

Riparian Restoration and Green Infrastructure

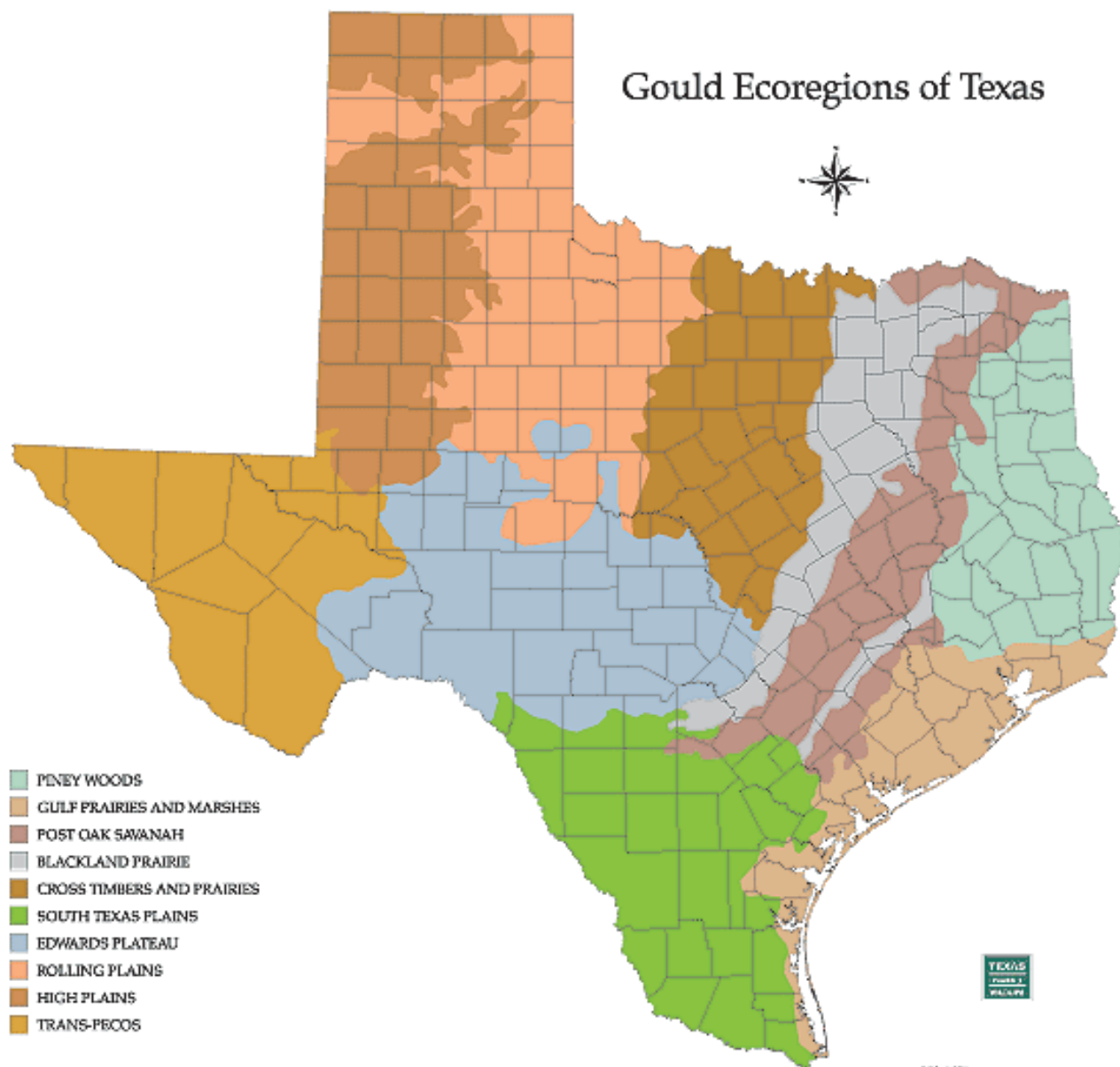
Implementing Adaptive Management
and Maintenance Within Restrictive,
Commodity-Based Budgets

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“Conceptually, **adaptive management** is simply learning from past management actions to improve future planning and management. However, adaptive management has proved difficult to achieve in practice.”

Allan, Catherine, **Stankey**, George Henry. 2009.

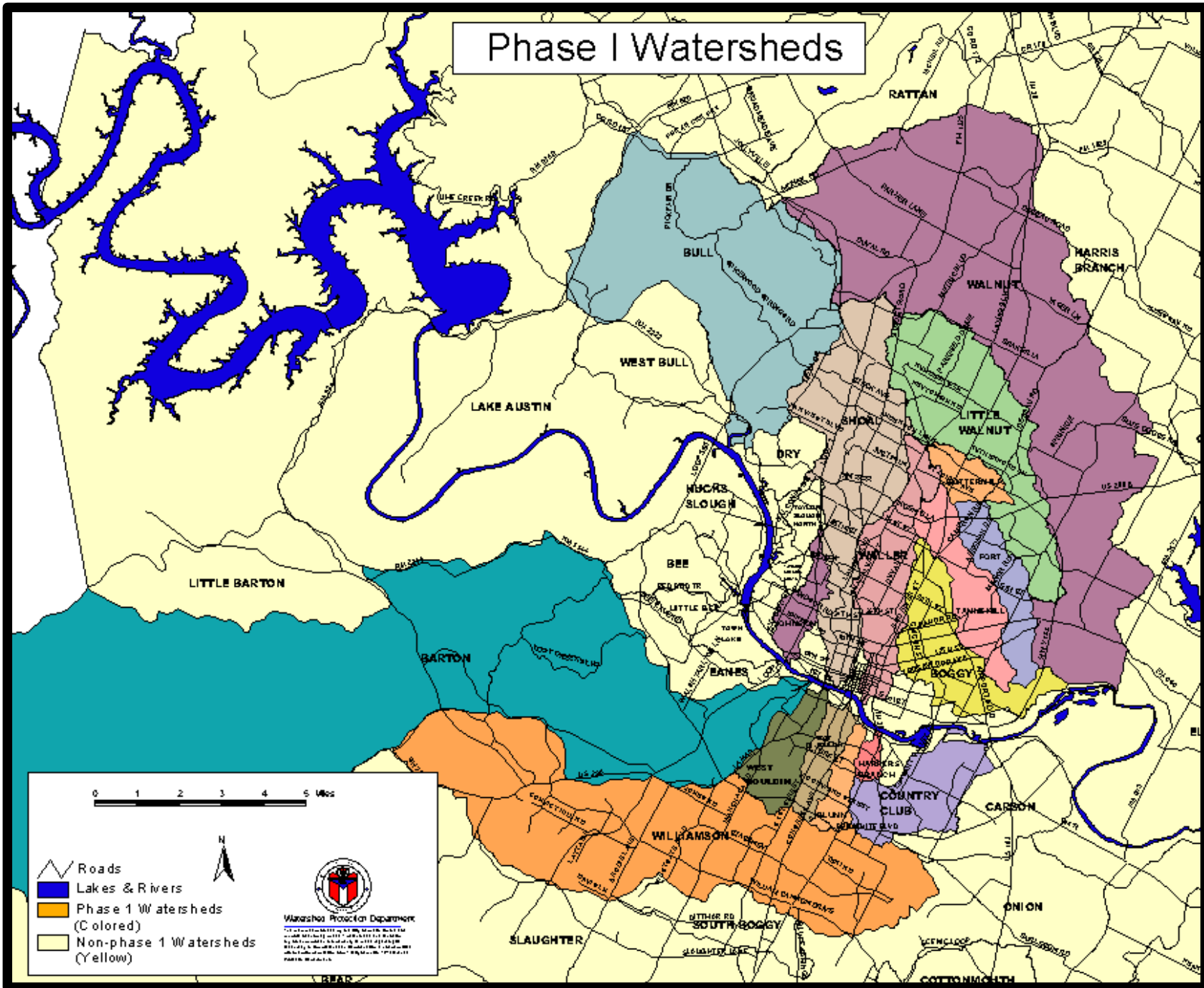
Gould Ecoregions of Texas



Source: Gould, E. W., Hoffman, G. O., and Reichenbach, C. A. 1968. Vegetational areas of Texas, Texas A. & M. University, Texas Agricultural Experiment Station, Leaflet No. 492 (here modified by the Texas Parks and Wildlife Department).

30-Meter Scale
 Protected Watershed Mapping System
 Map compiled by the Texas Parks & Wildlife Department
 GIS Unit. No liability is made for the accuracy of the data
 or the suitability of the data for a particular use.

Phase I Watersheds





Stream Restoration



Rain Gardens



Disc Golf Courses (?!)

Photo credit: Houck Design

Traditional Approaches

- Low bid.
- Boilerplate specifications, deliverable to municipal accounting departments.
- Performed under general (sitework) contractors.
- Restoration contractor locked into specs.
- Maintenance guidelines narrow, fixed.
- Irrigation.

The Need To Adjust

- Vegetative response to site may not be as planned.
- Weather, esp. rainfall fluctuations.
- Desire to reduce irrigated projects.
- Forestry approach.
- Utilize passive restoration.
- Improve results in the 3-5 year range, and beyond.

Changing Condition: Flood



Changing Condition: Invasives



Changing Condition: Neighbor Input



Getting to Adaptive Management Contracts

- Stakeholder input from restoration professionals and other potential bidders, brainstorming (list issues)
- Pilot project – Oak Springs
- 94 Bid Items, with additional lines for write-ins
- Value based bid
- Qualifications

Benefits

- Rapid response
- Faster project tracks from concept to execution
- Reduced water needs
- City WPD control through process
- Open dialog to communicate ideas
- Not just counting for performance measurement
- Utilizes knowledgeable professionals

Oak Springs



Oak Springs



Oak Springs



Weeping lovegrass (*Eragrostis curvula*)

photo: USDA NRCS Tucson Plant Materials Center
(PMC)

Oak Springs



Jamaican sawgrass
water willow
gama grass
obedient plant
emory sedge
three square bulrush
hibiscus
horsetail
bushy bluestem
Mexican primrose
vine mesquite
indian grass
short spikerush
water pennywort
clover fern

Shoal Creek Peninsula



Shoal Creek Peninsula



Shoal Creek Peninsula



Maplewood



Maplewood



hackberry
texas ash
cottonwood
black walnut
cedar elm
carolina buckthorn
evergreen yaupon
pecan
dogwood
live oak
soapberry

Auditorium Shores Restoration



Zilker Disc Golf (North Nine)



Zilker Disc Golf (North Nine)



Dottie Jordan Park



Maintenance

- Start early and often.
- Monitor irrigation (if used), or hand water during drought.
- IPM, by hand/mechanical whenever possible.
- Seedling care, focusing on most viable.
- Supplemental seeding.
- Monitoring.

Credits and Thanks

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