Sheep Pasture Infiltration Basin
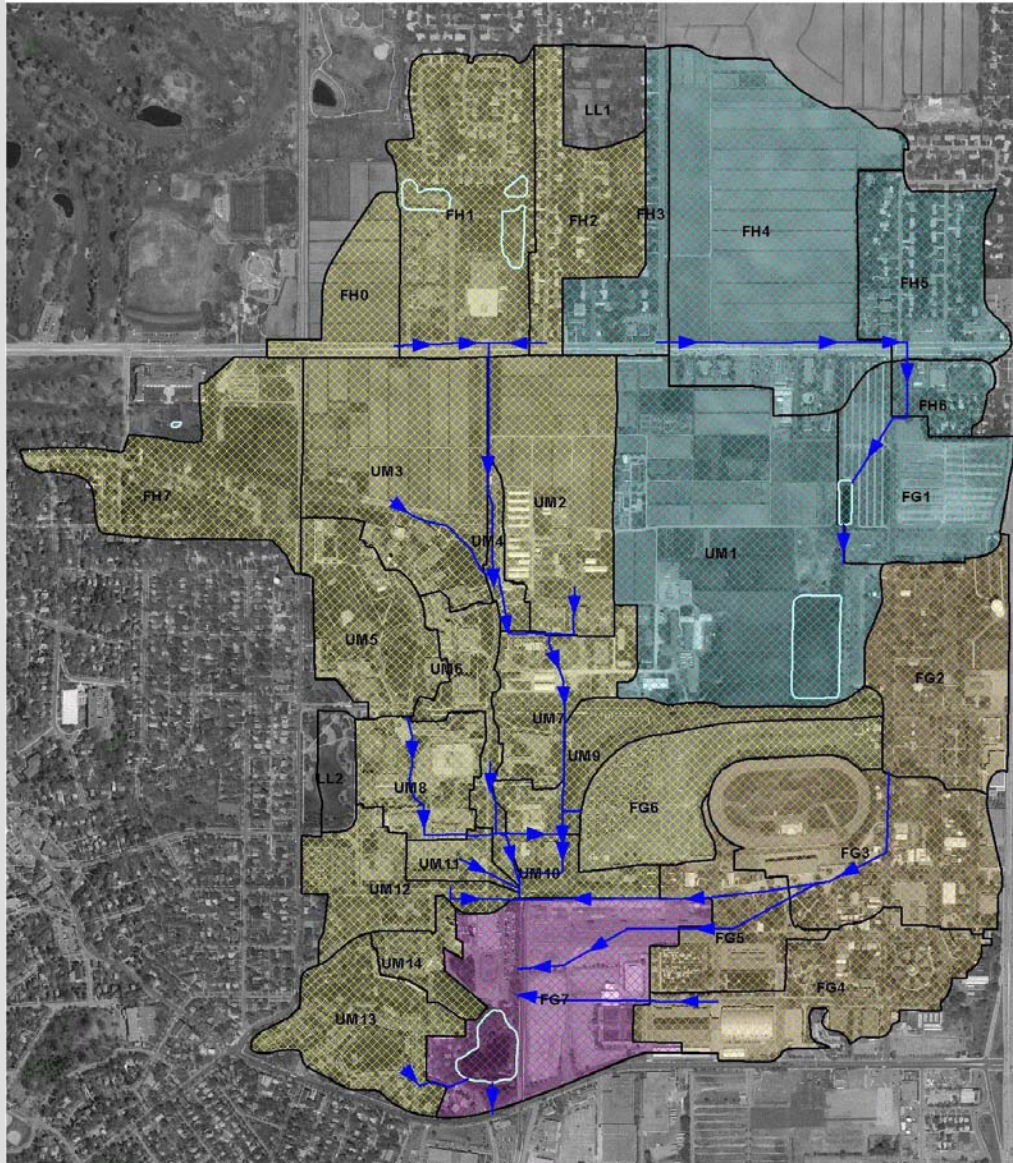
MGWA Conference
Nov. 13, 2008   **Pat Conrad**
Emmons & Olivier Resources, Inc. (EOR)

U of M Storm Water Management

Traditional Stormsewer system

Efficient drainage

Curb and Gutter

Piped discharge

Receiving body:

Sarita Wetland

1910 – Canals of Venice

1947 Air Photo

Sarita Wetland Hydraulic Study

- **2001 Assessment of flooding and water quality issues for the Sarita Wetland**
- **Phosphorus Loading**
- **Peak Rates/ Stormsewer Capacity**
- **Implementation Plan**
  - Sarita Forebay
  - Treatment in Fairgrounds
  - Small scale treatment (raingardens) throughout campus
  - **Sheep Pasture Infiltration Basin**

07 31 2001

Capitol Region Watershed District
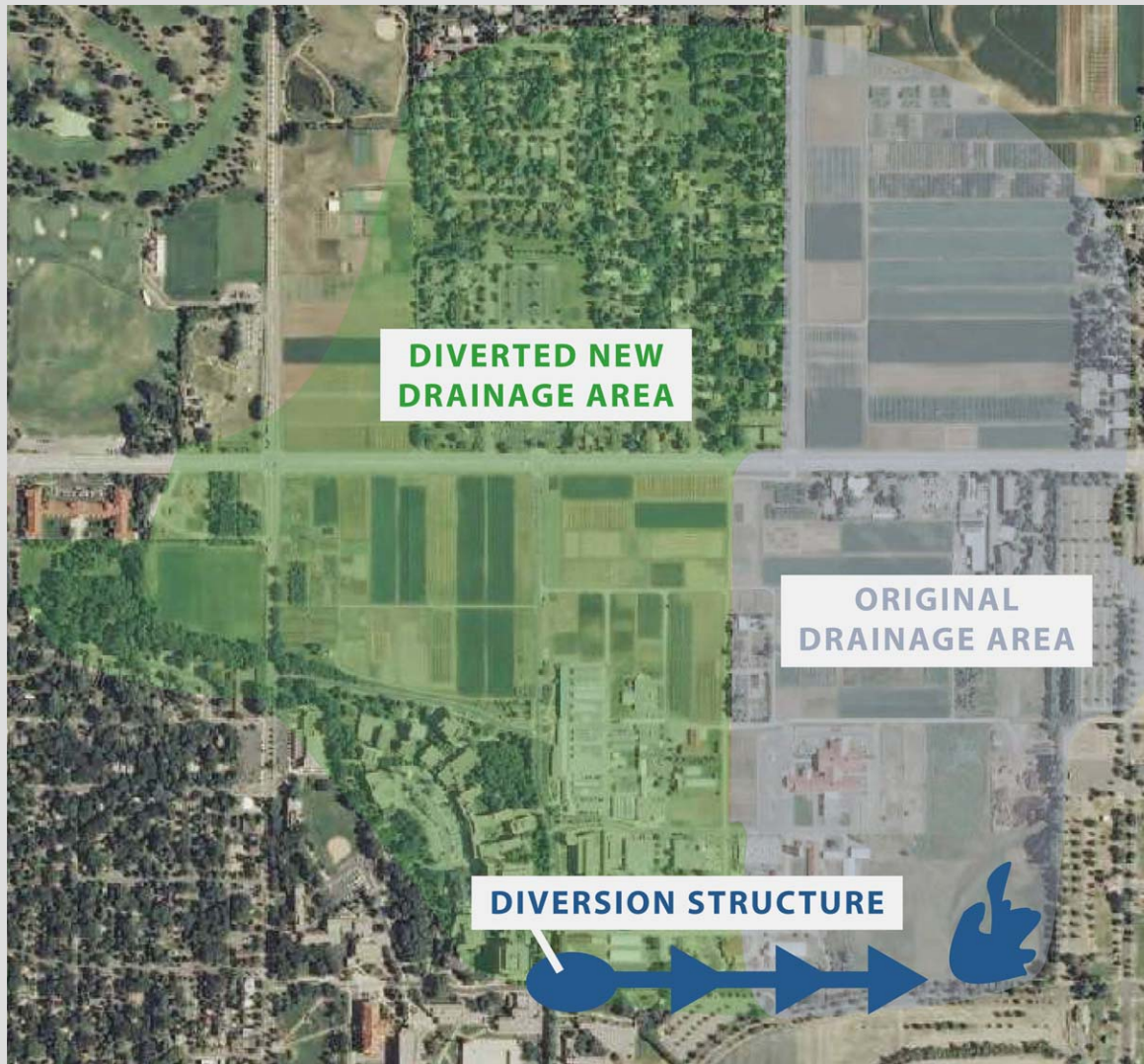
Sheep Pasture Past Conditions

Sheep Pasture Design: Concept

- Divert flows up to 10 cfs

- Rates ~1.0"/hour

- Pretreatment

- Native Vegetation

- Preserve/Maximize historically productive areas

- Emergency overflow

DIVERTED NEW DRAINAGE AREA

ORIGINAL DRAINAGE AREA

DIVERSION STRUCTURE

Design Specifics: Diversion

- Taps into 48" Mainline Stormsewer – 218 acres

- New manhole – green space in driveway of Continuing Education building

- 18" pipe diverts up to 10 cfs to Sheep Pasture Infiltration Basin

Design Specifics: Pretreatment

- Linear pretreatment cell
- Separated from Basin by rip-rap bern
- Sediment trap
- Ease of maintenance
- Excellent soils for infiltration

Design Specifics: Vegetation

- **Native Species**
- **Flood & Drought Resistent**
- **Deep rooted – promoting infiltration**
- **Forbs, Trees and shrubs**

Design Specifics: Landform

- Irregular land forms
- Mimic natural systems
- Aspect/Relief
- Visual Interest
- Cut/fill balance

Design Specifics: Infiltration Trench

- Construction Phase modification

- Mid-site – poor soil atop sand

- 4-8 foot excavation backfilled with sand

- Protected from siltation

Sheep Pasture Construction

- Siltation
- Clogging sandy soils
- Removed during construction
- Site tilling

Infiltration Basin Performance

March 2006

August 2006

April 2007