# Introduction of Irrigation Technology Center

By GUY FIPPS
*Ag Program, Texas A&M University System*

In August of 2001, Beach Ramirez, Inc. was engaged by the Agriculture Program, Texas A&M University System to conduct a Development Plan for the proposed Irrigation Technology Center of Texas to be located in or near San Antonio, Texas. This report addresses the following issues: demand, facilities and land requirements, design concepts, site selection criteria, budgetary costs associated with building and operating the facility, and finally the economic impact it may have locally to San Antonio.

The vision of the ITC is to establish a world class, state-of-the-art facility for education, testing and applied research for the purpose of promoting efficient water use. There is a definite need for such a facility. Irrigation is the single largest user of water in Texas and the Texas Water Development Board projects the total demand for water in Texas will surpass supply by 2010. In the year 2000, the turf, landscape, and agriculture irrigation market was approximately $13 billion.

The focus for a world-class research and technology center for irrigation, given the critical nature of water supply and demand, needs to be directed to what eventually produces and promotes the more efficient use of water. The ITC's vision and mission does this by focusing on performance standards, new and improved equipment testing, assist the public & private sectors in research and development, and provide education and training.

***Demand Analysis***

Our analysis indicates that that demand for Testing and Certification will be the primary revenue generator from the private sector. In a Beach Ramirez survey of manufacturers at the Irrigation Association Convention in San Antonio (Nov. 2001), 70% of respondents indicated a strong interest in utilizing the ITC for testing, research, and development.

Approximately $625,000 in annual revenue can be realized from the Irrigation and Hydraulics Labs and from marketing and analytical studies. Demand for applied research (contracts and grants) should conservatively generate between $1.2 and $1.3 million annually.

Demand for Education (training and certification) is conservatively expected to generate over $500,000 annually from Licensed Irrigators for continuing education courses, basic training courses for Licensed Irrigator candidates, and international training courses.

Visitor demand may be categorized by academic/scientific, international, industry, and tourist sectors. Our analysis indicates that an estimated 9,475 visitors would come for training and education in addition to 15,566 leisure visitors for a total of about 25,000 visitors.

***Building and Land Requirements***

The ITC is divided into four primary units and systems (Irrigation Testing Unit, Urban Landscape Irrigation System, Agricultural Irrigation System, and the Wastewater Unit) along

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with support facilities, including an Administrative and Education Building. The ITC will need approximately 211,000 square feet of space in 11 buildings with 444 parking spaces on a total of approximately 525 acres.

The plan is to develop the ITC in six (6) phases:

* Phase 1-A includes the Irrigation Test lab #1 (Wind Tunnel) along with a temporary building for offices and support space.
* Phase 1-B includes Irrigation Test Lab #2, and the Drip Test Lab. The total square feet of permanent building is approximately 100,000 square feet on 2.5 acres.
* Phase 2 includes the Hydraulics Lab of about 43,000 square feet on 1.25 acres.
* Phase 3 includes the Agricultural Irrigation System with several large plots for a total of 419 acres, and Urban/Landscape Irrigation System plots on 30 acres, and the Central Shop with 11,500 square feet. The total of this phase is 16,300 square feet on 449 acres.
* Phase 4 includes the Wastewater Unit.
* Phase 5 includes an Administration and Education Building with 48,500 square feet on about 6 acres.
* Phase 6 includes a future Visitors Center, land for ITC expansion, and land for private/public sector research and development. Total acres of between 40 and 70.

***Design Concepts***

Because the actual site has not been chosen, we approached the design and layout of the ITC with several different schemes. Three initial Design Concepts were produced with one design concept chosen and further developed. The Design Concept includes an enlargement of the area where most of the buildings will be located.

***Site Selection Criteria***

We developed a set of site selection criteria divided by the major sectors of Transportation, Infrastructure, Cost, Location, Terrain, Political, Regulatory, and Visibility. Once site selection is started, the sectors should be categorized by Primary, Secondary, and Tertiary importance.

***Capital Budget and Income and Expense***

Below is a summary of the capital expenditures needed to set the ITC facilities and equipment in place as planned. Estimated capital cost for Land, Buildings, Infrastructure, Site Work, Soft Cost, and Furniture, Fixtures and Equipment is expected to be approximately $26,630,000. Estimated capital cost for all equipment and material necessary to operate the ITC is expected to be approximately $4,522,000.

**Capital Budget Summary**

| | |
|---|---|
| **Buildings** | |
| Direct | $13,989,070 |
| Soft Costs, FF&E | $ 3,077,552 |
| Contingency | $ 5,120,000 |
| **Infrastructure/Land Acquisition** | $ 4,443,001 |
| **Equipment** | $ 4,521,800 |
| **Annual Operating Costs** | $ 3,174,231 |

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**Phase 1-A Capital Budget Summary**

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|---|---|
| **Lab #1** | |
| Direct | $ 715,650 |
| Soft Costs, FF&E | $ 157,443 |
| Contingency | $ 261,928 |
| **Infrastructure/Land Acquisition** | $ 1,600,00 |
| **Equipment** | $ 236,000 |
| **Annual Operating Costs** | $ 848,077 |

The budget was further analyzed by phase. Phase 1-A budget summary is listed above and is approximately $3,000,000 and Phase 1-B is estimated at approximately $7,600,000. Total Phase 1 budget is $10,600,000.

Income estimates are further detailed with additional comments relating to stakeholder support/contribution and endowment expectations. Revenue estimates for contracts and grants, certification and testing, and education conservatively total over $2,400,000. This does not include the significant potential additional revenue from contracts and grants, publications, software revenue, technology transfer fees, and donations.

In spite of a capital budget totaling over $31,000,000, the resulting assets will provide the capabilities to generate a significant amount of income. A number of financing alternatives are presented that would take advantage of the ITC's ability to generate revenue and gain state and federal initiatives philanthropic donations and local stakeholder support.

The generation of predictable revenue provides the ability to leverage and thus pay for the capital budget over time. Options include private financing, public financing, and a public/private arrangement.

***Economic Impact Analysis***

The initial one-time construction impact (including equipment and supplies) is approximately $44,500,000 and should produce approximately 1,524 jobs.

Visitors are expected to provide an economic impact of $3,360,000 for on-going local purchases for supplies and materials, with a total impact of approximately $26,100,000 annually with at least 500 jobs.

***Renderings***

Renderings of the ITC were developed and visually illustrate the land and facilities that will carry out the ITC's vision and mission.

# *Harvey McLarty Of Lubbock Is New Advisory Chairman*

Harvey McLarty of Lubbock is the new chairman of the Irrigators Advisory Council. The Council serves in an advisory capacity for the Irrigator Program which is a part of the Texas Natural Resource Conservation Commission.

Serving as the new vice chairman is Gene Barnes of Houston. Other members include: Alex Garza, Bob Thurmond, David C. Coleman, Willie Gossett, and public members David Burrell, Alice T. Megna and Edmund Archuleta.