

Program Narrative

I. General Information

Project Sponsor: The University of Texas – Pan American, Edinburg, Texas

Project Name: UTPA Indigenous Wildscape Educational Garden

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II. Description of the Proposed Project

Background Information — The University of Texas – Pan American (UTPA) is a comprehensive, public coeducational institution of higher learning established to serve the higher educational needs of South Texas. The University is organized around six academic colleges offering fifty undergraduate degree programs, forty Master-degree programs, and three Ph.D. programs. UTPA is located in the All-American City of Edinburg, which boasts a population approaching 50,000 and is home to a gateway site of the Texas Parks and Wildlife World Birding Center. With a current enrollment in excess of 14,000 students, the University serves as a hub for community events along with scholarly, cultural, and artistic activities for the region. In addition, each year approximately 75,000 visitors and school-age children visit the university campus. The 200-acre campus consists of modern buildings, patios, and fountains that reflect regional architecture. These structures are linked by a network of covered walkways that pass through a well-manicured landscape comprising a blend of both exotic and native trees and shrubs typical of the region. These covered walkways offer some of the only shaded outdoor public areas and are enjoyed by students and visitors alike.

The Rio Grande Valley is one of the fastest-growing urban areas in the United States, and as such much of the agricultural land and remnant native brush land in and around the Edinburg area is being converted to development at an extremely high rate. Consequently, there are fewer habitats for wildlife and a public that is not only further removed from the natural world but also losing an appreciation for nature. To counteract the negative effects of urbanization while at the same time develop an educational nature laboratory, UTPA administrators have designated approximately a 2-acre parcel of land conveniently located near the center of campus and in close proximity to the visitor center for habitat

enhancement. The purpose of this wildscaping project is to serve as a prototype of urban landscaping using native vegetation. It is also expected that this project will:

- Function as an environmental education center, which will emphasize botanical, wildlife, historical, and visual-cultural themes of the Lower Rio Grande Valley. As an educational function of the garden, representative native plants representing the unique vegetation of the Lower Rio Grande Valley will be cultivated. For example, at least 179 native woody plants species and 141 species of native grasses occur in the Valley;

- Provide specimens with informative plaques that give scientific and vernacular names in English and Spanish;

- Will be a living museum of native plant species. UTPA has been recognized for its attractive architectural and landscaping designs. Numerous visitors are attracted to the campus for its visual appeal and its unique cover walkway complex. An attractive Indigenous Wildscape Educational Garden enhanced by sculpture and other works of art produced by the UTPA Arts Department could contribute to the aesthetic values of the campus and serve as a tourist attraction as well as an educational center;

- Provide educational opportunities in natural sciences and history to university students, visiting school groups, and the general public, but specifically support the biology students and faculty in their educational endeavors;

- Encourage similar wildscaping projects by home-owners, businesses, and other education institutions, and;

- Provide much needed habitat for resident and migratory birds, insects, and other wildlife on campus.

Financial Support and Ongoing Maintenance- The Tourism Research Center will contribute seed funding in the amount of \$3,000. UTPA's Facilities Maintenance and Operations Department is initially providing \$2,500 in manual labor and equipment. Dallas Landscape Designer, Rod Russell-Ides, designer of the Replica of the Grotto of Our Lady of Lourdes in Houston, will be donating designs and services for the garden worth \$3,500.

In-kind services and resources will be provided by a number of partners: the City of Edinburg and the Native Plant Project –a non-profit organization - will provide plant material when possible. Both the Rio Grande Valley chapter of the Texas Master Naturalist program and the Hidalgo County chapter of the Texas Master Gardener program have committed volunteer services. Donations will be sought via requests to local businesses, individuals, and organizations, and by seeking further grant funding. UTPA's Environmental Awareness Club has also pledged volunteer services to the project and will pursue further fund raising and donations for the garden. The Edinburg Chamber and McAllen Chamber of Commerce, RGV Nature Coalition, Valley Morning Star Newspaper, Friends of the Wildlife Corridor,

South Padre Economic Development Corporation, Native Plant Project, Rio Grande Valley chapter of Texas Recreational Vehicle Association and the World Birding Center has committed to provide public relations and other logistical support.

UTPA's Facilities, Maintenance and Operations (FMO) have committed resources for the planning, installation, and maintenance of the wildscaping project. FMO will provide necessary watering equipment, water, electricity, site cleaning, upkeep, and overall maintenance with the help from E.A.C. To ensure the success of the project over time, the entire implementation process from planning to completion, as well as the overall, long-term maintenance plan will be guided by Texas Parks and Wildlife biologists, the UTPA's Department of Biology flora and fauna experts, and the student members of the Environmental Awareness Club and along with FMO staff. Jesus Franco, Urban Wildlife Biologist with the Texas Parks and Wildlife, and Chris Hathcock, Habitat Biologist at the World Birding Center, have participated extensively in the planning process and will continue to do so in the establishment, implementation and utilization of the garden. Carrie Cate is the manager of the Resaca de la Palma State Park in Brownsville and she will be used to help design the butterfly garden. Participation in this project by the Department of Biology faculty members and the University's FMO staff guarantees continuity. Once installed, UTPA's Indigenous Wildscape Educational Garden Project will become an indispensable, on-campus tool for the enhancement of a large number of anthropology and biology-related academic and extracurricular activities. The expected high visitation by the general public and the high visibility of the site will motivate the FMO and the University to maintain and enhance the project site.

The Department of Biology will be responsible for:

- The selection of plants known to attract birds, both those living here year-round and those inhabiting the Valley during the winter. This task would greatly enhance the value of the UTPA campus as a living laboratory for students as they learn to identify and study the unique Valley avifauna;
- Develop a curriculum that will be used in classes. **The garden will serve as an outdoor laboratory for Biology 4314 (Plant Taxonomy), and Biology 5314 (Advanced Plant Systems).** On campus field trips will be conducted to introduce students to native Tamaulipan Biotic Province plants. Students will observe first-hand the foraging behavior of birds attracted to the fruits, flowers, and foliage of the wildscaped area and perform research projects on campus, which is currently not possible.
- The Department of Biology will use the Indigenous Wildscape Educational Garden for students and visitors to learn the unique nature heritage of the Valley. Students often learn, for the first time, about places like Santa Ana National Wildlife Refuge and Bentsen State Park while attending UTPA. Many students have little or no knowledge of these habitats and their unique and delicate ecosystems. The UTPA's Indigenous Wildscape Educational Garden would create a microcosm of the Valley's natural habitat on campus, which would educate and inspire future community leaders and citizens. The location of the UTPA's Indigenous Wildscape Educational Garden behind the

Student Services Building is in a very visible part of campus. There the garden will improve the attractiveness of our campus to students, helping to promote student pride.

- Help in the designing of signs, trail guides, and/or activity stations to encourage habitat use.

The Department of Anthropology will be responsible for:

ANTHROPOLOGY 4350.01 Mexican American Folk Medicine

- Mexican Americans live in a world that is the product of unique historical and cultural experiences. A major dimension of Mexican American experience today is folk or traditional medicine. Mexican American folk medicine has a long and involved history. Prior to the European colonial expansion, complex medical traditions flourished in the Americas. When the Spaniards arrived and imposed new religious, economic, political, linguistic, and medical demands upon the natives, the native medical systems underwent slow but steady transformation. This resulted in medical traditions that were neither fully European nor fully Native American. As Mexicans and Mexican Americans changed in their composition and needs over time, their medical traditions changed with them, on up to the twentieth century. The present-day encounter of Mexican American culture with North American culture has in turn brought about still more changes in folk medicine. **ANT. 4350.01 will utilize** the Indigenous Wildscape Garden to study the medicinal plants used by Mexican American people.

Educational Programs

The goals of the educational programs are:

- Awareness and appreciation of wildlife
- Human values and the wildlife resource
- Habitat and ecological systems
- To learn nature photography
- Bird watching and identification
- Plant identification
- Environmental education
- Learn about water conservation
- Teach and promote native landscaping to the public

Coordinated by Environmental Awareness Club (EAC), Center for Tourism Research (CTR), Department of Biology (DOB), Department of Anthropology (DOA)

- Several training sessions where:

Local resource experts from Texas Master Naturalist and Texas Parks and Wildlife will train members of the EAC, UTPA students and other participants connected to the garden.

- To use Texas Master Naturalist Volunteers to lead tours through garden and field trips.

Programs /workshops –Aimed at local: home / business owners, cities, schools

Coordinated by EAC

- **Texas Wildscapes -Gardening for Wildlife**
 - Two 1-day workshops twice a year, once in the Fall and once in the Spring to be held in the garden
 - Partners: UTPA Department of Biology, Department of Anthropology, Texas Master Naturalist and Environmental Awareness Club, The Native Plant Project, World Birding Center and Texas Parks and Wildlife
 - Guest Speaker Dr. Servando Hinojosa “Medicinal Native Plants Used by Spiritual Healers and Western Medicine”
 - Other topics to include: Native gardening for local businesses
 - Target Audience: Open to the community and campus
 - Event is free
- **Water Conservation in the RGV**
 - 1-day workshop / symposium, twice a year, once in the Fall and once in the Spring to be held in the garden
 - Partners: UTPA's Maintenance Department, Department of Biology and Texas Parks and Wildlife
 - Guest Speaker: From UTPA's grounds Crew
 - Target Audience: Open to campus and community
 - Event is free
- **A Walk on the Wild Side** - Guided tours/educational programs for all visiting school groups that will benefit:
 - 23,000 students from area school districts that UTPA serves by giving tours, working with GEAR-UP programs, at-risk kids and hosting special events such as HESTEC.
 - These tours are year around and this garden will be part of the tour system.
 - Will use volunteers from Texas Master Naturalist, EAC, DOB and DOA
 - (See attached list of school districts in the region that visit and utilize the University.)
 - Event is free
- **Birding /nature field trips**
 - To Resaca de la Palma State Park in Brownsville
 - and the Port Isabel Lighthouse State Historic site, both state parks:

- Will be using volunteers from Texas Master Naturalist to teach skills found in the *Texas Nature Trackers* program
- To participants from EAC, DOB, DOA and the community.
- Event is free
- **Earth Day Festival** – (annual event) in April on campus organized by EAC
 - Partners for the event - and community event to learn about environmental issues UTPA Department of Biology, Department of Anthropology, Texas Master Naturalist, The Native Plant Project, World Birding Center and Texas Parks and Wildlife
 - This event is free and open to the community and campus
 - Food booths, music and games
 - Tours through the garden
 - Speakers on Water conservation, Native plants, and Environmental issues
- **Formal field trips**
 - To state parks, the World Birding Center, community recycling centers. Associated with local nature /birding festivals (McAllen, Mission, Harlingen).
 - Participants: Students from EAC, DOB and DOA
- Having guest speakers from Texas Parks and Wildlife, the Texas Master Naturalist, the Department of Biology and Anthropology address tours of people.

Coordinated by CTR and EAC

- **Spring Migration Celebration**
 - A daylong community event in March
 - Coordinated by EAC and DOB
 - Partners: UTPA Department of Biology, Department of Anthropology, Texas Master Naturalist, The Native Plant Project, World Birding Center and Texas Parks and Wildlife
 - The Department of Biology and World Birding Center will give lectures on the migration of birds, their impact to the community and ways of protecting them.
 - Target audience: Open to the campus and community – Will especially invite schools K through 8
 - This is a free event
- **Fall Migration Celebration**
 - A daylong event in October
 - Coordinated by EAC and DOB
 - Partners: UTPA Department of Biology, Department of Anthropology, Texas Master Naturalist, The Native Plant Project, World Birding Center and Texas Parks and Wildlife

- The Department of Biology and World Birding Center will give lectures on the migration of birds, their impact to the community and ways of protecting them.
- Target audience: Open to the campus and community – Will especially invite schools K through 8
- This is a free event

Coordinated by DOB and DOA

- Field days associated with classes /labs.
- Adopt a portion of the garden to oversee plants and maintenance.
- Arrange guest speakers from **Texas Master Naturalist and Texas Parks and Wildlife** to come to class to talk about environmental issues.
- Incorporate **Texas Parks and Wildlife's Project Wild** curriculum into the classroom.

Other:

- Promote UTPA's habitat as a hub for birding, native plant use, habitat enhancement, etc, activities and events taking place in the Valley.
- Print materials on "How to Establish Your Own Habitat", i.e. take-home printed information on how to reproduce UTPA's habitat at home, business, school, etc. Provide T-shirts to school groups to promote wildscaping in the community.

Components of the Proposed Habitat — The proposed project has the following components:

- Planted saplings and native canopy-tree species (see attached list of native plants),
- a native shrub garden
- grasses and ground coverings
- crushed granite for bedding
- a butterfly garden
- interpretive signage and several small plant-species name tags,
- informative & educational materials to be handed out,
- T-shirts
- viewing telescopes
- natural appearing bird houses, bird feeders, bird baths, and
- irrigation system

III. Objectives and Need for Assistance (Project Justification)

The strategic location and unique physiographic characteristics of the Lower Rio Grande Valley makes it the most biologically diverse region in the United States. The Valley serves as a confluence of temperate and tropical habitats along major migratory pathways inhabited

or frequented by thousands of plant and wildlife species, many of which are unique to the area. More than 1200 plant species have been recorded in the Valley, and about 40% of all the butterflies recorded in North America, north of Mexico, call this region home.

The diversity of habitats and its closeness to the Gulf of Mexico puts the Valley at the center of one of the busiest migratory flyways. With almost 500 (489 as of the last official count) bird species recorded in the area, the Lower Rio Grande Valley is indeed a birder's paradise. This official count represents about 54% of all bird species recorded in North America, north of Mexico. Except for California, Arizona, New Mexico, and Texas as a whole, the four counties (Cameron, Hidalgo, Starr, and Willacy) of the Valley have more birds than any state in the nation.

Unfortunately, the Valley is also one of the most threatened regions in the United States. Years of agricultural clearing and urban expansion have eliminated 95% of the original native brush in the region. The remaining five percent is now home to several federal and state listed endangered and threatened species. Today, several communities of the Lower Rio Grande area are included in the top 10 fastest growing communities in the country. Although many restoration and conservation efforts are currently being conducted on public and private lands in the area, an ever-increasing need for greater public environmental awareness and education is prevalent.

Objectives — The proposed project has the following objectives:

- to provide hands-on educational opportunities for university students taking classes in plant taxonomy, plant morphology, ecology, ornithology, entomology, landscape design, and similar subjects,
- to provide community outreach, specifically:
 - to provide hands-on educational opportunities for visiting school groups and the general public,
 - to help students and staff gain a sense of pride and ownership in the school,
 - to promote native landscaping around homes and businesses in the community,
 - to conserve water by providing additional shade and replacing lawn with drought-tolerant plant species,
 - to create positive change to the environment,
 - to promote appreciation for the natural environment throughout the community,
 - to promote awareness in issues of habitat conservation and the environment,
 - to provide habitat for native birds, insects, and other wildlife,
 - to provide a retreat for people in the community, including university faculty, staff, and students and campus visitors,
 - to reduce the amount of maintenance labor required for the area through creation of a wildscape,
 - to provide a tourist attraction for visitors to the area, and
 - to beautify the campus.

IV. Priority Funding Elements

UTPA's Indigenous Wildscape Garden will address priority elements listed in the instructions of the application as indicated below:

1. *Project provides services to the following underserved populations:*

A. **Ethnic Minorities:** The University of Texas-Pan American, a comprehensive regional university, has a population of more than 14,000 students, approximately 87 percent of which are Hispanic originating from the Rio Grande Valley and Mexico. Approximately 87% of the total student population receives some form of financial aid. With the largest enrollment of Mexican-American students in the U.S., UTPA has been credited with helping to foster prosperity among Latinos in South Texas. (UTPA's Institutional Fact Book 2000) The population in this South Texas-Mexico border region is very poor. The poverty rate is 36.5% for the general population, but 45% for schoolchildren. The unemployment rate is over 13%. The average household income is \$21,000, more than \$10,000 lower than the state average (Texas Comptroller's Office, Texas Workforce Commission).

<p>Rio Grande Valley</p> <p>36.5% in poverty 45% children in poverty 13% unemployed \$21,000 annual income 60% less than high school 8% college degree</p>

B. UTPA serves schools in the Region One Education Service Center area, which is comprised of seven (7) counties in the Rio Grande Valley of South Texas and runs along the U. S. -Mexico border. The 2000 census population for this area is 1.2 million, larger than the state of Rhode Island. This is a fast growing area in the United States; in the last decade, the population increased 40%. The area is majority ethnic minority, with 88.5% of the population Hispanic. (U.S. Census, 1990)

C. The schools in the Rio Grande Valley Educational Service Center educate over 315,000 students in 285 elementary, 76 middle school and 111 high schools. (*See attachment of ISDs served*)

D. **Low Income Community and Public Service** – Historically, the Rio Grande Valley public schools have experienced a high drop out rate. The average academic achievement is often below average on state and national achievement test. UTPA is the 10th largest university in the state and the fifth largest in the U.T System. It has embarked on a major initiative entitled *Improving Student Access and Success*, calling upon all elements of the institution to redouble their efforts to encourage higher educational aspirations among Valley young people, to facilitate their enrollment, and to increase the retention and graduation rates of those who enroll. (UTPA's Institutional Fact Book 2000) The University is committed to serving the community and to maintaining policies that recognize the complex educational needs of its students as they relate to the community. The University pledges itself to the fullest development

of its students by seeking financial assistance, providing appropriate developmental and support services, and offering enriched programs. In addition, the University is committed to providing appropriate and current information technology, computer, laboratories and physical resources to support academic programs and to evaluate the effectiveness of its instructional programs. UTPA's Indigenous Wildscape Garden is another piece of the puzzle that particularly addresses the study of regional flora and provides another extension of the University's educational programs afforded to students, visitors and the community.

E. Statistics for the Valley and of the population that UTPA serves:

Population

- 10% of Texas population lives in the counties on the border
- Border population growth in the 1990's was 50% higher than for the state
- Border population is younger: 25% are 5-17 years old (school-age); for the state, it's 20%. Therefore,

Education

- Per-capita spending for elementary and secondary education is higher on the border: \$1,269 per person vs. \$986 on the state level, and

Health/Social

- Border death rate is lower: 525 deaths/100,000 vs. 715.
- Border families are more stable: more marriages and 1/3 the divorce rate
- Border birth rate is 38% higher than state average
- Border infant mortality rate is 25% less than state average 15.8% of the state's uninsured children live on the Border; or, 31% of Border children are uninsured, compared to state average of 25%
- Death rates for hepatitis/other liver diseases and diabetes are higher on the Border, but HIV/AIDS death rate is lower (less than half the state rate)

Economics

- One-third of Border residents live in poverty, compared to state rate of 17%
- Nearly twice as many Border children live in poverty (40.5%), compared to the state average (22%).
- Annual employment growth was slightly higher on the Border, but unemployment was still nearly three-times (11.4%) the state average (4.6%)

- The property crime rate on the Border is slightly higher than the state average, but the violent crime rate is lower.
- The Border civilian labor force is 7.5% of the state total. 8.4% of the DOD active and civilian employment is on the Border.
- The Border saw more growth in businesses: 19.4% vs. 17.3%
- 2.7% of the state's farms are on the Border.
- The Border has 10% of the state's population, but only 5% of total personal income.
- Per capita personal income on the Border (\$14,224) is ½ of the state average (\$25,803).
- Average annual pay on the Border (\$22,366 is 2/3 of the state average (\$32,254)
- The state's increase in annual pay = 4.4%; the Border, only 1.9%.
- The Border received 12% of state expenditures to counties.
- The areas where the Border received state expenditures to counties in excess of its proportion of population were public assistance (14.8%), and intergovernmental payments (17%).

Source: The Border: On the Brink, Carole Keeton Rylander, Texas Comptroller of Public Accounts, Austin, Texas, March 2001

V. Project Action Plan

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| 1. Submit Proposal to the Texas Parks and Wildlife | October 1, 2003 |
| 2. "Brick Fundraiser" to raise funds for water feature and gazebo | Sept-Dec 2003 |
| 3. Decide on garden design and plant selection | January 15, 2004 |
| 4. Break ground for the garden | January 20, 2004 |
| 5. Install irrigation system and dig water feature | February 1, 2004 |
| 6. Finish water feature installation and brick walk | March 1, 2004 |
| 7. Build garden beds and install plants by | April 1, 2004 |
| 8. Set benches, archway, accent lighting, bird houses and feeders | May 1, 2004 |
| 9. Opening ceremony | May 10, 2004 |
| 10. Garden open to public for graduation | May 15, 2004 |

VI. Source of Sponsor Financing

The University of Texas-Pan American recognizes that this grant, if awarded, operates on a reimbursement basis. The university will incur expenses for work accomplished and the university will file for reimbursement at a later date according to project guidelines.

Funds for financing the sponsor share of the project have been allocated for the start-up costs of the garden for such items as irrigation system, building pathways and water feature. The University's FMO Department will provide manual labor and equipment for the ground preparation. The University will bid out for services and materials to the lowest, most qualified vendor. The vendors will be paid once the job is done, and they submit a bill for their services. All payments will be made in a timely manner.