be required. Volunteer citizens and representatives of local walking and bicycling advocacy groups could be recruited to complete much of the work at minimal cost to the city.

**Recommendations:**

- 1) Investigate opportunities for traffic calming in neighborhoods, without losing sight of the need to enable cyclists to move from one neighborhood to another safely and conveniently.
- 2) When designing or altering roads or bicycling facilities, consult and consider the needs of transportation/commuting cyclists as well as recreational riders.
- 3) When construction temporarily obstructs a bike lane or otherwise dangerously narrows a roadway, post and enforce a 25mph speed limit, with a "caution -- bikes taking lane" warning sign.
- 4) Since many of these problems are regional, City government should voice support of any proposed statewide or countywide legislation which encourages bicycle and pedestrian travel.

**Implementation:**

- 1) Control or traffic-calm all free right turns, merges, and diverges, such as from northbound Vulcan Av. to eastbound Encinitas Bl.
- 2) Empower the Traffic Commission to discuss issues raised by private citizens, i.e., make it an ombudsman between the public and Traffic Engineering.
- 3) In new housing developments, require pedestrian and bicycle easements through the ends of culs-de-sac. Example: from the end of Calle Magdalena to Requeza, through the proposed new housing tract, which will need emergency vehicle access from both directions, anyway.
- 4) Survey all traffic signals in Encinitas to ensure that they are responsive for all legal bicycle uses, including turns.
- 5) Permit pedestrians to cross on all sides of four-way intersections. Eliminate "no ped crossing" restriction at Leucadia Bl. / Highway 101, Leucadia Bl. / Orpheus, Saxony / Encinitas Bl., etc.
- 6) Endorse and support the "walk to school" program, to encourage the next generation to consider alternative modes of travel.
- 7) Pass resolutions endorsing statewide or countywide policies which promote nonmotorized travel.

**Indicator:**

- 1) Increased bicycle and pedestrian traffic in and around the city, coupled with reduced local motor vehicle traffic.
- 2) Reduced demand for local parking.
- 3) Reduced congestion downtown.

## 2) Topic: Energy Usage at City Facilities

### **Issues:**

Conservation/Operating Efficiency, Rising Costs

### **Background:**

Energy costs have historically been high in San Diego. However, statewide deregulation of energy suppliers has caused significant increases in costs over the last two years. Further, increases in population, combined with delays in construction of additional energy production capacity, have strained the existing capacity to deliver energy to the point where brown-outs, and other service interruptions have occurred.

### **Problem:**

How to reduce wasteful (both wasted energy and wasted money) energy consumption.

### **Current City Policy:**

The City has instituted several energy saving measures. For electricity, these include 1) City Hall is closed every other Friday. 2) The main electricity supply to City Hall is turned off after the work day has been completed, and is turned back on the next morning. If there are evening, or night meetings at City Hall, the electricity is reportedly kept on until midnight. 3) Most, if not all offices and meeting rooms in City Hall have motion sensor switches so that individual rooms are lit only when occupied. 4) Lighting has been reduced by removing bulbs throughout City Hall. 5) Ancillary electrical appliances, i.e., computers, copiers, coffee pots, etc., are turned off when not in continuous use, or have been eliminated. Comparison of monthly electrical consumption figures from July-March FY 2000-2001 (prior to instituting conservation measures) with July-March FY 2001-2002 (after conservation measures instituted), shows decreases in usage year-over-year of 20-42% in seven of the nine month-long periods, and increases in usage of 25 and 44% in 2 periods (see Attachment). According a City Management Analyst, the two monthly increases were due to an unusually large number of night meetings at City Hall in those two months.

Natural gas usage (primarily for space heating) was also compared for the same time periods. Usage decreased in 6 of the months by 6-88%, and increased in 3 of the months by 25-72%.

Energy usage data was also made available for Fire Station #1. However, the data were incomplete, and comparisons could only be made for four of the month-long periods. Usage decreased year-over-year in three of the periods by 10.5-29%; usage increased in one month by 46%.

**Data Gaps:**

Each City facility gets a bill from SDG&E, so energy consumption figures should be available from all City facilities for analysis. If SDG&E can not, or will not do year-over-year comparisons, then the City's Management Analysts may have to do it.

**Recommendations:**

- 1) Conduct an energy audit at each City facility to assess energy use patterns. The audits should be conducted by SDG&E, or a private consulting firm. Results of the energy audit will likely indicate areas where additional energy usage efficiencies may be realized. This process might be considered as a test implementation of an Environmental Management System.
  
- 2) Explore the possibility of dividing City Hall into electrical zones so that only public meeting areas may be lit for evening meetings, rather than the entire complex. Also, modify the procedure for keeping the power on for night meetings, so that when a meeting finishes at 9:30 PM, for example, the power can be turned off manually, rather than waiting for a timer to turn everything off at a preset, later time.
  
- 3) Ask City staff for additional energy-saving suggestions related to their own areas within City Hall.
  
- 4) Explore alternate methods of providing a suitable work environment for City staff, e.g., sky lights in work areas to further reduce lighting costs, raising the thermostat temperature on warm days to reduce the need for air conditioning, lowering the thermostat on cool days to reduce the need for heating, etc.

### 3) Topic: Public Works Department Vehicles

#### **Background:**

The Public Works Department operates approximately 80 vehicles, ranging from standard passenger cars and pick-up trucks, to specialized vehicles like fire engines and storm drain vacuum trucks. Five of the standard vehicles are dual-fuel, i.e., capable of running on compressed natural gas (CNG), as well as conventional motor fuels. Most of the vehicles are parked in open lots around City Hall.

#### **Existing Practice:**

Routine vehicle maintenance is carried out by City employees. The Public Works Department recycles waste oil, and other vehicle fluids as much as possible. They use recycled motor oil, rather than new oil, in City vehicles wherever possible. Department policy is to purchase green whenever possible. It is unclear whether these practices are fully implemented City policy, or reflect the attitude of the current Public Works Director.

#### **RECOMMENDATIONS:**

- 1) Continue purchasing green. Insure that this is City policy that will continue in spite of any departmental management and/or staff changes.
- 2) Operate City vehicles as long as is practicable. This must be guided by staff recommendation. One change that would help lengthen the service life of City vehicles would be to better protect them from the corrosive effects of salt air. This might be accomplished by a) moving the vehicle storage area away from the near coastal area at City Hall, or b) construction of a sheltered storage/maintenance facility. The timing of this decision is important, as the current storage area is the City's first choice for the new library.
- 3) As City vehicles reach the end of their useful service lives, replace them with dual-fuel, or alternative fuel vehicles where possible. To facilitate the transition, we recommend a pilot program to evaluate whether other currently available alternative fuel vehicles, such as the gas/electric hybrids, might also provide cost-effective functionality to fulfill City needs. The pilot program could include from one to five additional alternative fuel vehicles. As a practical matter this means only the passenger cars and pickup trucks. At the same time, encourage vendors of other types of vehicles, i.e. fire engines and vacuum trucks, to make available alternative fuel versions of their products. Only if they hear it from enough potential customers, will there be any incentive to produce new models.

- 4) The City of San Diego recently received a \$17 million grant to build and operate an alternative fuels center (see Attachment). The facility will offer an educational program for school children and other community members, as well as serve as a alternative fuels fueling station. The City of Encinitas might seek to join the project with San Diego in one of several ways including: financial support, using the facility to fuel or service its own alternative fuel vehicles, or seek grant money to operate a North County alternative fuels station. One obvious course of action would be to contact Shell Oil Company, operator of the CNG station on Encinitas Boulevard, to explore their interest in expanding that facility. As the City of Encinitas acquired more alternative fuel vehicles, they could not only become their own best customer, they would set the example for their citizens and other cities.

<b>4) Topic: Small Gasoline Engines (Leaf-blowers)</b>
--

**Issue:**

Regulation of use and emissions of small gasoline engines.

**Justification:**

As automobile and truck emission standards become increasingly stringent, the exhaust from the small gasoline engines in gardening equipment, scooters, leaf blowers, etc. contributes an increasing percentage of urban air pollution. Problem gases include the usual culprits of carbon monoxide, hydrocarbons, and oxides of nitrogen. Because most of these emission sources are pre-emptively regulated at the State and Federal level, the city's role in controlling them is quite limited. However, as will be noted below, the city does have several specific opportunities to protect the health of its citizens.

**Problem:**

In this context, noise pollution poses at least as significant a problem as exhaust emissions.

**Background:****Existing Practice/Policy:**

Currently, 21 California cities have elected to ban leaf blowers in residential areas, whereas the vast majority, including Encinitas, permit them.

**Assessment:****Data Gaps:****Recommendations:**

- 1) Since vehicular and nonvehicular exhaust emissions are regulated at the Federal and State level, the City of Encinitas has no recognized jurisdiction over them. However, the city can and should join other local governments in lobbying for stricter noise and emissions standards for these sources.
- 2) One distinct class of small gasoline engines, those used in leaf blowers, has been singled out in several cities. Since leaf blowers generate inordinate amounts of noise, direct emissions, and airborne dust and particulates, it is reasonable to require the city's maintenance contractors to consider other methods, such as manual sweeping and raking, and to use only the lowest-noise, lowest-emission technology available. In residential areas, operation should be restricted to standard workday hours, such as 8 a.m. to 5 p.m.

- 3) The City can also ban gasoline-powered scooters from its sidewalks, for safety, noise, and air quality reasons, although it may have to permit them on its streets.

<b>5) Topic: Firescaping</b>
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**Issue:**

Preventing Wildfires and Reducing the Rate of Spread, Intensity and Damage

**Problem:**

Inappropriate flammable vegetation types and poor management practices contribute significantly to the rate of spread and intensity of wildfires, and to the amount of damage and loss of both property and life caused by wildfires.

The most devastating local example is the Harmony Grove Fire of October 21, 1996. Residences with flammable and dead vegetation adjacent to exterior walls and overhanging wood roofs and decks readily ignited, leading to the loss of structures while fueling the spread of the fire. Burning palm frond bases that were windblown ignited yard furniture in an enclosed residential atrium at Sea Point Tennis Club over 800 feet from the burning front of the fire. Firebrands are burning embers produced by wildfire which are lifted high into the air and carried beyond the fire front. Firebrands are one of the major causes of home loss due to wildfire. Invasive non-native plant species such as pampas grass (*Cortaderia selloana* and *C. jubata*) and eucalyptus tree species occurring in dense stands in native plant areas also contributed to the spread of the Harmony Grove Fire.

**Justification:**

The protection of lives and structures from loss by fire in the City of Encinitas is one of the prime responsibilities and concerns of the City. The flammable characteristics of plants, such as many eucalyptus and pine tree species, are readily known. Many plant species have been identified and classified based on their known response to fire.

In the past couple years many eucalyptus trees have been killed or severely damaged due to insect pest infestations such as the Redgum Lerp Psyllid and the Eucalyptus Long-Horned Borer. Eucalyptus trees are often planted in dense stands, as property boundary line demarcations or as windbreaks. These trees contribute significantly to standing fuel loads.

Many native plants in natural areas can burn readily if ignited. That is why there are guidelines and standards for fuel modification zones at the wildland/urban interface. Flammable plants and unmanaged vegetation at some distance from the wildland/urban interface can also contribute to fuel loads and become ignition sources for spot fires to start from firebrands.

**Existing Policy/Practice:**

The City of Encinitas currently requires new developments subject to fuel modifications to follow " Guidelines for Planting in Developments Subject to Fuel Modification" (See Attachment I). In addition the City follows the County of San Diego Ordinance No. 9111

Amending Appendix II-A of the County Fire Code Relating to Wildland/Urban Interface Standards (See Attachment I).

Goal 3 of the Resource Management Element of the Encinitas General Plan states, " The City will make every effort possible to preserve significant mature trees, vegetation and wildlife habitat within the Planning Area. (Coastal 30240)"

**Data Gaps:**

There is currently no detailed mapping of locations of planted dense tree stands or locations of highly flammable vegetation adjacent to developed residential and commercial areas. This mapping could be done in conjunction with mapping invasive non-native plants. This information would be useful if applying for grant funds and for planning long-term control and fuel reduction efforts on publicly owned property.

**Recommendations:**

1) Limit plant choices in close proximity to City facilities to low flammability plants and implement appropriate vegetation control and maintenance measures, such as proper plant location and density control of flammable plants. This can be readily accomplished as part of normal planning and ongoing maintenance work.

2) Thin dense tree stands. Dead or failing trees should be removed and replaced with appropriate tree species at appropriate densities.

3) Remove " fuel-ladders" as part of maintenance efforts. " Fuel-ladders" are plantings that extend uninterrupted from the ground level to the canopies of trees. " Fuel-ladders" include the dried frond bases on the trunks of Mexican Fan Palms (*Washingtonia robusta*) which can be removed by a pruning technique called " skinning" .

4) Remove flammable invasive non-native plants from natural habitats. This will improve the quality and quantity of native habitat and reduce and/or prevent the further spread of these plants while reducing the risks from wildfire.

5) Incorporate firescaping guidelines into City landscaping practices and contracts and make this information readily available to the community. Every City facility, especially the fire stations and parks, should be landscaped utilizing recognized firescaping principals.

6) Use portions of the following example documents as a basis for Encinitas' guidelines: City of San Diego' s Guide to Environmentally Sensitive Brush Management and Environmentally Sensitive Erosion Control, the San Elijo Lagoon Conservancy' s " Guide to Protecting Your Home from the Threat of Wildfire" and the Rancho Santa Fe Fire Department' s " Desirable Tree List" (See Attachment II). Other sources of information include local examples of Firescape Gardens located at Quail Botanical Gardens, the Harmony Grove Fire Station and the Los Jilgueros Preserve in Fallbrook.

## **Appendices:**

### Appendix I.

Guidelines for Planting in Developments Subject to Fuel Modification.  
County of San Diego Ordinance No. 9111 Amending Appendix II-A of the County Fire Code Relating to Wildland/Urban Interface Standards.

### Appendix II.

City of San Diego' s Guide to Environmentally Sensitive Brush Management and Environmentally Sensitive Erosion Control.  
San Elijo Lagoon Conservancy' s " Guide to Protecting Your Home from the Threat of Wildfire."  
Rancho Santa Fe Fire Department' s " Desirable Tree List" .

<b>6) Topic: Guidelines for New Design and Redesign of Existing Structures</b>
--

**City Department Responsible:**

Public Works, Engineering, Community Development, Community Services

**Problem/Opportunity:**

Planning of new facilities and the redesign, retrofitting or remodeling of existing facilities offer an opportunity for the use of sustainable design. Application of sustainable design would benefit the City and region with long-range savings as well as the educational principles, cultural and health benefits offered by such environmentally integrated designs.

**Recommendations:**

- 1) Review the specification manuals used by City departments (such as “The Green Book” or Construction Specifications Institute (CSI) specification formats) concerning materials and methods to be used in new and remodeled facilities in order to evaluate often used, pertinent specifications on a “green index” for environmental sustainability.
- 2) Set up a design checklist and/or audit process to evaluate proposed designs or redesigns of city facilities. This check list would include the following factors:
  - Site selection that minimizes (or generously compensates for) ecological disruptions. These disruptions would be characterized as:
    - a) Use of land where natural topography and drainage patterns must be severely altered to accommodate the proposed use;
    - b) Use of land that is important to an ecological process such as water courses, important habitat areas or corridors; and
    - c) Large centralized hubs that require commuting and the resulting problems of air pollution and parking.
  - Integrated waste stream management
  - The life cycle costs of materials and maintenance associated with the design and the resulting health or ecological benefits (or damages) to the community.
  - Encourage use of daylighting for internal illumination.
  - Encourage use of passive heating and cooling
  - Water and Energy conservation measures
  - The use of local or native materials where possible and appropriate, including both building and landscaping materials.
  - Building and landscape design that is sensitive to and takes advantage of:
    - a) Psychological benefits of connections to outside air, daylight and views;
    - b) Aesthetic generated by regional climatic realities;
    - c) Integrates locally occurring materials and acknowledges the region’s original natural condition along with it’s various overlapping histories.

- 3) As a method of measuring and evaluating this information it is recommended that the city explore the use of a green building certification program such as Leadership in Environmental Design (LEED), the U.S. Green Building Council ([www.usgbc.org](http://www.usgbc.org)) or the International Performance Measurement & Verification Protocol (IPMVP) ([www.ipmvp.org/ipmvp\\_det.html](http://www.ipmvp.org/ipmvp_det.html))

## 7) Topic: Invasive Non-Native Plants and Algae

### **Problem:**

Numerous invasive non-native plant species have become established throughout the City of Encinitas and the County which are degrading the quantity and quality of our natural habitats by outcompeting and displacing native plant communities. Invasive non-native plants also negatively impact property by exacerbating flood damage (via debris jams), enabling out of season wildfires that disperse more rapidly, increasing water consumption, degrading pasture and agricultural lands, and limiting recreational use.

Conspicuous examples of aggressive terrestrial non-native invasive plants include giant reed (*Arundo donax*) and pampas grass (*Cortaderia selloana*), which are large plants that spread rapidly forming dense stands of vegetation that are a fire and flood risk, and reduce the recreational access and enjoyment of our open spaces.

*Caulerpa taxifolia* is an extremely invasive aquatic saltwater alga that has so far only been discovered in San Diego County within Agua Hedionda Lagoon. Once established it grows rapidly and can form a dense smothering blanket on any surface that displaces the native plants and animals. Sources of infestation are most likely through release of fragments from private aquariums. If *Caulerpa taxifolia* is not successfully identified and controlled it will threaten the marine ecosystems of the Pacific coastline as has occurred in the Mediterranean.

### **Background:**

Non-native plants are those that have been introduced from other locations and occur beyond their natural range. Invasive plants are those that spread into areas where they are not native (Rejmanek 1995) or species that displace natives or bring about changes in species composition, community structure or ecosystem function (Cronk & Fuller 1995, White et al. 1993). The focus of this discussion is on non-native plant species that are also invasive, although not all non-native plants are invasive.

In contrast to invasive non-native plant species, a native plant species is one that occurs naturally in a particular region, state, ecosystem, and habitat without direct or indirect human actions (Federal Native Plant Conservation Committee 1994). Native plant species have evolved in a community that includes competitors, pests, grazers, and diseases, and so the species composition and productivity of native plant communities is controlled naturally. Non-native species lack many of these natural checks, and can, therefore, exhibit rapid uncontrolled growth and wide dispersal. 17% of the North American flora, and as much as 33% of some state flora are composed of plants that are non-native species (U.S. Dept. Transportation, Federal Highway Administration 2000).

**Justification:**

Management and removal of these invasive non-native plants will significantly improve the quality and quantity of our natural habitat, will increase the recreational use of the land, and will help slow the further spread of these plants. Removal of large stands of invasive plants will reduce the risk of wildfire, reduce the risk of catastrophic floods, lessen soil erosion in riparian areas, and reduce water consumption. If these plants are not actively eliminated in the short term, they will continue to spread and create a far more damaging and expensive problem in the future. Furthermore they may increase to the point that control becomes unfeasible. The rate of spread of some invasive non-native species has been rapid, for example, yellow star thistle (*Centaurea solstitialis*) has expanded in California (mostly north and central) from 1.2 million acres in the late 1950s to 7.9 million acres in 1991.

The issue of invasive non-native plants is so important that on Feb 8, 1999, President Clinton signed Executive Order No. 13112 "To prevent the introduction of invasive species and to provide for their control and to minimize the economic, ecological, and human health impacts that invasive species cause." Invading non-native species in the United States cause major environmental damages and losses adding up to more than \$138 billion per year (Pimentel et al., 1999). Among factors contributing to endangered species loss, non-native invasions are the second greatest factor after outright habitat loss. About 42% of the species on the Threatened or Endangered species lists are at risk primarily because of non-indigenous species.

**Existing Policy/Practice:**

GOAL 10 of the Resource Management Element of the General Plan states that: The City will preserve the integrity, function, productivity, and long term viability of environmentally sensitive habitats throughout the City, including kelp-beds, ocean recreational areas, coastal water, beaches, lagoons and their up-lands, riparian areas, coastal strand areas, coastal sage scrub and coastal mixed chaparral habitats. (Coastal Act/30230/ 30231/30240). There is currently no comprehensive City policy that addresses the restoration of native habitat through the control of invasive non-native plants. 'Weeds' are removed by landscape maintenance crews contracted by the City, but no guidance exists specifically for removal of invasive non-native plants or for the identification of desirable native plants to be protected from removal. The focus of landscape management efforts have been on high use parks. Since natural habitats are not maintained, invasive non-native plants are spreading and are becoming a serious problem.

The possession and sale of *Caulerpa taxifolia* was banned by the State of California in September 2001.

**Assessment:**

The California Exotic Pest Plant Council (CalEPPC) has identified the invasive non-native plant species that are the most problematic in California (Attachment I). This list categorizes plants by their threat – with List A being the most invasive, and List B those of lesser invasiveness. The most threatening invasive non-native plants vary by region throughout the State. The top ten most problematic invasive non-native plant species in Encinitas, as determined by this Committee, are described in Table 1.

**Table 1.** List of the ten most problematic invasive non-native plant species within the City of Encinitas taken from the CalEPPC List of Most Problematic Non-Native Plants in California (Attachment I). Plant species are listed in alphabetical order. *Caulerpa taxifolia* has not been found within coastal habitat in the City of Encinitas.

Plant Species	Common Name	CalEPPC List <sup>1</sup>	Comments/locations
<i>Acacia</i> species	Acacia	More info	Generally in riparian and adjacent areas
<i>Arundo donax</i> <sup>2</sup>	Giant reed	A-1	Riparian areas, drainages, around wetlands
<i>Carpobrotus edulis</i>	Iceplant, sea fig	A-1	Coastal bluffs, sand dunes, escapee from gardens in many areas
<i>Cortaderia selloana</i> & <i>C. jubata</i> <sup>2</sup>	Pampas grass, jubata grass	A-1	Coastal dunes, coastal scrub, riparian, drainages, wetlands, horticultural
<i>Foeniculum vulgare</i>	Wild fennel	A-1	Grasslands, riparian, disturbed
<i>Lepidium latifolium</i> <sup>3</sup>	Perennial pepperweed/ tall whitetop	A-1	Currently only known at San Elijo lagoon – riparian, wetlands
<i>Myoporum laetum</i>	Myoporum	A-2	Coastal riparian, horticultural
<b>Ricinus communis</b>	Castor bean	B	Coastal riparian, drainages, disturbed areas - TOXIC
<i>Schinus terebinthifolius</i> & <i>S. molle</i>	Brazilian & Peruvian pepper tree	B	Riparian, horticultural, disturbed areas
<i>Tamarix</i> species <sup>2</sup>	Salt cedar/tamarisk	A-1	Riparian areas, wetlands, drainages

<sup>1</sup> A-1 = most invasive wildland pest plants, widespread; A-2 = most invasive wildland pest plants, regional; B = wildland pest plants of lesser invasiveness.

<sup>2</sup> Currently proposed for listing as a CA Noxious Weed, CA Dept. of Food and Agriculture, probably List B (see below). Public notice of these additions was published 8/2/2002 and should be approved after a public comment period ending 9/16/2002.

<sup>3</sup> List B CA Noxious Weed, CA Dept. of Food and Agriculture. This includes species that are widespread and at discretion of County Agriculture Commissioner to determine if eradication is feasible. SD County Agriculture has formed a Weed Management Area that is specifically targeting the eradication of *L. latifolium* from the County.

**Data Gaps:**

The general distribution of the most problematic invasive non-native plants (e.g. *Arundo* and pampas grass) is known qualitatively, but a detailed mapping of their distributions and acreage has not been done and is needed in order to develop and implement a plan for their management and removal. This information is essential in securing funding and in planning successful long-term control efforts.

**Recommendations:**

- 1) Ban the use of targeted invasive non-native plants in the landscaping of all City properties. Targeted invasive non-native plants should include at a minimum the ‘ Top Ten Most Problematic Invasive Non-native Plants in Encinitas’ identified by this committee (Table 1). Ideally the target list would include all plants on the California Exotic Pest Plant Council List of Exotic Pest Plants of Greatest Ecological Concern in California (Attachment I).
- 2) Adopt a Weed Abatement Code or similar policy to provide a comprehensive policy for the identification and abatement of targeted invasive non-native plants on City property (for an example see City of Richmond Weed Abatement Code, Attachment II).
- 3) Require new housing and commercial developments to avoid the use of targeted invasive non-native plants in their landscaping.
- 4) Initiate an eradication program for pampas grass (*Cortaderia selloana*) and giant reed (*Arundo donax*), two of the most problematic invasive plants on City properties. Infested properties adjacent to wildlands should also be treated where possible. This program should be carried out in a coordinated manner with other Cities and entities, preferable working from the top of the watershed towards the bottom to avoid re-infection of downstream areas from upstream sources. Mapping of non-native plants to be eradicated will aid in securing funding, estimating control costs, and carrying out effective long-term efforts. High priority areas for control include the drainages that lead into San Elijo Lagoon, Batiquitos Lagoon, and lower Cottonwood Creek.
- 5) Support the efforts of and actively work with the San Elijo Lagoon Conservancy, the Cottonwood Creek Conservancy, the Escondido Creek Conservancy, and the Batiquitos Lagoon Foundation in the removal of invasive non-native plants. The City should play a role in encouraging private property owners adjacent to natural lands or wildlands to avoid the use of invasive non-native plants.
- 6) Discourage the sale of targeted invasive non-native plants (see Table 1) within the City of Encinitas to prevent future introductions.
- 7) Promote community awareness on the invasive algae *Caulerpa taxifolia*. The State of California banned the sale and possession of several species of *Caulerpa* on September 24, 2001. However, awareness of what the plant looks like and where to report any new sightings in the coastal waters of Encinitas is still a very important task that should be encouraged by the City of Encinitas. Information on *Caulerpa taxifolia* and how to obtain public outreach materials is listed in Attachment III.

- a) Post *Caulerpa* information posters at all beach access points, lifeguard stations and nature centers.
- b) Distribute brochures and posters to local dive shops, aquarium shops, bait and tackle shops and schools.
- c) Support and participate in public events to look for this algae and to promote public awareness of the issue.

**Implementation (policy, resolution, etc):**

Changes will potentially be required to contracts, the Municipal Code, and/or the General Plan. Grants are available that can be used for native plant restoration through the removal of invasive non-native plants. Attachment IV lists several appropriate grant opportunities. In addition, the City should organize community removal days to involve the community and make use of volunteer labor.

Watershed based control of invasive non-native plants will require the City to participate in joint projects and partnerships. These programs may involve other cities, conservation groups, watershed networks, Resource Conservation Districts, and Weed Management Areas. The City is already making progress towards this level of cooperation as it recently signed an MOU to work with the City of Escondido, the Escondido Creek Conservancy and San Elijo Lagoon Conservancy.

**Attachments:**

- I. California Exotic Pest Plant Council List of Exotic Pest Plants of Greatest Ecological Concern in California
- II. City of Richmond Weed Abatement Code
- III. Information on *Caulerpa taxifolia*
- IV. Grant opportunities for invasive plant removal efforts

## 8) Topic: Landscape Maintenance: Integrated Pest Management/Pesticide Use

### **Definitions:**

Integrated Pest Management (IPM) uses pest prevention and mechanical and cultural methods in landscape maintenance. Pesticides (herbicides and insecticides) are used only after monitoring indicates they are needed according to established guidelines, and treatments are made with the goal of removing the target organism. Pest control materials are selected and applied in a manner that minimizes risks to human health, beneficial and non-target organisms, and the environment.

### **Present Situation:**

The City of Encinitas currently employs many integrated pest management methods in the maintenance of City lands. However, the City of Encinitas does not currently have a formal IPM program or specific guidelines to follow that indicate what methods should be used and a preferred pesticide use list. The City is constantly striving to improve its environmental practices and could do so through a formalized and widely used program.

### **Justification:**

Using IPM practices and reducing pesticide use on City maintained lands will control the rate and type of chemicals being applied, and will reduce the total chemical load. This will reduce potentially harmful impacts to humans (applicators and recreational users), wildlife, beneficial organisms, and the environment.

### **Recommendations:**

- 1) Practice the principles of Integrated Pest Management to the maximum extent possible on City maintained land. Establish guidelines for IPM practices. This may be a stand alone document or ideally would be part of comprehensive sustainable landscaping program for the City of Encinitas that would include planning, sighting, designing, constructing and maintenance of grounds and landscapes owned by the City.
- 2) Eliminate the use of the most hazardous pesticides. This can be achieved by using pesticide hazard categories developed by other cities or organizations or by having an assessment carried out on the pesticides used by the City (Attachment I). Generally pesticides are classified from Tier 1 (greatest potential hazard) to Tier 3 (least potential hazard). Tier 1 herbicides should be targeted for elimination.
- 3) Reduce the use of all pesticides through IPM practices.
  - a) Monitor the types and amount of pesticide used by the City.
  - b) Consider setting a pesticide reduction target, such as an overall pesticide use reduction of 30% by 2006.
  - c) Investigate and use alternative pest management strategies to reduce pesticide use. Alternatives could include: pest prevention techniques like mulching and using pest-resistant species, mechanical pest control techniques like weeding torch, steam weeding, radiant heat weeder, and hand pulling; weed barriers (geotextile fabric installations, mulch), hard edges (materials such as recycled plastic lumber are

effective barriers preventing weed creep into plant beds); alternative chemical controls like neem oil products, active bacillus products and potassium bicarbonate products; bio control (beneficial insects); and increased plant density.

- 4) Institute a pilot program to make one or more City parks or other maintained areas completely pesticide free. Different IPM techniques could be evaluated at these pesticide free parks to determine how effective they are. The program would also be a valuable tool for educating the public on the efforts of the City to reduce pesticide use and the potential impacts to humans and the environment.
- 5) Publicize the City's efforts to use IPM and to reduce pesticide use.
- 6) Encourage the community to follow the City's example in using less toxic pesticides and reduced amounts, and in employing IPM practices. Consider adopting a community IPM program.

**9) Topic: Multiple Habitat Conservation Plan (MHCP) and Encinitas Subarea Plan**

**Problem:**

The Multiple Habitat Conservation Program (MHCP) [ and the Encinitas Subarea Plan (ESP)] is a major, regional natural habitat conservation program, with a 50-year commitment, that challenges the City to plan cooperatively beyond its jurisdiction, at a regional level. The basic rationale of the MHCP makes good sense, but the County has not had enough time or funds to generate the data that are really needed to provide a stronger foundation for the MHCP. The framework of the MHCP and underlining assumptions are overly simplistic, few data are presented, and the wrong alternative was selected to be the Preferred Alternative in the DEIS/EIR. The MHCP's Preferred Alternative (Alternative No. 2 – Focused Planning Area No. 2) is seriously flawed because we do not know the consequences (impacts) of how the “take authorized” growth will be played out. The hidden cost of selecting Alternative 2 is that the cities and public will incur the cost of increased year-round urban runoff from the increased impervious cover generated by the enabled development. Hence, it is in conflict with the new Storm Water NPDES Permit (CAS0108758) issued by the SDRWQCB (2/21/01). Year-round urban runoff facilitates water quality impairment, colonization and dispersal of invasive exotic plants, degradation of riparian communities, contaminant/nutrient loading, lagoon degradation, and beach closures. The proposed MHCP's Preferred Alternative No. 2 conserves only 66% of the natural habitat. Alternative No. 3 – Biological Core and Linkage Area – the Biologically Preferred Alternative, should have been selected as the MHCP's Preferred Alternative, because it conserves 84% of the natural habitat and minimizes the increase in impervious cover! Some of the more significant problems are identified below (additional problems are described in **Attachment 1**):

1. SANDAG (1999) has projected that the population of each of the cities comprising the MHCP area and each of the Subarea Plans are projected to grow substantially by the year 2020 [i.e. Encinitas (25%), Oceanside (39%), Vista (30%), Carlsbad (97%), Escondido (22%), San Marcos (93%), and Solana Beach (19%)]. This growth will overwhelm the viability of many of the same habitats the MHCP is attempting to conserve. This growth will increase the amount of impervious cover by a similar percentage and, therefore, increase the flow of year round urban runoff loading (i.e. trace metals, pesticides, hydrocarbons, bacteria, nutrients), which will consequently degrade the ecological performance of the riparian/creek habitats even further. Since most of the creeks within the MHCP are already designated by the SDRWQCB (2002) as Category 1 Impaired Waterbodies, this additional population growth is a significant problem.

2. The following two MHCP objectives cannot be achieved:

- “Establish and maintain a balance between preservation of natural resources and regional growth and economic prosperity.”
- “Develop and implement a program for the conservation and management of habitats of federal and state endangered, threatened, or rare species, thereby

reducing the human related causes of species extirpation with the MHCP study area.”

The “balance” has already been exceeded and the proper ecological functioning of our natural resources is not being sustained. There is a significant, linear relationship between the amount of impervious cover in a subwatershed and stream condition (Schueler 1995). If the impervious cover within a subwatershed exceeds 10% then the adjacent streams become rapidly degraded. The current MHCP strategy will actually create more impervious cover. The amount of impervious cover in 3 subwatersheds in Encinitas is currently estimated to range from 19.1 – 32.7% (CWN 2002).

3. The ESP only presents one alternative out of the 4 presented in MHCP for the City to evaluate; the MHCP’s Preferred Alternative. The ESP does not consider the MHCP’s Biologically Preferred Alternative, Alternative No. 3. Biological Core and Linkage Areas at all. This burdens the City of Encinitas with the task of trying to figure out what the ESP would look like if the MHCP’s Biologically Preferred Alternative had been written.

4. The MHCP is based on simplistic aerial surveys with minimal or no ground truth information, and promises of future data acquisition. The proposed monitoring program, designed to track the status of population abundances of sensitive species and effectiveness of management efforts, lacks current baseline data.

5. The adjacent North County MSCP will not be completed for another 1.5 - 2 years (North County Times 7/25/02), even though a major portion of this MSCP lies within the same watersheds (i.e. the Carlsbad Hydrologic Unit) addressed by this MHCP.

#### **Justification:**

The MHCP is one of several major habitat conservation programs being developed for the entire San Diego County; the MSCP in South San Diego County (completed), the MSCP in North San Diego County (just started), the MHCOSP in East San Diego County (not started), and the MHCP in North San Diego County (completed draft EIR/EIS) (**Figures 1-1 and 1-2**). The MHCP program includes a detailed description of the plan (Vol. 1), vegetation and ecological communities, and species accounts (Vol. 2), individual Subarea Plans for each city within the boundary of the MHCP, and a draft EIR/EIS. The draft Encinitas Subarea Plan is an integral part of the MHCP.

Implementation of this program will assign significant responsibility to the City of Encinitas, but its overall success will be dependent on the performance of the whole MHCP and at the regional level (MSCP).

#### **Existing Practice/Policy:**

The MHCP/ESP appears to be basically compatible with the City’s General Plan: Resource Management Element goals and policies. Sec. 2.3 of the ESP describes which existing City documents, codes, and policies are relevant to implementation of the MHCP and how they would need to be amended or supplemented to implement the ESP. Applicable documents and elements include the following:

**City of Encinitas General Plan.**

- Land Use Element. Goal 8 and Goal 9.
- Public Safety Element.
- Resource Management Element.
- Recreation Element. Goal 1 and Goal 2.

**Zoning Ordinance.**

Districts and Overlay Zones

**Grading, Erosion, and Sediment Control Ordinance.****Fire Ordinance.****Encinitas Ranch Specific Plan.****Existing Facility/Program/Service:**

The Multiple Habitat Conservation Program (MHCP) is a new regional, habitat preservation program sponsored by the U.S. Fish and Wildlife Service and by the SANDAG (2001). The MHCP is a multiple-jurisdictional planning program designed to create, manage, and monitor an ecosystem preserve in northwestern San Diego County. The draft EIS/EIR that evaluates the MHCP and ESP is currently under final review. The purpose of this joint EIS/EIR is to evaluate the potential for environmental effects from the following proposed actions:

- Adopting the MHCP and five Subarea Plans for the cities of Encinitas, Carlsbad, Escondido, Oceanside, and San Marcos.
- Issuing “incidental take” permits for covered species pursuant to Sec. 10(a)(1)(B) of the Endangered Species Act (ESA) and Sec. 2800 et seq. of the California Fish and Game Code.

The Encinitas Subarea Plan (ESP) (Ogden and Conservation Biology Institute 2001) is a sub-plan of the MHCP that was specifically developed for implementation within the boundary of the City of Encinitas. “The ESP comprehensively addresses how the City of Encinitas will conserve natural biotic communities and sensitive plant and wildlife species pursuant to the California Natural Community Conservation Planning (NCCP) Act of 1991 and the California and federal Endangered Species Acts (CESA and ESA). The City may authorize the taking of natural habitats or associated species by public or private projects within its jurisdiction as long as those biological resources are adequately conserved by, and the projects are consistent with and covered by, the provisions of this plan.”

“The planning approach used by the MHCP is intended to replace the existing project-by-project biological mitigation process with comprehensive conservation planning. The current process results in fragmented biological mitigation areas, which by themselves do not contribute adequately to the continued existence of sensitive species or maintenance of natural ecosystem functions. Through a comprehensive conservation program, the MHCP will help resolve problems associated with haphazard and widespread habitat loss and piecemeal mitigation, which have constrained and increased costs for private and public development in northern San Diego County. By identifying priority areas for conservation and other areas for future development, the MHCP will conserve the most biologically valuable areas, while increasing the certainty for development outside the preserve area.”

**Assessment:  
Background.**

The DEIS/EIR for the entire MHCP area presented the following program alternatives and strategies for preservation of different amounts of existing habitat acreage:

- **Alternative 1. Focused Planning Area No. 1:**
  - Coastal sage scrub 60%
  - Chaparral 66%
  - Coastal sage/chaparral mix 80%
  - Maritime succulent scrub 91%
  - Total habitat preserved 65%**
- **Alternative 2. Focused Planning Area No. 2 (Preferred Alternative selected):**
  - Coastal sage scrub 66%
  - Chaparral 66%
  - Coastal sage/chaparral mix 80%
  - Maritime succulent scrub 91%
  - Total habitat preserved 66%**
- **Alternative 3. Biological Core and Linkage Areas (Preferred Biological Alternative):**
  - Coastal sage scrub 89%
  - Chaparral 93%
  - Coastal sage/chaparral mix 95%
  - Maritime succulent scrub 96%
  - Total habitat preserved 84%**
- **Alternative 4. No Action/No Project:**
  - Coastal sage scrub 19%
  - Chaparral 31%
  - Coastal sage/chaparral mix 18%
  - Maritime succulent scrub ?? %
  - Total habitat preserved 30%**

The existing Land Uses and Ownership in the City of Encinitas (**ESP Tables 2-1 and 2-3**) present a major challenge to implementing the ESP. Of the total numbers of acres in the City (12,074 ac), 8,151 ac are Developed, 1,111 ac are Agriculture, 83 ac are Disturbed, 89 ac are Eucalyptus woodland, and 2,640 ac are Natural Habitats. The 2,640 ac of Natural Habitats are owned by 9 different classifications of ownership; for example the City owns 67 ac, the County owns 551 ac, CDFG owns 274 ac, 1,636 ac are private, etc.

### **Preserve Design:**

The proposed ESP will protect 28 sensitive plant species (13 species documented to be present) and 47 sensitive wildlife species (31 species documented to be present) out of a total of 77 sensitive species in the MHCP (**ESP Table 3-2**). The approximate locations of some of the documented sensitive plant and wildlife species (**ESP Figures 3-3 and 3-4**), led to the identification of areas for preservation. The preserve design formally designates Focused Planning Areas (FPA), as shown in **ESP Figure 3-5**. The preserve is composed of “hardlined” and “softlined” areas. Hardlined areas are properties that were designated in the past as open space in the process of permitting various development projects. Softlined areas are properties not previously sanctioned as open space. Natural habitat areas that are constrained from development due to their steep slope are protected in the General Plan and zoning ordinance standards, but are not part of the ESP. Also some protected areas are managed by various home owner’s associations (HOAs). In summary, the City of Encinitas is comprised of 12,074 acres, 22% (2,640 acres) of which are natural habitats. 2,358 acres of natural habitats occur within the Focused Planning Area, and 2,173 (82%) of these acres is proposed to be preserved (2,088 ac of which are located within the Biological Core and Linkage Area, **ESP Table 4-1a**).

By conserving these species in protected areas, the City will be given the authority for “take authorizations” of them in unprotected areas. In addition, once the whole MHCP is approved, the City will be given “take authorizations” for all species on the MHCP covered list, because these species will be “conserved” elsewhere in the MHCP area. The ESP also conserves critical locations of the following 8 plant species and 9 animal species:

- San Diego thornmint
- Del Mar manzanita
- Encinitas baccharis
- Orcutt’s spineflower
- San Diego barrel cactus
- Orcutt’s hazardia
- Nuttall’s lotus
- Nuttall’s scrub oak
- Saltmarsh skipper
- California brown pelican
- Osprey
- American peregrine falcon
- Light-footed clapper rail
- Western snowy plover
- California least tern
- Belding’s savannah sparrow
- Large-billed savannah sparrow

The ESP gives a list of Narrow Endemic Species that are to be protected (**ESP Table 4-3**), a list of recommended native landscaping shrubs that can be used adjacent to protected areas (**ESP Table 4-2**), and a list of common invasive plant species that are to be avoided (**ESP Table 7-1**).

**Environmental Issues:**

*A more detailed review of environmental issues and problems with the proposed ESP and MHCP is given in **Attachment 1**.*

**Data Gaps:**

- The ESP presents only one alternative for consideration, the MHCP's "Preferred Alternative." It does not present the MHCP's "Biologically Preferred Alternative." Consequently, a meaningful assessment is not possible.
- MHCP and ESP habitat maps are based on jurisdictional boundaries, not whole watershed boundaries. Hence, they provide no context at the regional, watershed, or subwatershed level. Major mapping gaps exist because these data will be done in a future MSCP project (North County MSCP), which will not be completed for another 1.5 – 2 years.
- The vegetation and habitat mapping is based on dominant species. Few data are given on community species composition and there is little ground truth information.
- Presence and status of sensitive species in natural habitats within the City is not well documented.
- Since few data are presented on the actual population abundances of sensitive species, it will be difficult to track/monitor performance of the implemented MHCP and ESP.
- Critical habitat and recovery plan maps for endangered species are not included in the mapping or analyses.
- No contingency is given for effects of fire or failed mitigation projects in the proposed conserved areas.
- The quantity and distribution of impervious cover within the City and by subwatershed is not well known.

**Recommendations:**

The proposed MHCP and ESP program describes and would implement an extremely important regional natural habitat conservation strategy; one that the City should support in the future. However, in its present form, this program is unlikely to be successful and may even cause unanticipated environmental impacts. The following actions, prioritized in order of importance, are needed to improve the proposed program and should be required by the City before it accepts this program:

- 1) The ESP should be revised so the City can assess the merit of both the MHCP's Alternative 2 ("Preferred Alternative" [ 66% of natural habitat] ) and Alternative 3 ("Biologically Preferred Alternative" [ 84% of natural habitat] ).
- 2) The City should calculate the percentage of impervious cover in each subwatershed and use the results to interpret the spatial significance of the proposed MHCP and ESP plans.
- 3) The habitat maps should be revised to provide a whole watershed and a regional context for the MHCP report and for the ESP report. The current maps are based

on jurisdictional boundaries, which are not appropriate for an ecological program!  
The ESP and MHCP habitat maps should identify all subwatersheds.

- 4) Since the City is expected to grow by 25% by 2020, where that growth takes place is critical to performance of the MHCP and the ESP. The City's General Plan should be revised to implement the revised MHCP and ESP.
- 5) Habitat acreage information provided is very confusing, and needs to be presented in a more understandable manner.
- 6) The City should coordinate with the adjacent municipalities and the County to assure 100% cooperation can be secured before future implementation is accepted.
- 7) The "unforeseen circumstances" rule should be reevaluated, revised, or deleted.
- 8) A detailed description of the proposed monitoring methodology is needed. Since the MHCP's Biological Monitoring Plan Vol. 2 was not included in the distributed CD of MHCP documents it is not possible for the public to evaluate the adequacy of the contemplated monitoring plan. Success of the ESP and MHCP depends on this monitoring plan!
- 9) Recommended buffer zone widths are too narrow and need to be expanded (see Appendix A).
- 10) The City should evaluate a variety of management structures and not just accept the proposed creation of a MHCP Land Conservancy.

### **Implementation:**

Section 6 Plan Implementation Policies in the ESP provides a detailed discussion of how the ESP will be implemented and managed including the following topics: Implementation policies and actions, implementing agreement, city implementation actions and process, plan amendment process, boundary adjustments and equivalency, annexations, process for adding species, permanent resource protection, relationship to the MHCP, and cooperative MHCP implementation structure. The duration of the ESP is for 50 years! The City will implement the ESP through its land use authority and by taking the following actions:

- Implement an urgency ordinance for the interim
- Amend General Plan Elements: Land Use, Public Safety, Resource Management, and Recreation.
- Amend Encinitas Municipal Code Zoning, Grading, Erosion, and Sediment Control
- Continue current and revise Grading, Erosion, and Sediment Control ordinances
- Continue General Plan Goals and Guidelines.

*The ESP will also commit the City to implement a Cooperative MHCP Implementation Committee Structure to assure that policies, managing, and monitoring implementation is coordinated across all MHCP subarea plans. This structure will include two standing committees, i.e. elected officials, and an advisory group (city staff and stakeholders). The MHCP will establish a nonprofit MHCP Land Conservancy to finance and acquire land, facilitate coordination, and employ a manager. The ESP asserts that, since the City does not have the staffing or expertise to manage the preserve system, the new Conservancy would hire one.*

## 10) Topic: Sustainable Landscaping Program

### **Present Situation:**

While the City of Encinitas currently employs many methods that are important aspects of a comprehensive sustainable landscaping program, there are no formal guidelines that are to be followed by all City staff and departments, landscape architects and contractors, or that can be made available to educate and guide the community.

Sustainability has been defined as follows: "...to meet the needs of the present without compromising the ability of future generations to meet their own needs" (United Nations World Commission On Environment and Development, The Brundtlan Commission, Our Common Future, 1987).

### **Justification:**

City facilities and properties currently include approximately 442 acres and approximately 14,000 trees in parks, viewpoints, a golf course, beaches and access areas maintained by the Community Services Department (136 acres of which are currently listed as undeveloped). The Community Services Department also maintains 8.5-9.5 miles of street medians which include the recently completed downtown streetscaping project. The five fire stations (comprising 3+ acres) have landscaping and trees which are maintained by the Fire Department. Five City facilities with landscaping and trees are maintained by the Public Works Department. These facilities total approximately 3 acres and include City Hall. The Public Works Department also maintains 1-2 miles of street medians and 23,367 trees located in the public right-of-way. This totals over 448 acres and over 37,376 trees.

A formal sustainable landscaping program would ensure that landscape architects, contractors and City staff have specific guidelines to follow from the initial design to construction and continuing to the maintenance phase of all projects. The desired result of this program would be projects that have fewer negative impacts on the environment, use less water, use less pesticides, generate less green waste and have significantly reduced maintenance costs over the life of the project.

### **Recommendations:**

- 1) Create a sustainable landscaping program for the City of Encinitas that specifies how City-owned and managed landscapes will be designed, constructed and maintained. Landscape design, installation, and maintenance contracts would be required to comply with this program and its policies.

**Assessment:**

This section does not present an in depth analysis of all aspects of a comprehensive sustainable landscaping program, because this is a major task. Several topics (i.e. Guidelines for New Design and Redesign of Existing Structures, Integrated Pest Management, Invasive Non-Native Plants and Firescaping) have been treated in depth and are presented as detailed recommendations elsewhere in this report. Other topics are presented below at a preliminary level, but should be treated in much greater detail in a future effort.

The main elements of the Sustainable Landscaping Program should include the following components:

**1) DESIGN, INSTALLATION & MAINTENANCE GUIDELINES**

Create guidelines for the design, installation and maintenance of new facilities and landscaping areas and for the redesign of existing facilities. A specific recommendation has been developed for Guidelines for New Design and Redesign of Existing Structures (See Recommendation #6).

**2) FIRESCAPING**

Identify appropriate landscaping plants for City properties, and provide guidelines for selection, spacing, density and maintenance to reduce highly flammable fuel loads and to slow the rate of spread of potential fires. Specifically, identify appropriate native plants and low-water use plants that have low flammability and fire spread characteristics. Avoid the use of invasive non-native plants and remove them from natural habitat areas.

Incorporate firescaping guidelines into City landscaping practices and contracts and make this information readily available to the community. Every City facility, especially parks and fire stations, should be landscaped utilizing recognized firescaping principles. Refer to the specific recommendations under the issue of Firescaping (Recommendation #5).

**3) IRRIGATION & STORM WATER MANAGEMENT**

Irrigation systems should be designed, installed, maintained and managed utilizing evolving BMPs (Best Management Practices) such as those developed by the Irrigation Association and listed on their website at [www.irrigation.org/about\\_wtrmgmt\\_bmp.htm](http://www.irrigation.org/about_wtrmgmt_bmp.htm) and by the University of California, Riverside for tall fescue lawns (Attachment I). This includes maximizing water use efficiency through the use of uniform, adjustable, low-waste irrigation systems that are operated and monitored by Et (evapotranspiration) irrigation controllers with periodic field operational tests and adjustments. The City is currently utilizing many of these practices as outlined in its " Water Efficient Landscape Program."

Since the industry is constantly developing improved, cost-effective products with higher and more uniform water application efficiencies, the City should monitor these

improvements and acquire those that provide the best applications. Irrigation systems should be based on hydrozones (areas of similar soil, aspect, exposure and plant water requirements). The lowest amount and application rates of water to provide healthy plant material should be utilized.

All of the other principles of xeriscaping (low-water use landscaping) should be followed, including:

- Use native and other drought tolerant plants. However, in some wet locations or along riparian areas such as Cottonwood Creek, high-water use native plants are desirable.
- Reduce the amount of turf, especially in small areas that are narrower than 8 feet wide and/or less than a 1,000 sq. ft. in area. Continue the practice of the Community Services Department to aerate turf once per quarter, to increase water penetration and reduce run-off. Use turf with low water requirements.
- Create on-site water harvesting, retention, infiltration and re-use. City facilities should cause no run-off from a site, including parking lots, unless it is part of a natural watershed. Permeable concrete and asphalt should be utilized to reduce runoff.
- Use organic mulches to slow the rate of water flow and increase the rates of infiltration and absorption.

#### 4) MULCHING/COMPOSTING/FERTILIZATION

The City should continue to reduce and reuse landscape green waste materials through practices such as mulching mowers, and chipping larger green waste to use as mulch in shrub/flower beds and around trees. No green waste generated on a site should be removed from the site, but should be mulched, chipped, spread and reused. This will recycle all of the organic matter and mineral nutrients applied to and produced by the site. This will also reduce the need for supplemental fertilizers and the hauling and disposal of green waste off-site.

Mulching and reuse should be done on-site as appropriate unless the City develops an off-site facility for shredding and composting at a future maintenance facility yard. If supplemental fertilizers are required they should be 100% organic.

#### 5) INTEGRATED PEST MANAGEMENT

Practice the principles of integrated pest management to reduce use of pesticides including herbicides (see Integrated Pest Management - Recommendation #8 for detailed recommendations on this topic). Vigorous healthy plants are less susceptible to insect and disease problems. Weed control should be accomplished by non-chemical means whenever possible, including mechanical removal, mulching, dense low-level plantings to shade or cover exposed soil surfaces and other practices.

## 6) PLANT PALETTE

Revise, update and expand the City' s " Master Plant List" to create a more extensive plant palette species list to be used in the development of all City landscape projects. The plant palette list can be recommended or required for landscaping in new developments and can be used as a guideline for the community. The plant palette should be composed of native plant species and non-native plants that are climatically and environmentally adapted to this region and that are drought tolerant or have a low-water requirement.

The flammability of each plant on the list should be included as part of the required information, as well as mature height and spread and tree setback and clearance distances. Non-native plant species that are invasive or problematic in other ways should not be included, but put on a list of plants not to be used (see Invasive Non-Native Plants - Recommendation #7 for detailed recommendations on this topic). Periodic review and updating of any plant lists should be required.

The use of native plant species and other appropriate non-native plant species will reduce the amount of water required for irrigation while reducing the amount of herbicides and pesticides needed and providing increased habitat for native wildlife.

In some wet locations or along riparian areas such as Cottonwood Creek high-water-use native plants are both desirable and necessary. The plantings at fire stations could include fruit trees, cooking herbs and other edible plants that can be utilized by the Fire Station staff.

## 7) TREES & THE COMMUNITY FOREST

A sustainable community forest requires good initial design and tree selection to ensure the use of appropriate tree species for each site, considering the site limitations along with the tree' s intended functions. It also requires a plan for appropriate management including BMPs.

The plan should be based on goals to be achieved. Typical goals should include at least the following:

- Reduce the urban heat island effect by shading parking lots and buildings. This reduces the production of volatile hydrocarbons and other greenhouse gases while also reducing building cooling requirements and operating costs. A United States Environmental Protection Agency joint study with the Lawrence Berkeley Laboratory showed that since 1900 there has been an increase in the average August temperature of 0.8 degrees Fahrenheit per decade in San Diego (Attachment II). Encinitas and the region may have had a similar increase. This rate was approximately twice the rate of increase for other cities shown in the report. A study in Sacramento reported in the January 2002 issue of Urban Forest Research demonstrated a return of \$2 for every dollar invested in planting and maintaining trees to shade parking lots.

- Sequester carbon by increased tree plantings to offset the local and regional production of carbon dioxide and investigate joining the California Climate Action Registry which charts output and capture of carbon dioxide.
- Increase the amount of tree canopy cover - increased tree canopy cover reduces storm water run-off and can reduce the size and complexity of storm drainage systems. Large canopied trees are more effective than several small canopied trees. " A typical medium-sized tree in coastal southern California was estimated to intercept 2,380 gallons of water annually, a \$5 per tree benefit" (McPherson et.al. 2000) as reported in the July 2002 issue of Urban Forest Research. Increased canopy cover also contributes to improved air quality directly and indirectly through shade and reduced air-conditioning electrical demands. Shade from tree cover can also reduce the potential for skin cancers especially when used around schools and playgrounds frequented by young children. Deciduous trees on the south side of buildings allow for heating through solar radiation which also decreases energy demands and cost.
- Increased diversity of tree species can be used to decrease the number and concentration of highly flammable trees over time, while increasing diversity to prevent the loss of large numbers of trees to potentially lethal outbreaks of insects or diseases such as the Redgum Lerp Psyllid currently devastating several species of eucalyptus trees.
- Age diversity is utilized to insure that tree removals and replacements are ongoing to prevent a loss of canopy cover and to prevent numerous losses of large aging trees over relatively years.
- Improve tree vigor and health by utilizing best management practices including mulching and appropriate approved pruning methods. Overpruning reduces tree vigor and reduces service life while increasing the frequency of the pruning maintenance cycle and thereby increasing pruning costs. Topping is a pruning practice that is extremely damaging to trees and can create potentially hazardous conditions while reducing tree service life. This practice should be prohibited on all publicly owned trees by City Ordinance as recommended by the State of California Government Code Section 53067 Tree pruning: legislative declarations; specifications (Attachment III).
- Have an approved tree list that includes accurate information on the mature size of each tree by species. This list should include mature height, canopy spread, root flare, and flammability. The list should also include specified setback or clearances from buildings, hardscape (sidewalks, streets, curbs and gutters), street lights, traffic and safety lights, signs, and both aboveground and underground utilities to prevent damage to the improvements and/or premature tree removals. Trees should be considered as much a part of the City' s infrastructure as streets and water lines and protected appropriately, including during construction projects.

Additional appropriate goals should be included in a community forest management plan as well as a tracking method to determine if the stated goals are being met. (Much additional information, including numerous cost/benefit studies, are available at the website for the Center of Urban Forest Research <http://cufr.ucdavis.edu/>.)

## 8) MAINTENANCE

Significant man hours and maintenance costs are often spent in size control pruning and spent flower removal on trees, shrubs and perennials that grow larger than the space that they are planted in can accommodate. Over-planting for quick effect is also expensive and requires increased maintenance costs for pruning. Careful specification, selection and design can correct these problems. Some studies have shown that the payback period for removal and replacement of high maintenance plants can be one to two years. There is also a dramatic reduction in the amount of green waste that is generated and that must be handled, cleaned up after and disposed. This can allow maintenance personnel time to work on other projects or do an overall better job of maintenance.

## 9) EDUCATION

Every City landscape project should have an element of public education about sustainability, proper plant selection or decreased green waste generation and recycling. Signage, pamphlets, and displays can all be utilized to help the community learn how to utilize the same techniques. Joint classes or seminars with Quail Botanical Gardens could also be presented.

### **Attachments:**

#### Attachment I:

Irrigation Association' s BMP' s at their website:

[www.irrigation.org/about\\_wtrmgmt\\_bmp.htm](http://www.irrigation.org/about_wtrmgmt_bmp.htm)

University of California, Riverside - Best Management Practices for Irrigation and Nitrogen Fertilization of Tall Fescue.

#### Attachment II:

" Cooling Our Communities - A Guidebook on Tree Planting and Light-Colored Surfacing" , Akbari, Hashem, et.al editors, U.S. Environmental Protection Agency and Lawrence Berkeley Laboratory.

#### Attachment III:

State of California Government Code Section 53067 - Tree pruning: legislative declarations; specifications.

## 11) Topic: Environmental Policy

### **Present Situation:**

Encinitas has developed a reputation for environmental excellence: The “diversion factor” for waste has consistently been above 50%. The program for household hazardous waste is innovative. The use of vehicles powered with compressed natural gas (CNG) shows the City is willing to spend money to improve the environment and experiment with new technologies.

While some of this is driven by legislative mandates, much of it is done simply because it is, “the right thing to do.”

However, the City does not have an overall policy statement on environmental protection. Many organizations find it useful to have such statements to clearly convey the commitment and to make it clear to employees and citizens what is expected.

Further, no one on the staff has been specifically designated as the environmental coordinator to coordinate and follow-up on work in this area.

### **Recommendations:**

- 1) Develop and adopt a comprehensive environmental policy for Encinitas. Further, it is recommended that the policy include the following elements as a minimum:
  - A commitment to continual improvement and prevention of pollution in both the community and the City’s own operations.
  - A commitment to comply with and exceed the requirements of relevant environmental legislation and regulations.
  - A framework for setting and reviewing environmental objectives and targets.
- 2) Periodic review and update of the policy.

Sample policies for other organizations are attached.

It is suggested that initially the policy be adopted by ordinance, and then incorporated in the General Plan at the next update.

### **Justification:**

A strong environmental policy is the cornerstone of an effective environmental management program.

It is also recommended that someone on the staff be designated as the environmental coordinator for the City’s programs.

**Attachment I:**

Sample Environmental Policies from "Implementation Guide for Small and Medium-Sized Organizations," NSF, 2001

## 12) Environmental Management System and ISO 14001

**Issue:**

*Should the City of Encinitas develop an environmental management system (EMS) with the possible goal of ISO 14001 certification?*

**Justification:**

The experience of 23 public entities involved in EPA's initiatives to test the applicability of EMS to the public sector has validated this approach. While there are costs associated with the process, the operational efficiencies and savings have more than offset them.

**Problem:**

*Environmental regulations become ever more complex with greater compliance requirements levied on cities. At the same time, the pressures on the environment become greater due to continued growth within and outside the City. The resources and associated costs needed to respond to these issues continue to increase.*

**Background:**

The International Organization for Standardization (ISO) is a worldwide federation of national standards bodies from approximately 100 countries. ISO was established in Geneva, Switzerland, in 1946 to develop a common set of manufacturing, trade, and communications standards. Standards published by ISO are voluntary. ISO 14000 refers to a series of voluntary environmental standards, of which the cornerstone is ISO 14001, which specifies the contents of Environmental Management Systems (EMS), comprehensive plans for organizations to effectively manage all environmental aspects of their operations. ISO 14001 has auditable requirements that can be objectively assessed by a third-party accredited registrar. Originally designed to help businesses incorporate sound environmental management systems and processes into existing business systems and practices, it has recently been adopted by public entities.

The environmental management framework should identify resources for developing, implementing, measuring, and periodically reviewing an organization's progress toward achieving the principles set forth in its mission statement and environmental policy.

This framework normally includes the following:

- A policy that states a commitment to a specified level of environmental performance.
- A planning process and strategy for meeting this stated performance commitment.
- An organizational structure for executing the strategy.
- Specific objectives and targets.
- Specific implementation programs and related support tools to assist in meeting these stated objectives.
- Communications and training programs to execute the policy commitment.
- Measurement and review processes to monitor progress.

Since 1997, the US EPA, working with the Global Environment & Technology Foundation (GETF), has sponsored two initiatives to help public entities test the applicability and benefits of an EMS. While there are costs associated with implementing the program, they have found that for every \$1 of one time costs, \$4 of annual savings have been identified. Additional benefits identified include:

- Improved ability to meet compliance requirements.
- Increased efficiency, reduced costs and greater operational consistency.
- Improved environmental awareness, involvement and competency throughout the organization
- Better relationships with regulators.

A final report describing the keys to success and lessons learned, and an Implementation Handbook for Local Governments will be published in July 2002. In addition, the EPA is promoting the use of EMSs in government entities through the Public Entity EMS Resource (PEER) Center which will provide EMS information tailored to the unique characteristics of public entities to include technical assistance, mentoring, and training. The EPA will be sponsoring a third initiative for public entities later this year and is looking for municipalities to participate.

**Existing Practice/Policy:**

The City responds to requirements on an as needed basis, the need being established in most cases by the demands of regulators. There does not appear to be a formal feedback process to evaluate on-going programs to see what can be done to improve them.

**Assessment:**

It appears that environmental management and efficiencies of operation could be improved through implementation of a formalized process to evaluate present operations and the establishment of an on-going feed-back mechanism.

**Recommendations:**

- 1) City staff should develop a plan for implementing an EMS in Encinitas.
- 2) City should contact Jim Horne of US EPA to obtain information on participating with EPA in establishing an EMS for Encinitas.

**Implementation:** City staff to research and return to Council with recommendations.

**Indicator:**

Dollar savings identified in implementation of environmental programs. Ability to meet regulatory requirements in the most efficient manner.

### 13) Topic: Establishment of a Permanent Environmental Advisory Board

#### **Justification:**

The maintenance of a healthy local environment is critical to the continuance of the high quality of life associated with Encinitas. A healthy environment is reflected in the health of the community's residents, the desirability of the local neighborhoods as places to live, and benefits the economy through the attractiveness of the community to tourists.

#### **Problem:**

The City Council continually makes decisions on issues which can affect Encinitas' environment. The ability of the Council to fully understand the environmental ramifications of such decisions has not been maximized due to a combination of factors. These include lack of time to study an issue thoroughly, the difficulty in accessing outside experts to provide their perspective, the tendency of people not to recognize environmental loss or impact until the problem is well developed, and the lack of a formal process to hear from the community on environmental aspects of issues.

#### **Background:**

Traditionally, City Councils throughout the state have received analyses and background information from City staff and consultants hired for their particular area of expertise. In addition, for those topics deemed to be of sufficient importance, permanent bodies (commissions, advisory bodies, boards) were established to provide an initial review with recommendations provided to City Councils. These bodies assist in analyzing large amounts of information and in assessing accurately the community's position about an issue. The Planning Commission and Traffic Commission of Encinitas are examples.

Recently, communities have been recognizing that the environment is of such importance that it warrants establishing a separate body to provide advice on environmental issues to elected officials. For example, the City of Santa Monica set up an Environmental Task Force in 1991 which has been meeting monthly since it was formed. It consists of seven environmental experts appointed by the City Council. The group provides input and advice to the Council and City staff on program and policy decisions related to environmental issues. They were responsible for the development of Santa Monica's Sustainable City Program and provide ongoing oversight of the program. Examples of other issues they have addressed include regulating urban runoff, green building guidelines, and air quality issues at the municipal airport.

The City of San Francisco created a Commission on the Environment in 1996. It consists of seven members who serve four-year terms and are appointed by the Mayor. Its mission statement is "To improve, enhance, and preserve the environment and to promote San Francisco's long-term environmental sustainability as laid out in Section 4.118 of the City Charter." The Commission sets policy for the Department of the Environment and advises the City on environmental matters.

**Existing Practice/Policy:**

The Encinitas City Council receives analysis and comment on the environmental aspects of matters it is considering from City staff, consultants and any public comment it receives. In January of 2002 it formed the Blue Ribbon Committee on Environmental Issues. This committee has a six-month time frame to gather information and provide recommendations to the City Council.

**Assessment:**

Independent environmental input to the City Council could be improved.

**Recommendations:**

- 1) Establish a permanent environmental advisory committee akin to the Planning or Traffic Commission. The mission of the environmental advisory committee should be to develop proposed policies and procedures which will sustain the environmental health of the City of Encinitas and to advise the City Council on environmental aspects of issues the Council is considering.
- 2) The committee to consist of at least seven voting members, appointed by the City Council. Members should have expertise in different environmental areas. Two non-voting positions on the committee be established for students from Encinitas who attend a local high school or college.
- 3) Terms for the members to be four years, staggered among the members.

**Implementation:**

City Council direction.

**Indicator:**

Success of the City in meeting environmental regulations

- Maintenance of a diverse, healthy native eco-system
- Individual measurements in each of the areas dealing with the environment.

**References:**

City of Santa Monica Task Force on the Environment Mission Statement  
City of San Francisco Commission on the Environment Mission Statement.

<b>14) Topic: Environmentally Preferable Purchasing Policy</b>
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**Problem:**

Without an Environmentally Preferable Purchasing Policy the City is not maximizing the amount of sustainable, environmentally friendly products it is using. While the City does currently purchase some environmentally preferable products (e.g. recycled paper, recycled motor oil), there is no overall policy or guidance for City Departments. Guidance needs to be provided on what products should be purchased and what cost increases are acceptable to obtain these products. An increase in the use of environmentally preferable products will maximize the City's use of products most beneficial to human and environmental health and will complete the recycling loop. Recycling has not truly taken place until products are used that are composed of recycled materials.

**Justification:**

By using an Environmentally Preferable Purchasing Policy the City will promote both human and environmental health, will help maximize diversion of materials from the solid waste stream and will strengthen the market for environmentally preferable products. Other benefits of environmentally preferable purchasing include: improving public and occupational health and safety, decreasing in air, water and soil contamination, improving wildlife habitats, improving compliance with environmental regulations, and decreasing costs associated with waste management, disposal and cleanup. An Environmentally Preferable Purchasing Policy will set an important example to the community and would advertise Encinitas as a leader in environmental awareness.

**Existing Policy:**

The City currently has a recycling policy for purchasing recycled paper (Recycled Paper Purchasing, City of Encinitas Administrative Manual, General Section #PC02) and is a member of the Recycled Products Purchasing Cooperative. Various Departments do purchase some environmentally friendly products (e.g. Public Works uses recycled motor oil where possible), but there is no formal environmentally preferable purchasing policy that provides guidance and requirements.

**Data Gaps:**

While some environmentally preferable products have already been used and tested, the quality and effectiveness of some products is unknown. In such cases pilot programs may be required to test the quality and effectiveness of new products for the City's needs.

**Recommendations:**

- 1) Develop an environmentally preferable purchasing policy to be followed by all City Departments. This policy will provide guidance on products that must and can be used, where they can be obtained, and what extra cost is considered acceptable to obtain these products if they cost more than equivalent products that are not environmentally friendly. A price preference used by many organizations is 10%. Some environmentally friendly products will cost the same or less than equivalent products that are not environmentally friendly. The policy will also provide guidance on the use of environmentally preferable products by contractors and vendors that the City uses. A suggested Environmentally Preferable Purchasing Policy for Encinitas (Attachment I) and references for the purchase of environmentally preferable products (Attachment II) are attached.
- 2) Publicize the City's efforts.

**Attachments:**

- I. Suggested Environmentally Preferable Purchasing Policy for Encinitas
- II. References for purchase of environmentally preferable products

<b>15) Topic: Annual Report</b>
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**Improvement Opportunity:**

Other than the AB 939 report for solid waste diversion, the City does not have regular reports on its environmental performance.

**Recommendation**

- 1) Prepare an annual report on the City's environmental performance. The report would include accomplishments during the year, goals for the next year and recommendations for changes in the City's environmental programs. The report would be prepared by the City Manager in consultation with the Permanent Environmental Commission for the City Council, and distributed to employees and the public. It would be desirable to prepare it prior to the Mayor's "State of the City" address so it could be included in it.

**Justification:**

There are several reasons for the report.

- Employees like feedback on how well they are doing.
- Without such a report, the programs may get lost.
- This is a standard management technique to monitor progress and make adjustments as appropriate.
- Helps portray the City as an environmentally conscious organization and an environmental leader,
- Helps educate and involve the community,

## 16) Topic: Waste Minimization

### **Problem:**

The City of Encinitas is mandated to reduce the amount of solid waste it produces (AB 939) and is constantly striving to improve its environmental record. A formal, coordinated waste minimization program at City Operations (City Hall, Fire Departments and Water Districts, Sanitation Districts, Public Works facilities, and the Community/Senior Center) would reduce the amount of solid waste produced. The generation of waste increases the consumption of virgin materials and the disposal of waste is harmful to the environment by increasing the amount of solid waste sent to landfills.

### **Justification:**

Minimizing waste at City Operations will help the City to achieve its waste diversion goals mandated by AB 939. Minimizing waste will be beneficial for the environment by reducing the amount of solid waste deposited in the landfill. Minimizing waste could result in cost savings for the City by reducing the amount of waste produced and increasing the funds received from its revenue share with EDCO of recyclables. A waste minimization program at City Operations would set an important example for the community and neighboring cities, and would advertise Encinitas as an environmentally conscious community.

### **Existing Policy:**

Currently there is no formal waste minimization program, recycling policy or purchasing policy for City Operations. Existing policy related to recycling includes a general recycling directive that encourages City employees to recycle (Recycling, City of Encinitas Administrative Manual, General Section #G005).

Recycling bins are available for paper, bottles, and cans at all City Operations, but the system is not uniform and no instruction is provided to employees. At City Hall some employees have individual paper recycling bins at their desks, while others do not. Containers for recycling aluminum cans and bottles are available in some break rooms, but not others, and there is no uniformity in the type of container provided and no labeling on the containers. Most photocopy machines are capable of double sided copying and paper recycling bins are located in copying areas.

### **Recommendations:**

- 1) Establish a formal waste minimization program. The traditional hierarchy for pollution prevention is: (1) Source reduction, (2) In-process recycling, (3) Other recycling, (4) Treatment and recovery, and (5) Control mechanisms. Typically, each department prepares a flow diagram showing all inputs and outputs. Inputs to the process may include supplies, raw materials, chemicals, packaging and energy. Outputs may include finished products, solid wastes, liquid wastes, emissions, noise and odor. By analyzing the data, areas for improvement are identified, plans developed and implemented, and so forth. This is a continuous process of starting a new cycle when the previous cycle is completed.

Each Department could set up its own program or there could be a combined task force. Solana Recyclers is experienced in this area and perhaps could assist the City as part of the work in preparing the AB 939 annual waste diversion report.

It is obvious that one of the outcomes of the waste minimization program will be a formal recycling program, which leads to the following recommendation.

- 2) Establish a formal recycling program for all City operations that provides recycling for all standard recyclable products (glass, 1&2 plastics, aluminum, steel, and paper). Make the program uniform, easy and convenient.
  - a) Provide clearly labeled recycling bins at several locations at each facility. Provide individual paper recycling containers for each person's desk. Use signage where appropriate to encourage recycling and waste reduction.
  - b) Provide instruction to all employees on the importance of recycling, the City's policy on recycling, and employee's responsibilities (what can be recycled and how to recycle at City facilities). Include the City's policies and guidelines for recycling in the new-employee handbook.
  - c) Double sided copying and printing: Make sure all new copy machines are capable of double sided copying and using recycled content paper. Use signage adjacent to copy machines to encourage and remind employees to make double sided copies. New laser printers purchased should be capable of double sided printing, where feasible.
  - d) Publicize the City's recycling efforts.
  
- 3) Establish an Environmentally Preferable Purchasing policy that mandates the purchase of recycled content products and products that can be recycled (see separate recommendation for an Environmentally Preferable Purchasing policy #14).

## 17) Topic: Household Hazardous Waste

### Present Situation:

Household hazardous waste (HHW) covers a wide range of items, the following list being from the City of Encinitas website:

- **Household Cleaners:** Drain openers, oven cleaners, wood and metal polish / cleaners, toilet bowl cleaners, disinfectants.
- **Automotive Products:** Oil and fuel additives, grease and rust solvents, carburetor and fuel injector cleaners, air conditioning refrigerants, starter fluid, lubricating fluids, radiator fluids and additives, waxes, polishes, cleaners, transmission additives.
- **Home Maintenance and Improvement Products:** Paint thinners, paint strippers, adhesives, paints, stains, varnishes, sealants, and wood preservatives.
- **Lawn and Garden Products:** Pesticides, Herbicides, and Fungicides (Poisons)
- **Miscellaneous:** Batteries, finger nail polish removers, pool and photo chemicals

Local governments are required to keep household hazardous wastes out of the solid waste stream pursuant to PRC Section 47100.

Encinitas has a program for disposal of HHW that has two alternatives:

- Delivery to one of two regional disposal centers in Vista (19 miles one-way) or Poway (27 miles one-way); there is no charge for Encinitas residents. The disposal centers are only open on Saturdays from 9am-3pm.
- Arrange for home pickup. Home pickup is free for homebound elderly and disabled citizens, but there is a \$20 copay for all others. Two independent attempts to arrange for home pickups were difficult to arrange. In one case, a callback was promised within one week to schedule the pickup. The callback was not made and repeated follow-up calls were made without any results other than a promise to call. Finally, after six weeks the material was picked up. The second attempt was similar, but the material was picked up in three weeks. See Attachment I.

It is not known to what extent the public knows what materials are hazardous and cannot be included with regular trash. Furthermore the new automated trash container system makes it somewhat easier for citizens to 'hide' improper items in their trash bins.

The City's home page has a link to a page for HHW disposal. Additional information is on a page that is part of Storm Water Services, which is very hard to find. Information on what items constitute HHW is only on the Storm Water page.

## Recommendations:

- 1) Conduct a brief, informal survey to determine whether the public is sufficiently informed about what household hazardous waste is, and how to dispose of it. (A brief, informal survey might consist of 50 random telephone calls.)
- 2) Based on the results of the survey, provide public outreach on this topic, perhaps including:
  - a. Flyers in public buildings
  - b. Stores: Provide information at the point of purchase. Support programs by Solana Recyclers for 'shelf talkers' at points of purchase that provide information on purchasing the least toxic alternatives.
  - c. Public gatherings, e.g. fairs.
- 3) Establish a HHW pickup site in Encinitas. The long drives to Vista and Poway and the limited hours of operation discourage dropping off HHW, and the \$20 copay discourages home pickup. The site would support nearby North Coast communities as well.
- 4) Get the home pickup service to work. Make sure the home HHW pick-up service is working efficiently. Currently pick-ups in an area occur when a threshold number of requests are obtained. However, making citizens that are motivated to properly dispose of HHW (and in some cases pay for the service) wait for a month or more with no communication, is unacceptable. The HHW pick-up service should consider having a set pick-up schedule, for example, the first week of every month.
- 5) Suggestions for the City of Encinitas Website:
  - a) Combine the HHW information on the two pages into one page, with a link from the home page.
  - b) Explain why it is important to properly dispose of HHW.
  - c) Rather than say, "Materials accepted included . . ." Say that these materials must not be disposed of with ordinary trash and they are accepted . . . "
  - d) The site states that there are periodic collection events. It is believed that this is no longer the case. However, if it is, dates should be provided.
  - e) In printing the web pages, they are more than one page wide and the right hand edge is chopped off.
  - f) There are written directions for the Vista and Poway disposal sites. It would be helpful to provide maps.
  - g) Explain that the "clean-up" day in October does not include HHW.
  - h) The website provides a number at Public Works to call for more information—760-633-2840. It would be helpful if the list of HHW items on the website was more comprehensive.

<b>18) Topic: Green Waste</b>
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**Present Situation:**

The City of Encinitas is mandated to reduce the amount of solid waste it produces (AB 939) and is constantly striving to improve its environmental record. The collection of solid waste is a mandatory service for all residents and businesses. Residential service includes curbside green waste and recyclable materials collection. The City has an exclusive franchise agreement with EDCO to provide collection services for residential and commercial customers.

All residential green waste from Encinitas is used as ‘ alternative daily cover’ at the Otay landfill. Green waste from City properties is generally mulched and used on site, or at other locations within the City, such as along the rail line. In some cases mulch is purchased for use on City properties. Because the green waste is either used at the Otay landfill, or mulched and used on City property, it is not considered “solid waste” as measured under AB 939.

**Recommendations:**

- 1) Increase public knowledge on the importance of recycling green waste in the curbside program, and on the backyard composting program that is run by Solana Recyclers at Quail Botanical Gardens. Also make citizens aware of where they can obtain recycled mulch and compost from other green waste programs (City of San Diego Miramar landfill and City of Oceanside). This can be achieved by providing more information on the City web site, through periodic articles in the City newsletter, etc.
- 2) Use the maximum amount of recycled green waste and compost on City properties and projects. This would involve using some of the curbside green waste that is currently all being used for ‘ alternative daily cover’ at the Otay landfill.
- 3) Consider using the curbside green waste for compost and mulch rather than for alternative daily cover, and having the mulch and compost product available for City and community use (see recommendations #2&4).
- 4) Investigate the feasibility of having mulch and/or compost available to City residents at a site within the City. This would just be a re-distribution point and a nominal fee could be charged to cover the expense of the service.
- 5) Become a partial sponsor of the master composting training program carried out by Solana Recyclers at Quail Botanical Gardens.

**19) Topic: eWaste**

**Present Situation:**

The term " eWaste" is loosely applied to consumer and business electronic equipment that is near or at the end of its useful life. There is no clear definition for eWaste; for example, no decision has been made on whether items like microwave ovens and other similar " appliances" should be grouped into the category.

There are hazardous materials such as lead, mercury and hexavalent chromium in circuit boards, batteries and cathode ray tubes (CRTs) for television sets and computer monitors. According to the U.S. EPA, television set and computer monitors contain an average of four pounds of lead. Further, electronic discards are one of the fastest growing segments of our nation' s waste stream.

California law currently views nonfunctioning CRTs from television sets and computer monitor as hazardous waste and they may not be disposed of with the regular waste stream.

A notice from EDCO in early 2002 advised residents that they may dispose of televisions, monitors and other electronic items at the household hazardous waste collection facilities in Vista and Poway. Acceptable items include TV, computer monitor, hard drive/CPU, keyboard, mouse, stereo, VCR, and radio. There is a \$20 recycling fee for each TV or computer monitor, no charge for other items. However, there is no charge for the first 1,000 residents of nine North County communities. (Apparently, this is a combined total, not the first 1,000 from each of the communities.)

Three electronic waste collection events were carried out in North County in August and September 2002.

The August 2002 bill from EDCO contained its "Environmental Times" newsletter and it provided excellent information on eWaste.

Despite these recent efforts, it is suspected that there is still limited knowledge in the community that these items are hazardous and how to dispose of them. There is no mention of eWaste on the Encinitas website.

**Recommendations:**

- 1) Conduct a brief, informal survey to determine whether the public is sufficiently informed about what eWaste is, and how to dispose of it. (A brief, informal survey might consist of 50 random telephone calls.)
- 2) Based on the results of the survey, provide public outreach on this topic, perhaps including:
  - a. Flyers in public buildings

- b. Stores: Provide information at the point of purchase. Support programs by Solana Recyclers for 'shelf talkers' at points of purchase that provide information on how to properly dispose of eWaste.
  - c. Community events—e.g. fairs
- 3) Establish a home pickup service, similar to that for household hazardous waste.
- 4) Establish a drop-off site in Encinitas, similar to that recommended for Household Hazardous Waste (HHW)
- 5) Encinitas Website. Provide information similar to the recommendation for HHW. Probably combine HHW and eWaste.
  - a. Explain why it is important to properly dispose of eWaste.
  - b. Explain that the "clean-up" day in October does not include eWaste.
  - c. Provide information on organizations that will accept discarded electronic equipment for reuse.
- 6) Encourage retail outlets to accept old equipment for recycling, or at least to provide information on proper disposal, perhaps even including it with information given to customers when new equipment is purchased.
- 7) Support companies that are establishing programs to help buyers reuse or recycle old computers and other electronics as part of the process of buying or leasing new models. Examples of companies with programs are: Best Buy, Dell, Hewlett-Packard, Gateway, IBM and Sony.
- 8) Support legislation at the state and federal levels to include the cost of disposal in the purchase price of equipment. This is similar to what is done for beverage containers. This will result in the user paying for disposal, not the general public.

## 20) Topic: Public Recycling

### **Present Situation:**

The City of Encinitas is mandated to reduce the amount of solid waste it produces (AB 939) and to meet the requirements of San Diego County Mandatory Recycling Ordinance. The ordinance specifies various items that cannot be disposed of in San Diego County solid waste facilities—and thus, must be recycled. Encinitas has in turn adopted the ordinance as Chapter 11.20 of the Municipal Code, SOLID WASTE MANAGEMENT. ‘ All recyclable materials shall be separated from other garbage and combined refuse, and placed for collection in the same manner as when their regular garbage collection occurs.’

Encinitas is constantly striving to improve its environmental record. The vast majority of the waste produced in the City is from private residences and businesses; therefore, increased recycling in this sector can have an important impact. The disposal of products that are recyclable is harmful to the environment by increasing the amount of solid waste sent to the landfill and by missing the opportunity to produce recycled content products that reduce the consumption of virgin materials.

### **Justification:**

Increased recycling by private residences and businesses will reduce the amount of solid waste produced, helping the City to achieve its waste diversion goals mandated by AB 939. Increased recycling will be beneficial for the environment by reducing the amount of solid waste deposited in the landfill and by increasing the production of recycled content products.

### **Existing Policy:**

The collection of solid waste is a mandatory service for all residents and businesses. Residential service includes curbside green waste and recyclable materials collection. The City has an exclusive franchise agreement with EDCO to provide collection services for residential and commercial customers. EDCO is the only company authorized to haul solid waste in the City.

By virtue of the franchise agreement, the City has delegated responsibility for meeting the recycling goals mandated by AB 939 to EDCO. Specifically, section 7.3 of the agreement states:

#### 7.3 Solid Waste Diversion

Given the full cooperation of the City, Franchisee guarantees to the City that the diversion requirements of applicable state and federal law will be fully satisfied at all times during the initial term and any extended term of this agreement.

Under the present agreement, EDCO has no requirement or incentive to exceed the diversion required by law. In order for Encinitas to continually improve, a requirement to do this needs to be incorporated in the agreement.

To meet the requirements, the franchise agreement specifies:

### 7.5 AB 939 Staffing

The Franchisee shall dedicate adequate staff to implement and monitor AB 939 requirements on behalf of City, throughout the term of this Agreement, in accordance with the City's integrated waste management programs identified in the Source Reduction and Recycling Element (SRRE).

### 7.6 Public Outreach Program

The Franchisee will develop and implement a public education program on source reduction, reuse, recycling, composting and secondary materials usage and availability as required by the Public Education Component of the City's SRRE and AB 939. This requirement may include, but is not limited to presentations, mailers, and brochures.

To meet this responsibility for educational outreach, EDCO sends out a quarterly informational newsletter with billing statements. However, anyone not receiving a bill, such as many renters and apartment dwellers, do not receive any recycling information or guidance. EDCO also has a web page that clearly explains what can be recycled and gives holiday recycling schedules.

The City has little or no recycling information available at its website, at City and public facilities, and in public mailings. There is currently no recycling at public locations in the City, such as at beaches, parks, downtown, and at community events. An attempt at recycling was initiated at Moonlight Beach about five years ago, but was halted quickly due to contamination with non-recyclable items. Recycling at some community events (such as the Street Fair) has been provided by Solana Recyclers in the past in exchange for free booth space, but they are not going to continue this in the future.

There are inconsistencies in Municipal Code 11.20, SOLID WASTE MANAGEMENT.

At 11.20.100 H it states:

"All recyclable materials shall be separated from other garbage and combined refuse, and placed for collection in the same manner as when their regular garbage collection occurs"

Recyclable materials are defined at 11.20.020 M as " materials that are recyclable and/or reusable within the following categories of residential, commercial (office and hospitality) and industrial as defined more specifically within each category by resolution of the City Council." According to the City Clerk, the categories have not been defined by resolution of the City Council. However, the code does have definitions for recyclable materials for commercial and industrial, but not for residential:

For the category of commercial recyclables, the code defines them at 11.20.020 H as recyclables from the two commercial subcategories of office buildings (of more than 20,000 sq. ft.) which are office paper, corrugated cardboard, newspaper and awning (sic); and hospitality (restaurants and taverns) which are corrugated cardboard, plastic beverage bottles, glass jars and bottles, white goods (appliances), aluminum, tin and bi-metal cans.

For the category of industrial recyclables, the code defines them at 11.20.020 Q as industry/construction waste streams to include dirt, asphalt, sand, land clearing brush, concrete and rock.

To implement recycling, resolutions by the City Council are required, as described at 11.20.170:

Diversion of designated recyclables from the City's waste stream is required by all residential, commercial and industrial customers with the City of Encinitas as set forth by resolution of the City Council. The implementation schedule shall apply to the provision of services which will divert designated recyclable materials from the City's waste stream. These items shall be established by resolution of the City Council.

According to the City Clerk these enabling resolutions have not been passed.

In summary, Municipal Code 11.20 is a mish-mash.

- It says diversion of all recyclables is required.
- There are glaring exceptions for commercial establishments—only office buildings, restaurants and taverns over 20,000 square feet must recycle.
- Recyclables for residential customers have not been defined.
- The City Council has not passed the necessary resolutions to implement the program.

Four large retail establishments were asked for information about their recycling programs. Two responded they did not recycle (one said it was, "too large to recycle".) and the other two did not respond.

### **Recommendations:**

- 1) Establish an additional recycling drop-off facility for public use. Currently the only public drop-off site is located at Solana Recyclers at 137 N. El Camino Real. This site is well used, which indicates that an additional site in closer proximity to Old Encinitas, Cardiff and Leucadia would provide valuable services for these communities. The drop-off site needs to be convenient and in a location that can be enclosed at night or that is well watched to avoid vandalism and drop-off of un-recyclable products. One potential site is at City Hall.
- 2) Establish a pilot recycling program at Moonlight Beach and another public location such as a sports park that would be expected to have less contamination. Other locations that could be included or added in the future (depending on the success of the pilot program) include downtown, other beaches, parks, and at community events (e.g. the Street Fair).
  - a) Two alternatives for recycling receptacles that should be considered include wire baskets attached to the side of trash containers, and separate recycling containers with restricted opening sizes to discourage the deposit of trash items.

The advantage of wire baskets/side-cars attached to trash receptacles is that they are convenient for people to use, they are inexpensive, and they will not be damaged by vandals. Funds are currently available through Solana Recycler's grants for such a program. Separate stand-alone recycling receptacles require more effort by the recycling party, will be vandalized, and are more expensive to purchase and maintain.

- b) The institution of a recycling program needs to be coupled with educational outreach. A past effort to recycle at Moonlight Beach was halted due to high contamination. The pilot program should be well advertised to make the community and visitors aware of the effort and to reduce the contamination levels. Public outreach could include articles and advertisements in local papers, information on the City web site and newsletter, and rental of billboard space along Highway 101 during the summer. Grants are available for such projects, and a selection of recycling messages/artwork are available for free use (see Attachment I).
  - c) A pilot program at Moonlight Beach would have to be tailored to accommodate the higher volume of visitors during the summer months. This could include an increased number of recycling receptacles, increased collection frequency, and/or increased educational/instructional signage during this period.
  - d) Monitoring of the pilot program would allow for an accurate assessment of how well the program is working and how it could be improved.
- 3) Publicize waste minimization/recycling and services that are available:
- a) Create a comprehensive fact sheet on recycling and other related services and make available to the public through the City's web site, at City facilities, at City events, in the City newsletter, in the City Community calendar, at libraries, etc. When posted on the City's website, the link should be prominent—at present a search is required to locate recycling information. The fact sheet could contain information on a variety of services so that all pertinent information is available in one convenient location. Information could include: recycling (curbside program, drop-off facilities), streetsweeping schedule, community cleanup events, Household Hazardous Waste program, electronic waste, green waste, composting classes at Quail Botanical Gardens, motor oil recycling, and stormwater run-off guidelines and hotline telephone number. See Attachment II for an example of a comprehensive web page addressing environmental issues from the City of San Francisco. This information could also be available through a telephone hotline that has recorded messages with all this information (see Attachment III for list of information available on the City of Escondido's hotline). A single hotline number is convenient and easy to use and can be publicized and distributed easily, for example on refrigerator magnets.
  - b) Promote recycling in general, such as in the community calendar and City Hall bulletin board – anyplace there is a blank spot occasionally put in a reminder to recycle.

- 4) Reduce the contamination level in the curbside recycling program by increasing public education. This can be achieved by the City (see recommendations 3&7) and by EDCO. The following are suggested recommendations for EDCO.
  - a) Recommend EDCO distributes its quarterly newsletter to all curbside customers (i.e. all renters and multi-family dwellers), not just those receiving a bill.
  - b) Recommend EDCO is more aggressive in educating individuals at the curb. This is especially important for renters and other new residents that may not have received any information on what can be recycled and how to present it. EDCO currently has a policy of leaving explanatory notes when improper items are placed in recycling bins, but it is at the discretion of the driver when to do this (i.e. after repeat offenses, when a lot of improper material is presented, etc.). Based on observations within an Old Encinitas neighborhood, EDCO could have a more stringent and standardized policy. It is also recommended that these explanatory notes indicate where items that EDCO does not recycle can be recycled at other locations (e.g. plastic grocery bags can be recycled at most grocery stores). A more convenient dispenser system for the notes would reduce the amount of time required by the drivers to leave a note. Currently drivers must return to the cab to obtain a note – a hip dispenser or dispenser on the outside of the truck where the recyclables are deposited would be more efficient.
  - c) Instead of, or in addition to, increasing the responsibility of EDCO drivers, personnel could be specifically dedicated to check curbside bins at certain intervals, e.g. every 3 months. They would be responsible for examining curbside bins and leaving explanatory notes where necessary. This could be combined with a recycling incentive program that chooses ‘ excellent recyclers’ that are awarded prizes or small monetary amounts.
- 5) Include mandatory recycling in permits for City events such as the street fairs. This recommendation is included in a proposal Solana Recyclers is planning on submitting to the Community Services Department and should be adopted by the City.
- 6) At community clean-up events make sure that waste is segregated for recycling (if not done already). Consider partnering with Goodwill or other organizations at the clean-up event to allow for re-use of items.
- 7) Promote full recycling for apartments, condominiums, and other multi-family residences. One condominium was found where the management will only recycle newspapers. (Perhaps we should recommend that all apartment and condominium complexes with ten or more units shall have programs to meet the requirements of the City ordinance.) Currently only the owner of the complex receives the EDCO newsletter. Consider requiring that all individual residents specifically receives an information newsletter so they know what to recycle and how to do it. This could a requirement of EDCO or of the managers of the multi-family complexes.

- 8) Prominently display on all literature, announcements, recycling stations, etc. that the recycling program is a City of Encinitas program, not EDCO. This will give the effort more credibility and provide some positive publicity for the City.
- 9) Publicize on the City website the locations for oil and oil filter recycling, and redemption centers.
- 10) Pass the necessary resolutions to implement Municipal Code 11.20 with respect to recycling.
- 11) After passing the necessary resolutions, follow-up to see that the Code requirements are being met.
- 12) Consider implementing mandatory recycling for other commercial establishments, such as retail outlets.

<b>21) Topic: Solid Waste Reduction at Cottonwood Creek and Moonlight Beach</b>
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**Problem:**

Litter collects in Cottonwood Creek due to run-off from surrounding areas and is deposited on the beach and in the ocean. Summer crowds at Moonlight Beach create large amounts of waste and the number of trash cans and frequency of pick-up is not sufficient to prevent overflow of trashcans during high use periods.

**Justification:**

Reduction of litter in these public places will create more aesthetically pleasing recreational opportunities for Encinitas residents and tourists. Reduction of litter in Cottonwood Creek, and therefore in the ocean, will be beneficial for native wildlife. Avoidance of trashcan overflow at Moonlight Beach will prevent the spread of trash by seagulls and other wildlife and will be less unsightly.

**Existing Policy:**

Solid Waste Management, Chapter 11.20, Encinitas Municipal Code  
Litter Control, Chapter 11.24, Encinitas Municipal Code  
County of San Diego Recycling Ordinance, adopted by City of Encinitas

Trash is collected at Moonlight Beach once per day, generally very early in the morning. The City is in the process of installing screens in at least some of the storm drains that lead into Cottonwood Creek.

**Recommendations:**

- 1) Place screens on all storm drains that lead into Cottonwood Creek to catch solid waste in run-off and prevent the deposition into the Creek, onto the beach and into the ocean. For example, litter is deposited into the Creek area from the Second Street outfall because there are not adequate screening devices in place (Attachment I).
- 2) Investigate the sources of solid waste in the watershed and address these sources where possible – i.e. implement a watershed approach.
- 3) Increase the number of trashcans and/or the frequency of collection at Moonlight Beach. During peak use periods the trashcans are filled to overflowing. Currently these overflowing trashcans are left overnight, resulting in the scattering of litter by seagulls and other wildlife before the trash is collected in the morning. A final, late day trash collection should be instituted, rather than, or in addition to, the current early morning trash collection that allows the dispersal of litter. In addition, the number of trash cans could be increased during peak use periods and reduced during low use periods.
- 4) Fence off the end of the alley between Second and Third Street along to stop illegal dumping down into the Creek area (see Attachment I for examples of dumping).

- 5) Institute a pilot recycling program at Moonlight Beach for aluminum cans and 1&2 plastics. This program would require a concurrent education and awareness effort. This is presented in detail in the Public Recycling recommendation (#20).

**Attachment I:**

Photos illustrating trash in Cottonwood Creek after a storm event, area at end of alley to be fenced, and trash overflow at Moonlight Beach during the summer

## 22) Topic: Helium Balloons

### **Present Situation:**

Balloons are sold and given away at many functions, both public and private. The release of balloons, whether intentional or accidental, causes litter which can harm wild, farm, and domestic animals. A portion of released balloons end up in the ocean and on the beaches. In addition to creating litter on the beaches, these balloons can harm marine wildlife. Many species of marine animals, including turtles, seals, whales, dolphins, fish and birds have been found with balloons in their digestive systems. It is assumed that these animals mistake the balloons for their natural prey such as jellyfish and squid. Although it is difficult to prove that death results directly from ingestion of a balloon, their presence in animals' stomachs indicates either that they are not easily digested and/or that death occurs shortly after ingestion due to blockage of the digestive and/or respiratory tract. The ribbons attached to the balloons can also entangle animals. A selection of publications relating to the negative impacts of man-made debris on marine mammals is included in Attachment I.

There are currently no restrictions on the sale or use of balloons in the City of Encinitas.

### **Background:**

Balloons that are not disposed of properly end up littering the beaches and ocean. Non-helium balloons are carried through storm drains and natural waterways. Helium balloons that are released rise up in the air and eventually are deposited on land or in the ocean. An estimated 90-95% of released helium balloons rise to an altitude of 1.8 miles and burst into small fragments. Others may float for miles before descending to the ground or sea semi-inflated. While many balloons are made of biodegradable latex, they can still take up to 6 months to break down. Balloons made from mylar are slower to break down.

### **Justification:**

Reducing the release of helium balloons within the City will reduce the amount of balloon litter on the beaches and will reduce the potential negative impacts to marine wildlife. Since balloons can travel for many miles in the air or ocean, actions taken by the City of Encinitas would also have positive impacts for surrounding areas. However, without restrictions in surrounding communities balloons will continue to wash up on the City's beaches.

### **Recommendations:**

The most comprehensive solution would be to ban the sale and use of helium balloons in the City, but several alternative options are listed below. Depending on how strong a stand the City of Encinitas wants to take on this issue, one or all of the following recommendations could be implemented.

- 1) Ban the intentional release of balloons at any City or private event within the City of Encinitas. The intention is not to undermine or prevent celebrations, only to ensure that people are aware of the negative environmental impacts and choose

an environmentally friendly alternative. Balloons could potentially still be used, but would have to be disposed of properly.

- 2) Require retailers of helium balloons to provide a verbal and/or written explanation to purchasers of helium balloons on the harmful impacts of balloon release.
- 3) Implement an educational outreach program on the harmful impacts of helium balloons. This could be achieved through providing information in the City's newsletter, the City's web page, at public events, at the Community Center, at public parks, etc. Point of purchase outreach (recommendation #2) would also be an important element of this education effort.

## 23) Topic: Beach/Cliff Erosion

### **Issues:**

Public Safety, Tourism, Sand Replenishment

### **Background:**

A large part of the allure of Encinitas to tourists, both local and transient, lies in its beaches. The City commissioned a survey in the summer of 2001 of visitors to its beaches, and their economic impact on the City (King). Results of the study indicated that nearly 44% of visitors to Encinitas' beaches are residents, and another 20% live within 20 miles. The remainder come from farther away. Three-quarters stay one day or less. The major reasons for visiting the beach included swimming (18.7%), surfing (14.6%), play on the beach (9.1%), recreation for the kids (22.1%), and hang-out (33.8%). The overall economic impact of beach visitors to the City of Encinitas was calculated to be approximately \$47 million per year.

### **Problem:**

Ever since southern California's creeks and rivers started being dammed for flood control in the mid-1930's, the natural supply of sand that had been replenishing the beaches was interrupted. Compounding the problem is the fact that sea level has been rising steadily for several thousand years, which increases the likelihood of beach erosion by large storm waves that run up the beach further than the average waves. The net result is that there is already a sand deficit on the City's beaches, and on-going sand replenishment is necessary to maintain the beaches and protect the sea cliffs. Less sand on the beaches means that the bluffs behind the beaches are at risk for undercutting, and eventual collapse. Bluff collapse may have negative impacts on public and private property (restricted beach access/houses falling), and public safety (recent fatality).

Two things to keep in mind: 1) Mitigation measures that might be implemented are only buying time – time before the sand naturally migrates elsewhere, time before the bluffs recede, time before manmade structures along the immediate coast and bluff line are destroyed. 2) Migration of beach sand and bluff erosion are not steady state processes, they are both seasonal and episodic. During intense storm activity that may accompany El Nino conditions, the processes may be catastrophic.

### **Current City Policy:**

Concern for the condition of the beaches and coastal bluffs are evident throughout the City's General Plan (Introduction, and Land Use, Circulation, Public Safety, Resource Management, and Recreation Elements of the Plan).

For example, Policy 1.7 of the Public Safety Element says “The City shall develop and adopt a comprehensive plan..to address the coastal bluff recession and shoreline erosion problems in the City.” Goal 8 of the Resource Management Element says “The City will undertake programs to ensure that Coastal Areas are maintained and remain safe and scenic for both residents and wildlife.” Goal 10 of the Resource Management Element says that “the City will preserve the integrity, function, productivity, and long term viability of ...ocean recreational areas, coastal waters, beaches ...”

Encinitas has an agreement with the State of California to maintain the State beaches at Leucadia, Swami's, and Moonlight beaches. The City values its beaches as a public resource for its citizens, as an attraction for promoting tourism in the area, and as a means of protecting private property on the adjacent bluffs. The City currently has a policy of trying to obtain surplus sand when it becomes available (Page I-7 of the Introduction to the General Plan says, “Beaches - The beach areas are losing sand depth each year and sand replenishment programs are needed to provide for their restoration.” In general, this has resulted in sporadic placement on City beaches of relatively minor quantities of sand. In 2001, through the efforts of SANDAG, Encinitas and several other coastal San Diego County cities received a total of 2 million cubic yards of sand dredged from offshore sources at a cost of \$17.5 million. Approximately 470,000 cubic yards were placed on Encinitas' beaches. There is no current source of funding in place to repeat 2001's effort. However, the City does allocate 2% of the T.O.T. for sand projects (approximately \$225,000/yr).

Current city policy regarding private property where there is a risk of bluff collapse is to require the private parties to pay for their own bluff stabilization measures. The City exercises its control through the design and permit process (Coastal Development Permit, EMC 30.80). For example, the City wants sea walls to have as natural an appearance as possible. Once a section of bluff collapses, the City pays to have the fallen rocks and debris removed to the extent necessary to maintain public safety, and the overall appearance of the beach. In certain cases, the City might seek to recover some of these costs from the private party(s) involved. The City requires a bond for debris removal as part of the Coastal Development Permit.

The City has adopted a Coastal Bluff Overlay Zone (EMC30.34) where special restrictions on development apply. Some of the restrictions include a 40-foot buffer zone for new construction or any permanent irrigation systems, a requirement for drainage and runoff to be channeled away from the bluff edge, use of drought tolerant plants, design of buildings (new construction, as well as remodeling of existing structures) to be easily removable if threatened by bluff collapse, and preservation of scenic views. The Coastal Bluff Overlay Zone also defines conditions for the installation of “preemptive measures,” i.e., protection devices.

The City has a Final Draft Comprehensive Coastal Bluff and Shoreline Plan (Draft Plan) that was approved in June 1998. The major elements of the Draft Plan include on-going sand replenishment and retention, bluff stability, bluff protection, permanent sources of funding, and a Beach Restoration Committee made up of senior City staff, one City Council member, property owners, community groups, and the public at large (probably 7-10 members total).

#### **Data Gaps:**

Since last year's sand program was the first large scale sand replenishment program on the West Coast, there is no historic data to evaluate how and where the sand placed last year will be distributed naturally on the beaches. In other words, how long will the new sand stay on the local beaches; and what are the differences in sand distribution between El Nino, La Nina, and 'average' storm years? Is there an optimal size for sand grains to maximize retention, or does size matter at all if there is an adequate supply of sand? What are the primary and secondary effects of the imported sand on other aspects of the local environment, i.e., effects on local reef communities, bottom topography as related to surfing, long shore transport that might restrict water flows across the mouth of the lagoon (forbidden by the General Plan), and potential impacts to neighboring areas like Solana Beach and Del Mar.

Another large data gap is the identification of a reliable source of funding. How can the City of Encinitas secure reliable funding to pay for on-going sand replenishment? The 2% T.O.T. allocation will never provide enough money to allow the City to overcome the large sand deficit that exists.

#### **Recommendations:**

- 1) The City should approve and implement the Final Draft Comprehensive Coastal Bluff and Shoreline Plan (Draft Plan), dated 6/11/98, with only minor changes as suggested below. The fact that there is an approved 4 year old draft calls into question the City Council's commitment on this issue. If the City Council can't or won't approve the complete Draft Plan, then it should at least approve the Beach Restoration Committee as proposed in the Draft Plan. With this committee, the City Council would have an advisory resource to help them deal with these issues.
- 2) The Draft Plan does not stress enough the fact that shoreline retreat is inevitable. The Draft Plan is also short-sighted in that there is no provision for dealing with the long term implications of this problem. Page 33 of the Draft Plan states, "It is recognized that shore and bluff protection, including a sand replenishment and retention program, can promote safe lateral beach access by reducing *or eliminating bluff erosion.*" (emphasis added)

- 3) The Draft Plan should state that is undesirable to armor the entire bluff face within City limits. The Draft Plan appears to be contradictory on this point. In one area of the Draft Plan, the use of small scale protection devices such as notch fills, pocket fills, and cobble barriers is encouraged. In another area, the Draft Plan says “All reasonable efforts shall be made to maximize the length of the seawall within the segment.”
- 4) Institute an on-going program of monitoring City beaches, and the adjacent offshore areas to beyond wave base, as a means of identifying areas where sand preferentially accumulates or erodes. The current program of semi-annual monitoring to a depth of only 50 feet is inadequate. Monitoring events should occur at least quarterly; monthly would be better. Monitoring immediately after significant storm activity should also be included in the program. This will help serve as an early warning system to identify problem areas where active erosion is occurring, evaluate the effectiveness of sand placements, and assess negative impacts to specific habitat areas and/or surfing resources.
- 5) The concept of stockpiling sand for future use is flawed for several reasons, and should be dropped. First, there is a considerable sand deficit on City beaches. Why put the sand elsewhere, when it is needed on the beaches now? Second, several hundred thousand cubic yards of sand makes a big pile. There are no obvious, out-of-the-way storage places. And there could be many potentially negative impacts, including habitat destruction, visual impacts, and transportation issues. Third, moving a pile of sand that large is expensive, and stockpiling would require moving it at least twice. Where would the extra money come from?
- 6) The City should continue to work with SANDAG, and other governmental agencies (local, regional, state, and federal) on this issue.

Some factions have advocated a policy of hands-off coastal management whereby natural processes would be allowed to work. This means no sand replenishment would take place, bluffs would be allowed to collapse and recede, and structures would be lost. There are at many problems with this approach, but the one with greatest significance is that such a policy is counter to the Public Safety Element of the City’s General Plan (and the General Plans of most cities), as well as the California Coastal Act.

Shoreline protection/sand retention devices such as groins, jetties, or breakwaters are not recommended unless proposed as part of a regional sand management plan.

## 24) Topic: Efficient Use and Conservation

### **Justification:**

Encinitas, while on the ocean, is located in an arid area and is without sufficient indigenous local surface or ground water. Ultimately, the security of water supply depends upon perpetual reuse, efficient usage patterns, and conservation.

### **Problem:**

Encinitas has only enough capacity for the next 1000 homes and will soon lose its allotment from Lake Hodges to San Diego (L. Wurb, Public Works, pers comm). Encinitas has several available mechanisms to conserve and save water but has implemented only a few. For example, the City has installed low-flow water appliances at many locations.

### **Background:**

Encinitas retails water from San Diego County Water Authority through the San Dieguito Water District and treats sewage through the San Elijo Wastewater Treatment JPA.

Most water comes from the Colorado River through the Metropolitan Water District, from CalFed in northern California, collections at local reservoirs, and from ground water in slight amounts. It stores water in Lake Skinner and Lake Hodges.

The City claims 47% are from local sources, 15 million gallons MG storage treated, 495MG storage untreated, 14% for irrigation and 14% for agriculture. The SDCWA claims 5,112 acre-feet supplied in 2000, but a combination of 3,663 acre-feet local and 4,690 acre-feet Authority-supplied for a total of 8,353 acre-feet of which 4,690 is municipal and industrial use (matching the Authority supply). They also estimate a City population of 36,500.

Encinitas, as a world-famous floriculture center, dedicates significant water to that and other industry and to irrigation of public parks and landscaping.

Desalination remains prohibitively expensive in the near-term unless co-located with a power generator such as the plant being proposed in Carlsbad.

The City, acting as the water utility, recently adopted a rate structure to fund capital investment and operations that did not consider conservation or drought.

The City, acting as the water district, operates a reclaimed water system consisting of treatment plants and a distribution system.

**Existing Practice/Policy:**

The general plan mandates reducing dependence on imported water. The current fee structure, instead of promoting conservation, perpetuates the sense that water is nearly free and therefore valueless. For the most part, the fee structure provides excess use rates at equal to base rates. Higher-tiered rates (in effect until and through 1991) would inevitably provide some conservation measures.

Only residential users have a truly tiered structure allowing agriculture, irrigation, industry, landscaping, and municipal users to use without apparent price penalty. Homes with agriculture pay much less than those without and pay only \$0.03/HCF (hundred cubic feet) more for all water over 21 HCF.

Reclaiming water has recently been implemented in the form of tertiary treatment facilities and a partial distribution system to large users. The rate structure is a "take and pay" type which promotes usage rather than some conscientious conservation. Use of reclaimed water is better than raw water, but there has been little, if any, investigation of the use of reclaimed water to recharge groundwater or to augment flows through the two local lagoons.

The fire system is charged by drinking-quality water.

**Assessment:**

The City recently approved and implemented unsustainable rates. The city will run short of water unless market incentives are put in place to conserve it.

**Data Gaps:**

None in rate structure

**Recommendations:**

- 1) Continue to calculate and charge for infrastructure maintenance, improvements and operations.
- 2) Develop sufficient supply sources to provide water during normal and drought years.
- 3) Devise and implement a drought rating and notice system to:
  - sensitize water users,
  - prepare them for inevitable water-short years,
  - plan voluntary conservation, and later
  - mandate conservation necessary to reduce demand to supply.
- 4) Maximize direct and indirect use of reclaimed water.
- 5) Restore/recharge groundwater ensuring quality and storage capacity.
- 6) Consider revising the rate structure to:
  - more dramatically tier rates for single and multi-family residences,
  - delete the flat rate for residences with agriculture and replace it with a tiered rate structure,

- include at least a moderately tiered rate structure on agriculture, landscaping, excess use, and construction,
  - include a seasonal demand accommodation structure, and
  - require that the service meter fee pay a greater proportion of the costs.
- 7) Increase the infrastructure spines of reclaimed water to make it more available without undue cost to smaller users.
  - 8) Have the fire chief consider the costs and benefits of converting to reclaimed water in the fire mains.
  - 9) Implement a water education program in the water district bill mailing system focused on:
    - implementing a household gray water-irrigation reuse scheme,
    - composting, and
    - water conservation.
  - 10) Mandate sustainable and low-water use landscaping for all new and replanted city landscaping.
  - 11) Require all new city facilities, such as the library, to install and maintain water saving appliances.
  - 12) Fund and implement a water efficiency revolving loan program.
  - 13) Conduct an audit of city water appliances to retrofit all inefficient ones and of all systems to take advantage of gray water reuse opportunities.

**Implementation:**

Staff and District evaluation

**Indicator:**

Water and reclaimed water use and sewage disposal rates per capita, per household, on a city-wide basis, and as a water district.

**References:**

Black and Veatch report and presentation and Water District agenda report of Feb 27, 2002 and personal interview with City Public Works Director.

**Attachments:**

Existing and recommended rate structure.

## 25) Topic: Meeting Encinitas Water Supply Needs in the Face of Dwindling Supply

### **Present Situation:**

The City of Encinitas relies upon imported water to meet its water supply needs. Consequently, the cost, reliability, and, most importantly, long-term availability of water is linked to water supply issues throughout California and indeed the West.

Water is supplied in Encinitas by two water districts: San Dieguito Water District (“SDWD”) and Olivenhain Municipal Water District (“OMWD”).

SDWD supplies water to approximately two thirds of the City population in its service district which is predominantly west of El Camino Real. OMWD provides the balance of the City’s water supply to its eastern half—predominantly Olivenhain and portions of New Encinitas.

SDWD obtains its water from two sources: the San Diego County Water Authority (“SDCWA”) and Lake Hodges. Both the Lake Hodges and untreated SDCWA water is treated at the R.E. Badger Filtration Plant in Rancho Santa Fe. Additionally SDWD receives treated, potable water from SDCWA and also non-potable recycled water from the San Elijo Water Pollution Control Facility. Recycled water is currently in use for the Encinitas Ranch Golf Course and certain traffic medians. In Fiscal year 2001-2002, SDWD is expected to deliver approximately 8,000 acre-feet [ 1 acre-foot = ~ 326,000 gallons] .

OMWD, like SDWD, is a member of SDCWA which in turn is a member of the Metropolitan Water District (“MWD”) which supplies both the Los Angeles and San Diego metropolitan areas with water from the Colorado River through the Colorado River Aqueduct and from Northern California through the State Water Project.

Since less than 20% of Encinitas’ water supply comes from local and reclaimed sources, Encinitas must rely heavily upon water ultimately supplied by the MWD from the Colorado River and the Sacramento River/San Joaquin River Delta (via the State Water Project) with approximately three fourths of these imports drawn from the Colorado River. Consequently, as demand for the limited supply of water available from the Colorado River intensifies throughout the West, Encinitas, like San Diego County, is vulnerable to water shortages.

Such shortages may arise from both increased demand as well as disruptions in historical regional precipitation patterns arising from the effects of global warming. For example, recent efforts at modeling the effects of global warming performed by researchers at the University of California, Santa Cruz project a 50% decrease in the Sierra Nevada snowpack—a significant source of water for urban California.

The cost of residential water in Encinitas varies by water district and volume used within a range of approximately \$600 to \$1,000 per acre-foot. [ Note that an acre-foot of water is commonly described as meeting the annual water needs of two typical families of four people.] Recent estimates for desalination of sea water are \$1300/acre-foot and higher. Hence if persistent shortage resulting from declining water supplies and increased population cause a doubling in the cost of water, desalination will become a feasible alternative source of water. However, the operating costs of desalination plants depend heavily upon electric energy costs and thus desalinated water costs could increase sharply in tandem with energy prices should California suffer future energy supply crises as it did in 2000-2001.

Encinitas, as a recipient of Colorado River water, is poised to suffer a substantial cut in the available water supply from the Colorado River effective December 31, 2003 unless a complex water transfer and water conservation is put into place. The roots of this problem lie in a 1931 apportionment of the Colorado River amongst the western states; this apportionment, which is administered by the U.S. Department of the Interior, is known as the Law of the River. California's share of the Colorado River flow under the Law of the River is 4.4 million acre-feet per year. Nevada and Arizona, for example, are apportioned 300,000 and 2.8 million acre-feet per year respectively. For decades these and other states did not make full use of their allotments and California used as much as an additional 900,000 acre-feet of the unused surplus. Now that both population demand and new infrastructure in Nevada and Arizona make it possible for these states to claim their full entitlements to the Colorado River, California must ultimately reduce its use of Colorado River to no more than its 4.4 million acre-feet share. The deadline for this reduction is the end of this year unless California approves and implements a series of contemplated conservation measures that would begin a phased reduction in its consumption from 5.3 million acre-feet to 4.4 million acre-feet by 2015. If California does not meet its obligations for the first phase of this reduction in water use, it will face an immediate loss of all surplus water it has been withdrawing from the river.

Most of the water withdrawn from the Colorado River is apportioned for agriculture and only 550,000 acre-feet are earmarked for the MWD. Of the surplus water beyond California's allotment of 4.4 million af, an additional 672,000 af has been withdrawn by the MWD each year for urban use. In California as throughout the west, the right to use water is tied to one's priority in time when one began making beneficial use of the water. The principle is summed up as "First in time, first in right." Thus in a drought, the senior water right holder gets her allotment satisfied first and then the second most senior right holder's claim is satisfied and so on until the water is exhausted. MWD is only fourth in line for its 550,000 af share of California's 4.4 million af share of the Colorado River. Furthermore, the 112,000 af earmarked for SDCWA is of lowest priority of all the 672,000 af of surplus Colorado River water received by MWD beyond its basic allotment. Consequently, San Diego, including Encinitas, is on

the frontlines of California's current water war and stands to lose a substantial portion of its water supply.

The linchpin of the settlement agreement which forestalls California's complete loss of the surplus Colorado River water is a water conservation plan to be implemented by farmers in the Imperial Valley who have superior rights to MWD regarding California's basic allotment of Colorado River water. By conserving water and also by transferring some of the conserved water to MWD, MWD and particularly SDCWA, will be able to maintain urban water supplies by receiving as much as 200,000 af per year for the next 75 years. The greatest threat to the success of this plan lies in the consequences for the Salton Sea.

The Salton Sea, without a natural outlet apart from evaporation, is brackish and becoming inexorably more so over time. The principal source of relatively fresh water supplying the Salton Sea is agricultural drainage in the Imperial Valley. If less water is used in the Imperial Valley and what is used is used more efficiently, the Salton Sea will receive even less water thereby accelerating the process by which it becomes too saline to support fish and bird populations. While such decline is inevitable, the quick withdrawal of a substantial amount of agricultural runoff may impair efforts to mitigate the loss of environmental benefits provided by the Salton Sea to migratory birds and other wildlife. Without approval of the plan by the State Water Resources Control Board including reviews of the likely environmental consequences of the water transfers, the plan will not go forward, California will fail to meet its first milestone for conservation of water to reduce its withdrawal of surplus Colorado River water, thereby triggering the draconian immediate cut-off of all surplus withdrawals by California.

## **Recommendations**

- 1) Reduction of water consumption in Encinitas and throughout the county coupled with increased use of reclaimed water is essential to cope with the long-term effects of drought and reduced water supply from the Colorado River. Thus Encinitas should look to the water conservation strategies set forth in the Water Conservation section.
- 2) Encinitas through the SDWD, which is a member of the SDCWA, can contribute its voice to advocacy for effective agricultural conservation measures in the Imperial Valley coupled with support for water transfers to urban use so as to preserve the gradual rather than abrupt reduction in California's share of the Colorado River.

## 26) Topic: Stormwater and Urban Runoff Management

### **Problem:**

In 1999 the City of Encinitas was sued by the San Diego Bay Keeper (San Diego, CA) for discharges of contaminated urban runoff and storm water to the ocean as evidenced by a long history of high bacterial counts in the surf zone; particularly at Moonlight Beach. The resulting litigation led the City to implement a new storm water monitoring and reporting program. Moonlight Beach and San Elijo Lagoon, as well as Escondido, Encinitas, and San Marcos Creeks, are currently listed by the SDRWQCB as Sec. 303(d) Category 1, Impaired Waterbodies. In February 2001, the SDRWQCB formally acknowledged the magnitude of the non-point source runoff pollution problem by adopting Order No. 2001-01, and issued a new NPDES Permit No. CAS0108758, which defined Waste Discharge Requirements for Discharges of Urban Runoff from the Municipal Separate Storm Sewer Systems (MS4s) Draining the Watersheds of the County of San Diego, the Incorporated Cities of San Diego County (including Encinitas), and the San Diego Unified Port District.

Ultimately, storm water and urban water runoff contaminants are derived from diverse sources and practices throughout the upper watershed, and, therefore, present a very difficult public education problem.

In 1998, the National Environmental Education and Training Foundation (NEETF)/Roper conducted a public survey and reported that “fewer than 1/3 of American adults could select the definition of a watershed from a simple multiple choice quiz, and there was reason to believe that fewer than 1% could define one if you asked them point blank. Just 25% of Americans even know where their water originates, even though the vast majority consumes water directly from the tap (Scott 2002).”

### **Justification:**

The esthetics, ecological condition, and environmental health of our coastal waters are of significant value to the citizens and economy of the City of Encinitas. Coastal recreation is an important part of life in Encinitas and its economic value has been estimated to be about \$47 m/yr (King 2001). Consequently, impairment of these natural resources via contaminant loading (associated with urban runoff) is a serious issue.

### **Existing Practice/Policy:**

The City conducted an analysis to assess the City’s consistency with the watershed protection policies and principles found in the new Storm Water Permit, and it concluded that the City’s General Plan (GP) and Local Coastal Plan (LCP) were consistent with the new permit and that no amendments to the GP/LCP were needed. “Many of the City of Encinitas GP and LCP policies directly specify preservation and acquisition of riparian corridors, wetlands, and buffer zones providing important water quality benefits. They place limits on disturbances of natural bodies of water and drainage systems caused by

developments and even strive to avoid developments susceptible to erosion and sediment loss. GP/LCP policy discourages the amount of impervious surfaces in new development areas minimizing the transport of urban runoff and pollutants.” A full description of these policies, with respect to storm water runoff, is given in Appendix D, and ordinances are given in Appendix F of the JURMP (2002) report.

### **Existing Facility/Program/Service:**

In response to the new storm water runoff permit issued by the SDRWQCB in February 2001 (and to the Heal the Bay lawsuit), the City has taken a very aggressive and leadership role in implementing a new storm/urban water runoff assessment and monitoring program. The City is required to do the following:

- Prohibit non-storm water discharges from entering the Municipal Separate Sewer System (MS4s).
- Prohibit discharges from storm drains that violate water quality standards.
- Implement legal authority to control pollutant discharges into and from MS4s.
- Implement BMPs to reduce pollutants discharge into and from MS4s.
- Implement a Jurisdictional Urban Runoff Management Program (JURMP) to reduce discharge of pollutants via urban runoff.
- Collaborate and implement a Watershed Urban Management Program (WURMP) to identify and mitigate highest priority water quality issues/pollutants in the watershed.
- Collaborate with all co-permittees to plan and coordinate activities.

“The goal of the City’s JURMP is to protect and improve the quality of urban runoff and storm water in order to improve the water quality of the local water bodies. These water bodies primarily include the Pacific Ocean and beaches of Encinitas, Batiquitos and San Elijo Lagoon, Cottonwood Creek, Escondido Creek, and Encinitas Creek. The goal of this program will be accomplished through public education, implementation of BMPs (both structural and nonstructural), enforcement of the City’s (new and updated) ordinances, and working with construction sites, and industry and commercial entities to increase their awareness of urban runoff issues and reduce pollutants leaving their sites. The City has revised its storm water ordinance and updated its grading ordinance to more clearly address its position regarding urban runoff and storm water pollution. ” The City submitted a comprehensive JURMP report on February 21, 2002, which includes the following elements (items 2, 4, and 5 will be emphasized):

- Legal Authority –Storm Water & Grading Ordinance
- Land Use Planning for New Development and Redevelopment
- Construction
- Existing Development (Municipal, Industrial, Commercial, Residential)
- Education
- Public Participation
- Assess JURMP Effectiveness
- Fiscal Analysis

The City currently monitors 3 storm water flow events per year, and 46 dry weather stations throughout the City at least once between May 1 and Sept. 30 using generic Co-permittee protocols. 25% of the samples were analyzed by a commercial laboratory.

Subsequently, the City of Encinitas was identified by the SDRWQCB as the lead Responsible Co-permittee for the Carlsbad Hydrologic Unit (904.0), which includes the Cities of Oceanside, Carlsbad, Vista, San Marcos, Escondido, Encinitas, and Solana Beach, and the County of San Diego.

On January 31, 2003, the City is required to submit a comprehensive WURMP report, which must include the following elements:

- Completed watershed map
- A water quality assessment and watershed monitoring needed
- Prioritization of water quality problems
- Recommended activities
- Individual co-permittee implementation responsibilities and schedule
- Description of watershed public participation mechanisms
- Description of watershed education mechanisms
- Description of mechanism and schedule for watershed-based land use planning
- Strategy for assessing the long term effectiveness of the WURMP

To facilitate develop of the WURMP the City's Encinitas and Escondido and the Escondido Creek and San Elijo Lagoon Conservancies, and appropriate federal and state agencies took a major step and signed a formal Cooperative Agreement to manage and preserve the Escondido Creek Watershed as a Preservation Area on July 17, 2002.

#### **Assessment:**

#### **Background:**

The City has made a substantial effort and investment to increase its ability to assess, monitor, and manage pollutant loading from urban runoff. The City has also conducted a very valuable assessment of the contaminant loading in the Cottonwood Creek watershed and acquired funds to construct and operate a small water treatment plant along Cottonwood Creek to reduce the high bacterial loading in the creek. These credible efforts document and treat serious symptoms, but the sources of these problems are largely derived from the upper watersheds.

#### **Impervious Cover:**

One of the problems that results from urbanization is an increase in the amount of urban runoff due to an increase in impervious cover. Rough estimates of the current amount of impervious cover for the subwatersheds in Encinitas are as follows: Cottonwood Creek (32.7%), Encinitas (21.4%), San Elijo (19.1%),

Encinas (35.3%), and San Elijo Hills (7.6%) (CWN 2002). Since the City of Encinitas is projected to grow by 25% by 2020, urban runoff should increase proportionally to this growth.

Schueler (1995) has shown that there is a significant linear relationship between the amount of impervious cover in a subwatershed and stream condition. If the impervious cover within a subwatershed is less than 10%, then the adjacent stream should be in relatively good physical and ecological condition, if it measures between 10 – 25% the adjacent stream should be degraded, and if above 25%, the stream should be in serious trouble. Since the rate and volume of storm water runoff is related linearly to the amount of impervious cover, increased contaminant loading and further impairment of the beneficial uses of our local creeks, lagoons, and nearshore coastal waters can be expected. This trend can be managed to the extent that the correct “best management practices” are selected, implemented, and are effective.

### **Cottonwood Creek Urban Runoff Assessment and Action Plan:**

The City conducted a field study to characterize the “dry weather” composition and sources of water pollution throughout the Cottonwood Creek watershed in order to develop an action plan for how to reduce urban runoff, improve water quality conditions in the creek and at its ocean discharge at Moonlight Beach. The watershed was segmented into 9 sub-basins, and 10 stations were selected to represent the input of each sub-basin to the main stem of Cottonwood Creek. Each station was sampled 3 times (once per week) over a period of 3 weeks during September 2001. Water samples were analyzed for a spectrum of parameters (i.e. physical analytes, inorganic non-metals, organics, metals, and bacteria) using standard, analytical protocols, by the Encina Wastewater Authority Laboratory (Encinitas, CA) and by Del Mar Analytical (Irvine, CA).

The City concluded:

- Groundwater is significant component of the average surface flow (100gpm) in the lower reaches of Cottonwood Creek.
- Type and quantity of contaminant loading is related to land uses in each sub-basin.
- Many of the tributaries were dry in their upper reaches.
- There is significant nutrient loading (agricultural/nursery activities and groundwater) throughout the watershed.
- Bacterial counts were elevated throughout the watershed, especially in the upper reaches. Several stations exhibited very high counts.
- Metals were elevated in the middle reaches of the watershed.
- No significant organic compounds (fuel hydrocarbons, PCBs, organochlorine pesticides) were found.
- Each sub-basin exhibited some unique pollution problems.

The City developed a Watershed Action Plan, consisting of the following elements, to improve water quality:

- Reduce use of fertilizers (nutrients) and increase containment on site.
- Increase inspections and public education to reduce bacterial loading associated with fertilizers, urban runoff, and illegal encampments.

- Use of BMPs and inspections to reduce metal loading.
- Preserve open space, acquire property to create/increase stream side acreage buffer, increase riparian buffer, day-lighting pipes as open earthen channels to provide passive water quality treatment.
- Conduct a focused quantity and quality groundwater study.

Subsequently, the City secured funds to construct an urban runoff “treatment” facility adjacent to Cottonwood Creek, and plans to divert the creek and to treat it by applying UV and Ozone.

Unfortunately, Schueler (2000) concluded that “current storm water practices, stream buffers, and source controls have a modest potential to reduce fecal coliform levels, but cannot reduce them far enough to meet water quality standards in most urban settings.” Key factors that can be used to facilitate bacterial die-off include: Sunlight (uv light), sedimentation, sand/soil filtration, chemical disinfection, and growth inhibitors. UV light has been used by waste water engineers to treat discharges from municipal storm water pipe systems. However, water turbidity and flow rate greatly limit the effectiveness of UV light treatment systems.

**North County Storm Water Public Awareness Survey (SANDAG 2002):**

In 2002 SANDAG completed a North County Storm Water Public Awareness Survey at the request of 7 cities in North San Diego County, including Encinitas “to determine residents’ knowledge and actions regarding storm water pollution and water quality.” The survey was conducted by mail and was sent to 2,500 households in each city. 506 surveys (20%) were returned from Encinitas. The survey results suggest that the citizens of Encinitas citizens are very knowledgeable about pollution issues and actively practice pollution management methods.

**Data Gaps:**

- Current data on the % of impervious cover for each subwatershed throughout the City is preliminary and needs to be assessed more rigorously.
- Correlations between contaminant loading and land uses by subwatershed are needed.
- Standard public education methods and strategies may not be effective

**Recommendations:**

- 1) The City should map the boundaries of each of the subwatersheds throughout the City and include these boundaries as a common data layer on many of the City’s maps.
- 2) The City should conduct an Urban Runoff Assessment and Action Plan for each of the other 6 subwatersheds that comprise the City, similar to the study that it did for the Cottonwood Creek subwatershed (Weldon et al. 2002).

- 3) The City should calculate the % of impervious cover for each subwatershed, and correlate the results with the storm water and dry weather runoff monitoring data by subwatershed.
- 4) The results should be used as a basis for planning for where to accommodate future growth, as a means for managing urban runoff, and as a mechanism for implementing “smart growth” strategies.
- 5) The City should use the subwatershed as the geographic unit for educating the public about how they can help to “best manage” urban runoff from their local subwatershed. Perhaps a runoff “report card” could be developed and published for each subwatershed.

**Implementation:**

The City is already making a very credible, significant effort at complying with the new storm/urban water permit; has assessed the problem at Cottonwood Creek and is implementing a fast track engineering solution; and has formalized a “partnership” Cooperative Agreement, in recognition of the fact that the City is part of a larger watershed. “Watershed partnerships represent a new method of watershed management. Instead of each agency, organization, or individual working separately, a wide array of stakeholders decide to work cooperatively at the watershed scale toward improved environmental conditions. Watershed partnerships are based on the assumption that longer-lasting improvements result from decentralized, community-based collaborative decision that is made by those most interested or most affected by the outcome of the decision. These voluntary partnerships complement the existing regulatory framework of local, state, and federal agencies and are not intended as a replacement for any regulatory program (Rea et al. 2003).” These current efforts can be enhanced by increased understanding of the role impervious cover and guiding future growth to areas already exhibiting high impervious cover, and discouraging growth in areas with less than 10% impervious cover.