Potential Water Savings In Irrigation

- **Regional Water Planning Projects**

  Integrated Water Resources Plan – Phase II, 1998

  SB1 Region M Project, 1999 – 2000

MAJOR ACTIVITIES

A. District Bio and Survey

B. GIS Mapping

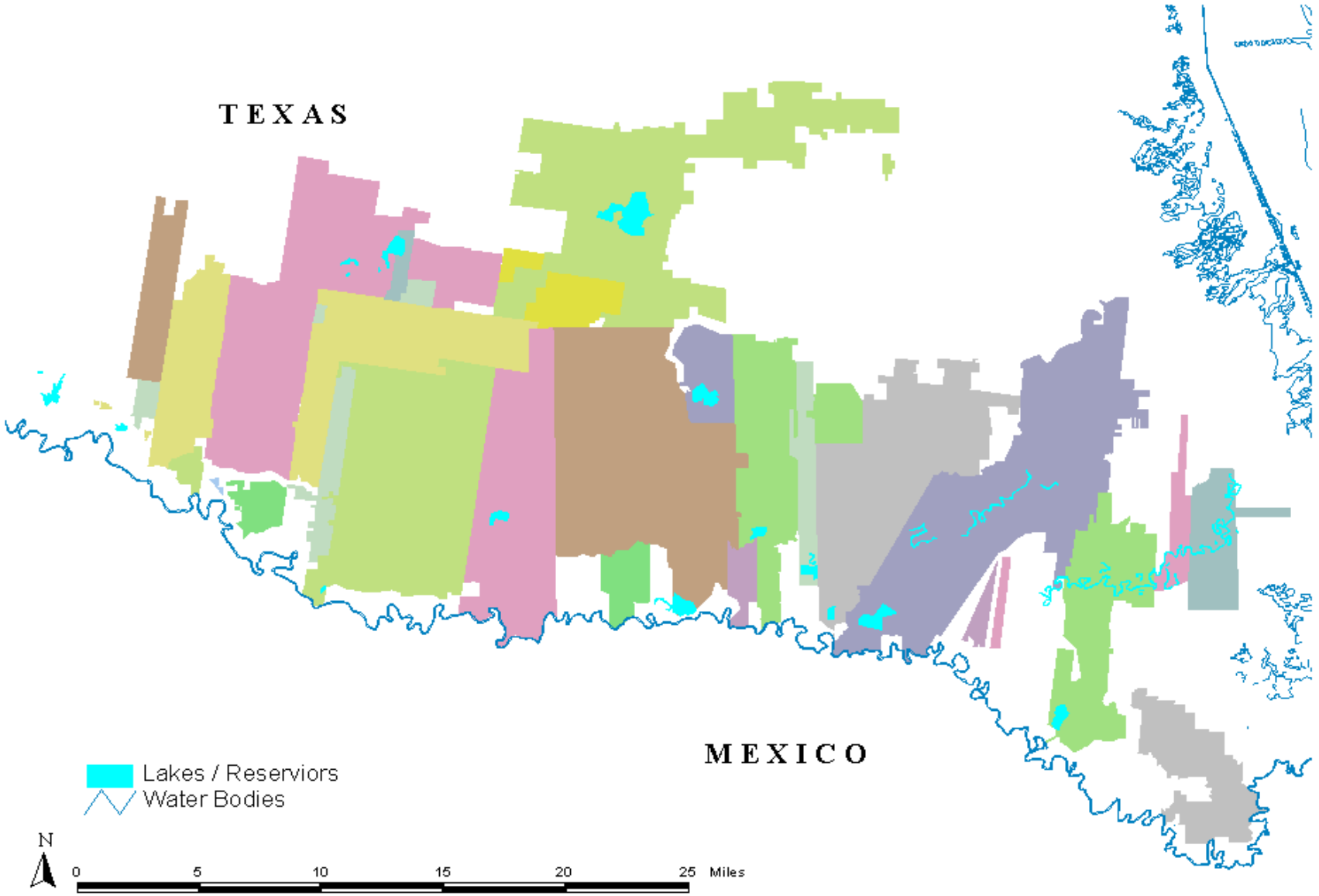
C. Seepage Lost Tests

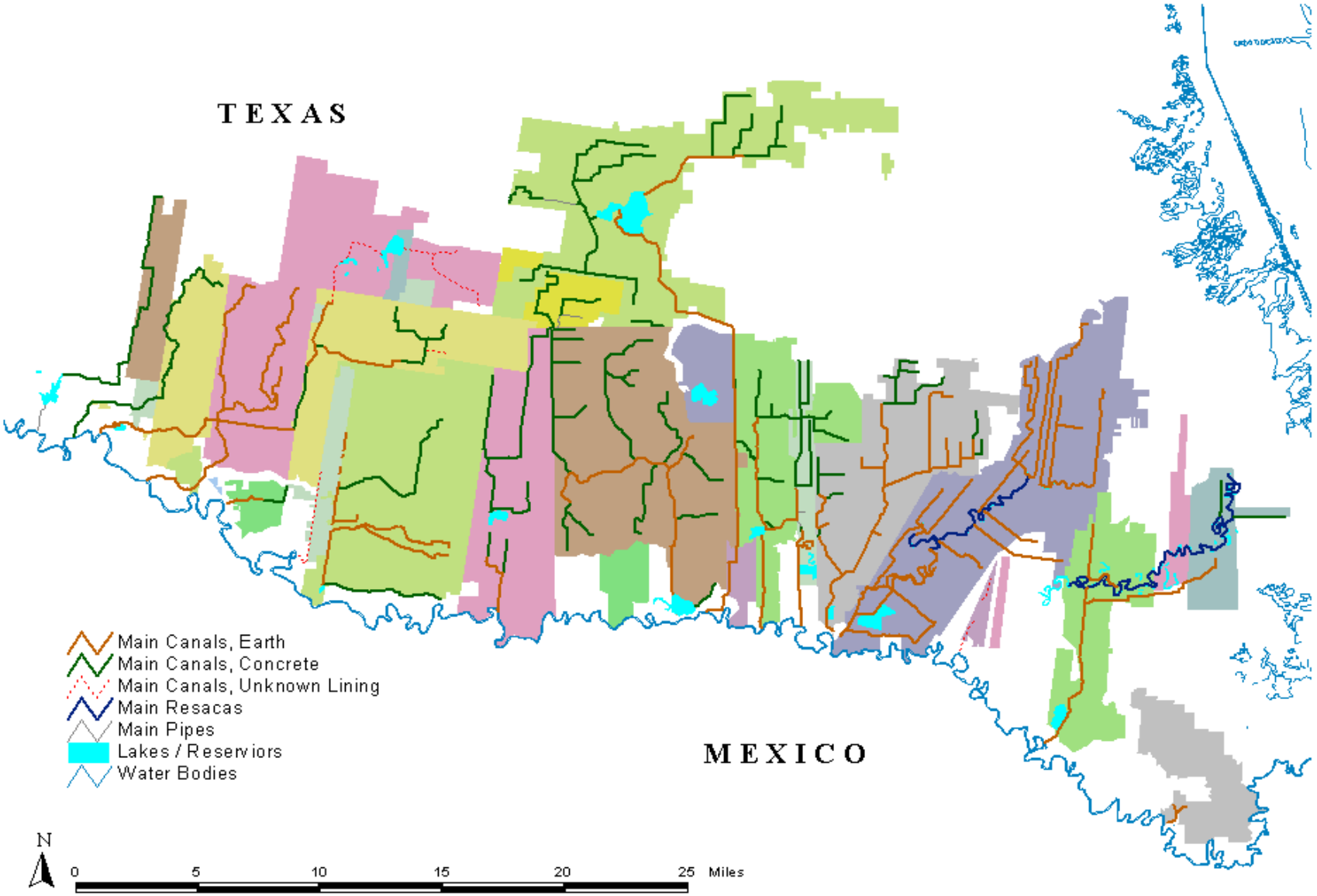
D. Spill Lost and Recovery Measurement

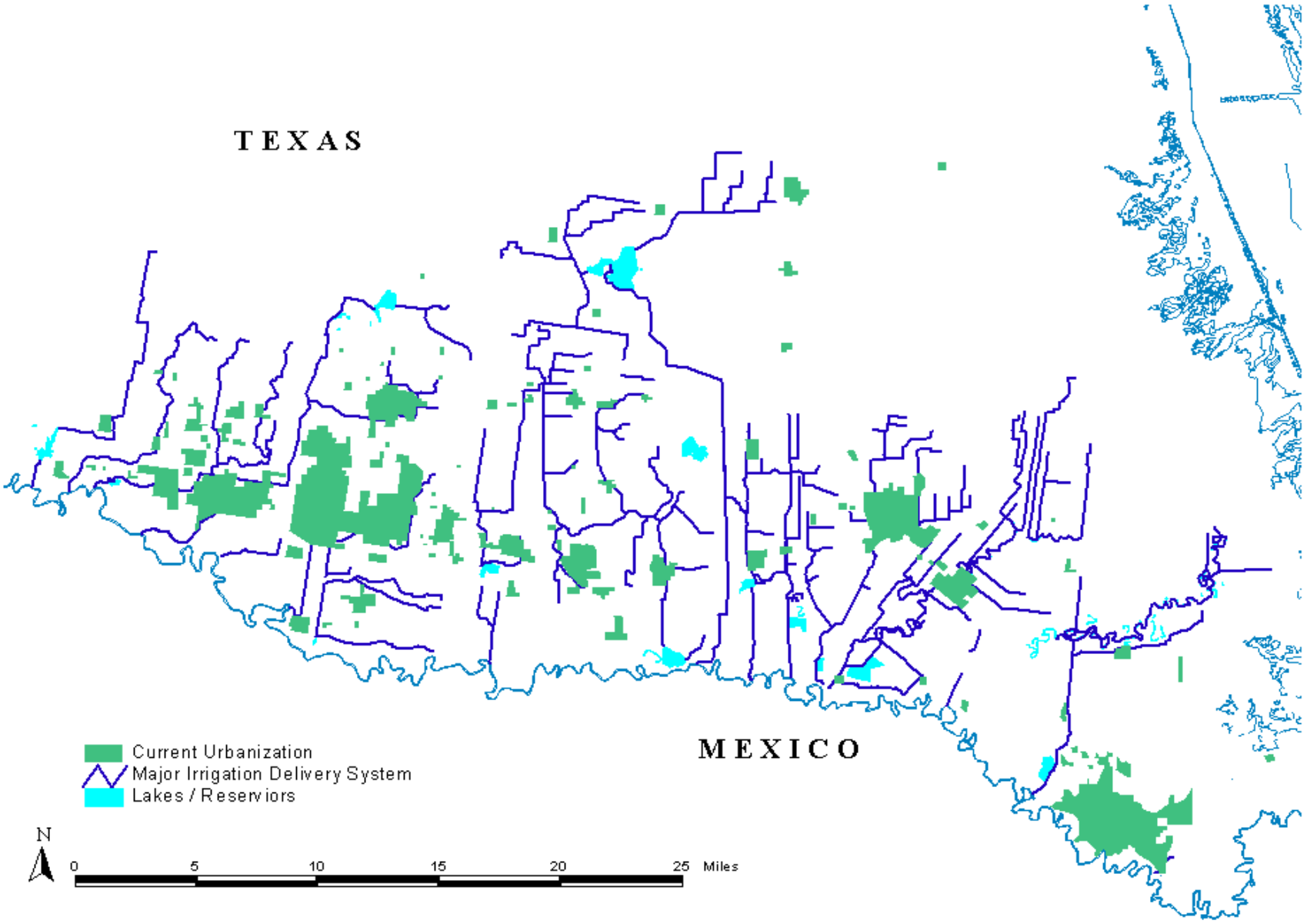
E. Review of District Rehab Costs and Results

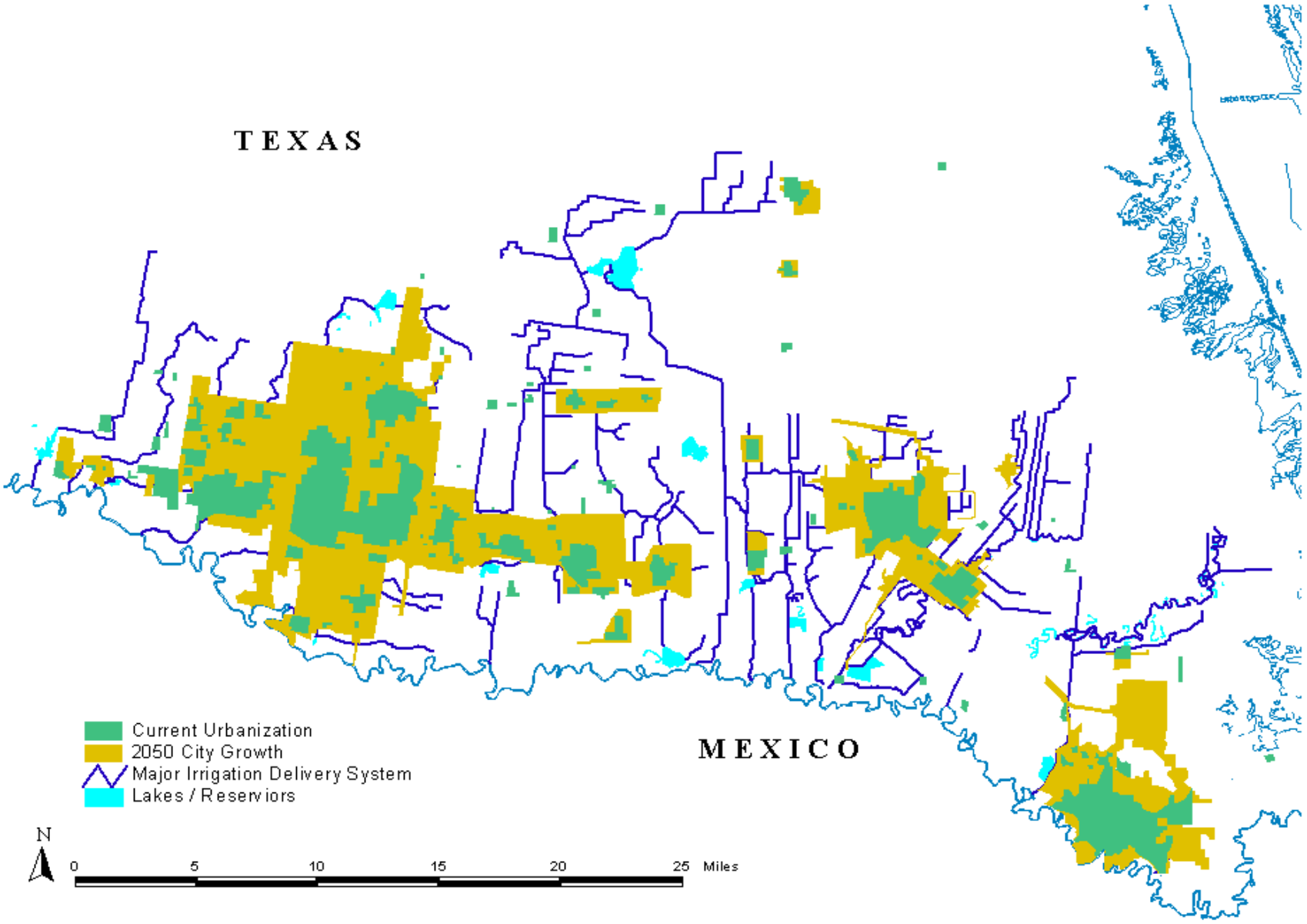
F. Canal Rider Survey

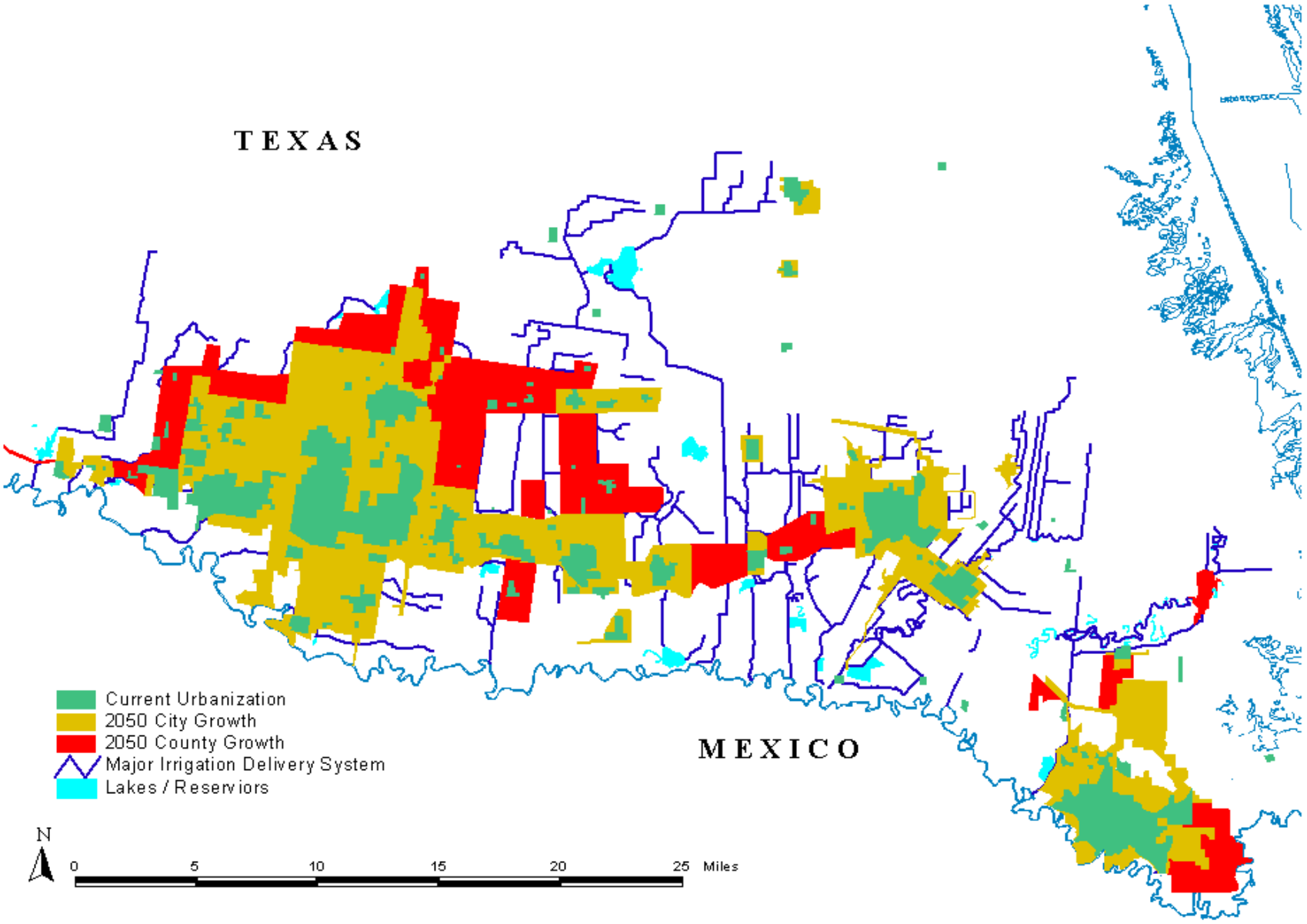
G. Canal Rating Procedure

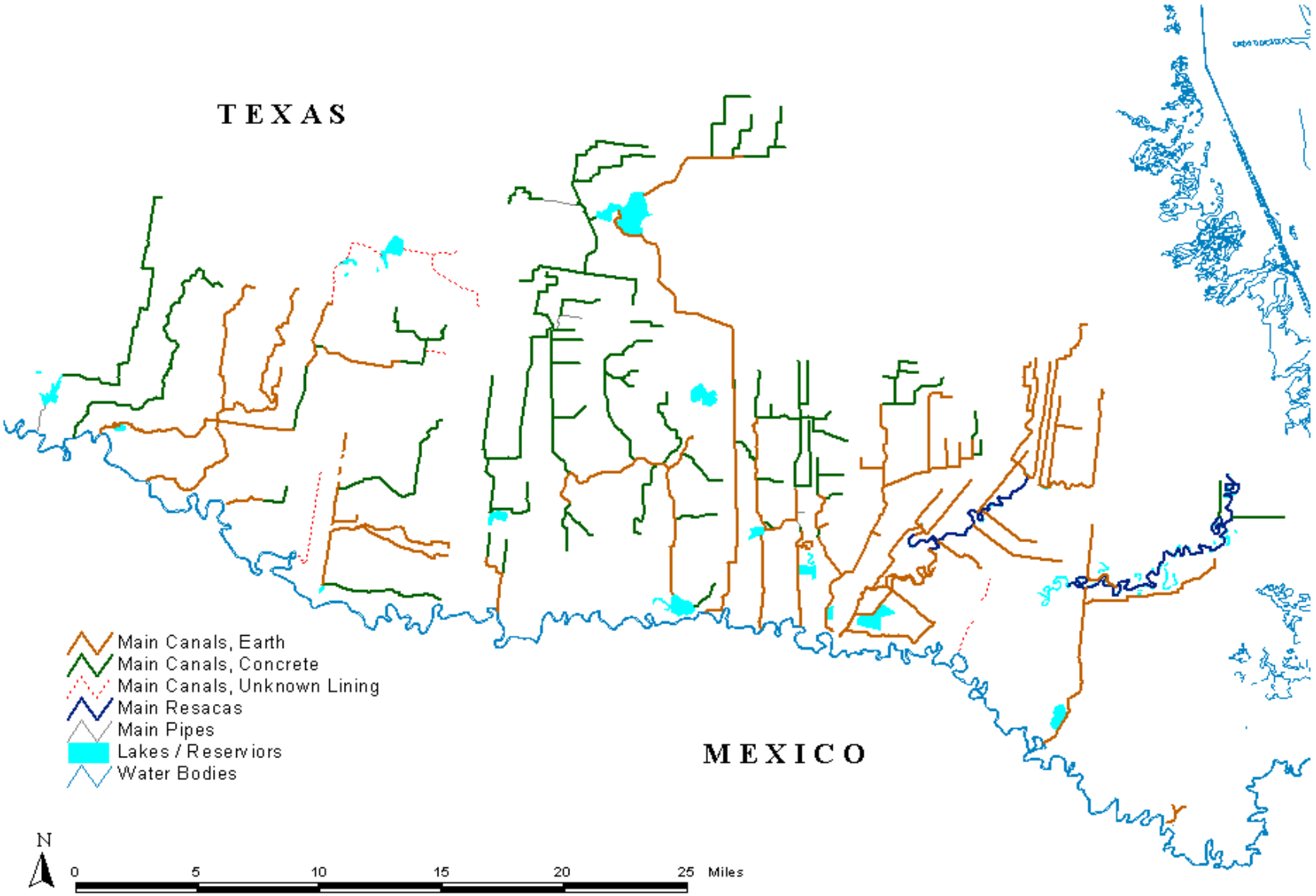

TEXAS
MEXICO
Lakes / Reservoirs
Water Bodies
N
0
5
10
15
20
25
Miles

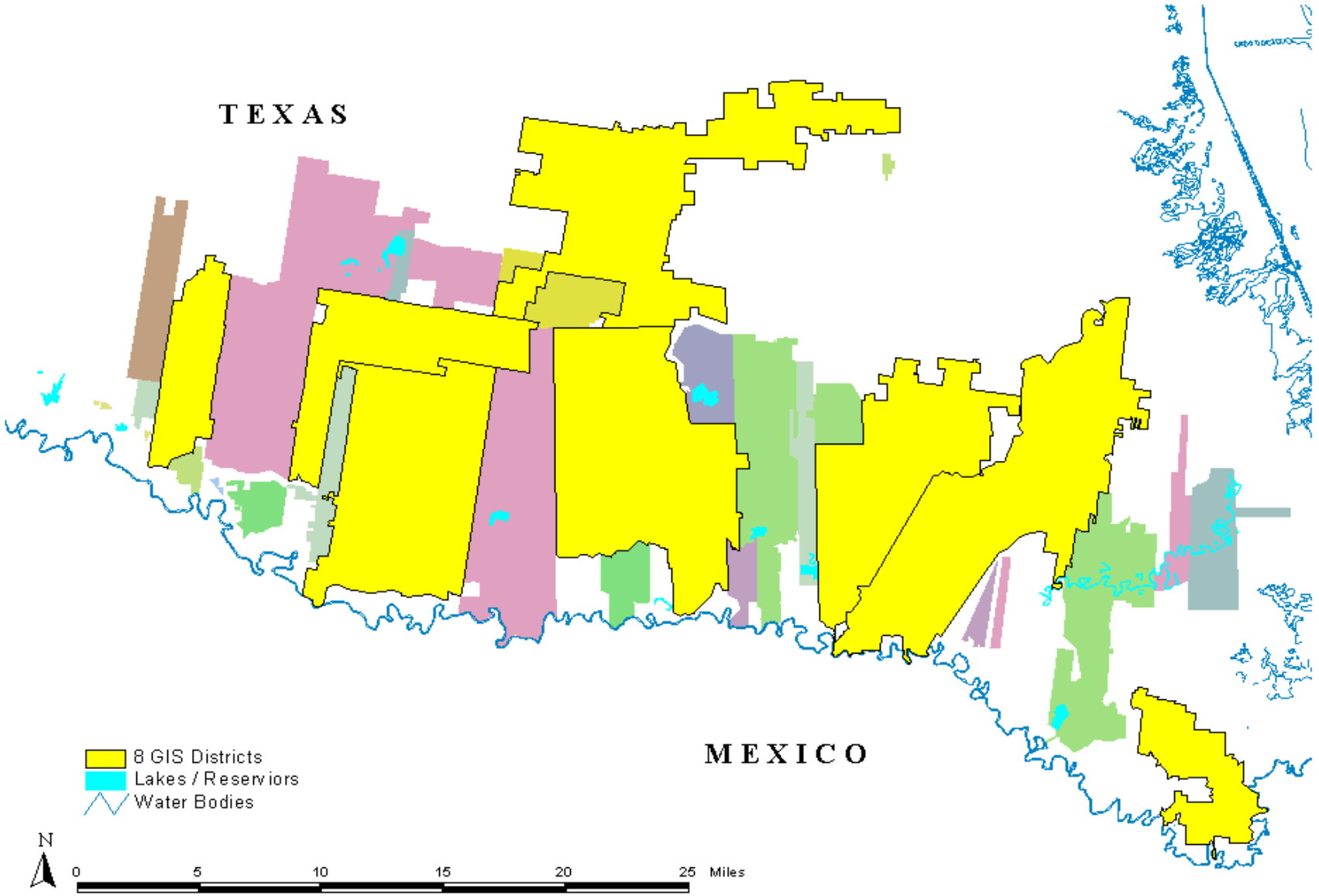

TEXAS
MEXICO
Main Canals, Earth
Main Canals, Concrete
Main Canals, Unknown Lining
Main Resacas
Main Pipes
Lakes / Reservoirs
Water Bodies
N
0
5
10
15
20
25
Miles

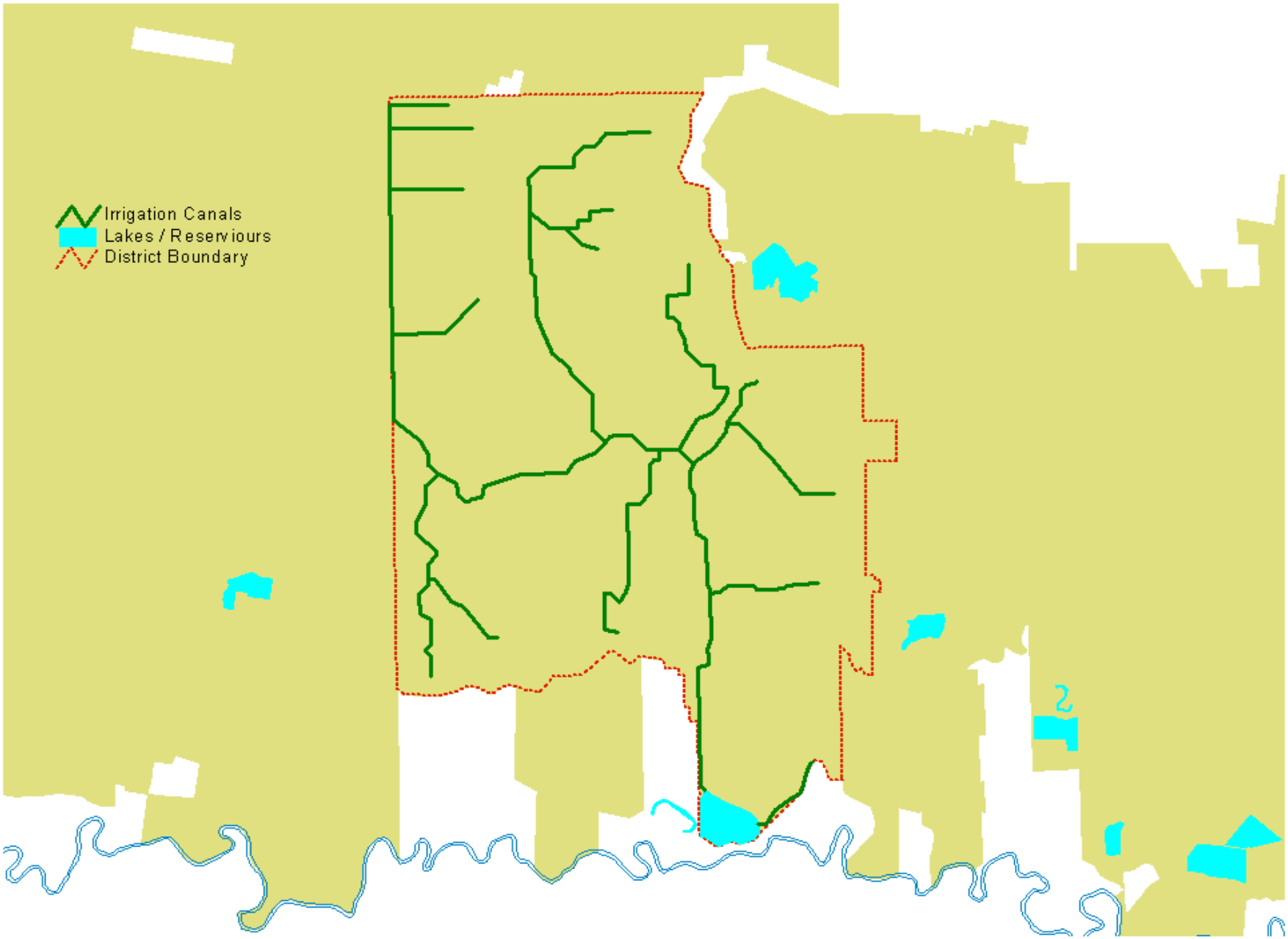

TEXAS
MEXICO
Current Urbanization
Major Irrigation Delivery System
Lakes / Reservoirs
N
0
5
10
15
20
25
Miles

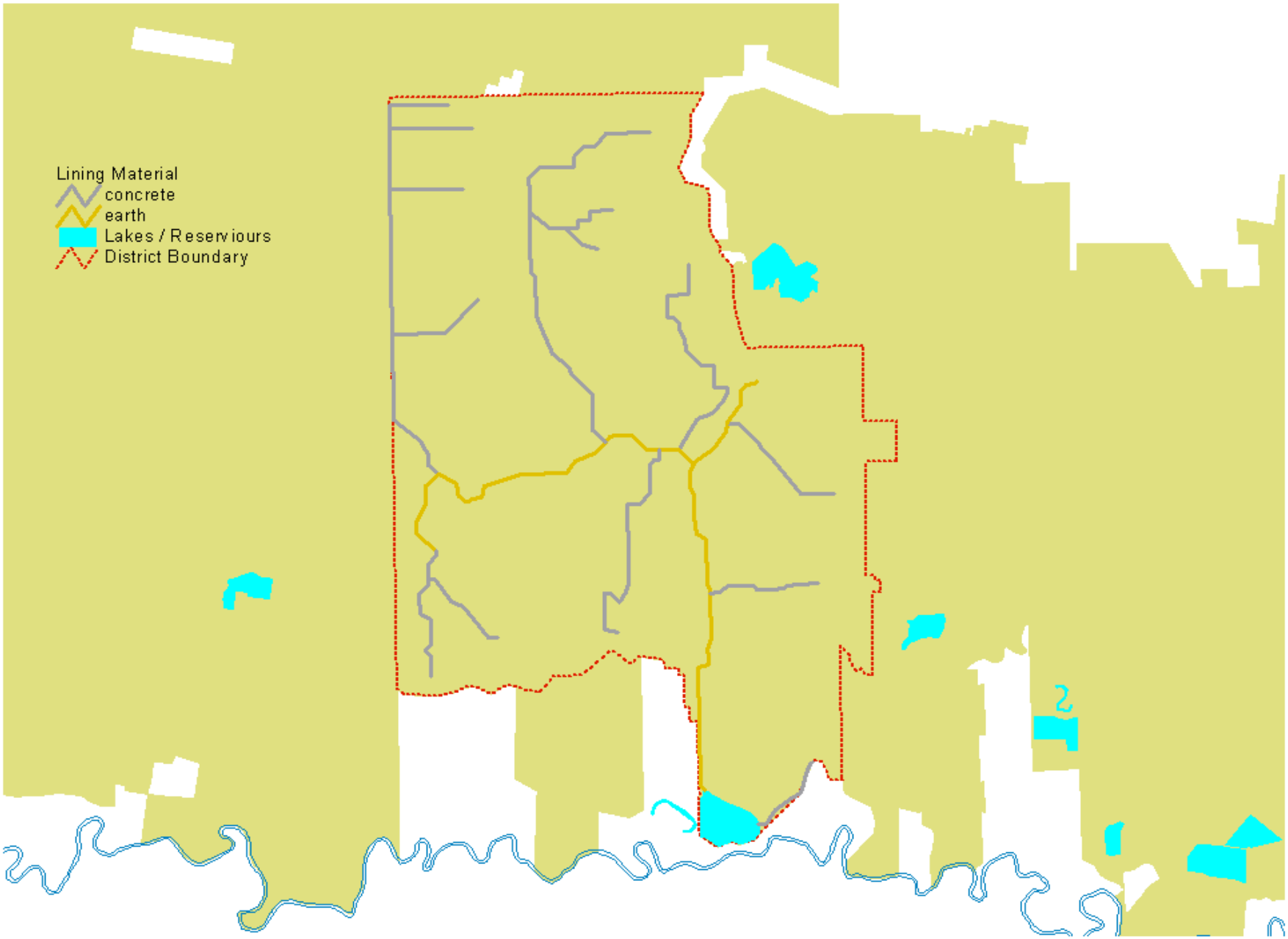

TEXAS
MEXICO
Current Urbanization
2050 City Growth
Major Irrigation Delivery System
Lakes / Reservoirs
N
0
5
10
15
20
25
Miles

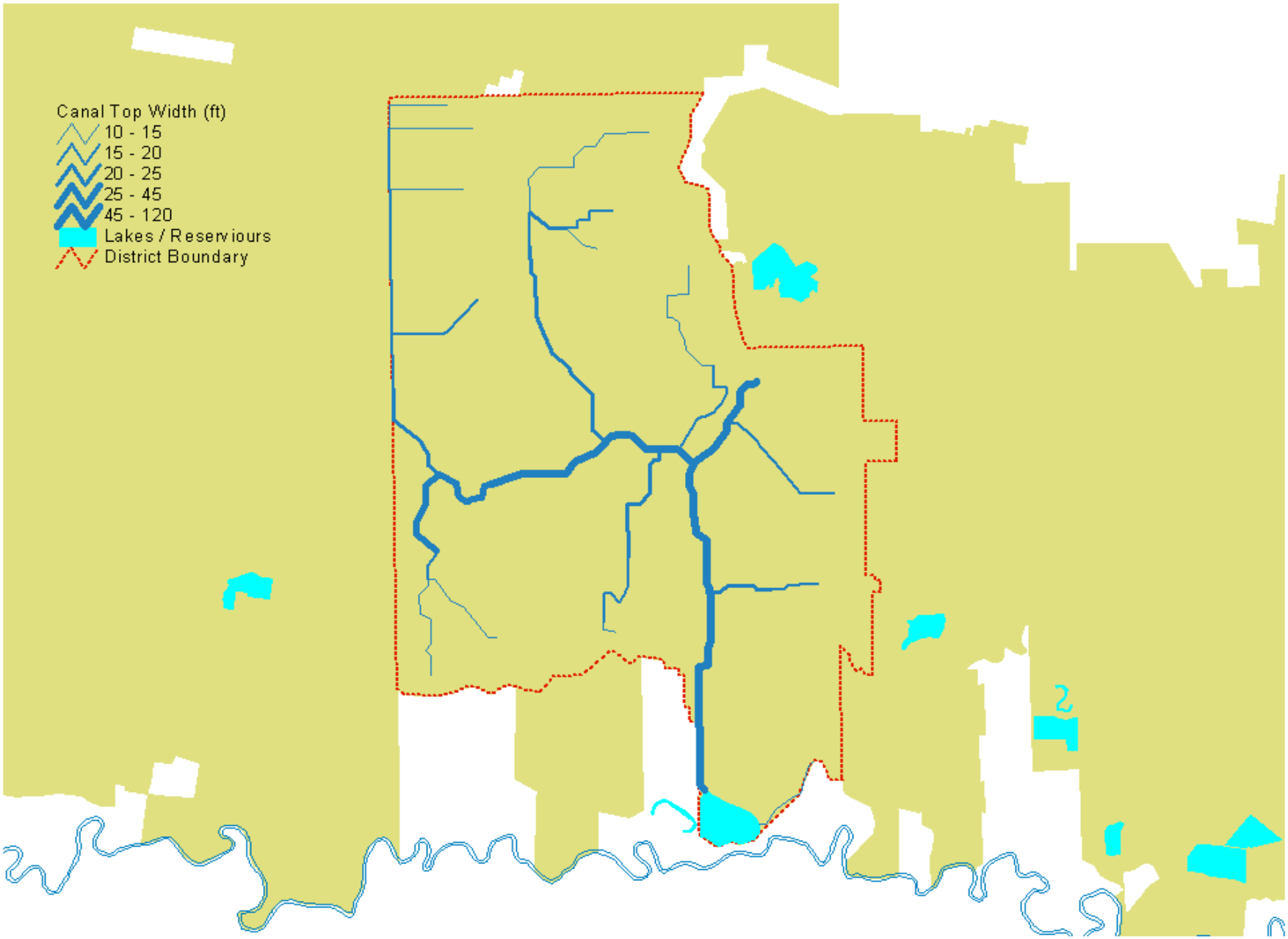

TEXAS
MEXICO
Current Urbanization
2050 City Growth
2050 County Growth
Major Irrigation Delivery System
Lakes / Reserviors
N
0
5
10
15
20
25
Miles

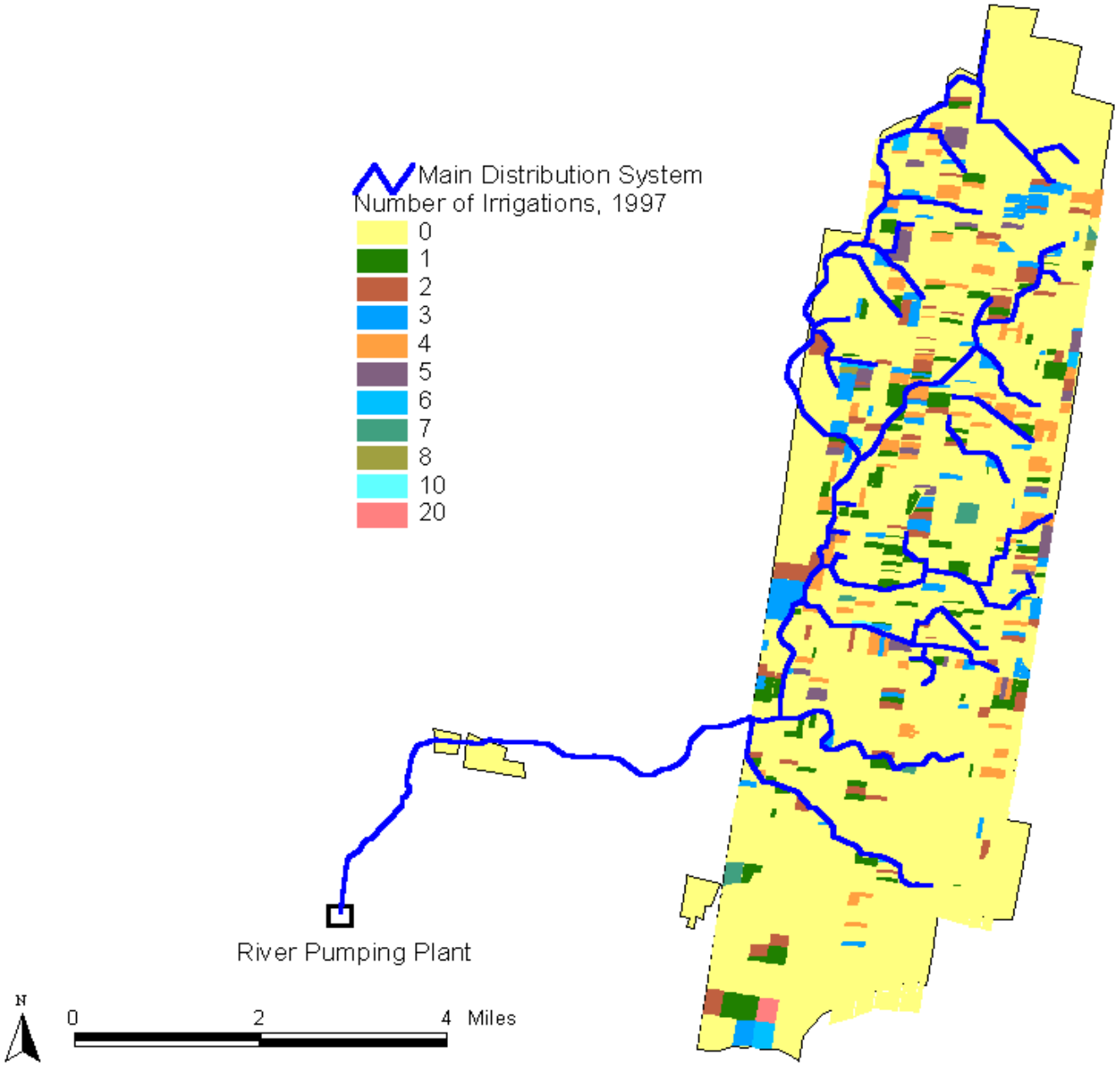

TEXAS
MEXICO
Main Canals, Earth
Main Canals, Concrete
Main Canals, Unknown Lining
Main Resacas
Main Pipes
Lakes / Reservoirs
Water Bodies
N
0
5
10
15
20
25
Miles

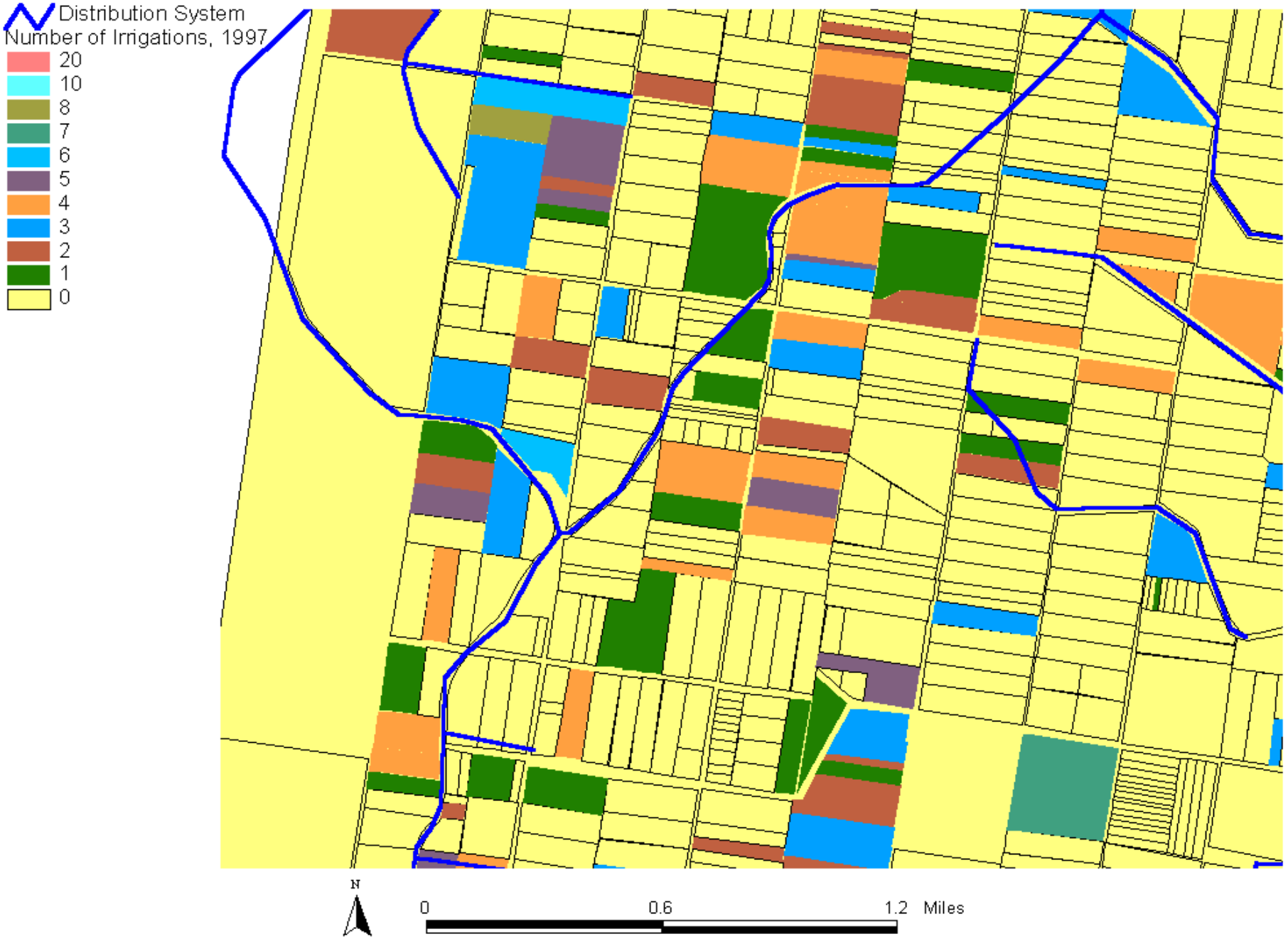

TEXAS
MEXICO
8 GIS Districts
Lakes / Reservoirs
Water Bodies
N
0
5
10
15
20
25
Miles

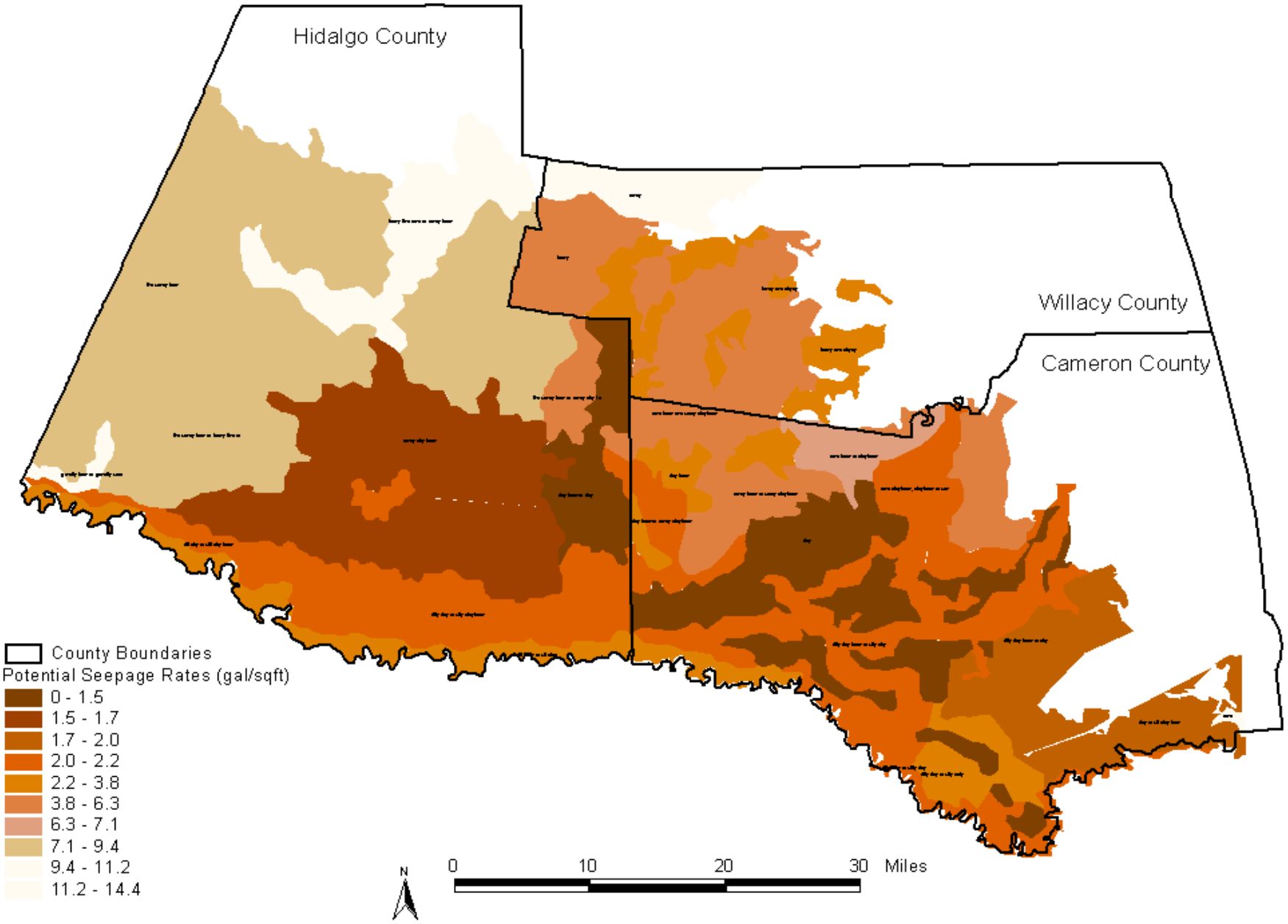

Irrigation Canals
Lakes / Reserviours
District Boundary


Lining Material
concrete
earth
Lakes / Reserviours
District Boundary


Canal Top Width (ft)
10 - 15
15 - 20
20 - 25
25 - 45
45 - 120
Lakes / Reserviours
District Boundary


Main Distribution System
Number of Irrigations, 1997
0
1
2
3
4
5
6
7
8
10
20
River Pumping Plant
N
0
2
4 Miles

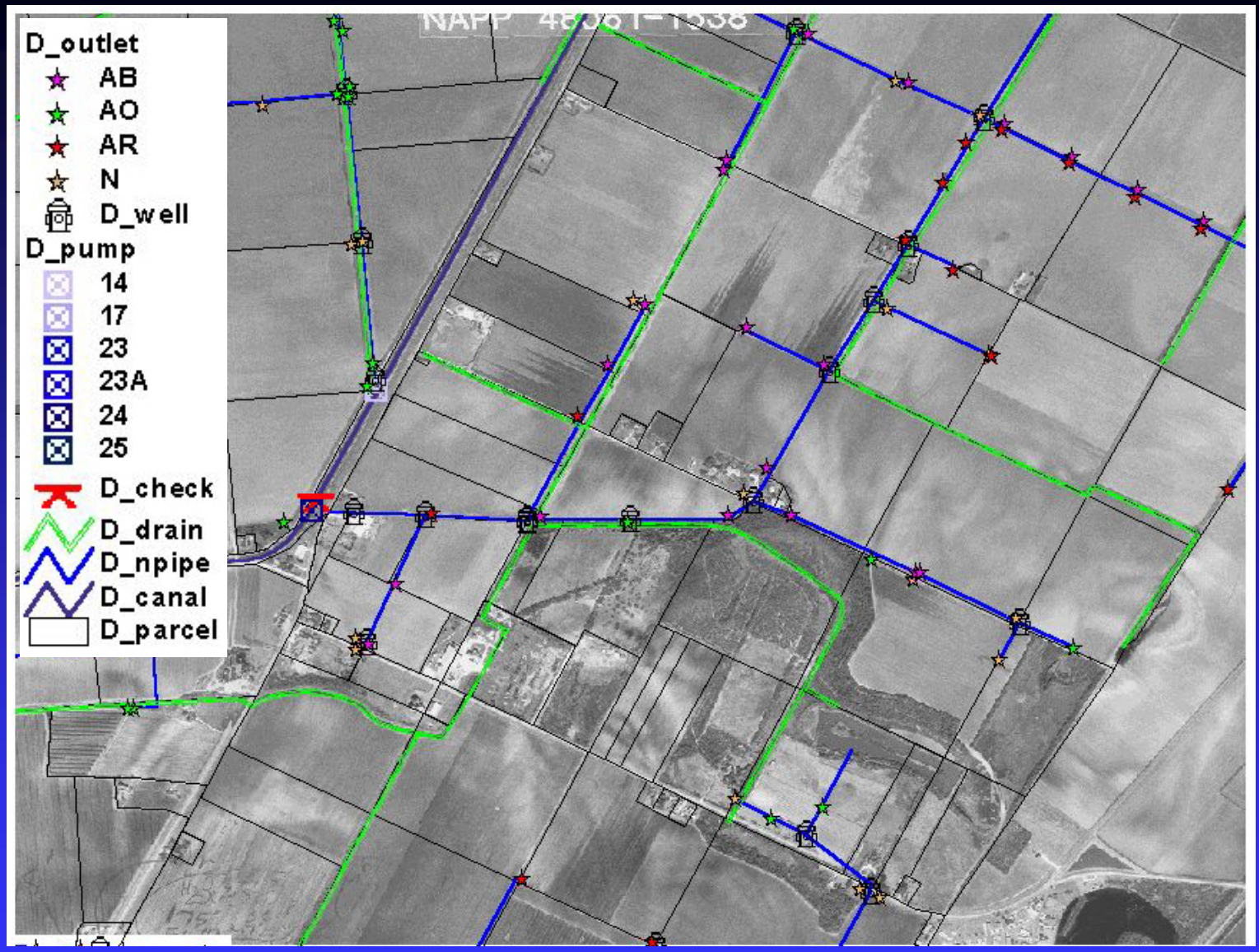

Distribution System
Number of Irrigations, 1997
20
10
8
7
6
5
4
3
2
1
0
N
0
0.6
1.2 Miles


Hidalgo County
Willacy County
Cameron County
County Boundaries
Potential Seepage Rates (gal/sqft)
0 - 1.5
1.5 - 1.7
1.7 - 2.0
2.0 - 2.2
2.2 - 3.8
3.8 - 6.3
6.3 - 7.1
7.1 - 9.4
9.4 - 11.2
11.2 - 14.4
N
0
10
20
30
Miles

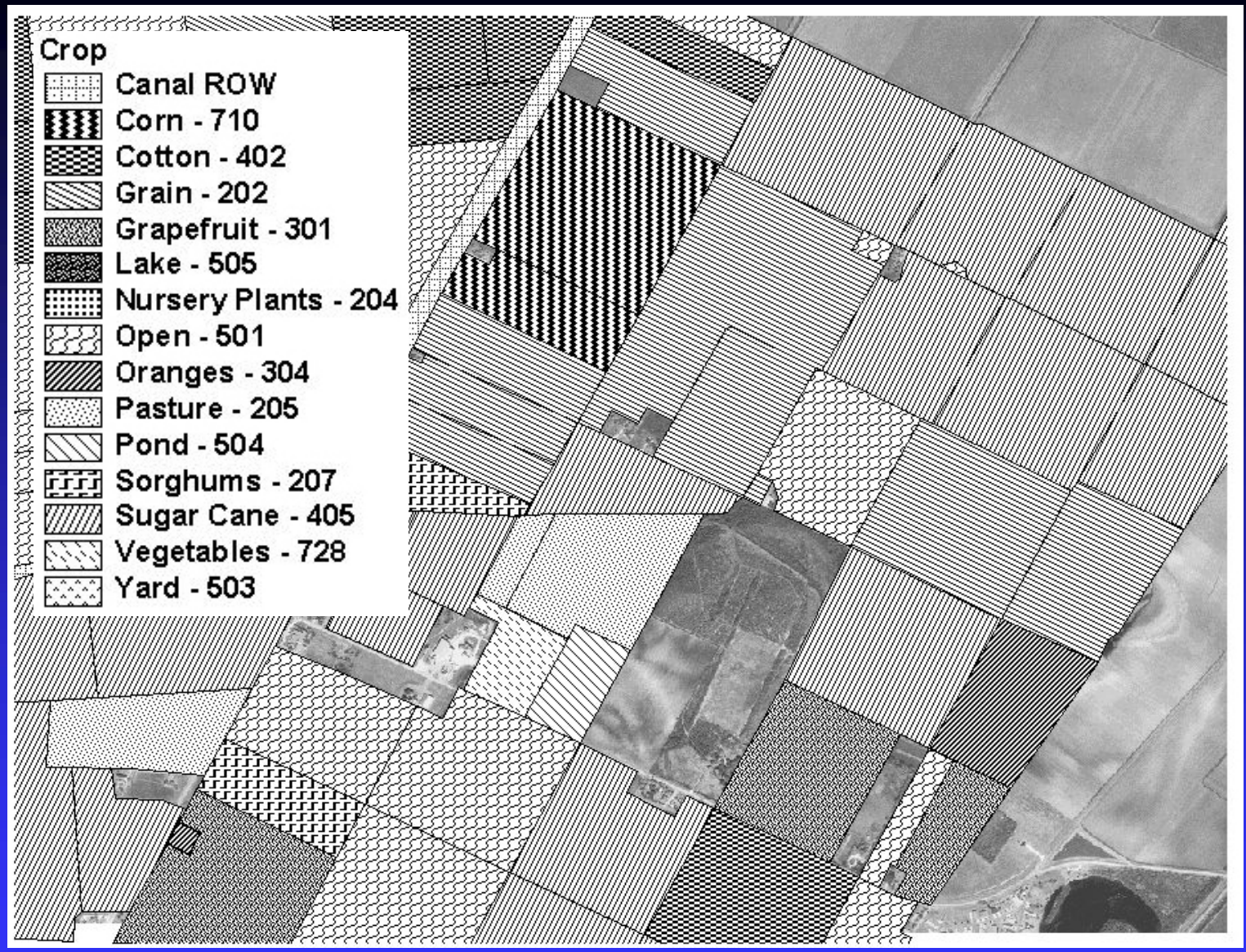
Inserting DOQQ - Digital Orthophoto Quarter Quadrangle
These are infrared satellite images that can aid in drawing land parcels.

Drawing in land parcels by metes and bounds or other land descriptions. DOQQ as reference.

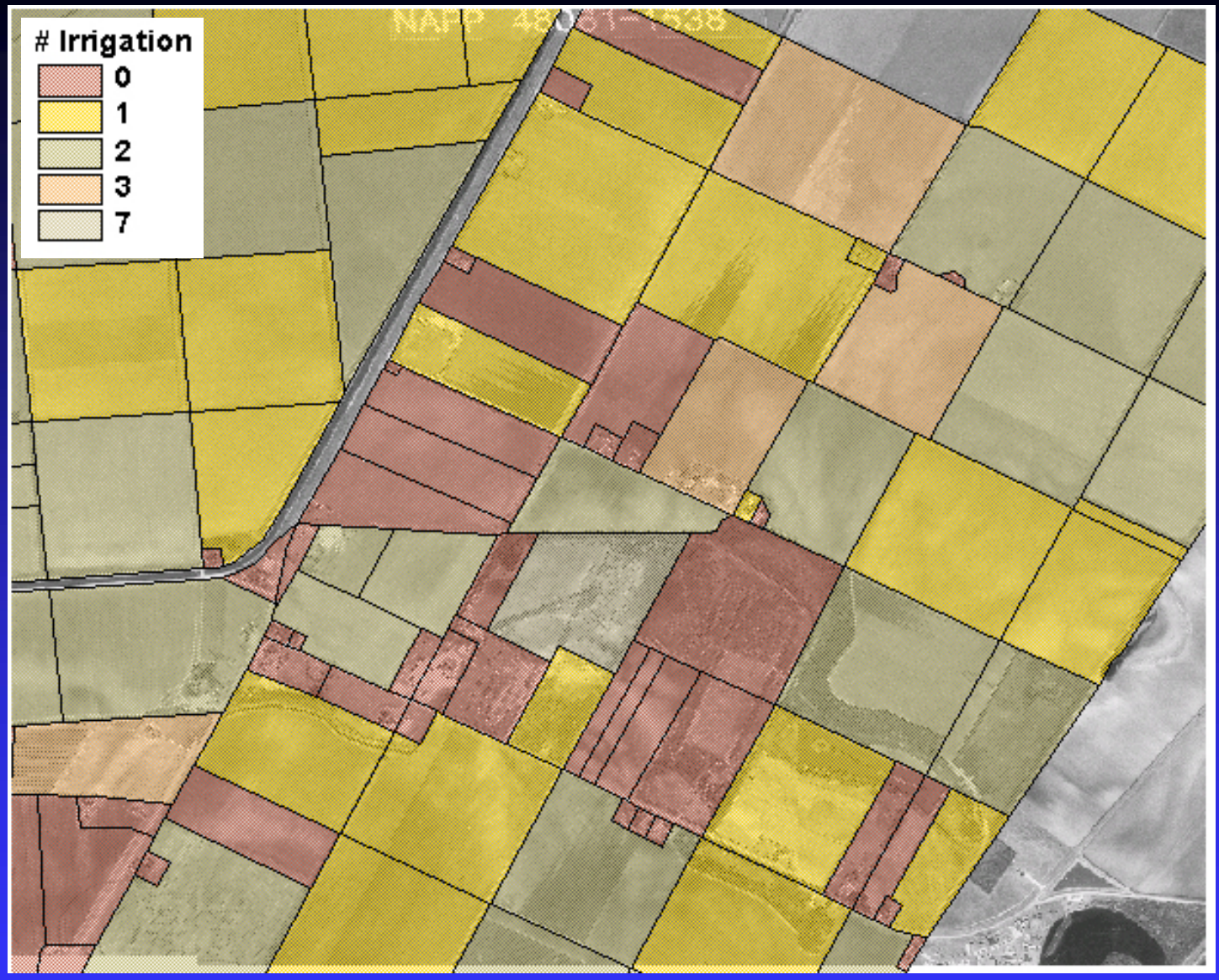
Drainage, pipe, and canal systems also drawn into ArcView using DOQQ as a reference.



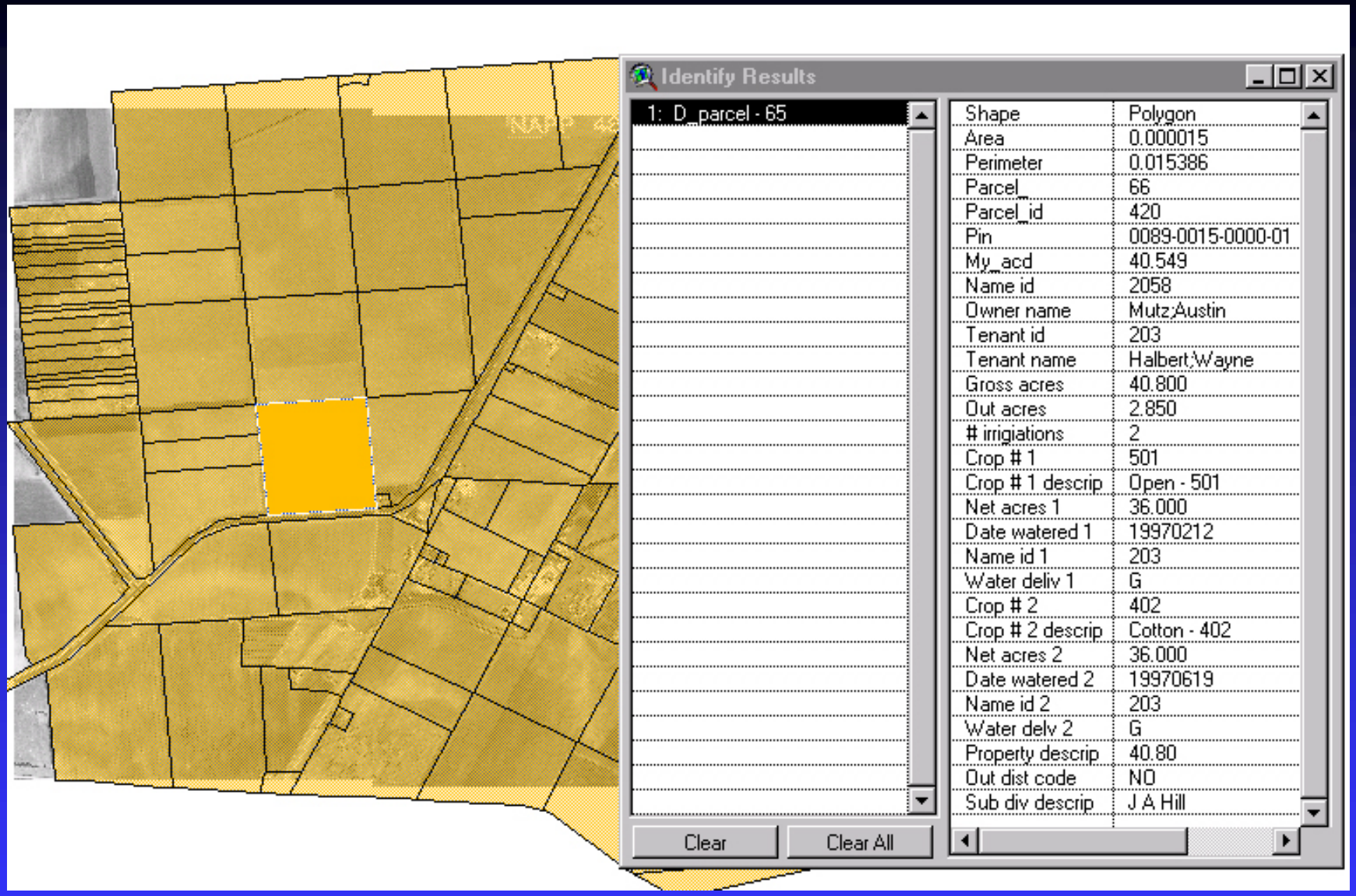
Outlet, well, pump, and check stations are also included. Themes can be shown by characteristics in database as outlets and pumps show.



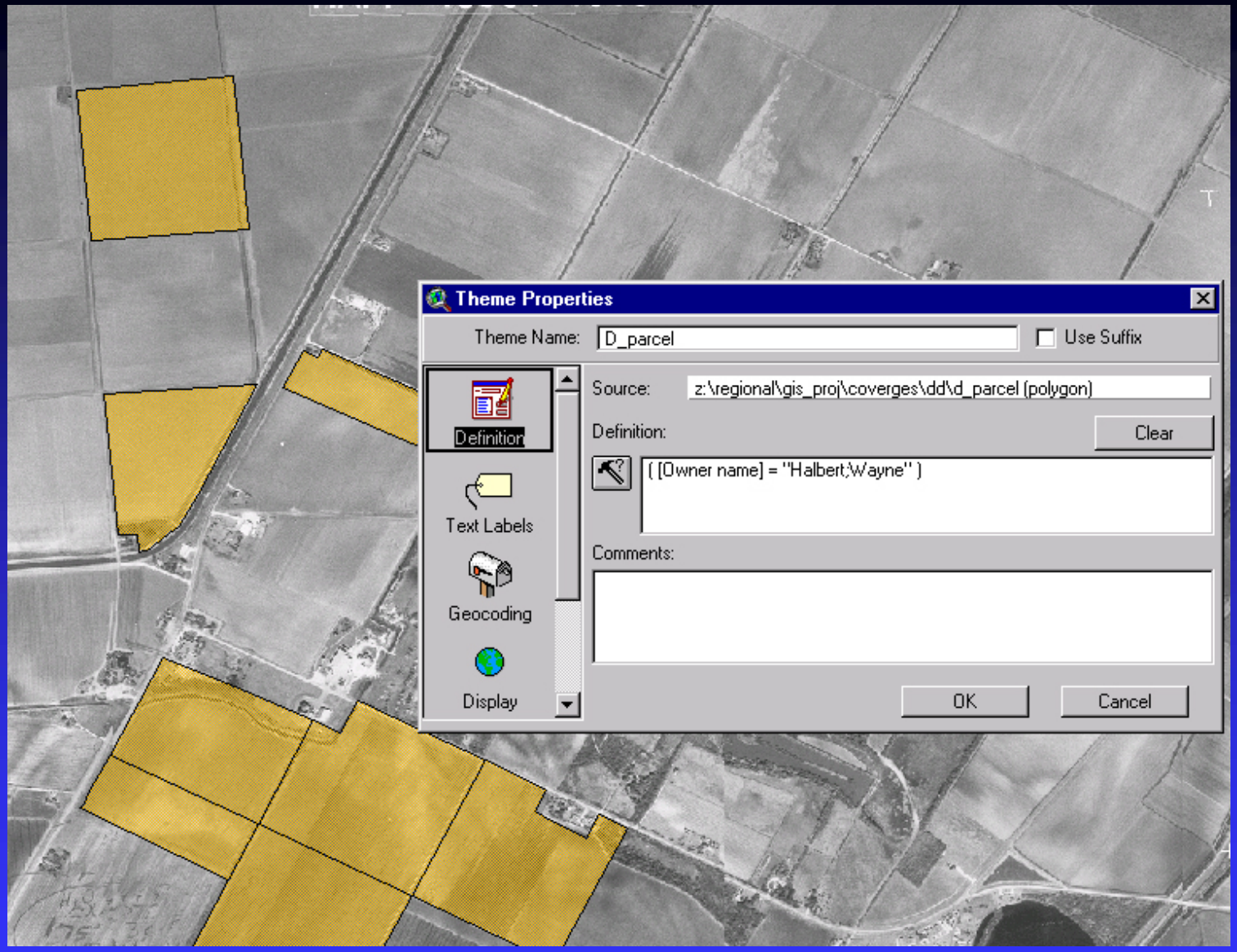
By simply drawing parcels and linking account numbers to database you can show crops grown by each land owner or tenant.



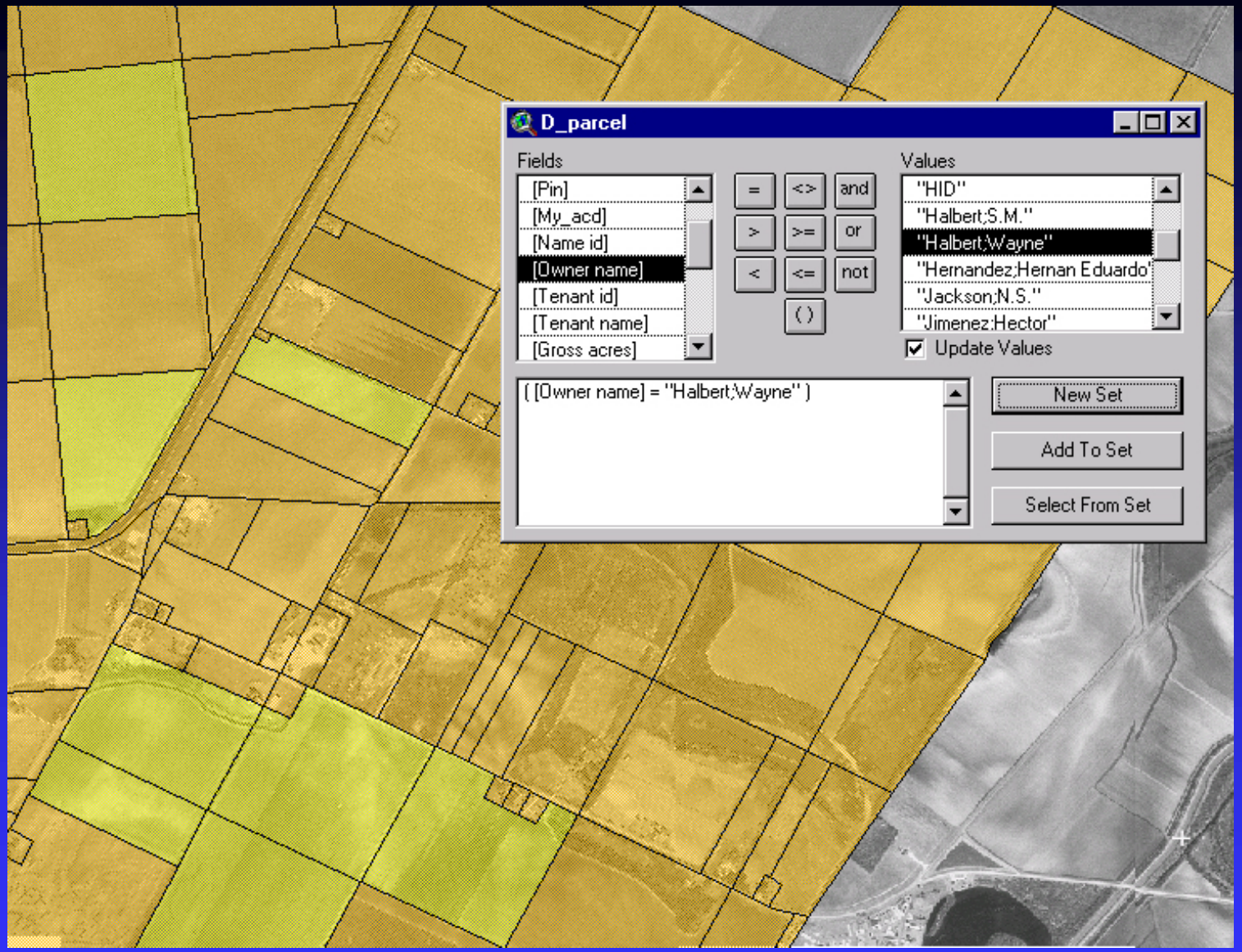
Number of irrigations by each land owner or tenant. All parcels can be characterized by what is included in the database. (i.e. crops, number of irrigations, land size, etc.)



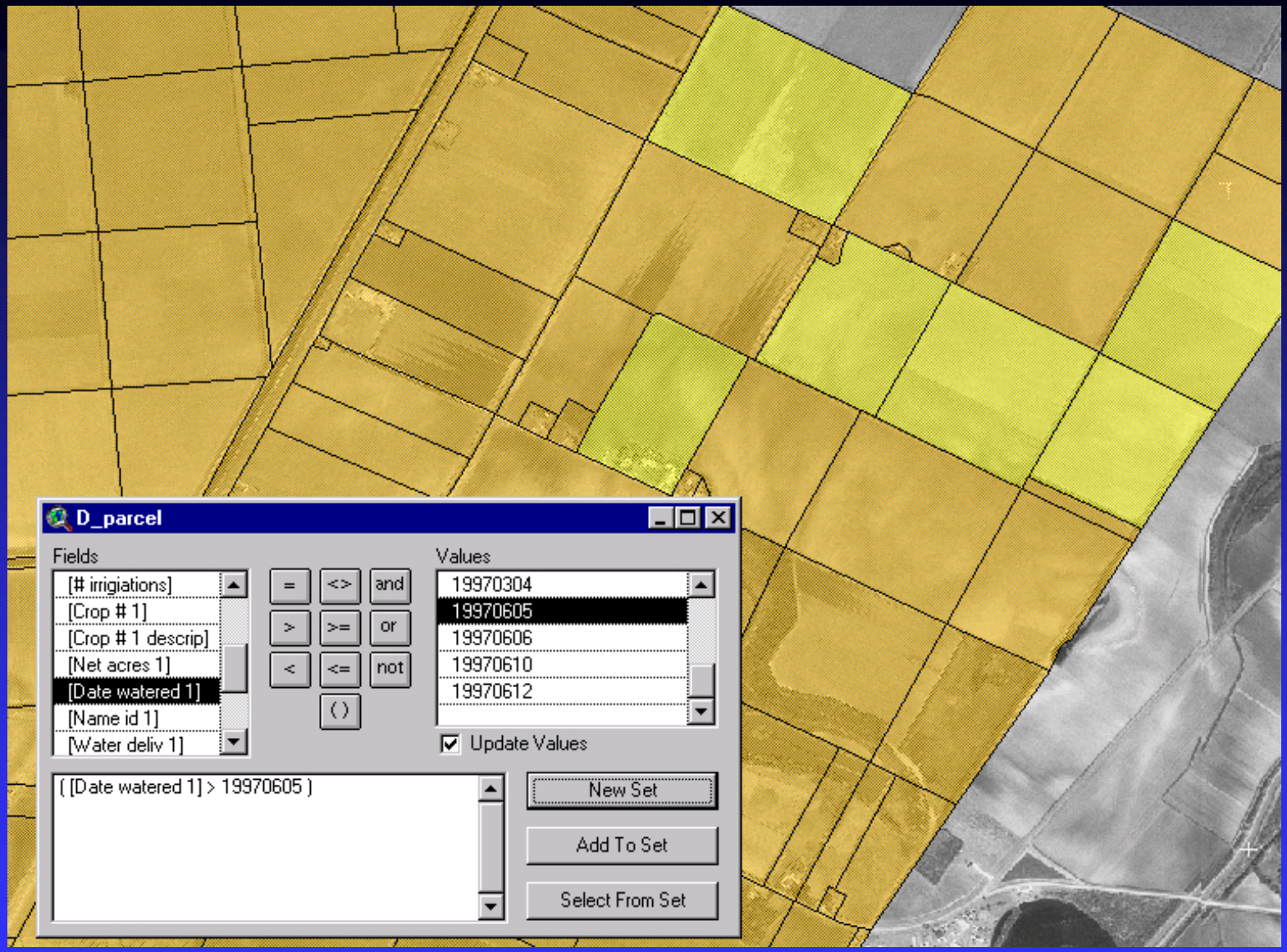
This shows all the information about the parcel highlighted. This can be done by simply clicking on a tract of land using the information tool. The database was linked to the “Pin” number above.



Querying owner name = Wayne Halbert using spatial query. This query builder automatically turns all parcels not owned by Mr. Halbert “off.”



Querying owner name = Wayne Halbert using different method. This highlights all parcels owned by Mr. Halbert.



This query shows all parcels watered after June 5, 1997 as seen by ([Date watered 1])>19970605). Anything in the database can be queried.

This shows all the information about a certain drainage system that was “clicked on” using the info tool.