

# CURRICULUM VITA

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Professor and Extension Agricultural Engineer - Irrigation, Water Management

Biological and Agricultural Engineering  
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Dr. Fipps expertise is in irrigation technology, water and salinity management, water resources engineering, irrigation scheme management and rehabilitation, and information technologies including web-based information delivery and GIS. Dr. Fipps has worked extensively in on-farm demonstration and technology transfer, as well as regional water planning and management programs. Dr. Fipps has international experience and conducted field work and studies in Latin America, Europe, Africa, the Middle East, Central Asia and the Far East.

## EDUCATION

- B.A. Liberal Arts, University of Texas at Austin. 1977.
- B.S. Agricultural Engineering, Texas A&M University, College Station, 1979.
- M.S. Biological and Agricultural Engineering, North Carolina State University, Raleigh, 1984.  
Thesis: *Modeling of Lateral Seepage in Relation to the Design of Irrigation and Drainage Systems.*
- Ph.D. Biological and Agricultural Engineering, North Carolina State University, Raleigh, 1988.  
Thesis: *Numerical Solutions to the Richards Equation in Two and Three Dimensions.*

## EXPERIENCE

- 1980 - 1981 Research Associate, Texas Agricultural Experiment Station, Department of Agricultural Engineering, Texas A&M University. Biomass Gasification Project.
- 1981 - 1982 Engineer, Radian Corporation, Austin, TX. Environmental and Engineering Consulting.
- 1985 - 1988 USDA National Needs Fellow, Department of Biological and Agricultural Engineering, North Carolina State University.
- 1988 - 1994 Assistant Professor and Extension Agricultural Engineer, Texas A&M University System, College Station.
- 1994 - 1999 Associate Professor and Extension Agricultural Engineer, Texas A&M University System, College Station.
- 1999 - Professor and Extension Agricultural Engineer, Texas A&M University System, College Station.
- 2003 - Director, Irrigation Technology Center. Texas A&M University System.

## **INTERNATIONAL EXPERIENCE** (partial listing)

Peace Corps Volunteer - Wells Specialist, Upper Volta (Burkina Faso), West Africa, 1975-1977.

Technical Advisor, CARE-International, in Chad, Africa, 1985.

Consultant - Caspian Pipeline Consortium/Oman Oil Company, Analysis of the potential impact of pipeline construction on irrigated schemes and pressurized irrigation systems in the Krasnoda and Stovopole regions of South Russia, 1995.

Development of a Conceptual Design: The Sinaloa Irrigation Training Center for INIFAP and the Sinaloa Foundation, Mexico, 1997.

Design of the Guanajuato Irrigation Center for the Guanajuato Secretary of Agriculture and the University of Guanajuato, Mexico, 1997-1998 .

Irrigation Needs Assessment for Trinidad and Tobago - evaluation of irrigation schemes and on-farm irrigation development needs for the Ministry of Agriculture and Land Resources as part of a Texas A&M University Project, 1999-2000.

Agricultural and Urban Water Demand Management graduate level curriculum development for the Jordan University of Science and Technology, 2004.

Consultation for the Chinese Ministry of Science and Technology on irrigation and water resource sustainability in Xinjing Province, 2005.

### Study Tours/Visits

Uzbekistan	Hosted by the Institute for Irrigation and Agricultural Engineers, Tashkent, Uzbekistan, 1994. Met with Irrigation Agency and Government Officials and toured irrigated regions of Tashkent, Samarkand, Nukus (Aral Sea).
Costa Rica	Hosted by EARTH University. 1995
China	Hosted by the Longding Group and the Fish Island Project, Wuhan University, and the Water Resources Department of Taiwan. Included visits to Beijing, Chongqing, Chengdu, Wuhan, Shanghai, and Taipei. 2000.
Jamaica	Hosted by the National Irrigation Commission of Jamaica, included tours of 4 irrigation schemes and a seminar. 2001.
France	Hosted by CEMAGREF. 2002.
Italy	Hosted by the Bercia Hills Irrigation District, the University of Padua and National Irrigation Laboratory of Italy. 2002.
Israel	Hosted by the Volcani Center and National Water System. 2002.

### International Graduate Students

Uzbekistan (2), Turkey, Ethiopia, Saudi Arabia, Canada, Mexico, Jordan

### Customized Training Programs for Individuals/Delegations

Ethiopia, India, Yemen, Mexico, Egypt, Uzbekistan, Kazakhstan, Tajikistan, Turkmenistan, Turkey, Australia, France, Israel, China, Mali, Botswana

## **PROFESSIONAL AFFILIATIONS**

Registered Professional Engineer, State of Texas (certificate number 70876).  
Texas Agricultural Irrigation Association: Charter Member, Director 1991-1992.  
American Society of Agricultural Engineers:  
    Associate Editor, Journal of Applied Engineering in Agriculture, 1995- 1997;  
    Local Arrangement Chair, ASAE International Conference, San Antonio, 1996;  
    Member, Drip Irrigation Committee, 2002 – .  
American Society of Civil Engineers:  
    Member Water Use Committee, 1993- ;  
    Control Member-Drainage Committee, 1993-1995.  
U.S. Committee on Irrigation and Drainage:  
    Chair: Committee on GIS in Irrigation Projects 2002 - .  
Extension Specialist Association, Chapter Director, 1992-1994.  
Texas Turf Irrigation Association.  
American Geophysical Union.  
Friends of Burkina Faso: Director, 2004 – .

## **CURRENT ACTIVITIES AND ON-GOING PROGRAMS**

The Irrigation Technology Center, director of a newly created center of the Texas A&M University System to coordinate irrigation programs and to design and develop a new major facility for equipment testing and certification, performance standards development, education and applied research (website: <http://itc.tamu.edu>).

TexasET Network and Web Site, weather station network and posting of ET data on the internet for use in irrigation scheduling (website: <http://texaset.tamu.edu>).

Irrigation District Engineering and Assistance (IDEA) program including technical assistance to districts, the development of a GIS-based irrigation district management systems, district rehabilitation planning and analysis, technical assistance on GIS and database modernization, and research into the development of Rapid Assessment Tools for determining and prioritizing irrigation district rehabilitation projects (website: <http://idea.tamu.edu>).

Texas A&M School of Irrigation, a short course program with courses offered throughout Texas for irrigation professionals and individuals (website: <http://irrigation.tamu.edu>).

Evaluation of emerging irrigation technologies and water management strategies, various projects in central and south Texas, including on-farm demonstrations of drip, sprinkler and surface irrigation.

Use and development of information technology for university outreach programs.

Irrigation studies as a part of regional water planning and resources management programs.

## TAMUS COMMITTEE ASSIGNMENTS

### Extension

Initiative Team Leader - Water Use Efficiency in Agriculture, 1990-1994.  
Chair - Computer Software Acquisition Committee, 1990-1991.  
Chair - Planning Committee on Tele-Conferences, 1990.  
Coastal Management Committee, 1993-1994.  
Initiative Team Leader - Water Conservation and Quality, 1994-1996.  
Fee-base Programming Committee, 1995-1996.  
Drought Response Task Force, 1996, 1998.  
Water Response Team, 2001 -

### Biological and Agricultural Engineering Department

Vision Committee, 1989-1992.  
Graduate Programs Committee, 1989-1995.  
Faculty Search Committees (6).  
Natural Resources and Environmental Group, 1994.  
Social Committee, 1995-1996  
Computer Committee, 1997-

### Texas A&M University System (TAMUS)

Rio Grande River Water Quality Initiative: Focus Group 1994-1995  
Rio Grande Corridor, 1994  
Edwards Aquifer Initiative Committee, 1994-1995.  
Chair, Agricultural Issues, Water Leadership Team  
PET Analysis Committee, Water Leadership Team

### External Agency

Water Rights and Uses Committee, Texas Water Commission.  
Edwards Aquifer Task Force, Texas Water Commission.  
GIS Rio Grande/Rio Bravo Group (inter agency).  
Arroyo Colorado Science and Technical Advisory Committee, Texas Natural Resources Commission.  
Chair: Western Region Extension Water Use Specialists Association, 1998-

## **PERSONNEL SUPERVISED** (current)

	FTE
Eric Leigh, Extension Associate	1
Martin Barroso, Ag Technician I	1
Askari Karimov, Extension Associate	1
David Flahive, System Analyst	1
Kendall Chilek, Extension Assistant	1
Karl McDonald, Extension Assistant	1
Yanbo Huang, Extension Associate	0.5
2 student workers	1

## GRADUATE STUDENT COMMITTEES

### Major Professor – Completed

Jalal Basahi	M.S., AGEN, 1993
Dinku Endale	Ph.D., AGEN, 1995
Edwin Wilson	M.S., AGEN, 1997
Jalal Basahi	Ph.D., AGEN, 1998
Bakhtiyor Mukhammadiev	M.E., AGEN, 2000
Azim Nazarov	M.S., AGEN, 2000

### Major Professor - Current

Milton Henry	PhD Ag Eng
Omar Amawi	PhD, BAE
Larry Demich	PhD, BAE
Burak Turan	PhD, CE/BAE

### Committee Member

Michael Schwarz	M.A., Fishery and Wildlife, 1991
Max Alleger	M.S., Fishery and Wildlife, 1992
Kyung Chang	Ph.D., Electrical Engineering, 1993
Alpha Kergna	M.S., AGEC, 1990
Diptish Vartek	M.S., AGEN, 1993
Glenn Turner	M.S., AGEN, 1994
Wesley Newman	M.S., Rangeland Ecology, 1997
Paul Rodique	Ph.D., AGEN, 1998
Byron Neal	M.S., BAE, 1999

## PROFESSIONAL IMPROVEMENT ACTIVITIES (since 1988)

### 1988

AGU Fall Meeting, San Francisco, CA.  
ASAE Winter Meeting, Chicago, IL.

### 1989

High Plains Irrigation Conference, Amarillo.  
International Irrigation Symposium, Los Angeles.  
ASAE Texas Section Meeting, Amarillo.

### 1990

High Plains Irrigation Conference, Amarillo.  
Irrigation Research and Development in the 1990's International Conference, University of Lethbridge, Alberta, Canada.  
Third National Irrigation Symposium, IA and ASAE, Phoenix, AZ.  
Western Water Extension Specialists Meeting, Phoenix, AZ.  
ASAE Texas Section Meeting, College Station.

1991

High Plains Irrigation Conference, Amarillo.  
International Seminar on Efficient Water Use, Mexico City.

1992

High Plains Irrigation Conference, Amarillo.  
ASAE Texas Section Meeting, Corpus Christi.  
Toured the Center for Irrigation Technology, Fresno, and the Irrigation Research and Training Center, San Louis Obispo, CA.

1993

Western Region Water Use Specialist Meeting, Spokane, WA.  
ASAE International Summer Meeting, Spokane, WA.  
ASCE Irrigation and Drainage Conference, Park City, UT.

1994

Subsurface Drainage and Water Requirements Committees, ASCE.  
Texas Irrigation Conference  
TAIA Annual Meeting

1995

ASCE International Water Resources Conference, San Antonio.  
Texas Water '95 Conference, San Antonio.  
Participated in 3 International Conferences: Mexico (2), Costa Rica.  
Third International Micro-Irrigation Conference, Orlando.

1996

Western Region Extension Water Use Specialist Meeting, San Antonio.  
International ET and Irrigation Scheduling Conference, San Antonio.  
Chemigation Workshop and Irrigation Association Exposition, San Antonio.

1997

SALE -Extension Leadership Class  
Official visit, Center for Irrigation Technology, Fresno.  
Irrigation Association Exhibition, Nashville.

1998

SALE -Extension Leadership Class  
Annual Meeting, ASAE, Orlando.  
USCID, 14<sup>th</sup> Technical Conference on Irrigation, Drainage and Flood Control, Phoenix

1999

Toured the Utah Water Resources Laboratory in Logan, February.  
Toured Senninger's Irrigation testing and production facilities in Orlando, February  
ASCE Water Resources Engineering Conference in Seattle, August.  
USCID Conference on Modernization of Irrigation Water Delivery Systems, Phoenix  
IA International Irrigation Exhibition in Orlando, November.  
Traveled to China

2000

USCID/ASCE Conference, Ft. Collins  
ASAE National Irrigation Symposium, Phoenix  
IA International Irrigation Exhibition in Phoenix,

2001

Toured HC&S, Maui.  
Traveled to Jamaica, hosted by the National Irrigation Commission.  
IA International Irrigation Show.

2002

Class on flow measurement taught by Flow Dynamics in Phoenix  
40th Anniversary Conference of Peace Corps, Washington, D.C.  
World Congress of the ICID, Montreal.  
Hearing Deposition on whether an irrigation district has excess water rights.  
Traveled to France to tour the irrigation testing lab of CEMAGREF in Aix au Provence  
Traveled to Italy to study irrigation districts in the Venezia Region  
Traveled to Israel with San Antonio Water System officials hosted by the Volcani Center and the  
National Water Company.

2003

International Meeting of the ASAE, Las Vegas, 7/27-30.  
USCID International Conference, Phoenix, 5/12-15. Organized and conducted a workshop on  
GIS in Irrigation Project as part of the conference.  
Toured Glenn Canyon Dam and Lake Powell to investigate the ecological impact of the  
dam which is now visible due to low water levels.

2004

Traveled to China as part of an official TAMU delegation for the Symposium on the  
Internationalization of University Science and Technology Parks. Worked with the Chinese  
Ministry of Science and Technology, spent two weeks touring 2 regions in China to explore  
possible areas of cooperation in irrigation programs.  
Traveled to Hawaii to study use of GIS in managing irrigated coffee and sugarcane plantations.

## **CURRICULUM DEVELOPMENT**

### **Short Courses/Workshops**

(developed and regularly taught)

Water Measurement Workshop for Irrigation Districts (8 Hours CEU)

Beginning GIS (geographical information systems) for Irrigation Districts (8 hours CEU)

Intermediate GIS (geographical information systems) for Irrigation Districts (8 hours CEU)

Introduction to Use of GPS (global positioning satellite) Technologies and Methods (8 hours CEU)

Landscape Irrigation Auditing & Management (16 hours CEU)

Irrigation Water Management of Commercial Landscapes (8 hours CEU)

Zoning Principles for Landscape Irrigation (8 hours CEU)

Introduction To Drip Irrigation (4 hours CEU)

Fundamentals of Irrigation System Design and Hydraulics Surveying (4 hours CEU)

Efficient Irrigation System Design (8 hours CEU)

Electrical Wiring and Safety for Irrigation (8 hours CEU)

Automated Weather Stations for Irrigation (8 hours CEU)

Introduction To Irrigation Design Software (8 hours CEU)

IrrigationCAD Workshop (6 CEU)

### **Graduate Courses**

Agricultural Water Management (3 hours credit)

Urban Water Management (3 hours credit)

### **Speciality Workshops** (offered occasionally)

Center Pivot Dealers Workshop (1 day)

Wastewater Irrigation:. (3-day).

Developing Water Conservation Plans for Irrigation Districts (1-day).

Flow Meters Installation and Use in Irrigation (1 day)

## **AGRICULTURAL IRRIGATION FIELD WORK PROGRAMS/EXPERIENCE**

### **On-farm Irrigation Technology and Water Management Demonstrations**

(design, installation, monitoring and documentation)

Full Center Pivot Conversions to LEPA  
Full Center Pivot Conversions to LESA  
Partial Center Pivot Conversions to LEPA, LESA, Low Pressure  
Side-roll (wheel) move management  
Surge flow irrigation  
Improved furrow irrigation  
Basin irrigation optimization  
Surface and subsurface drip tap evaluations  
Drip tubing evaluations, including permanent and tree-loop systems

### **Crop Water Management Demonstrations**

(using soil moisture monitoring, ET, flow metering, etc.)

Cotton	wheat
Corn	Citrus
Sorghum	Fruit trees and berries
Peanuts	Cantaloupes
Pasture	Sugar cane
Forage Crops	Fresh vegetables
Potatoes	Onions
	Horticultural crops

### **Irrigation Pumping Plant Efficiency Testing**

Diesel units (65)  
Natural gas units (64)  
Electric units (115)

### **Irrigation District Infrastructure and Management Systems**

Canal seepage loss tests  
Pipeline and valve leak tests  
Sill loss monitoring  
Water supply adequacy evaluations  
Canal condition evaluations  
Database analysis

### **Weather Station Network**

(siting, maintenance, designed and maintain automatic downloading and web posting system)

TexasET Network and Website (see <http://TexasET.tamu.edu>)

## **FINANCIAL SUPPORT**

### **Summary** (funds directly managed/spent, not total awards)

Cash donations	\$ 163,000
Material/equipment donations	\$ 156,852
Contracts/Grants	\$ 3,085,456
Fee-based revenue	\$ ~600,000

### **Cash Donations**

South Texas Irrigation Conference: 1990 - \$1500 Evergreen UWCD, \$2000 Atascosa Peanut Growers Association, \$1000 Wilco Peanuts; 1991 - \$1000 EUWCD; 1993 - \$500 EUWCD, \$1000 EAA.

Lower Rio Grande Irrigation Conference, 1995, \$1,000; 1996, \$2000; 1998 \$2000; 2001, \$2000 donations from the LRGV Managers Association (PI).

ITC Development Plan: SAWS \$125,000; BexarMet \$10,000; SARA \$10,000; TTIA \$2,500, Medina UWD \$1,000; TAIA \$2,500.

### **Donation of Materials And Services**

Center pivot water applicators and materials for conversion on irrigated pasture for Seco Creek WQ Project, 1991, \$2,000. Senninger. Inc.

Drainage system installation for Presidio Drainage Project, 1991, \$5,000, Mercier and Ussery, Inc.

Center pivot water applicators for demonstration projects, 1992, \$8,000, Senninger, Inc.

Torque cell, data logger, and drive shaft assembles to support Irrigation Pumping Plant Testing Project, 1992, \$12,000, CP&L.

Surge valve, 1993, \$1,600, Waterman Industries.

Center pivot water applicators, 1993, \$1,200, Senninger, Inc.

Components for a drip trailer and drip strip tubing with plastic mulch, 1993, \$4,500, High Tech Irrigation.

20 acres of drip tubing from Hardee and Netafin for a county demonstration project in Atascosa County, 1995, \$8,000.

3 Surge Valves, 1996, Waterman Industries \$3,600

LEPA Water Applicators, 1996, Senninger, Inc. heads, \$1,300.

Twelve-inch Surge Valve, 1997, Waterman Industries, \$1800.

Lindsay Insertion flow meter, 1998, Lindsay \$1200.

Raindrip, 2001 - drip products valued at \$89,452.

10 acres of drip tape from T-Systems for an irrigation demonstration in Cameron County, 2003, \$10,000.

A flow meter for the IMPAC pivot from Great Plains Meter, Inc., 2003, \$1200

A weather station provided by the East Texas Irrigation Association to be located at the Overton Center. 2003, \$6,000

### **Contracts and Grants Through Extension**

#### 1989

Monitoring Irrigation Drainage Water Quality in the Lower Rio Grande Valley (PI), 1 year, \$5000, TAEX Mini-grant.

LEPA Center Pivot Irrigation (PI), 1 year, \$2000, Evergreen Underground Water Conservation District.

Evaluation of LEPA Irrigation Systems on Peanuts, 1 year, \$5000, TAEX Mini-grant.

Peanut Production in a Circle for LEPA Irrigation, 1 year, \$4250, TAEX Mini-grant.

#### 1990

LEPA Demonstration Project (PI), 3 years, \$5500, Evergreen Underground Water Conservation District.

Irrigation Water Quality Project (PI), 3 years, \$4500, Starr County Soil and Water Conservation District, Starr Produce Company.

Seco Creek Water Quality Demonstration Project - Irrigated Cropland Component (PI), 6 months, \$8000, TAEX.

Upper North Bosque River Water Quality Demonstration Project - Irrigated Cropland Component (PI), 9 months, \$3000, TAEX.

Demonstration and Evaluation of BMP's for Controlling Non-point Source Pollution from Irrigation Return Flows (PI), 1 year, \$5000, TAEX Mini-grant.

Demonstration Drainage Project, Presidio (CI), 1 year, \$5000, TAEX Mini-grant.

Efficient Irrigation of Christmas Trees for Optimum Production (CI), 3 years, \$6000, Texas Christmas Tree Growers Association and TAEX Mini-grant.

1991

Seco Creek Water Quality Demonstration Project - Irrigated Cropland Component, 1 year (PI), \$8,000, TAEX.

Upper North Bosque River Water Quality Demonstration Project - Irrigated Cropland Component, 1 year (PI), \$5,000, TAEX.

Presidio Drainage Project (installation of a drainage system) (CI), \$2,500, SCS.

Mitigating Irrigation Return Flow (Seco Creek WQ Project - 3 data loggers and sensors) (PI), \$6,000, SCS.

Landscape Irrigation Auditor Training Program ©), \$50,000, TWDB and LCRA.

Development of a LEPA Short Course (CI), 1990, 1 year, \$5000, TAEX Mini-grant.

Computer Software Acquisition (PI), 1991, 1 year, \$2,500, TAEX: USDA base support funds.

Water Quality Education (PI), 1991. 1 year, \$5,350, TAEX: USDA base support funds.

1992

Irrigation Pumping Plant Efficiency Testing Project (PI), 2 years, \$119,000, Governor's Energy Office.

Seco Creek Water Quality Demonstration Project - Irrigation Component, 1 year (PI), \$8,000, TAEX.

Upper North Bosque River Hydrologic Unit Project - Irrigation Component, 1 year (PI), \$5,000, TAEX.

Water Use Efficiency in Agriculture - TAEX Initiative Team (PI), 1992, 1 year, \$14,000, TAEX - USDA base support funds.

1993

Irrigation Water Management in the Lower Rio Grande Valley, 1 year, (PI), \$10,000, TAEX Initiative Team Grant.

Achievements in Water Conservation Through the Landscape Irrigation Auditor Program, 1 year, (CI), \$10,000, TAEX Initiative Team Grant.

Demonstrating Efficient Water Use System for Crop Production, 1 year, (CI), \$10,000, TAEX Initiative Team Grant.

Evaluation of Subsurface Drip Irrigation for Disposal of Wastewater Effluent, 1 year (CI), \$7,000 TAEX Initiative Team Grant.

Demonstrate Water Conserving, Environmentally Sound Methods of Applying Irrigation Water to Reduce the Total Water Demand Placed on the Edwards Aquifer, 1 year (CI), \$25,000, Texas Water Development Board.

Landscape Irrigation Auditor Program, 1 year (CI), \$15,000. Texas Water Development Board.

Intermittent Sand Filters for Improving Effluent Water Quality of On-Site Wastewater Treatment Systems, 2 years (CI), \$141,019, On-Site Wastewater Treatment Research Council.

Seco Creek Water Quality Demonstration Project - Irrigation Component. 1 year (PI), \$15,000, TAEX.

Upper North Bosque River Hydrologic Unit Project - Irrigation Component, 1 year (PI), \$5,000, TAEX.

#### 1994

Seco Creek Demonstration Project - Irrigation Component, (\$20,000, as PI; \$6,000 as CI), TAEX.

Upper North Bosque River Project - Irrigation Component, (\$6,000 as PI, \$5,000 as CI), TAEX.

Non-Point Source Prevention in the Arroyo Colorado Watershed, \$102,000. USEPA, TSSWCB (PI).

#### 1995

Creating an Urban ET Network, TAEX Initiative Team Grants Program, \$5,000 (PI).

List Server/Internet Project, TAEX Initiative Team Grants Program, \$7,500 (CPI).

Integrated Landscape Management 319 Project, TNRCC, \$111,000 (PI).

Seco Creek Demonstration Project - Irrigation Component, TAEX, \$10,000 (PI).

Upper North Bosque River Project - Irrigation Component, TAEX. \$6,000 (PI).

Water Conservation and Quality Initiative Team Support Funds, 1995. TAEX. \$5000 (PI).

Water Quality and Conservation Initiative Team (PI), 1995, TAEX, \$10,500.

#### 1996

Upper North Bosque Hydraulic Unit Project - Irrigated cropland component (PI of task), 1996, TAEX \$4000

Seco Creek Water Quality Demonstration Project - Irrigated Cropland Component, 1996, TAEX (PI of task), \$4000

Non-Point Source Prevention in the Arroyo Colorado Watershed, \$ 38,000. USEPA, TSSWCB (PI) (supplemental funding).

Emergency Response for the Lower Rio Grande Valley of Texas, \$60,000, USDA-CSREES (PI).

1997

Upper North Bosque and Seymour Hydraulic Unit Projects - Irrigated cropland component (PI of task), TAEX \$4000

Seco Creek Water Quality Demonstration Project - Irrigated Cropland Component, TAEX (PI of task), \$5000

Water Conservation Through Drip Irrigation with Rainfall Capture, TAEX, \$10,000 (CI).

1998

Integrated Landscape Management 319 Project, TNRCC, (PI), \$ 26,000 (supplemental funding).

Texas ET Network and Web Site, TAEX, (PI), \$30,000

Irrigation District GIS Support, Joint funding from eight districts, (PI), \$21,024

Texas ET Network and Web Site and support of Landscape Irrigation Programs, \$15,000, TAEX (SB1 Funding).

2000

\$37,500 salary and operating for Extension Associate/Landscape Irrigation (TAEX).

2001

Rapid Assessment Tool for Determining Water Savings in Irrigation Districts. Bureau of Reclamation, \$50,000 for 1 year.

GIS Technical Assistance Program. LRGV Sugar Growers Association, \$10,280 for 1 year.

Weather Station Network Cooperative Project. TCE, \$6,000 (total project \$26,000).

Rio Grande Initiative: Task 1: \$125,000, Irrigation District Assistance; Task 2: \$ 94,000, ITC; Task 3: \$ 94,500, Institutional (DMS); Task 4: \$ 11,850, On-farm; Task 5: \$ 29,488, Urban

TexasET Network weather station fee, SAWS \$3,000.

GIS Technical Assistance 2nd Year Program. LRGV Sugar Growers Association, \$9,600 for 1 year.

Rio Grande Initiative: Task 1: \$145,000, Irrigation District Assistance; Task 2: \$ 94,000, ITC; Task 3: \$ 94,500, Institutional (DMS); Task 4: \$9,000, On farm

2003

TexasET Network weather station fee, SAWS \$3,000.

GIS Technical Assistance 3rd Year Program. LRGV Sugar Growers Association, \$9,600 for 1 year.

Rio Grande Initiative: Task 1: \$145,000, Irrigation District Assistance; Task 2: \$ 94,000, ITC;

Task 3: \$ 94,500, Institutional (DMS)

2004

TexasET Network weather station fee, SAWS \$3,000.

Rio Grande Initiative: Task 1: \$150,000, Irrigation District Assistance; Task 2: \$94,000, ITC; Task 3: \$ 94,500, Institutional (DMS)

Utah State Cooperative Extension. Produce a version of the Landscape Irrigation Auditing software for Utah. \$5,000.

Accuwater, Inc. Water budget calculator. \$4000.

### **Contracts and Grants through the Experiment Station**

Spatial Variability Component of Rio Grande River Project, \$4,000 (PI), REP Project. 1991.

Irrigation Control of White Fly, 1 year (PI), \$9,000. 1992.

Irrigation Water Control of White Fly on Peanuts (instrumentation development component), 1 year, \$5,600 (PI), Texas Peanut Board. 1992.

Irrigation Drainage Water Quality, 1 year, \$6,200 (PI), Texas Water Resources Institute. 1992.

Rio Grande River Water Quality Project (modeling component), 1 year (PI), \$5,000, REP Project. 1992.

Evaluation of Peanut Growth Models ©, 2 years, \$30,000, Texas Peanut Board. 1992.

Droplet Impact Measurement Using Piezoelectric Strips, 1 year, \$10,500. 1993.

Constructed Wetland Technology for Treatment of Residential (Colonias) and Processing Wastewater, 2 years (CI), \$76,340, REP Project. 1993.

Regents Fellowship (PI), \$ 15,000, TAMU (second year funding). 1993.

Soil Moisture and Agricultural Water in a Changing Climate: Coupling Regional Hydrologic Model with Adjusted GCM Estimates from the National Institute for Global Environmental Change, \$69,253 (CI). 1995.

IRDDESS Evaluation, Harlingen Irrigation District, \$1700. 1995.

Soil Moisture and Agricultural Water in a Changing Climate: Coupling a Regional Hydrologic Model with GCM Estimates, National Institute for Global Environmental Change, (CI), \$81,000 (2nd year renewal). 1996.

Development of an Irrigation District Visual System: Phase II. Harlingen Irrigation District,, \$5,000. 1996.

Soil Moisture and Agricultural Water in a Changing Climate: Coupling a Regional Hydrologic Model with GCM Estimates, National Institute for Global Environmental Change, (CI), \$85,000 (3rd year renewal). 1997.

Lower Rio Grande Valley Integrated Water Resources Plan, Engineering Analysis of Irrigated Agriculture and Irrigation Districts, Lower Rio Grande Development Council, \$100,000 (as PI of Task; \$1.2 million total project). 1998.

Characterization of Conveyance Loss in the Distribution Networks in the Lower Rio Grande Valley of Texas, \$60,000. Bureau of Reclamation. 1998.

Region M Water Resources Project, Fipps (\$238,000, entire TAES component (\$288,000)). 1999.

\$54,000 for GIS and District Analysis program in the LRGV, ½ from the College of Ag and Life Sciences, ½ from irrigation districts. 2000.

\$3014 for printing copies of the ITC Brochure (TAES). 2000.

## **PUBLICATIONS**

### **Texas Cooperative Extension Publications**

B-6162 *Center Pivot Training Manual*. G. Fipps and L.L. New, 4/05.

B-6156, *Irrigation of Sugarcane in Texas*. J. Enciso, B. Wiedenfeld, G. Fipps. 3/05.

L-5406 *Maintaining Subsurface Drip Irrigation Systems*. J. Enciso, D. Porter, J. Bordovsky, G. Fipps, 7/04.

L-5406S *Maintaining Subsurface Drip Irrigation Systems* (Spanish) J. Enciso, D. Porter, J. Bordovsky, G. Fipps, 7/04.

L-5424 *Irrigating Sorghum in South and South Central Texas*, C. Stichler, G. Fipps, 2/03.

B-6150 *Irrigation of Forage Crops*, J. Enciso, D. Porter, G. Fipps, P. Colaizzi, 5/04

B-1612 *Managing Texas' Groundwater Resources through Groundwater Conservation Districts*, G. Fipps, (major revision), 1/02.

B-6096 *Center Pivot Irrigation*, L.L. New and G. Fipps, 4/01

B-1612 *Managing Texas' Groundwater Resources through Groundwater Conservation Districts*, G. Fipps, 11/98.

B-1667 *Irrigation Water Quality Standards and Salinity Management Strategies*, G. Fipps, 1996.

B-6011 *Calculating Horsepower Requirements and Sizing Irrigation Supply Pipelines*. G. Fipps. 9/95.

*Irrigating Vegetables*. G. Fipps. In: Handbook for Vegetable Production in Texas. S. Cotner, Editor. 1991

B-2422 *Chemigation Equipment and Safety*. L.L. New and G. Fipps. 1990.

B-1663 *Planning and Operating Orchard Drip Irrigation Systems*. L. New and G. Fipps. 1990; revised 1992.

B-1667 *Salinity Management and Irrigation in the Lower Rio Grande Valley*. G. Fipps. 1990.

B-1670 *Soil Moisture Management*. G. Fipps. 1990.

B-1691 *LEPA Conversion and Management*. L.L. New and G. Fipps. 1990.

B-1652 *1990 Chemigation Workbook* (contributing author).

#### **Newsletters** (as editor)

*WATER - Quality, Conservation, Management*. (Bi-monthly Newsletter), Texas Cooperative Extension. 1989 -1995.

*Irrigation Technology Center* Newsletter. Bi-annual. 2002 –

*IDEA* (Irrigation District Engineering and Assistance Program) Newsletter. Bi-annual. 2004 –

#### **Extension Conference Proceedings** (as editor)

Proceedings of the 1990 South Texas Irrigation Conference. January 11, Pearsall, 80 pp. Including papers: *Irrigation - How Much and When*, G. Fipps.; *LEPA Conversion and Management*, G. Fipps and L.L. New; *Chemigation Equipment and Safety*, L L. New, G. Fipps.

Center Pivot Dealers Workshop Workbook. October 1991. Including papers: *Calculating HP Requirements and Sizing Supply Pipelines*, G. Fipps; *LEPA Conversion and Management*, L. New and G. Fipps.

Proceedings of the 1991 South Texas Irrigation Conference. January 15, Hondo, 148 pp. Including papers: *Effect of Operating Pressure and Irrigation Efficiency on Pumping Costs*, G. Fipps; *Chemigation with LEPA Center Pivots*, L. L. New, A. Knutson, G. Fipps.

Proceedings of the Seminar on Private Water Rights and Public Policy. January 14, 1991, Hondo, 60 pp.

Proceedings of the 1993 South Texas Irrigation Conference. January 15, Hondo.

Proceedings of the Seminar on Private Water Rights and Public Policy. January 1993, Hondo.

Proceedings of the 3rd Seminar on Water Rights and Public Policy. Including paper: *Recent History of the Edwards Aquifer Controversy*. January 1994, Hondo.

Proceedings of the 4th South Texas Irrigation Conference, Editor, Hondo. January 1994.  
Including papers: *Irrigation Pumping Plant Efficiency Testing Results*, B. Neal and G. Fipps;  
*Improving the Efficiency of Center Pivot Irrigation with LEPA*, G. Fipps and L. New; *Choosing a Center Pivot for Pastures*, G. Fipps.

**Special Industry/Commodity Publications** (partial listing)

*The Future Is Not the Past: Irrigation Research Should Focus on Answering the Basic Questions*, Resource Magazine

US Water News, an article on the Texas ET Network and Web Site: *Extension service helps Texans measure ET, schedule irrigation*, April 1999 edition.

*A Savings Surge: Brownsville Water Conservation Program Curtails Water Waste, Spreads Out Irrigator's Allotments*, Texas Farmer Stockman 111(2).

*Avoiding Common Drip Irrigation Mistakes*, Irrigation Business and Technology, Vol. 5(5), October 1997.

*Growing Cantaloupes with Drip Irrigation and Plastic Mulch*, G. Fipps and F. Dainello, Irrigation Journal Volume 46(5), May/June 1996.

*Texas Border Battle: Water Rights and Wrongs*, Irrigation Business & Technology, Vol. IV, No. 6, November 1996.

*Pumping Plant Efficiencies in South Texas*, Irrigation Business & Technology, Vol. IV, No. 6, November 1996.

*LEPA: conversion y manejo*, L. New and G. Fipps, Agricultura de las Americas, Año 43, No 5, 1994.

*Drip Under Plastic in the Lower Rio Grande Valley of Texas*. Irrigation Journal, November 1993.

*Pros and Cons of Drip Under Plastic and Center Pivot Irrigation for Vegetable Production*, South Texas AgriNews, September 1993.

*Profiles in Agricultural Irrigation: Efficient Grain Sorghum Irrigation on the Texas High Plains*, G. Fipps and L. L. New, Irrigation Journal: 43(5), July/August 1993.

*Improving the Efficiency of Center Pivot Irrigation with LEPA*, G. Fipps and L. L. New, Water International, Fall 1992.

*LEPA Center Pivot Irrigation in Texas*, L. L. New and G. Fipps, Agribusiness Worldwide, October 1991.

*Choosing a Center Pivot*, Stockman Grass Farmer 49(6), June 1992.

*Update on the Edwards Aquifer*, Texas Agricultural Irrigation Association Newsletter, October 1992

*TWC Approves Water Conservation Regulations*, Texas Agricultural Irrigation Association Newsletter, December 1992.

*Senate Bill Adopted in Edwards Controversy*. Texas Agricultural Irrigation Association Newsletter, 2nd Quarter 1993.

*Computer Models to Manage Water in Irrigation Districts*, New Waves 8(4), Dec. 1995.

*Lower Rio Grande Irrigation Conference*, Texas Agri News, October 21, 1996.

*Texas Irrigated Acreage Fairly Stable*, Southwest Farm Press, Volume 23(14), July 18, 1996.

### **Published Proceedings Papers**

*Issues and Approaches to Coupling GIS to Irrigation Distribution Network and Seepage Loss Models*. Yanbo Huang , Milton Henry , Guy Fipps. Proceedings of the GIS Workshop, USCID International Conference, May 13, 2003. Phoenix.

*GIS as a Tool in Irrigation District and Projects*. Eric Leigh, Guy Fipps. Proceedings of the GIS Workshop, USCID International Conference, May 13, 2003. Phoenix

*Irrigation Scheme Rehabilitation Evaluation Procedure for Prioritizing Projects based On Water Savings*. Leigh and Fipps. Proceedings of the World Congress of the ICID, Montreal. July 2002.

*Drip Irrigation: What is the State of the Art*. Hanson, Fipps, Martin. Proceedings of the National Irrigation Symposium, Phoenix (Nov 11-16, 2000. Published by the ASAE.:

Potential Evapotranspiration for Irrigation Water Management in Urban landscapes - the San Antonio Experience. Fipps, Pope. Proceedings of the National Irrigation Symposium, Phoenix (Nov 11-16, 2000. Published by the ASAE.:

*Progress in developing a GIS-based management system for Irrigation Districts*. Leigh, Fipps. Proceedings of the National Irrigation Symposium, Phoenix (Nov 11-16, 2000. Published by the ASAE.:

*ET in Hydraulic Modeling of the Rio Grande River in Texas*. G. Fipps and R.J. Brandes; (65) Proceedings of the ASCE/USCID Conference in Ft. Collins June 2000.

*Implementation of GIS-based District Management System*. G. Fipps and E. Leigh (55). Proceedings of the ASCE/USCID Conference in Ft. Collins June 2000.

*Implementation of an District Management System in the Lower Rio Grande Valley.* G. Fipps and C. Pope. Proceedings of the 14<sup>th</sup> Technical Conference - 1998, Contemporary Challenges for Irrigation and Drainage. U.S. Committee on Irrigation and Drainage, 338 pp., 1999

Water For Texas Conference, Austin, 12/2, *Misconceptions about Efficient Irrigation Technologies and Practices.* (45).

*Water Shortages and Irrigation in the Lower Rio Grande Valley of Texas.* Proceedings, ERPI Agricultural Technology Alliance, South Padre Island, Nov. 12-14, 1997, Report CR-109983, Industrial and Agricultural Technologies and Services, Palo Alto, CA. Feb. 1998.

*Field Evaluations of Improved Irrigation Technologies,* G. Fipps, Hydrological Science and Technology, Vol. 12 (1-4) pp. 127-130, 1996.

*Irrigation District Modeling for Water Conservation Planning,* G. Fipps and D. Endale, Hydrological Science and Technology, Vol. 12 (1-4) pp. 131-135, 1996.

*Slow Sand Filter Design and Maintenance for Water Treatment in Small Communities,* E.E. Wilson. Hydrological Science and Technology, Vol. 12 (1-4) pp. 137-141, 1996

*Modeling Irrigation Strategies and Scheduling in Irrigation Districts,* D.M. Endale and G. Fipps. Proceedings of the International Conference: Evapotranspiration and Irrigation Scheduling, Nov. 3-6, 1996, ASAE.

Proceedings of the Water for Texas Conference, Austin, January 1995. Texas Water Resources Institute: *Attacking Excessive Water Use in Landscape Irrigation,* D. Smith and G. Fipps; *Potential of Constructed Wetland Systems for Onsite Wastewater Treatment,* B. J. Lesikar, G. Fipps and G. A Turner; *Managing Water in Irrigation Districts,* D. Endale and G. Fipps.

*Micro Irrigation of Vegetables Under Plastic Mulch in the Lower Rio Grande Valley of Texas,* G. Fipps and E. Perez. In the Proceedings of the Fifth International Micro Irrigation Congress, 4/2-6, Orlando. ASAE.

Proceedings of the Texas Water '95 Conference, San Antonio, August 15-17, 1995. ASCE: *Modeling Irrigation Districts with IRDDESS - A Tool for Conservation and Planning.* D. Endale and G. Fipps.; *Potential of Constructed Wetlands Systems for Onsite Wastewater Treatment and Reuse,* B. J. Lesikar, G. Fipps and G. A. Turner; *Does Landscape Irrigation Auditing Save Water in Urban Areas?* G. Fipps, D. Smith.

Proceedings of the First International Conference on Water Resources Engineering, August 14-18, 1995. San Antonio. ASCE: *Wetland Systems for Home Sewage Treatment/Reuse,* B. J. Lesikar, G. A. Turner, G. Fipps and R. P. Wiedenfeld; *Irrigation Pumping Plant Energy Use and Potential Savings,* B. Neal and G. Fipps.

*Technologies for Reducing Water and Energy Use.* The Proceedings of the International Seminar on Energy Savings, Technologies and Environmental Engineering, Tashkent, Uzbekistan, May 20-24, 1994.

*Constructed Wetland Systems for Onsite Wastewater Treatment in the Lower Rio Grande Valley of Texas*, G. A. Turner, B. J. Lesikar, G. Fipps and B. Wiedenfeld. Proceedings of the National Symposium on Protecting Rural America's Water Resources, Washington, DC, Oct. 23-26, 1994.

*Improving the Efficiency of Center Pivot Irrigation with LEPA*. Proceedings of the International Seminar on Water Use Efficiency, Mexico City, October 1991.

*Six Years of LEPA in Texas - Less Water, Higher Yields*. G. Fipps and L. L. New. Proceedings of the Third National Irrigation Symposium, Phoenix, ASAE Publication 04-90, 1990

*Chemigation with LEPA Center Pivots*. L. L. New, A. Knutson and G. Fipps. Proceedings of the Third National Irrigation Symposium, Phoenix, ASAE Publication 04-90. 1990.

*LEPA Center Pivot Irrigation In Texas*. G. Fipps and L. L. New. Proceedings of the Conference on Irrigation Research and Development in the 1990s, Lethbridge, Alberta, July 17-20, 1990.

*Irrigation Water Quality Issues in the Lower Rio Grande Valley*. G. Fipps. Proceedings of the Conference on Irrigation Research and Development in the 1990s, Lethbridge, Alberta, July 17-20, 1990.

*Drainage and Erosion Control*. Proceedings of the Texas Blueberry Growers Association Convention, Beaumont, September 21-23, 1989.

*Two and Three Dimensional Seepage from Stormwater Infiltration Ponds*. Proceedings of the Symposium on Coastal Water Resources, Wilmington, NC, May 1988.

*Numerical Solutions for Drains on a Hillside*. Proceedings of the Third International Workshop on Land Drainage, Columbus, Ohio, December 7-11, 1987.

*Fluidized-Bed Combustion and Gasification of Biomass*. W. A. LePori, G. Fipps, et al. Selected papers from the 1980 ASAE National Energy Symposium, Vol. 2, October 1980.

## **Electronic/Video Media**

### World Wide Web

Irrigation Technology Center Web Site (<http://itc.tamu.edu>)

District Management System Web Site (<http://dms.tamu.edu>)

Irrigation District Education and Assistance Web Site (<http://idea.tamu.edu>)

Dr. Guy Fipps Web Site (<http://gfipps.tamu.edu>)

Texas A&M School of Irrigation Web Site (<http://irrigation.tamu.edu>).

The Texas ET Network and Web Site, (<http://texaset.tamu.edu>).

The Arroyo Colorado Water Quality Data Base (<http://arroyo.tamu.edu>).

### Video (production and script writing responsibilities)

*The Arroyo Colorado Project*, a 15-minute video summarizing what is known about the water quality of the Arroyo and purpose and activities of the multi-agency Section 319 project.

*Integrated Landscape Management*, a video news release (1 minute) on BMP's for nutrient and irrigation water management.

#### Computer Software

Texas Irrigation Auditing and Scheduling Software (Version 1.0), September 2004.

IRDDESS. 1996. Irrigation district simulation model

LIAM (Landscape Irrigation Auditing and Management) Software. 1994.

TIPPEES (Texas Irrigation Pumping Plant Evaluation Software). 1993. Calculates efficiency and pay-back period for repairs.

LIAS (Landscape Irrigation Auditor Software). 1993.

Gypsum Block Tracking for Irrigation Scheduling. 1991: Spreadsheet program for use with Lotus 1-2-3 and Quattro Pro. Tracks, graphs and averages block readings for up to 4 fields.

COMBO. 1989: Midpoint draw-down during transient drainage events using a combination of analytic solutions.

MG3D. 1988: Transient, 3-Dimensional numerical solution to the Richards Equation for combined saturated and unsaturated groundwater flow using finite differences and the multigrid method.

GS-SOR. 1987. Transient, Gauss-Seidel solution with successive over-relaxation to the Richards Equation for 3-dimensional combined saturated and unsaturated groundwater flow.

FENIS. 1984. Transient, finite element solution to the Richards Equation for combined saturated and unsaturated groundwater flow in 2-dimensions.

#### **Journal/Professional Publications**

*Simulation-based Irrigation Scheduling as a Water Management Tool in Developing Counties*, by D.M. Endale and G. Fipps. Irrigation and Drainage, the Journal of the International Commission on Irrigation and Drainage, Vol 50(3), 3 Sept 2001, pp 249-257.

Potential Water Savings in Irrigated Agriculture in the Low Rio Grande Basin of Texas. G. Fipps. TWRI TR-183, published by the Texas Water Resources Institute, College Station, August 2001,

*Incorporating Water Harvesting into Plasticulture Production of Muskmelon, 'Cucumis melo', var. 'reticulatus L'*. Dainello, F.R., L. Stein, G. Fipps, K. White. HortTechnology Jan-Mar 9(1):78-85, 1999.

*Measuring Droplet Impact Energy with Piezoelectric Film*, J.M. Basahi, G. Fipps, M.J. McFarland, Journal of Irrigation and Drainage Engineering, July/August, 1998.

*Field Evaluations of Improved Irrigation Technologies*, G. Fipps, Hydrological Science and Technology, Volume 12(1-4), 1996.

*Irrigation District Modeling for Water Conservation Planning*, G. Fipps and D. Endale, Hydrological Science and Technology, Volume 12(1-4), 1996.

*Slow Sand Filter Design and Maintenance for Water Treatment in Small Communities*, E.E. Wilson, G. Fipps, Hydrological Science and Technology, Volume 12(1-4), 1996.

*Irrigation Return Flow*. Texas State Soil and Water Conservation Board, Temple, 1991.

*Simple Methods for Calculating Flow to Drains*. ASCE Journal of Irrigation and Drainage, December 1991.

*Pond Seepage in Two and Three Dimensions*. Fipps, G. and R. W. Skaggs. Journal of Hydrology 117:133-151, 1990.

*Analysis of Stormwater Infiltration Ponds on the North Carolina Outer Banks*. G. M. Chescheir, G. Fipps, and R. W. Skaggs. Report No. 254, Water Resources Research Institute, University of North Carolina, Raleigh, September 1990.

*Influence of Slope on Subsurface Drainage of Hillsides*. Fipps, G. and R. W. Skaggs. Water Resources Research 25(7):1717-1726. 1989.

*Modeling Three-Dimensional, Combined Saturated and Unsaturated Ground Water Flow Using Multigrids*. Fipps, G. and R. W. Skaggs. Transactions of the ASAE, Vol.32(4):1263-1268, 1989.

*Drains as a Boundary Condition Infinite Elements*. Fipps, G., R. W. Skaggs, and J. L. Nieber. Water Resources Research, Vol.22(11):1613-1623, 1986.

*Effects of Canal Seepage on Drainage to Parallel Drains*. Fipps, G. and R. W. Skaggs. Transactions of the ASAE, Vol.29(5):1278-1283, 1986.

#### **Grant/Contract Reports** (partial listing)

*Ponding Test Results, Seepage and Total Losses, North Alamo Main Canal, Hidalgo County Irrigation District No. 2*, Eric Leigh and Guy Fipps, February 4, 2004 (22p). Irrigation Technology Center report.

*Seepage Loss Test Results, the Main Canal, Valley Municipal Utility District No. 2*, Eric Leigh and Guy Fipps, January 21, 2004 (13p). Irrigation Technology Center report.

*Ponding Test Results: Seepage and Total Losses, Secondary Canals 13, 16, and 29, Donna Irrigation District, Hidalgo County No. 1*, Eric Leigh and Guy Fipps, March 30, 2004 (22p). Irrigation Technology Center report.

*Ponding Test Results, Seepage Losses Laterals 8e and 2a-c, Maverick County Water Control and*

*Improvement District No. 1*, Eric Leigh and Guy Fipps, March 30, 2004 (20p). Irrigation Technology Center report.

*Ponding Test Results, Seepage and Total Losses, Main Canal B, Hidalgo County Irrigation District No. 16*, Eric Leigh and Guy Fipps, February 17, 2004 (24p). Irrigation Technology Center report.

*Upgrading Existing Databases, Recommendations for Irrigation Districts*, David Flahive and Guy Fipps, September 21, 2004 (7p). Irrigation Technology Center report.

*The Municipal Water Supply Network of the Lower Rio Grande Valley*, Guy Fipps, February 5, 2004 (25p). Irrigation Technology Center report.

*Irrigation Technology Center, Espada Site Evaluation*, 11/12/05, 2 pages, 4 maps. Irrigation Technology Center report.

*GIS Implementation Program, Year Three Progress Report*. Eric Leigh and Guy Fipps, May 27, 2004. LRGV Sugar Growers.

*Statistical Relationships between Canal Seepage Rates and Canal Condition Parameters for the Rapid Assessment Tool*. Milton Henry and Guy Fipps. Bureau of Reclamation, May 2004.

*Measured Seepage Losses of Canal 6 - La Feria Irrigation District Cameron County No. 3*. May 5, 2003. Eric Leigh, Guy Fipps. Irrigation Technology Center report.

*Flow Measurement and Structure Assessment*. Report prepared for the Richmond Irrigation District. Eric Leigh, Milton Henry, Guy Fipps. June 30, 2003. Irrigation Technology Center report.

*Measured Water Losses of Lateral A in Hidalgo County Irrigation District No. 2*. April 28, 2003. Leigh and Fipps. 22 p., 19 figures, 10 tables. Irrigation Technology Center report.

*Demonstration of the Rapid Assessment Tool: Analysis of Canal Conditions in Hidalgo County Irrigation District No. 1*. Feb 5, 2003. Leigh and Fipps. Irrigation Technology Center report.

*Demonstration of the Rapid Assessment Tool: Analysis of Water Supply Conditions in the Harlingen Irrigation District*. Jan 7, 2003. Leigh and Fipps. Irrigation Technology Center report.

*Development Plan for the Irrigation Technology Center of Texas, Texas A&M University System*. With Beach Ramirez. 2/20/02. Irrigation Technology Center report.

*Irrigation District Database Analysis*. Report Prepared for Cameron County Irrigation District No. 2. Flahive and Fipps. Irrigation Technology Center report.

*Flow Measurement for Rehabilitation Planning*. Report Prepared for Cameron County Irrigation District No. 2. Leigh & Fipps. Irrigation Technology Center report.

*Farm Turnout Flow Recommendations for New Outlets in Cameron County Irrigation District No. 2*. Faulkner & Fipps

*Seepage Loss Test Results In Hidalgo County Irrigation District No. 2*. Leigh & Fipps.

*Seepage Loss Test Results In Cameron County Irrigation District No. 2*. Leigh & Fipps.

*Irrigation Needs Assessment for Trinidad and Tobago* for a TAES project. 2000.

*Characterization of Conveyance Losses in Irrigation Districts of the Lower Rio Grande Valley of Texas* for the Bureau of Reclamation project of the same name (Project No. 98-FG-60-10\_0, 1/12, 28pp). 2000.

*Potential water savings in irrigated agriculture for the Rio Grande Planning Region (Region M), Final Report* December 22, 2000. Prepared for the Region M Water Planning Group.

*The Potential Water Savings from Improvements in Irrigation District Distribution Systems and On-farm Irrigation*. December 1999. Prepared for the Region M Water Resources Plan Project.

*Lower Rio Grande Valley Integrated Water Resources Plan - Phase II: Potential Water Savings from Improvements in Irrigation District Distribution Systems and On-farm Irrigation in Hidalgo, Cameron and Willacy Counties*. Report submitted to Perez-Freese and Nickols and the Project Steering Committee, Lower Rio Grande Valley Development Council, September 1998.

*Non-point Source Pollution Prevention in the Arroyo Colorado Watershed: Accomplishments of the Texas Agricultural Extension Service*, Report submitted to the Texas State Soil and Water Conservation Board, November 1997.

*Evaluation of IRDDESS in the Lower Rio Grande Valley*. A Report submitted to the Harlingen Irrigation District, May 30, 1996. 35 p.

*Analysis of the Arroyo Colorado Data Base. Long-term Trends of Water Quality Indicators*. Report submitted to the Texas State Soil and Water Conservation Board. August, 1996. 46 p.

*Monitoring Irrigation Drainage Water Quality in the Lower Rio Grande Valley*. Final Project Report submitted to TAEX. September 5, 1991.

*Demonstration and Evaluation of BMPs for Controlling Non-Point Source Pollution From Irrigation Return Flows*. Final Project Report submitted to TAEX. September 13, 1991.

*Analysis of Stormwater Infiltration Ponds on the North Carolina Outer Banks.* G. M. Chescheir, G. Fipps, and R. W. Skaggs. Report No. 254, Water Resources Research of the University of North Carolina, Raleigh. September 1990.

*Analysis of the New Hope Tributary to Marsh Creek: Technical Report.* G. Fipps. Water Resources Research Institute of the University of North Carolina report to the City of Raleigh. October 21, 1988.

*Technical Analysis of CARE - Chad's Agricultural Development Project: Final Report.* Submitted to CARE - Chad and USAID, N'Djamena, Chad, and CARE International, New York. April 11, 1985.

*Mississippi Biomass and Solar Development.* G. Fipps et al. Radian Corporation Report to Mississippi Department of Energy and Transportation. December 19, 1981.

*A Texas Biomass Research, Development and Demonstration Planning Document.* G. Fipps. Texas Energy and Natural Resources Advisory Council, Austin. August 31, 1981.

*Reclamation Plan for the Sparta Mine Site in Calhoun County, Arkansas.* S. A. Gavande and G. Fipps. Radian Corporation Report to Shell Oil Co. Houston. April 1981.

*On-Site Energy Production from Agricultural Residues: Final Report.* W. A. LePori, G. Fipps. et al. Texas Energy and Natural resources Advisory Council, Austin. August 31, 1981.

### **Book Chapters**

*Aral Sea Disaster.* Encyclopedia of Water Science Marcel Dekker, Inc., New York. 2003.

*irrigation.* The Texas Almanac, published by the Dallas Morning News.

*Improving the Efficiency of Center Pivot Irrigation with LEPA,* G. Fipps and L. L. New, in Efficient Water Use, Instituto Mexicano De Tecnologia Del Agua, Mexico City, 1993.

*Improving the Efficiency of Center Pivot Irrigation with LEPA,* G. Fipps and L. New. Efficient Water Use 1994, editors: H. Garduno and F. Arreguin-Cortes, UNESCO/STLAC, Montevideo, Uruguay (ISBN:92-9089-340-0), 379 p.

*Mejoramiento en la Eficiencia de Riego con Pivote Central Empleando LEPA (Aplicacion Precisa con Baja Energia)* G. Fipps, L. New. In Unso Effivciente del Agua. Editors: H. Garduno, F. Arreguin-Cortes. UNESCO, 1994.

## PAPERS PRESENTED

### Invitational (partial listing)

#### 2004

*GIS Applications in Agriculture*, Special Seminar, USDA, Honolulu (3/2, 35)

*GIS for Irrigation Scheme Management*. HC&S, Inc., Maui (3/5, 25)

*GIS Programs in Texas*, University of Hawaii (3/9, 45)

#### 2003

*Irrigation System Alternatives and Selection*. South Texas Farm and Ranch Show, Victoria (10/22, 65).

*Irrigation System Alternatives and Selection*. Lower Rio Grande Irrigation Conference. McAllen (10/27, 125).

#### 2002

*Groundwater Conservation Districts*. Brazos/Robinson County Extension Meeting, Bryan. 1/29 (90)

*Groundwater Conservation Districts*. East Texas Fruit and Vegetable Conference, Tyler 2/19 (150):

*Infrastructural Needs of Irrigation Districts; Update on the Irrigation Technology Center*. Texas Produce Convention, Houston 9/13 (55)

*Groundwater Conservation Districts*. East Texas Nursery Growers Association, Tyler 12/4 (85)

#### 2001

*Achieving Real Water Savings in Irrigated Agriculture*. From Sole Source to Integrated Resource Symposium, sponsored by the Edwards Aquifer Authority, San Antonio, (9/20, 98)

*Managing Texas' Groundwater Resources through Groundwater Conservation Districts*, Burleson County Extension Meeting, Caldwell, 11/8 (120).

*Overview of Irrigation Technologies*. LRG Irrigation Seminar (12/4, 120)

*Managing Texas' Groundwater Resources through Groundwater Conservation Districts*, Lions Club, Hallettsville, (9/25, 10/29, 145).

*Leveraging Local Resources*, Urban Extension Conference, Ft. Worth, (9/28, 230).

*Chemigation*, 8<sup>th</sup> Annual SE Texas Maintenance Conference, Conroe, (10/25, 45; with Simpson)

*The DMS and GIS Program in Texas*. Seminar for HC&S, Maui (7/2, 45) *Managing Texas' Groundwater Resources through Groundwater Conservation Districts*. Sweetwater (2/6, 106)

*Center Pivot Irrigation*. Center Pivot Clinic, Sinton (5/23, 34).

#### 2000

South Texas Irrigation Conference and Trade Show in Hondo (1/8): *Use of PET for Irrigation Water Management; The Irrigation Technology Center* (80).

*Selection and Costs of Irrigation System*. Calhoun county extension meeting in Port Lavaca (1/19, 30).

LRG Valley Irrigation Conference (2/3): *Irrigation Selection and Cost; Modernization of the Accounting Systems of Irrigation Districts* (165); *Center Pivot Irrigation* (35).

Region M Committee: *Potential Water Savings in Irrigated Agriculture for the Rio Grande Planning Region* (5/24, 16).

Tri-County field day tour on our center pivot demonstration at the Buffalo Ranch in Burleson County (6/29, 89).

*Current District Efficiencies and Projections of Water Saving Potential* at a meeting on Improving Irrigation District Efficiencies: Status and Opportunities, Monte Alto (10/3, 35).

*Strategy for Agricultural Water Conservation in the Rio Grande Water Plan for the Next 50 Years* at a meeting sponsored by the United Research and Education Foundation, Mission (10/4, 45).

Uniting the Basin 2000 conference in Juarez: *Lower Rio Grande Valley Agricultural Efficiencies* (11/10, 135), sponsored by the Rio Grande/Rio Bravo Basin Coalition.

#### 1999

Texas Vegetable Association Mid Year Meeting, McAllen, 6/11, *Opportunity to Improve Water Delivery Infrastructure* (85).

Tri-County Crops Tour, Mumford, 7/1, *Center Pivot Irrigation* (95).

Science and Technology Committee of the Edwards Aquifer Authority, San Antonio, 10/27, *The Irrigation Technology Center* (45).

Texas Recreation and Park Society Region 5 workshop, 11/19, *The Science of Irrigation Scheduling* (25).

TAMUS Ag Program Briefing, San Antonio, 11/19, *The Irrigation Technology Center* (30).

LRGV Horticultural Society Annual Meeting, Weslaco, *Potential Water Savings in Irrigation Districts and Irrigated Agriculture in the LRGV* (125).

Center Pivot Irrigation Meeting, Sinton, 2/2, *Efficient Center Pivot Irrigation* (30).

East Texas Vegetable and Fruit Conference, Tyler, 2/2, *Planning for Irrigation* (125).

Furrow Irrigation Conference, Port Lavaca, 1/27, *Management of Furrow Irrigation Systems* (36).

TNRCC and TWDB Workshop on Water Conservation and Drought Contingency Plans, Houston, 5/25, *Conveyance Losses, Metering Structures and GIS and On-farm Irrigation Water Conservation*”.

TNRCC and TWDB Workshop on Water Conservation and Drought Contingency Plans, Weslaco, 5/27, *Conveyance Losses, Metering Structures and GIS and On-farm Irrigation Water Conservation* (35).

Irrigation Water Management Program, Sinton, 5/26, *Irrigation Scheduling and Water Management* (16).

Water Management Workshop for Irrigation and Water Districts, McAllen, 3/23, *Pipe flow Measurement* (55).

Delta Lakes Irrigation District grower’s meeting, Monte Alton, 3/24, *Use and Accuracy of Propeller Flow Meters* (115).

#### 1998

Texas Produce Convention, South Padre, September 10-11, 1998: *Agricultural Focus of the Regional Water Plan for Hidalgo, Cameron and Willacy Counties; Tools Available to Help Schedule Irrigations*

*Opportunities to Improve Water Delivery Infrastructure.* Texas Vegetable Association Mid-Year Meeting, McAllen, June 9, 1998.

Seminar on Water Rights and Public Policy, Hondo, 1/12, *The Irrigation Question* (90).

South Texas Irrigation Conference, Hondo, 1/13: *Drip Irrigation; The Texas ET Network and Web Site.* (125)

LRGV Water Quality Conference, Weslaco, 1/28, *Arroyo Colorado Project: Benefits of Implementing BMPs in the Rio Grande Valley,* (120)

LRGV’s Future: Nonpoint Source and Water Quality Seminar, 3/13, *The Internet and Water Quality: A compatible Pair.* (55)

Stakeholder Meeting, Cameron County Irrigation District, San Benito, 9/22, *Potential Water Savings in Irrigation Districts* (260).

District Stakeholders Meeting, Weslaco, 11/12. *Potential Water Savings in Irrigation Districts.* (35)

CA/NV Alfalfa Symposium, Reno, 12/3, *Getting the Most from Center Pivots*. (350)

Irrigation Management Seminar, Sinton, 4/22, *Efficient Irrigation*. (15)

#### 1997

*Irrigation and Water Issues in South Texas*. Agricultural Technical Alliance Fall Meeting, South Padre, November 11, 1997.

Lower Rio Grande Irrigation Conference, Harlingen, December 4, 1997: *ET and Scientific Irrigation Water Scheduling; Irrigation Innovations in the Lower Valley*

Texas Irrigation Council Annual Meeting, Austin, *Development of an Irrigation District Visual and Management System*, September 17, 1997.

*Drip Irrigation With Effluent*. Texas Irrigation Conference, San Angelo, January 11-12, 1995.

#### 1996

*Understanding Irrigation Technologies: Economics, Effectiveness, Applications* (238). Lower Rio Grande Irrigation Conference, McAllen. 10/29/05.

#### 1995

*Wastewater From Aquaculture: Issues and Strategies*, Texas Aquiculture Association Annual Convention, Austin, February 10, 1995.

*Landscape Irrigation Water Management*, Valley Turf and Grounds Management Conference, McAllen, May 3, 1995.

*Capabilities of the Agricultural Engineering Department*, Texas Water Development Board Special Briefing, Austin, May 19, 1995.

*Irrigation and Water Issues in the Lower Rio Grande Valley*, Valley Cotton Production Meeting, Weslaco, October 25, 1995.

Lower Rio Grande Irrigation Conference, McAllen, December 12, 1995: *Potential of Improved Irrigation Technologies and Management Practices; Drip Irrigation of Row Crops; Drought Contingency Planning with IRDDESS*.

#### 1994

*Water Rights and Regulation in Texas*, East Texas Fruit and Vegetable Growers Conference, February 25, 1994.

*Well-Head Protection for Private Water Wells*, Blueberry and Fruit Growers Joint Conference, College Station, October 3, 1994.

#### 1993

*Advance Irrigation Technologies for Vegetable Production*, Texas Produce Convention and Trade Show, South Padre Island, September 15- 18, 1993.

*TAEX Programs in Efficient Irrigation in the Lower Rio Grande Valley*, Water Conservation Conference sponsored by the TWDB and Bureau of Land Reclamation, Weslaco, May 1993.

*Texas Well Head Protection Regulations*, 1993 Texas Christmas Tree Growers Association Annual Meeting in Shepard, April 3.

*TAEX Program in On-Farm Irrigation Water Management*, Irrigation Water Use Requirements Update meeting sponsored by TWDB, TWRI, Austin, March 1993.

*Irrigation Water Efficiency and Soil Moisture Monitoring*, TAEX Center Pivot Workshop, Plainview, February 1993.

#### 1992

*Water Issues and Rights*, TAEX Faculty Staff Conference, College Station, November 1992.

*Update on the Edwards*, ASAE Texas Section Meeting, Corpus Christi, October 1992.

*Irrigation Efficiency*, Water 2020 Conference, San Angelo, October 1992.

*Water Quality Concerns in South Texas*, South Texas Universities Regional Council, Corpus Christi, January 1992.

*Overview of Irrigation in Texas*, Texas Irrigation Conference, Lubbock, January 1992.

*Legislative and Regulatory Programs Related to Texas Irrigation*, General Membership Meeting of the Texas Agricultural Irrigation Association, Lubbock, January 1992.

#### 1991

*State and Federal Regulation and Management of Agricultural Non-Point Source Pollution*, Rio Grande Valley Cotton Conference, South Padre Island, October 1991.

*Pond Construction*, Texas Greenhouse Conference, College Station, November 1991.

#### 1991

*Irrigation Efficiency and Technology*, Testimony for the Special Legislative Committee on the Edwards Aquifer, Public Hearing, Uvalde, Texas, July 31, 1990.

#### 1990

*Irrigation*, Texas Department of Agriculture Direct Marketing Conference, Austin, February 7, 1990.

*Irrigation Technologies for Reducing Water Use and Operation Costs*. ECO-Fair '90 Conference, Texas Department of Agriculture, Austin, October 5, 1990.

*New Irrigation Technologies for Vegetable Production*, Texas Vegetable Growers Association Annual Meeting, South Padre Island, November 1, 1990.

1989

*Irrigation Basics*, Texas Christmas Tree Growers Association Annual Meeting, Houston, September 29-October 1, 1989.

*Drainage and Erosion Control*, Texas Blueberry Growers Association Convention, September 21-23, 1989, Beaumont.

1988

*Analysis of Stormwater Infiltration Ponds on the Barrier Islands*, Workshop on the Design of Stormwater Control Facilities, North Carolina Society for Professional Engineers and N.C. Department of Environmental Management, McKimmon Center, NCSU, Raleigh, May 1988.

1985

*Agricultural Development in Chad*, G. Fipps, Seminar, presented for the Biological and Agricultural Engineering Department, NCSU. October 1985.

### **Invitational - International**

*Agricultural Technology Revolution and Challenges - the Irrigation Technology Center*. Symposium on the Internationalization of Agricultural Science and Technology Parks, Weifan, China (5/17/04, 75).

*Irrigation Technology*, Collective Farm 127, Kuitun, China (5/23/04, 25).

*Irrigation in Texas*. Seminar, Institute of Agricultural Soil and Water Engineering, Northwest Sci-Tech University of Agriculture and Forestry, Yangling, China (5/27/04, 30).

Management of Groundwater in Texas and Overview of Irrigation Technologies and Design Considerations. Seminar, University of Aquascalientes, Mexico, sponsored by the Aquascaliente Department of Water Resources (12/4/04, 125).

*The District Management Program*. Seminar presented to the National Irrigation Commission, Kingston, Jamaica (9/11/03, 16).

*Irrigation Advances*. University of Padua, Italy. October 2002.

International Conference on Water Issues in the Lower Rio Grande Mexico-Texas Border Region, Monterrey, Mexico (3/30/01, 115) 2001: *The Irrigation Technology Center of Texas; GIS and Modeling*.

*Irrigation Technologies and Water Management Strategies*. National Rangeland Congress, Aquascaliente, Mexico, August 27, 1998.

Growers Meeting, Irapuato, Mexico, 2/12/98, *The Guanajuato Irrigation Center* (130)

*Irrigation Technologies and Economics*. ExpoAgro Sinaloa '97, Culiacan, Sinaloa, Mexico, January 24-26, 1997. INIFAP

*Soil Moisture Monitoring*. Hi-Tech Drip Irrigation Conference, Colima, Colima, Mexico, May 14-16, 1996.

*Irrigation Pumping Plant Testing and Potential Savings*. VI Semnan de Maquinaria Agricola, Universidad Autonoma Agraria Antonio Narro, September 1, 1995.

*Design and Operation of Orchard Drip Irrigation Systems*. 3er Simposium Internacional Nogalero, Torreon. July 6, 1995.

*Irrigating Vegetables*. International Irrigation Conference, Costa Rica, March 24-26, 1995.

*Advanced Irrigation Technologies for Efficient Irrigation*, International Technical Support Seminar, organized by the McAllen Producers Terminal Market Owners Association, McAllen, November 11-12, 1994.

*Modern Irrigation Technologies for Reducing Water and Energy Use*. International Seminar on Energy Savings, Technologies and Environmental Engineering. Tashkent, Uzbekistan, May 23-27, 1994.

Seminario-Taller, Conservacion de Aqua y Energia en el Sector Agricola, San Luis Potosi, Mexico, November 9-12, 1993: *Irrigation Technologies; Prevention of Aquifer Contamination. Irrigation in Texas*.

*Irrigation in Texas*. Seminar presented to the Agricultural Engineering Department, University of Guanajuato, Irapuato, Mexico, November 8, 1993.

Growers Meeting, Irapuato, Mexico, 2/12, *The Guanajuato Irrigation Center* (130)

National Rangeland Congress, Aquascaliente, Mexico, 8/27, *Efficient Irrigation Technologies and Water Management*. (165)

Guanajuato Ag Exposition, Irapuato, Mexico, 11/7. *GIS for Management of Irrigation Districts*. (35).

### **Professional Papers and Presentations** (other)

*Modeling Flows in Irrigation Distribution Networks - Model Description and Prototype*. Yanbo Huang, Guy Fipps. Paper number 032146, Presented at the 2003 ASAE Annual International Meeting, Las Vegas. 27-30 July 2003.

*Potential Water Savings and Efficiencies of Irrigation Districts in the Lower Rio Grande Valley of Texas*, Paper presented at the ASCE International Water Resources Engineering Conference, Seattle, August 1999.

ASAE Annual International Meeting, Orlando, July 12-16, 1998: *Predicting Kinetic Energy Produced by a Sprinkler System with Piezoelectric Film*, Basahi, J.M., G. Fipps, A.L. Kenimer, Paper No. 982097; *The Effect of Droplet Impact Energy Produced by a Sprinkler System on Soil Erosion, Runoff and Infiltration Rate*, Basahi, J.M., A.L. Kenimer, G. Fipps, G.J. Sabbagh, Paper

No. 982060; *Development of a Non-intrusive Torque Measurement System*, E.E. Wilson, G. Fipps, Paper No. 983124.

ASCE International Water Resources Conference and Texas Water '95 Conference, San Antonio. August 16-18, 1995: *Options for Saline Water Disposal - Irrigation Case Studies; Drip Irrigation Under Plastic Mulch in Texas; Is the Arroyo Colorado Polluted?*

ASAE Texas Section Meeting, College Station, October 20, 1994: *Seco Creek Project Irrigation Programs; Irrigation Pumping Plant Efficiency Testing Program*, G. Fipps, B. Neal.

*A New Look at Pumping Plant Efficiency Testing*. Neal, B. and G. Fipps. Paper presented at the 1994 Summer Meeting of ASAE.

*Center Pivot Conversion Methods*. G. Fipps. Presented at the 1993 Western Region Water Use Specialists Meeting, Spokane, June 1993.

*Methods for Predicting Horizontal and Radial Flow During Drainage*. G. Fipps and R. W. Skaggs. Paper No. 87-2603 presented at the Winter Meeting of the ASAE, Chicago, December 1987.

*An Approximate Method for Quantifying Lateral Seepage*. G. Fipps and R. W. Skaggs. Paper No. 86-2548 presented at the Winter Meeting of the ASAE, Chicago, December 1987.

*Application of the Finite Element Method to Field Drainage Problems*. Paper No. 86-2055 presented at the Summer Meeting of the ASAE, San Luis Obispo. July 1986.

*An Approximate Method for Quantifying Lateral Seepage to and from Drained Fields*. Chescheir, G. M., G. Fipps and R. W. Skaggs. Paper No. 86-2548 presented at the Winter Meeting of the ASAE, Chicago, December 1986.

*Development of a Biomass Research, Development and Demonstration Program for Texas*, G. Fipps. Paper No. 81-3575 presented at the ASAE Winter Meeting, Chicago, December 1981.

Irrigation and Drainage Technical Conference, Phoenix, 6/3, *Implementing a District management System in the Lower Rio Grande Valley of Texas*. (125)

Water For Texas Conference, Austin, 12/2, *Misconceptions about Efficient Irrigation Technologies and Practices*. (45)