

Water Use Efficiency

Section B: Research and Development;
Feasibility Studies, Pilot or Demonstration Projects;
Training, Education or Public Information;
Technical Assistance

City of Corona Landscape Learning Center

Corona Department of Water and Power

January 11, 2005

Table of Contents

	Page
Background, Goals, and Objectives.....	1
Eligible Projects	1
Statement of Work: Relevance and Importance	1
Statement of Work: Technical/Scientific Merit	3
Statement of Work: Monitoring and Assessment	5
Qualification of Applicants	6
Outreach, Community Involvement, and Acceptance	6
Benefits and Costs	7
APPENDIX A: Project Information Form	14
APPENDIX B: Signature Page	18
APPENDIX C: Project Costs and Benefits Table	19
APPENDIX D: Environmental Documentation.....	24
APPENDIX E: Completed Design Plans.....	29

Background, Goals, and Objectives

The City of Corona is located 45 miles southeast of Los Angeles in western Riverside County. The Corona Department of Water and Power (CDWP) has grown from a small municipal water agency in 1964 to a modern “state-of-the-art” water system that maximizes the city and state’s natural resources. CDWP owns and operates 3 water treatment plants and 4 wastewater treatment plants. The department provides water service to approximately 141,000 customers with a total of 40,883 acre-feet of water sold annually. The mission of the department is to enhance the health and quality of life for the citizens of Corona by providing them an adequate supply of safe, good quality water, an effective efficient system for collecting, treating and disposing of wastewater and its byproducts and reliable electrical power at a reasonable price while providing customer service in a prompt and courteous manner. CDWP strives to improve the quality of life in Corona and provide our residents the best possible service and opportunities.

The goal of the department is to use initiative, innovation and the wide range of professional people and technical skills available to manage environmental, public health, and regulatory issues that face the water industry. To meet this goal, staff is continually developing projects that will extend our resources; from implementing a recycled water program for our parks and schools to creating the Landscape Learning Center that will teach residents about native and water-efficient plants and how they can be incorporated into their landscape. The City of Corona Landscape Learning Center (LLC) is a 1 acre demonstration garden that has been divided into 9 different landscape designs. Each design incorporates a different theme using water efficient plants and irrigation. The purpose of the LLC is to demonstrate water-wise landscape design to the homeowner, and to do so in a manner that is easily translated into their home environment.

Project Eligibility

The Landscape Learning center supports the California Bay-Delta Program’s Water Use Efficiency Plan for developing a demonstration garden that promotes water use efficiency.

Statement of Work: Relevance and Importance

Project Description

For the last three years the Corona Department of Water and Power (CDWP) has offered free Landscape Design and Irrigation Classes to provide information to residents about water-wise landscaping. There has been a great response to these classes and it has created the need to expand the program. To further

promote water-efficient landscape and irrigation design, CDWP has worked closely with a local residential landscape designer to create an educational center that will teach residents how to develop a well designed landscape that is water efficient. The concept, know as the City of Corona Landscape Learning Center (LLC) will be 1 acre of nine different theme landscapes that incorporate water-efficient plants and irrigation. The LLC is designed to provide a comprehensive conservation program to residential customers.

The purpose of the LLC is to demonstrate water-wise landscape design to the homeowner, and to do so in a manner that is easily translated into their home environment. One of the landscape designers involved with this project has been working with residents for 15 years and has frequently had customers comment that they can't visualize what the end product will look like. The LLC differs from other gardens because water-efficient landscape designs are shown as realistic individual properties. Residents can see first hand how to design their landscape and see how water efficient plants can be incorporated for a beautiful design. At a typical nursery setting plant materials are arranged row upon row. The customer is faced with an unfamiliar array of trees and shrubs and no real idea of how to implement them into their own landscape space. The same is seen at many gardens here in California. There are vast arrays of plant materials that are shown but they are not placed in such a way for the homeowner to easily translate it into their landscape. In comparison, consider a typical home-furnishing store. Each show room presents a series of real life vignettes. In each exhibit, walls define the space, rugs are on the floor; all the elements necessary to create a beautiful room are in place. The ideas presented are immediately recognizable as something we can apply to own personal spaces. That is the goal with the Landscape Learning Center: to show water efficient and native plants in a well designed landscape so homeowners can easily incorporate the same principles into their own landscape design. The LLC is designed to represent the realistic needs of homeowners, including budget, realistic limits of the average residential site, ease of installation, and lifestyle.

The Landscape Learning Center has been designed to demonstrate water conservation principles. The following are a few key elements that will be incorporated into the LLC:

Recycled Water - The Corona Department of Water and Power is in the process of expanding its recycled water program. Part of this expansion will include supplying the LLC with recycled water. The LLC will be located next to the wastewater treatment plant that is producing the recycled water thus providing the potential for an additional educational opportunity.

Irrigation – Each design will include proper irrigation for the specific plant pallet. Drip irrigation will be used in the majority of planting areas. The irrigation system for these landscapes will be fully automated.

Mulch – Throughout the LLC mulch and groundcover will be used. Some of the materials will be wood mulch, rock groundcover, and decomposed granite.

Signage - Throughout the LLC signs will indicate the type of plant, the water use requirement, and any special information about the plant. Each garden will have information about how much water the design will save over an all turf landscape of the same size. We are looking at using signs that will be made out of redwood. There are several benefits to using this material including: it is organic, weatherproof, longer lasting, blends well with the theme of the overall landscape and it is less expensive than some other alternatives.

The design of the LLC utilizes a wide variety of native and water-wise plant materials that are locally available and many of which are under used. Although we demonstrate the use of native materials such as Toyon, Rhus and Salvia the emphasis and majority of the planting scheme will be based on:

1. Local availability of materials to the average resident.
2. Ornamental value of the plant
3. A plant that is dependable and easy to grow.
4. Suitability to the site, particularly as it relates to non-invasive root systems and the mature size of the plant.
5. Turf areas comprise no more than 10% of the total property area of the project. The designs that include turf serve as a design element within the overall composition rather than wall-to-wall carpeting of grass typical to so many residential landscapes.

On the attached plans, each design shows a list of the plants that will be incorporated into the landscape.

Statement of Work: Technical/Scientific Merit

Design

The following lists the nine landscape themes that will be built at the Landscape Learning Center. Each description includes the estimated cost of material and installation, the total area, and estimated water savings. The estimated annual water savings are based on water use of a fescue lawn minus the appropriate water coefficient specific to the plant pallet. Please see the enclosed plans for further details of each landscape and the list of plants to be used.

Entry (\$112,429) – The entryway will provide a welcome message and materials that can be used for self guided tours and also serve as a gathering area for field trips. Cost includes construction of a restroom.

Cottage Garden (\$37,093) – This landscape is located in the center of the LLC. There are 5 specialized gardens that are centered around an open-air structure. The specialized gardens are seasonal, herb, bulb, butterfly and hummingbird.

Total area = 7,804 sq. ft.

Planting area = 5,087 sq. ft.

Estimated Water Savings = 106,214 gal/yr.

Meadow / Woodland (\$23,410) – The design shows that by selecting the right plants the landscape can be water-efficient and create a woodland effect. The woodland theme uses many native plants.

Total area = 3,394 sq. ft.

Planting area = 2,318 sq. ft.

Estimated Water Savings = 62,836 gal/yr.

California Native (\$19,168) – This landscape design incorporates native plants, shrubs and trees.

Total area = 3,060 sq. ft.

Planting area = 2,287 sq. ft.

Estimated Water Savings = 74,094 gal/yr.

Water Wise Garden (\$10,515) vs. Bloopers Garden (\$5,129) – This is a side by side comparison of the same size back yard where one is all turf and the other is designed to be water wise.

Water-Wise Landscape	Bloopers Landscape
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Total area = 1,600 sq. ft.	1,520 sq. ft.
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Planting Area = 624 sq. ft.	395 sq. ft.
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Estimated Water Savings = 39,981 gal/yr.	
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Edible Garden (\$27,536) - This landscape focuses around backyard dining. Some of the plants to be used are various fruit trees, herbs, vegetables and edible flowers,

Total area = 3,726 sq. ft.

Planting area = 2,064 sq. ft.

Estimated Water Savings = 84,038 gal/yr.

Tropical Garden (\$38,073) – The design shows that a tropical feel can still be accomplished with water-wise plants.

Total area = 2,706 sq. ft.

Planting area = 1,564 sq. ft.

Estimated Water Savings = 63,115 gal/yr.

Asymmetrical Garden (\$33,280) – This is a front and back yard that is divided by a façade that looks like the front of a home. The design is based on asymmetry.

Total area = 4,020 sq. ft.

Planting area = 2,052 sq. ft.
Estimated Water Savings = 67,208 gal/yr.

Symmetrical Garden (\$27,582) – This is a symmetrical design that also uses a house façade. The front and back landscapes will both be developed.

Total area = 3,596 sq. ft.
Planting area = 1,967 sq. ft.
Estimated Water Savings = 46,002 gal/yr.

The LLC will also have an amphitheater where CDWP will provide classes for residents and school field trips as an additional educational opportunity. The LLC will also feature a maintenance area that will give hands-on experience with topics such as compost, soil, and irrigation controllers.

Project Schedule

- June 2005 – Send out Request for Proposal (RFP) for Construction
- July 2005 – Construction RFP due
- August 2005 – Select Construction consultant
- September 2005 – Begin Site preparation and grading
- November 2005 – Install concrete and hardscape
- March 2006 – Install plant materials for phase 1.
- June 2006 – Complete project

Environmental Documentation

A California Environmental Quality Act (CEQA) study has been completed. Please see Appendix D

Preliminary Plans

Design plans have been completed for the Landscape Learning Center and are attached. Please see Appendix E.

Statement of Work: Monitoring and Assessment

During the construction phase of the project, there will be ongoing monitoring of the progress. The construction manager will receive updates from the selected consultant.

Once the Landscape Learning Center is completed and it is open to the public the workshops and tours will begin. CDWP will be closely monitoring the education tours and landscape workshops offered. These groups, in addition to residents touring the facility, will be given the opportunity to offer suggestions for improvement. This will help staff assess the impact of the garden and allow for future plans of improvement.

Qualifications of Applicants

The Corona Department of Water & Power has the staff to oversee the construction process. The City of Corona is involved with many construction projects and has the experience to manage this project.

The Corona Department of Water and Power has been working on securing additional funding to support this program. To date, CDWP has already received a \$25,000 grant from the United States Bureau of Reclamation to be applied to the design portion of the grant and The Metropolitan Water District's City Makeover program has awarded the City \$20,000 towards construction.

Outreach, Community Involvement, and Acceptance

The LLC will benefit Corona residents and neighboring communities by teaching about water efficient landscape design. Additionally, it will provide an educational experience to local schools and will be an extension of the established Landscape Design class series. The focus of each design is to teach residents how to develop a landscape that incorporates plants that require less water and proper water maintenance. Water conservation and education is a key component of each landscape design. The maintenance area will also provide hands-on experience for residents to learn about irrigation systems including drip irrigation and controllers.

In addition to conservation and education, the LLC provides the opportunity to illustrate and display Corona's local history in native landscape design as well as demonstrating the development and evolution of the citrus industry. Local historical topics to be addressed by the LLC include the use of drip irrigation and its beginnings in agricultural crops and the types of food natives ate and examples found in the garden.

1. Student Programs – CDWP currently has a conservation/education outreach program that reaches approximately 2,000 students each year. An additional 1,000 students are expected to be reached with the development of the LLC as it will provide a new local field trip experience and is adjacent to football fields.

All programs will be developed to meet the California Academic Standards with an emphasis on life and earth sciences, local history, and social sciences. There are many learning opportunities that students can walk away with, which can include:

- Water & resource conservation
- Environmental awareness
- Natural habitats

- History: Our native history in plants, animals and people
- Plant structure

2. Adult Programs – Twice a year CDWP offers free Landscape Design classes to residents. This program reaches approximately 200 residents annually. The Landscape Learning Center will allow CDWP to reach additional residential customers since the facility can be open without a scheduled class. The program content will address:

- Basic design principles as they apply to residential landscape design
- Drip irrigation systems
- Sprinkler systems
- Understanding irrigation timers
- Proper pruning techniques
- Plant selection
- Proper planting techniques

In addition local nurseries have been included in the project to ensure that visitors of the LLC will have a local retail store to purchase the native plants. The nurseries intend to support the LLC concepts by carrying native plants and the other plant materials that will be used. This will help to further promote the installation of native plants.

For continuing community effort, CDWP is forming a non-profit organization. The non-profit entity is comprised of community leaders and those dedicated to the education and promotion of horticulture.

Benefits and Costs

The following is a detailed cost estimate for the construction of the Landscape Learning center.

CITY OF CORONA Landscape Learning Center Cost Estimate -

DESCRIPTION	QTY.	UNIT	UNIT PRICE	TOTAL
Mobilization				
Site Survey & Layout	1	Visit	\$ 1,750.00	\$ 1,750.00
Construction Trailer	3	Month	\$ 200.00	\$ 600.00
Phone Service	3	EA	\$ 100.00	\$ 300.00
Temporary Site Fencing	1,030	LF	\$ 3.50	\$ 3,605.00
Storage Bin	3	EA	\$ 200.00	\$ 600.00
Portable Toilet - 1	3	Month	\$ 100.00	\$ 300.00
Equipment Mobilization	1	LS	allow	\$ 3,000.00
Permits & Fees		EA	NA	\$ -
Final Clean-up	2	AC	\$ 400.00	\$ 600.00

Sub-Total **\$ 10,755.00**

Grading

Finish Grade	65,340	SF	\$ 0.50	\$ 32,670.00
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Sub-Total **\$ 32,670.00**

Site Utilities

Sewer Clean Out	1	EA	\$ 400.00	\$ 400.00
Irrigation Water Meter 2"	1	EA	\$ 6,000.00	\$ 6,000.00
Potable Water Meter 3/4"	1	EA	\$ 3,000.00	\$ 3,000.00
Potable 1" SCH 40 PVC Water Line		LF	\$ 7.50	\$ 7.50
2" Ball Valve	1	EA	\$ 100.00	\$ 100.00

Sub-Total **\$ 9,507.50**

Site Electrical

SCE Service Include Trenching & Backfill	1	EA	\$ 5,000.00	\$ 5,000.00
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Sub-Total **\$ 5,000.00**

ENTRY

Soil Preparation	5,749	SF	\$ 0.20	\$ 1,149.80
Weed Abatement	5,749	SF	\$ 0.02	\$ 114.98
Trees 24" Box	6	EA	\$ 225.00	\$ 1,350.00
Entry Gate	43	LF	\$ 20.00	\$ 860.00
Bollard	14	EA	\$ 200.00	\$ 2,800.00
Plaster Wall 12" High	81	LF	\$ 30.00	\$ 2,430.00
4" Concrete	2,724	SF	\$ 5.00	\$ 13,620.00
Colored Concrete Band	115	SF	\$ 10.00	\$ 1,150.00
Irrigation	1,815	SF	\$ 1.10	\$ 1,996.50
Planting	1,815	SF	\$ 2.25	\$ 4,083.75

Sub-Total **\$ 29,555.03**

DESCRIPTION	QTY.	UNIT	UNIT PRICE	TOTAL
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WOODLAND

Soil Preparation	3,941	SF	\$ 0.20	\$ 788.20
Weed Abatement	3,941	SF	\$ 0.02	\$ 78.82
Trees 15" Box	8	EA	\$ 75.00	\$ 600.00
Trees 24" Box	6	EA	\$ 225.00	\$ 1,350.00
Shrubs 5 Gallon	80	EA	\$ 14.00	\$ 1,120.00
Shrubs 1 Gallon	200	EA	\$ 8.00	\$ 1,600.00
Assorted Ornamental Grasses	98	SF	\$ 1.25	\$ 122.50
Meadow grasses - Seed	622	SF	\$ 0.09	\$ 55.98
DG Path	100	SF	\$ 0.80	\$ 80.00
Step stones	15	EA	\$ 3.00	\$ 45.00

Play Structure	1	EA	\$ 2,500.00	\$ 2,500.00
Decking	442	SF	\$ 12.00	\$ 5,304.00
Paver patio	318	SF	\$ 6.00	\$ 1,908.00
Bench	1	EA	\$ 500.00	\$ 500.00
Seat Wall	27	SF	\$ 35.00	\$ 945.00
Rocks	1	LS	\$ 2,000.00	\$ 2,000.00
Irrigation	2,220	SF	\$ 1.10	\$ 2,442.00
Sub-Total				\$ 21,439.50

NATIVE

Soil Preparation	3,060	SF	\$ 0.20	\$ 612.00
Weed Abatement	3,060	SF	\$ 0.02	\$ 61.20
Shrubs 5 Gallon	150	EA	\$ 14.00	\$ 2,100.00
Shrubs 1 Gallon	300	EA	\$ 8.00	\$ 2,400.00
Decomposed Granite	200	SF	\$ 0.80	\$ 160.00
Concrete Stepping Stones	20	EA	\$ 3.00	\$ 60.00
Flagstones	10	EA	\$ 100.00	\$ 1,000.00
Boulders	1	Allow	\$ 3,000.00	\$ 3,000.00
Trellis	169	SF	\$ 14.00	\$ 2,366.00
Irrigation	2,287	SF	\$ 1.10	\$ 2,515.70
Pavers 4" Thick Concrete on sand	187	SF	\$ 6.00	\$ 1,122.00
Rock Groundcover	2,800	SF	\$ 0.80	\$ 2,240.00
Sub-Total				\$ 17,636.90

BLOOPERS

Soil Preparation	1,520	SF	\$ 0.20	\$ 304.00
Weed Abatement	1,520	SF	\$ 0.02	\$ 30.40
Trees 24" Box	1	EA	\$ 225.00	\$ 225.00
Turf	985	SF	\$ 0.60	\$ 591.00
Planting Beds	395	SF	\$ 1.00	\$ 395.00
Mulch	395	SF	\$ 0.80	\$ 316.00
Decomposed Granite	50	SF	\$ 0.80	\$ 40.00
Swing set	1	EA	\$ 500.00	\$ 500.00
Irrigation	1,380	SF	\$ 1.10	\$ 1,518.00
4" Thick Concrete	90	SF	\$ 5.00	\$ 450.00
				\$ -
Sub-Total				\$ 4,369.40

DESCRIPTION	QTY.	UNIT	UNIT PRICE	TOTAL
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WATER WISE

Soil Preparation	1,600	SF	\$ 0.20	\$ 320.00
Weed Abatement	1,600	SF	\$ 0.02	\$ 32.00
Trees 15" Box	4	EA	\$ 75.00	\$ 300.00
Trees 24" Box	1	EA	\$ 225.00	\$ 225.00
Turf	304	SF	\$ 1.10	\$ 334.40

Planting Beds	624	SF	\$ 1.60	\$ 998.40
Mulch	624	SF	\$ 0.80	\$ 499.20
Decomposed Granite	50	SF	\$ 0.80	\$ 40.00
Barbecue Prep Area	1	LS	\$ 1,500.00	\$ 1,500.00
Swing set	1	EA	\$ 1,500.00	\$ 1,500.00
Sand	150	SF	\$ 0.95	\$ 142.50
Soil Fabric	150	SF	\$ 1.25	\$ 187.50
6" Mow strip	66	LF	\$ 4.50	\$ 297.00
Irrigation	928	SF	\$ 1.10	\$ 1,020.80
4" Thick Concrete Patio	472	SF	\$ 5.00	\$ 2,360.00

Sub-Total **\$ 9,756.80**

COTTAGE GARDEN

Soil Preparation	7,804	SF	\$ 0.20	\$ 1,560.80
Weed Abatement	7,804	SF	\$ 0.02	\$ 156.08
Turf	567	SF	\$ 0.60	\$ 340.20
Hedge	42	EA	\$ 14.00	\$ 588.00
Butterfly Garden Planting	1,485	SF	\$ 1.25	\$ 1,856.25
Seasonal Planting	456	SF	\$ 1.25	\$ 570.00
Herb Planting	1,412	SF	\$ 1.50	\$ 2,118.00
Bulb Planting	370	SF	\$ 1.00	\$ 370.00
Hummingbird Garden Planting	975	SF	\$ 1.00	\$ 975.00
Gazebo 12' Diameter	1	Allow	\$ 6,000.00	\$ 6,000.00
Decomposed Granite Walk	1,282	SF	\$ 0.80	\$ 1,025.60
Stepping Stones	39	EA	\$ 3.00	\$ 117.00
Bench	2	EA	\$ 500.00	\$ 1,000.00
Trellis	24	SF	\$ 20.00	\$ 480.00
Raised Planters 18"	138	LF	\$ 35.00	\$ 4,830.00
Wooden Fence 3' High	151	LF	\$ 30.00	\$ 4,530.00
Irrigation	5,505	LF	\$ 1.10	\$ 6,055.50
4" Thick Concrete	900	SF	\$ 5.00	\$ 4,500.00

Sub-Total **\$ 37,072.43**

LLC GENERAL

Decomposed Granite Walk	3,034	SF	\$ 0.80	\$ 2,427.20
Metal Edging	2,762	LF	\$ 4.50	\$ 12,429.00
Garden Sign	1	EA	\$ 6,000.00	\$ 6,000.00
Irrigation Mainline	548	LF	\$ 1.25	\$ 685.00
Irrigation Gate valve	1	EA	\$ 150.00	\$ 150.00

Sub-Total **\$ 21,691.20**

EDIBLE

Soil Preparation	3,726	SF	\$ 0.20	\$ 745.20
Weed Abatement	3,726	SF	\$ 0.02	\$ 74.52

Trees 15" Box	16	EA	\$ 75.00	\$ 1,200.00
Shrubs 5 Gallon	40	EA	\$ 14.00	\$ 560.00
Shrubs 1 Gallon	60	EA	\$ 8.00	\$ 480.00
Planting Area	1,905	SF	\$ 1.50	\$ 2,857.50
Wood Mulch	1,905	SF	\$ 0.80	\$ 1,524.00
Entry Door	1	LS	\$ 2,000.00	\$ 2,000.00
Arbor	114	SF	\$ 4.35	\$ 495.90
Bench	2	EA	\$ 500.00	\$ 1,000.00
DG Path	612	SF	\$ 0.80	\$ 489.60
Retaining Wall	56	LF	\$ 60.00	\$ 3,360.00
36" Fence	84	LF	\$ 10.00	\$ 840.00
Window Wall	8	LF	\$ 22.50	\$ 180.00
Raised Vegetable Beds	159	SF	\$ 3.50	\$ 556.50
Outdoor Kitchen	1	LS	\$ 2,000.00	\$ 2,000.00
Pavers	208	SF	\$ 10.00	\$ 2,080.00
Concrete Ramp	140	SF	\$ 6.25	\$ 875.00
Patio	599	SF	\$ 5.00	\$ 2,995.00
Irrigation	1,687	SF	\$ 1.10	\$ 1,855.70

Sub-Total **\$ 26,168.92**

TROPICAL

Soil Preparation	2,706	SF	\$ 0.20	\$ 541.20
Weed Abatement	2,706	SF	\$ 0.02	\$ 54.12
Trees 15" Box	6	EA	\$ 75.00	\$ 450.00
Trees 24" Box	2	EA	\$ 225.00	\$ 450.00
Shrubs 1 Gallon	105	EA	\$ 8.00	\$ 840.00
Shrubs 5 Gallon	280	EA	\$ 14.00	\$ 3,920.00
Shrubs 15 Gallon Palm	8	EA	\$ 65.00	\$ 520.00
Planting Area	1,564	SF	\$ 8.00	\$ 12,512.00
Turf	316	SF	\$ 1.10	\$ 347.60
Groundcover	1,564	SF	\$ 0.60	\$ 938.40
Play Structure 6'x6'	2	EA	\$ 1,000.00	\$ 2,000.00
Wood Fiber	256	SF	\$ 2.25	\$ 576.00
Gazebo 12' Diameter	1	Allow	\$ 6,000.00	\$ 6,000.00
Irrigation	1,564	SF	\$ 5.00	\$ 7,820.00
4" Thick concrete	570	SF	\$ 5.00	\$ 2,850.00

Sub-Total **\$ 39,819.32**

ASYMMETRICAL (MEDITERRANEAN)

Soil Preparation	4,020	SF	\$ 0.20	\$ 804.00
Weed Abatement	4,020	SF	\$ 0.02	\$ 80.40
Trees 24" Box	2	EA	\$ 225.00	\$ 450.00
Shrubs 5 Gallon	95	EA	\$ 14.00	\$ 1,330.00
Shrubs 1 Gallon	275	EA	\$ 8.00	\$ 2,200.00
Turf	625	SF	\$ 1.10	\$ 687.50
Groundcover	2,052	SF	\$ 0.25	\$ 513.00

Rock Mulch	1,800	SF	\$ 0.80	\$ 1,440.00
Bench	3	EA	\$ 500.00	\$ 1,500.00
Pergola Structure	1	EA	\$ 300.00	\$ 300.00
Fire Pit	1	EA	\$ 1,500.00	\$ 1,500.00
Seat wall	62	SF	\$ 45.00	\$ 2,790.00
House Façade	87	LF	\$ 60.00	\$ 5,220.00
36" Wall & Gate	50	EA	\$ 45.00	\$ 2,250.00
Irrigation	2,391	LF	\$ 1.10	\$ 2,630.10
Entry Concrete Pavers	70	SF	\$ 6.50	\$ 455.00
Courtyard Flatwork	320	SF	\$ 5.00	\$ 1,600.00
Patio Flatwork	717	SF	\$ 5.00	\$ 3,585.00

Sub-Total **\$ 29,335.00**

SYMMETRICAL (FORMAL)

Soil Preparation	3,596	SF	\$ 0.20	\$ 719.20
Weed Abatement	3,596	SF	\$ 0.02	\$ 71.92
Trees 15" Box	6	EA	\$ 75.00	\$ 450.00
Trees 24" Box	4	EA	\$ 225.00	\$ 900.00
Shrubs 5 Gallon	80	EA	\$ 14.00	\$ 1,120.00
Shrubs 1 Gallon	280	EA	\$ 8.00	\$ 2,240.00
Turf	746	SF	\$ 0.60	\$ 447.60
Roses 6 Gallon	11	EA	\$ 18.00	\$ 198.00
Hedges	260	SF	\$ 2.00	\$ 520.00
Planting Area	1,453	SF	\$ 1.00	\$ 1,453.00
Ground Cover	150	SF	\$ 0.25	\$ 37.50
House Façade	52	LF	\$ 60.00	\$ 3,120.00
Play House	1	Allow	\$ 1,000.00	\$ 1,000.00
Small Pots	6	EA	\$ 30.00	\$ 180.00
Medium Pots	2	EA	\$ 60.00	\$ 120.00
Bench	2	LF	\$ 500.00	\$ 1,000.00
Arbor	2	EA	\$ 1,200.00	\$ 2,400.00
Arbor & Swing	1	EA	\$ 1,500.00	\$ 1,500.00
Birdbath	1	EA	\$ 80.00	\$ 80.00
Irrigation	2,805	LF	\$ 1.10	\$ 3,085.50
Flagstone	226	SF	\$ 6.50	\$ 1,469.00
Pavers on Sand	565	SF	\$ 6.50	\$ 3,672.50

Sub-Total **\$ 25,784.22**

MAINTENANCE AREA

Weed Abatement	7,600	SF	\$ 0.02	\$ 152.00
Soil Bins	3	EA	\$ 1,000.00	\$ 3,000.00
Work Shed	1	EA	\$ 5,000.00	\$ 5,000.00
Clean Shed	1	EA	\$ 5,000.00	\$ 5,000.00
Seat Wall	80	LF	\$ 40.00	\$ 3,200.00
Cold Frames / Vegetable Beds	6	EA	\$ 350.00	\$ 2,100.00
Trellis	570	SF	\$ 14.00	\$ 7,980.00

Decomposed Granite	3,995	SF	\$	0.80	\$ 3,196.00
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Sub-Total					\$ 29,628.00
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AMPHITHEATER

Estimate					\$ 10,000.00
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Sub-Total					\$ 10,000.00
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There are many environmental and societal benefit of the Landscape Learning Center since it incorporates the use of native and other drought tolerant plants. The focus of each design is to teach residents how to develop a landscape that incorporates plants that require less water and proper water maintenance. Water conservation and education is a key component of each landscape design. The LLC will provide:

- Education on plants and show how they can be used in a residential setting
- Address a wide range of subjects on many levels to benefit everyone from preschoolers to adults
- Benefit Corona residents and neighboring communities by teaching them about water efficient landscape design
- Provide an educational experience to local schools
- Be an extension of our established Landscape Design class series.

The funding for the Landscape Learning Center is coming from a variety of sources. The United States Bureau of Reclamation granted \$25,000 to be used for design purposes. Metropolitan Water District awarded CDWP \$20,000 to be used for construction of the LLC. Additionally, CDWP has allocated approximately half of the construction costs from the current annual budget.

2004 Water Use Efficiency Proposal Solicitation Package

APPENDIX A: Project Information Form

Applying for:

Urban

Agricultural

1. (Section A) **Urban or Agricultural Water Use Efficiency Implementation Project**

(a) implementation of Urban Best Management Practice, # _____

(b) implementation of Agricultural Efficient Water Management Practice, # _____

(c) implementation of other projects to meet California Bay-Delta Program objectives, Targeted Benefit # or Quantifiable Objective #, if applicable

(d) Specify other: _____

2. (Section B) **Urban or Agricultural Research and Development; Feasibility Studies, Pilot, or Demonstration Projects; Training, Education or Public Information; Technical Assistance**

(e) research and development, feasibility studies, pilot, or demonstration projects

(f) training, education or public information programs with statewide application

(g) technical assistance

(h) other

3. Principal applicant
(Organization or affiliation):

City of Corona Department of Water and Power

4. Project Title:

City of Corona Landscape Learning Center

5. Person authorized to sign and submit proposal and contract:

Name, title

Mr. Donald A. Williams
Assistant General Manager

Mailing address

815 W. Sixth St.

Corona, CA 92882

Telephone

(951) 736-2232

Fax.

(951) 736-2231

E-mail

Don.Williams@ci.corona.ca.us

6. Contact person (if different):	Name, title.	Karly Gaynor Water Conservation Coordinator
	Mailing address.	815 W. Sixth St. Corona, CA 92882
	Telephone	(951) 279-3601
	Fax.	(951) 739-4909
	E-mail	karlyg@ci.corona.ca.us

7. Grant funds requested (dollar amount): <i>(from Table C-1, column VI)</i>	\$183,245
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8. Applicant funds pledged (dollar amount):	\$303,243
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9. Total project costs (dollar amount): <i>(from Table C-1, column IV, row n)</i>	\$486,488
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10. Percent of State share requested (%) <i>(from Table C-1)</i>	43%
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11. Percent of local share as match (%) <i>(from Table C-1)</i>	57%
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12. Is your project locally cost effective? <i>Locally cost effective means that the benefits to an entity (in dollar terms) of implementing a program exceed the costs of that program within the boundaries of that entity.</i> <i>(If yes, provide information that the project in addition to Bay-Delta benefit meets one of the following conditions: broad transferable benefits, overcome implementation barriers, or accelerate implementation.)</i>	<input type="checkbox"/> (a) yes <input checked="" type="checkbox"/> (b) no
--	--

11. Is your project required by regulation, law or contract? If no, your project is eligible. If yes, your project may be eligible only if there will be accelerated implementation to fulfill a future requirement and is not currently required. <i>Provide a description of the regulation, law or contract and an explanation of why the project is not currently required.</i>	<input type="checkbox"/> (a) yes <input checked="" type="checkbox"/> (b) no
--	--

12. Duration of project (month/year to month/year): 06/05 to 06/06

13. State Assembly District where the project is to be conducted: 71st District

14. State Senate District where the project is to be conducted: 37th District

15. Congressional district(s) where the project is to be conducted: 44th District

16. County where the project is to be conducted: Riverside County

17. Location of project (longitude and latitude) -117.57 long
33.87 lat

18. How many service connections in your service area (urban)? 37,235

19. How many acre-feet of water per year does your agency serve? 40,883

20. Type of applicant (select one):

- (a) City
- (b) County
- (c) City and County
- (d) Joint Powers Authority
- (e) Public Water District
- (f) Tribe
- (g) Non Profit Organization
- (h) University, College
- (i) State Agency
- (j) Federal Agency
- (k) Other
 - (i) Investor-Owned Utility
 - (ii) Incorporated Mutual Water Co.
 - (iii) Specify _____

21. Is applicant a disadvantaged (a) yes, _____ median household income

community? If 'yes' include annual
median household income.

(b) no

(Provide supporting documentation.)

2004 Water Use Efficiency Proposal Solicitation Package
APPENDIX B: Signature Page

By signing below, the official declares the following:

The truthfulness of all representations in the proposal;

The individual signing the form has the legal authority to submit the proposal on behalf of the applicant;

There is no pending litigation that may impact the financial condition of the applicant or its ability to complete the proposed project;

The individual signing the form read and understood the conflict of interest and confidentiality section and waives any and all rights to privacy and confidentiality of the proposal on behalf of the applicant;

The applicant will comply with all terms and conditions identified in this PSP if selected for funding; and

The applicant has legal authority to enter into a contract with the State.

Signature

Name and title

Date

APPENDIX C: Project Costs and Benefits Tables

Table C- 1: Project Implementation Costs (Budget)

Table C- 2: Annual Operations and Maintenance Costs

Table C- 3: Total Annual Project Costs

Table C-4: Capital Recovery Factor

Table C- 5: Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

Table C- 6: Project Annual Local Monetary Benefits

Table C- 7: Project Local Monetary Benefits and Project Costs

Table C- 8: Applicant's Cost Share and Description

**APPENDIX C
PROJECT IMPLEMENTATION COSTS TABLE**

**APPLICANT: City of Corona Department of Water and Power
Project Title: City of Corona Landscape Learning Center**

If using the excel tables on DWR website, complete shaded areas only.

Section A projects must complete Life of Investment, column VII and Capital Recovery Factor, column VIII. Do not use 0.

Table C-1: Project Costs (Budget)

	Category	Project Costs \$	Contingency % (ex. 5 or 10)	Project Cost + Contingency \$	Applicant Share \$	State Share \$	Life of investment (Years)	Capital Recovery Factor (Table C-4)	Annualized costs \$
	(I)	(II)	(III)	(IV)	(V)	(VI)	(VII)	(VIII)	(IX)
	Administration (for initiation of project)								
	Salaries, wages	60,000		60,000	60,000				
	Fringe benefits								
	Supplies								
	Equipment								
	Consulting services								
	Travel								
	Other								
(a)	Total Administration Costs ¹	60,000		60,000	60,000				
(b)	Planning/Design/Engineering								
(c)	Equipment Purchases/Rentals/ Rebates/Vouchers								
(d)	Materials/Installation /Implementation	234,123		234,123	117,061	117,062			
(e)	Implementation Verification								
(f)	Project Legal/License Fees								
(g)	Monitoring and Assessment								
(h)	Report Preparation								
(i)	Structures								
(j)	Land Purchase/Easement								
(k)	Environmental Compliance/Mitigation/ Enhancement								
(l)	Construction	126,065	5	132,368	66,182	66,186			
(m)	Other (Specify)								
(n)	TOTAL (=a+...+m)	420,188	NA	426,491	243,243	183,248	NA	NA	
(o)	Cost Share Percentage	NA	NA	NA	57	43	NA	NA	NA

¹ (Excludes administration O & M costs)

Table C-2: Annual Operations and Maintenance Costs

Operations (1) (I)	Maintenance (II)	Other (III)	Total (IV) (I + II + III)
			0

(1) Include annual O&M administration costs here.

Table C-3: Total Annual Project Costs

Annual Project Costs (1) (I)	Annual O & M Costs (2) (II)	Total Annual Project Costs (III) (I + II)

(1) From Table C-1, row (n) column (IX)

(2) From Table C-2, column (IV)

Table C-4: Capital Recovery Factor

(for a discount rate of 6%)

Life of Project (in years)	Capital Recovery Factor
1	1.0600
2	0.5454
3	0.3741
4	0.2886
5	0.2374
6	0.2034
7	0.1791
8	0.1610
9	0.1470
10	0.1359
11	0.1268
12	0.1193
13	0.1130
14	0.1076
15	0.1030
16	0.0990
17	0.0954
18	0.0924
19	0.0896
20	0.0872
21	0.0850
22	0.0830
23	0.0813
24	0.0797
25	0.0782

Life of Project (in years)	Capital Recovery Factor
26	0.0769
27	0.0757
28	0.0746
29	0.0736
30	0.0726
31	0.0718
32	0.0710
33	0.0703
34	0.0696
35	0.0690
36	0.0684
37	0.0679
38	0.0674
39	0.0669
40	0.0665
41	0.0661
42	0.0657
43	0.0653
44	0.0650
45	0.0647
46	0.0644
47	0.0641
48	0.0639
49	0.0637
50	0.0634

Table C-5: Project Annual Physical Benefits (Quantitative and Qualitative Description of Benefits)

QUALITATIVE DESCRIPTION - REQUIRED OF ALL APPLICANTS¹				QUANTITATIVE BENEFITS –(where data are available) ²
Description of physical benefits (in-stream flow and timing, water quantity and water quality) for:	Time Pattern and Location of Benefit	Project Life: Duration of Benefits	State Why Project Bay-Delta benefit is Direct³, Indirect⁴ or Both	Quantified Benefits (in-stream flow and timing, water quantity and water quality)
Bay-Delta:				
Local:			Not Applicable	

¹The qualitative benefits should be provided in a narrative description. Use additional sheets to describe the benefits.

²The project benefits that can be quantified (i.e. volume of water saved or mass of constituents reduced) should be provided.

³Direct benefits are project outcomes that contribute to a CALFED objective within the Bay-Delta system during the life of the project.

⁴Indirect benefits are project outcomes that help to reduce dependency on the Bay-Delta system. Indirect benefits may be realized over time.

Table C-6. Project Annual Local Monetary Benefits

ANNUAL LOCAL BENEFITS	ANNUAL QUANTITY⁴	UNIT OF MEASUREMENT	ANNUAL MONETARY BENEFITS (Thousands \$/yr)
(a) Avoided Water Supply Costs (Current or Future Sources)			
(b) Avoided Energy Costs			
(c) Avoided Waste Water Treatment Costs			
(d) Avoided Labor Costs			
(e) Other (describe)			

(f) Total [(a)+(b)+(c)+(d)+(e)]	NA	NA
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⁴ Examples include avoided cost of current water supply (or future supply if available), energy savings, labor savings, waste water treatment.

Table C-7: Project Local Monetary Benefits and Project Costs

(a) Total Annual Monetary Benefits (Table C-6, row(f))	\$
(b) Total Annual Project Costs (Table C-3, column III)	\$

Table C-8: Applicant's Cost Share and Description

Applicant's cost share (%): (from Table C-1, row o, column V)	
Describe how the cost share (based on relative balance between Bay-Delta and Local benefits) is derived (see Section A-7 for description). Provide description in a narrative form.	