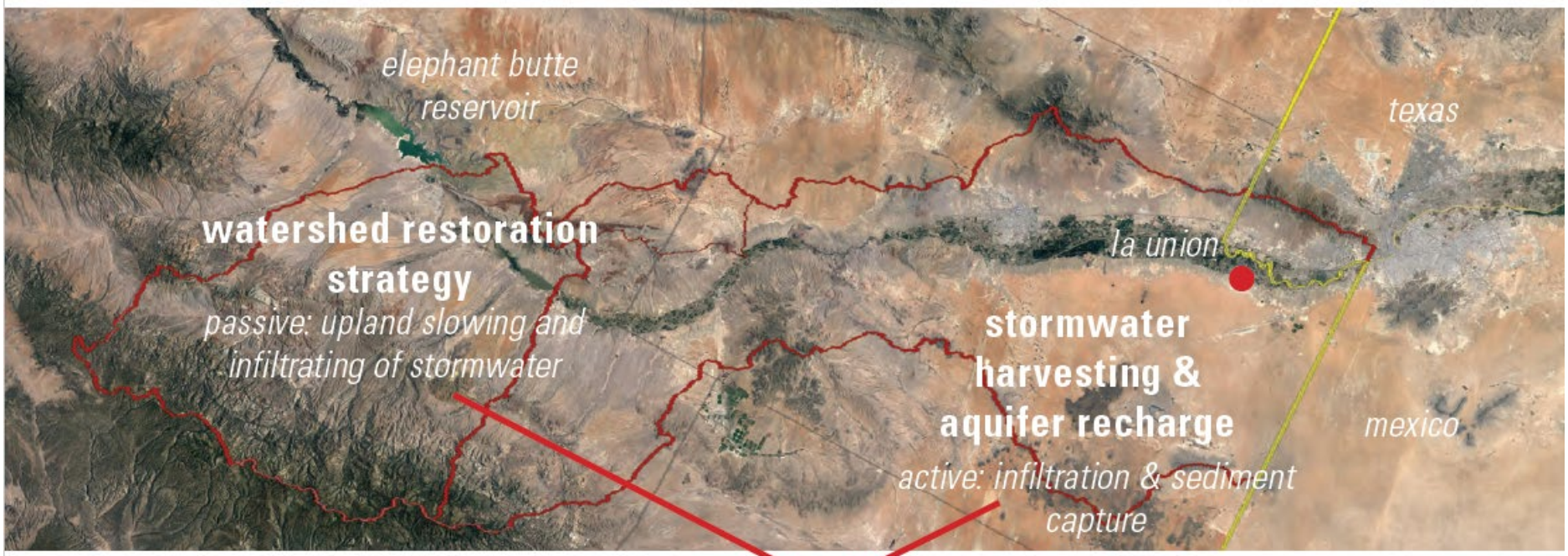
la union - conceptual watershed approach discussion



connie maxwell
NM WRRI grad. research asst.
NMSU Ph.D. cand., water sci. & man.

NM WRRI WATER & COMMUNITY COLLABORATION LAB (draft logo)

NM STATE UNIVERSITY

NEW MEXICO WATER RESOURCES RESEARCH INSTITUTE

New Mexico EPSCoR

The South Central New Mexico Stormwater Management Coalition

HATCH NEW MEXICO CHILE CAPITAL OF THE WORLD

City of Anthony New Mexico — Est. July 1, 2010 —

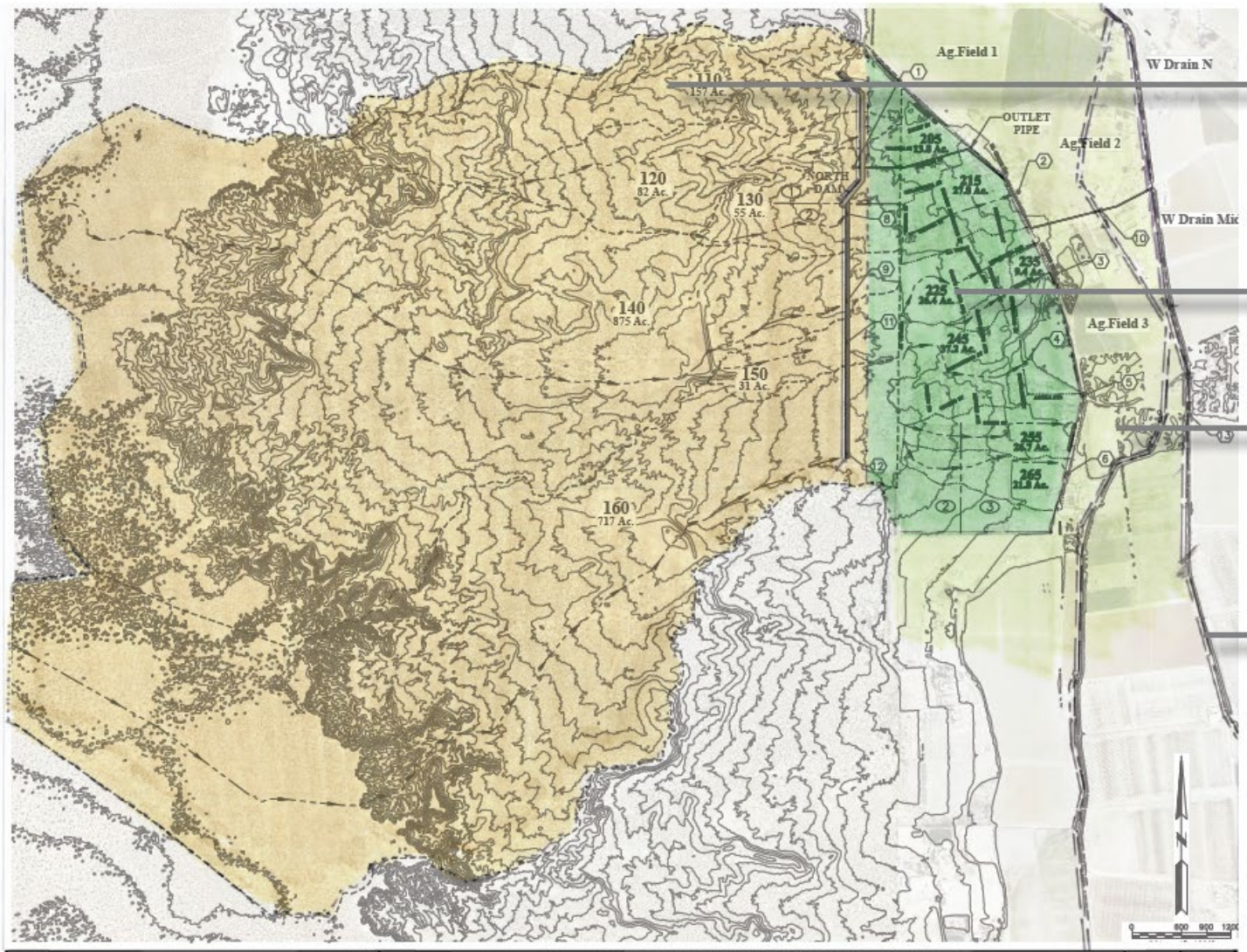
Doña Ana & Caballo Soil and Water Conservation Districts

Sierra Soil & Water Conservation District

SIERRA COUNTY NEW MEXICO flood commission

DONA ANA COUNTY NEW MEXICO flood commission

EBID ELEPHANT BUTTE IRRIGATION DISTRICT



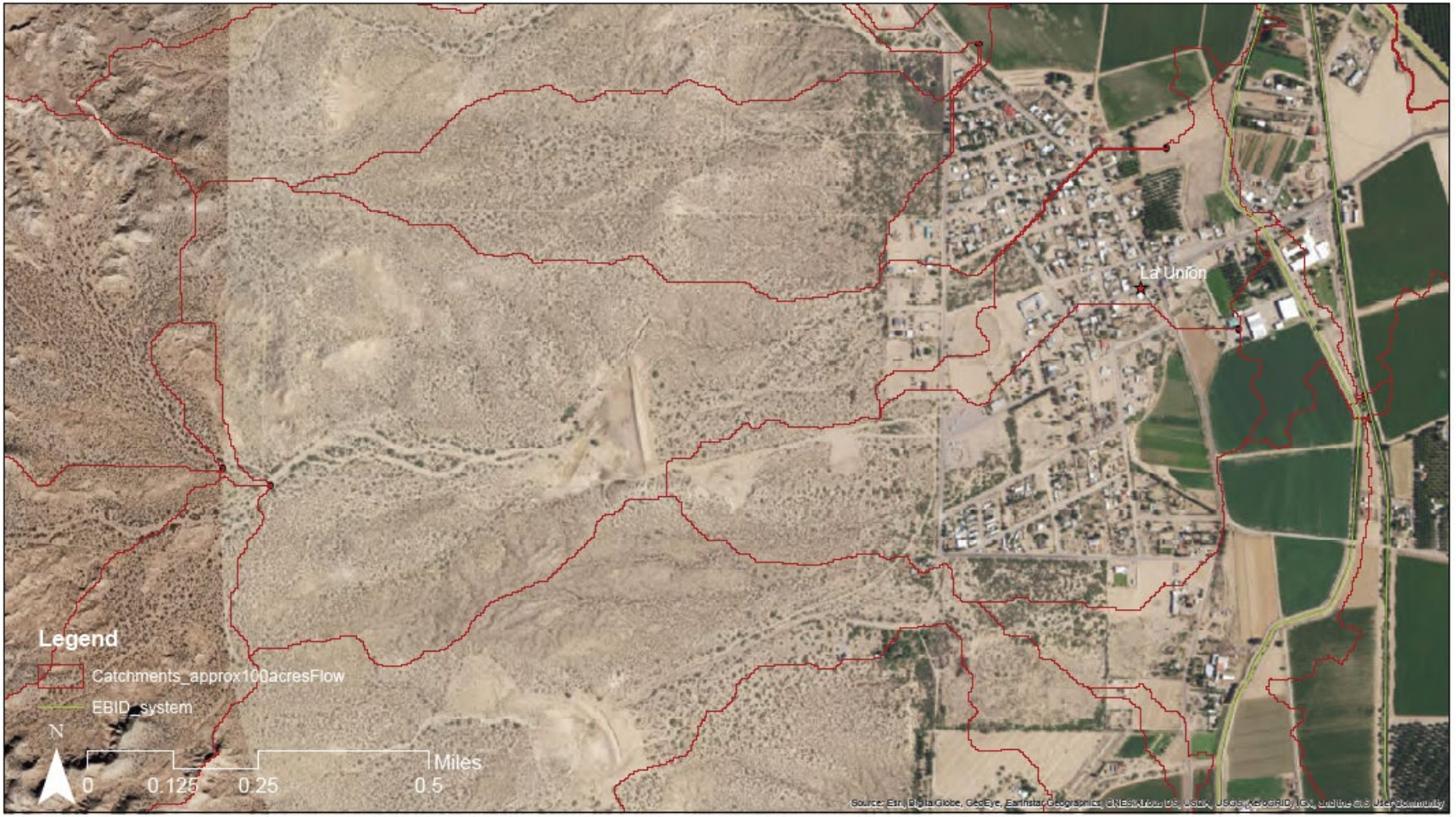
upper watershed

town

agricultural fields

west drain (outflow for flooding requires upgrades)

underlay



La Union Area: catchments

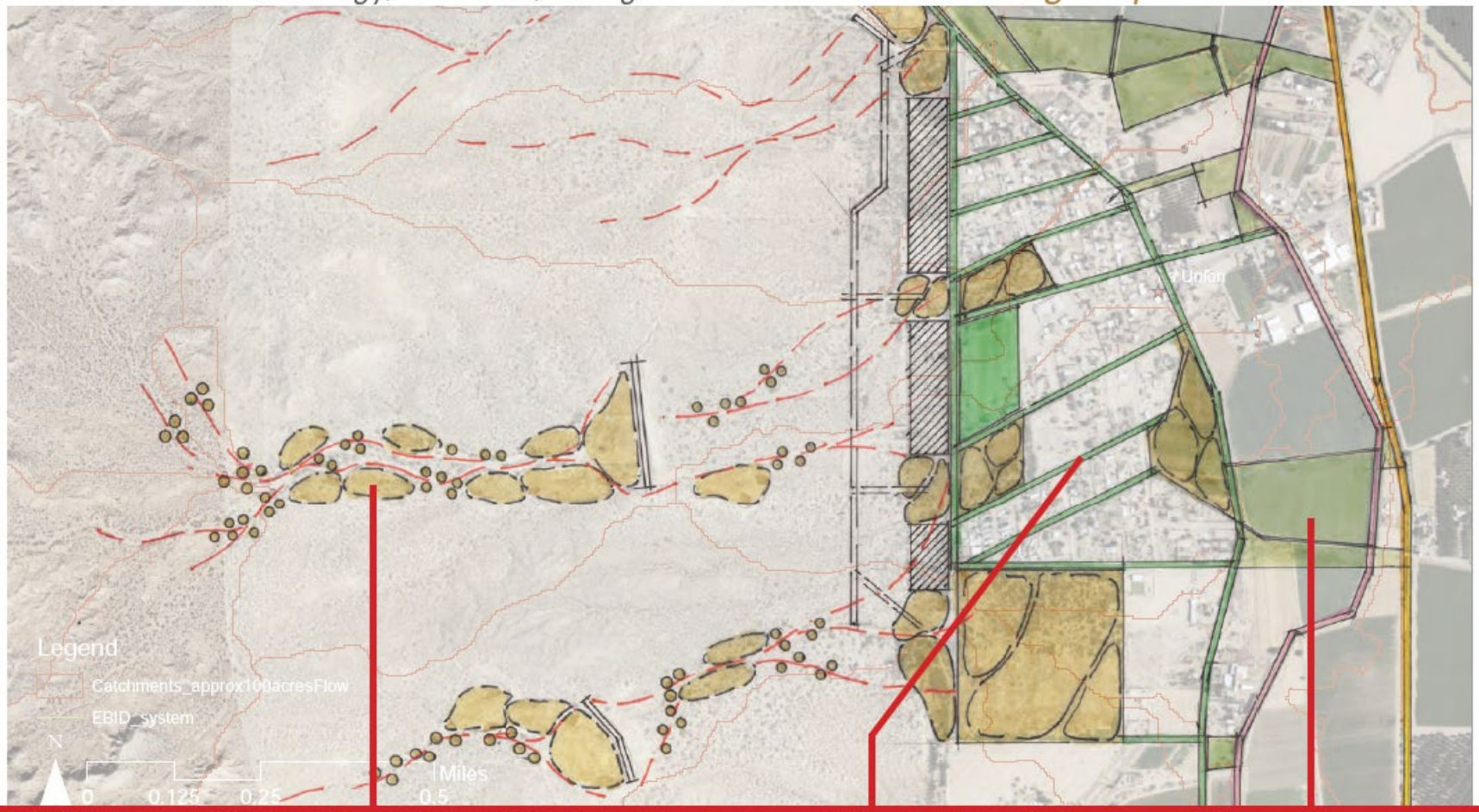
contact: Connie Maxwell, alamosa@nmsu.edu, 575.740.1099

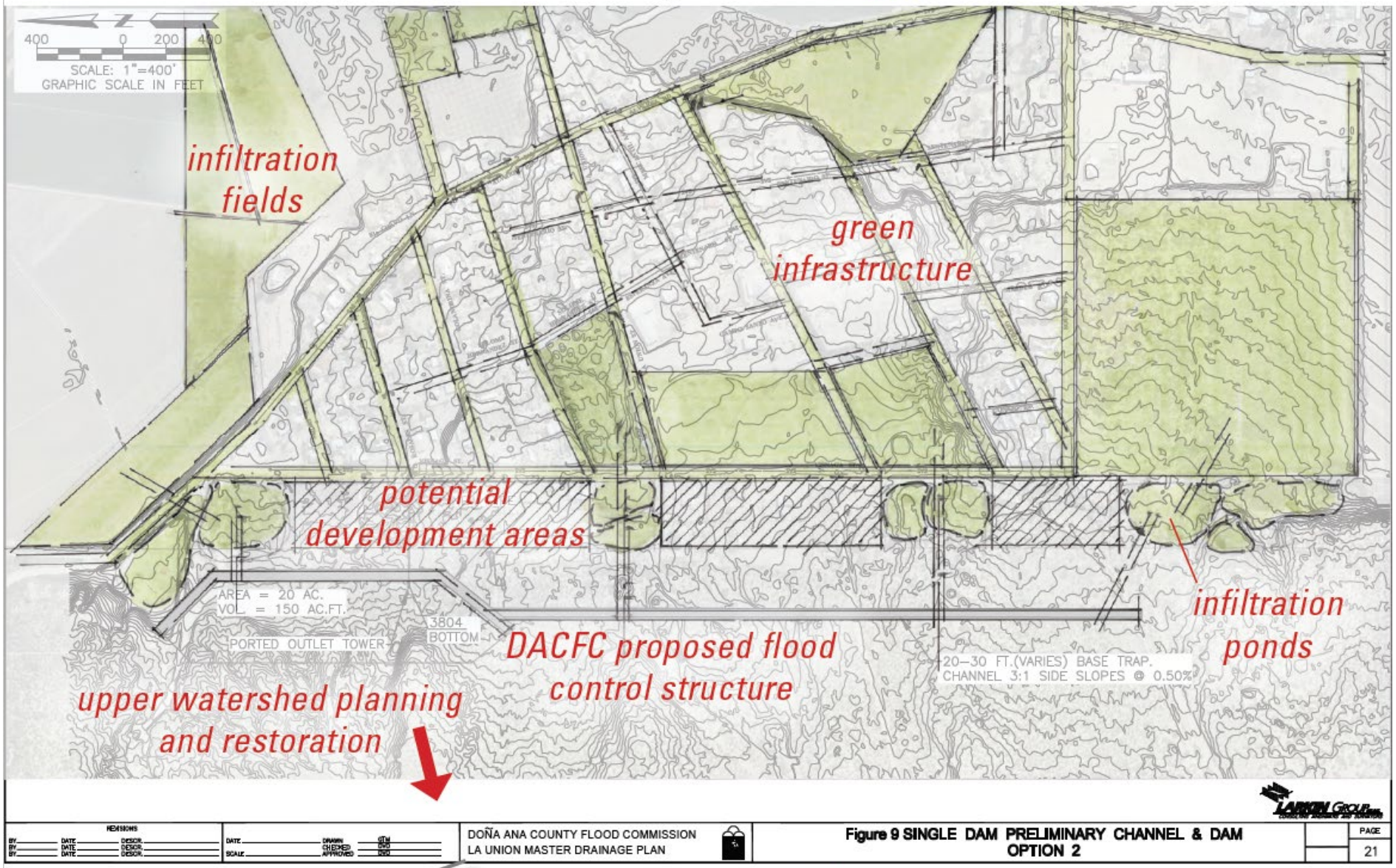
NEW MEXICO WATER RESOURCES RESEARCH INSTITUTE

it all begins in the upper watershed

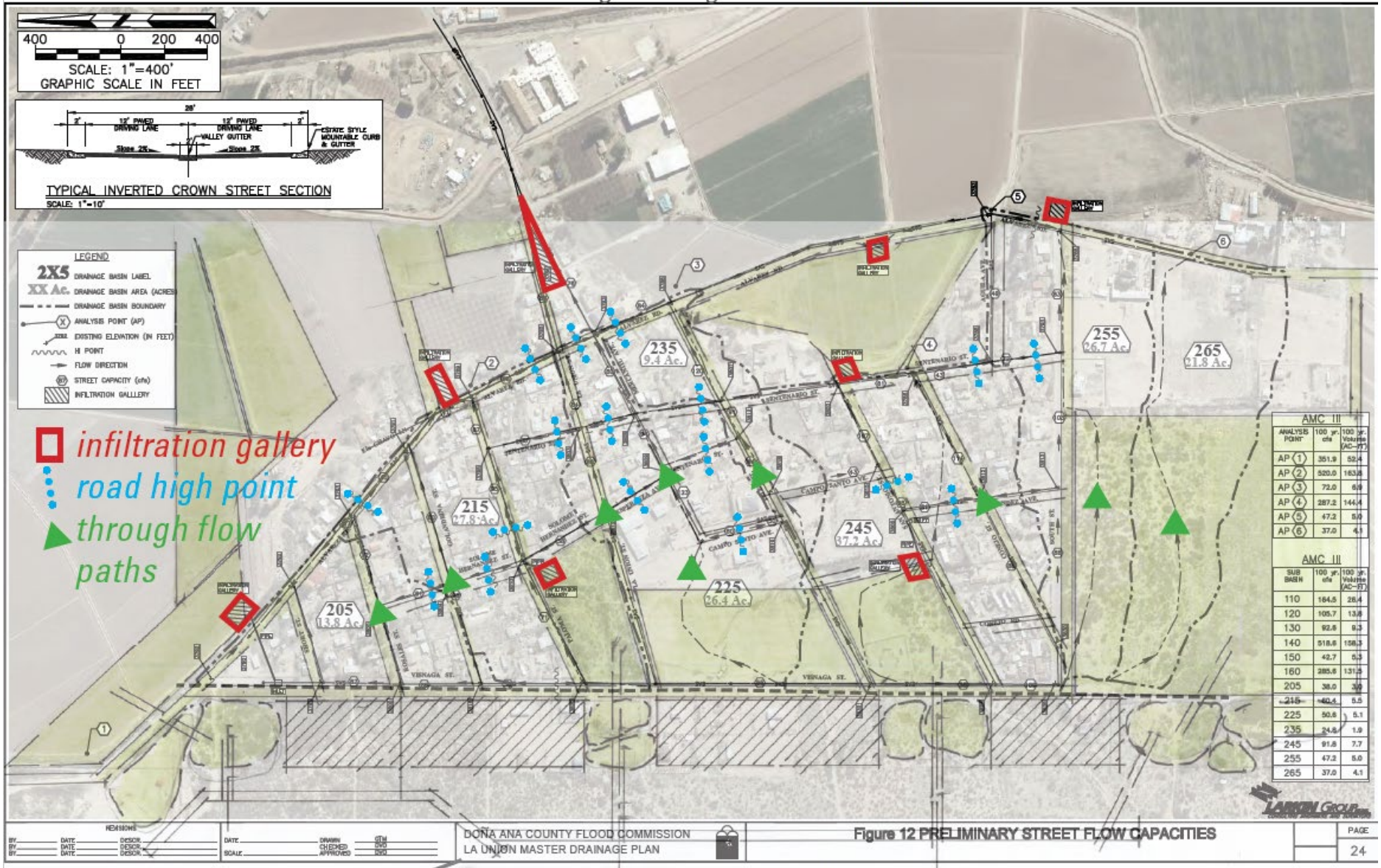
reduce flood energy, infiltrate, revegetate

strategies per zone




400 0 200 400
SCALE: 1"=400'
GRAPHIC SCALE IN FEET
infiltration fields
green infrastructure
potential development areas
AREA = 20 AC.
VOL = 150 AC.FT.
3804
BOTTOM
PORTED OUTLET TOWER
DACFC proposed flood control structure
20–30 FT.(VARIES) BASE TRAP.
CHANNEL 3:1 SIDE SLOPES @ 0.50%
infiltration ponds
upper watershed planning and restoration
REVISIONS
DOÑA ANA COUNTY FLOOD COMMISSION
LA UNION MASTER DRAINAGE PLAN
Figure 9 SINGLE DAM PRELIMINARY CHANNEL & DAM OPTION 2
PAGE
21

underlay


400 0 200 400
SCALE: 1"=400'
GRAPHIC SCALE IN FEET
TYPICAL INVERTED CROWN STREET SECTION
SCALE: 1"=10'
LEGEND
2X5 DRAINAGE BASIN LABEL
XX Ac. DRAINAGE BASIN AREA (ACRES)
DRAINAGE BASIN BOUNDARY
ANALYSIS POINT (AP)
EXISTING ELEVATION (IN FEET)
H POINT
FLOW DIRECTION
STREET CAPACITY (cfs)
INFILTRATION GALLERY
infiltration gallery
road high point
through flow paths
205 13.8 Ac.
215 27.8 Ac.
225 26.4 Ac.
235 9.4 Ac.
245 37.2 Ac.
255 26.7 Ac.
265 21.8 Ac.
AMC III
ANALYSIS POINT | 100 yr. cfs | 100 yr. Volume (AC-FT)
AP 1 351.9 52.4
AP 2 520.0 183.8
AP 3 72.0 8.9
AP 4 287.2 144.4
AP 5 47.2 5.0
AP 6 37.0 4.1
AMC III
SUB BASIN | 100 yr. cfs | 100 yr. Volume (AC-FT)
110 164.5 28.4
120 105.7 13.8
130 92.8 9.3
140 518.8 158.3
150 42.7 5.3
160 285.6 131.5
205 38.0 3.9
215 40.4 5.5
225 50.8 5.1
235 24.8 1.9
245 91.8 7.7
255 47.3 5.0
265 37.0 4.1
REVISIONS
DONA ANA COUNTY FLOOD COMMISSION
LA UNION MASTER DRAINAGE PLAN
Figure 12 PRELIMINARY STREET FLOW CAPACITIES
PAGE 24

underlay

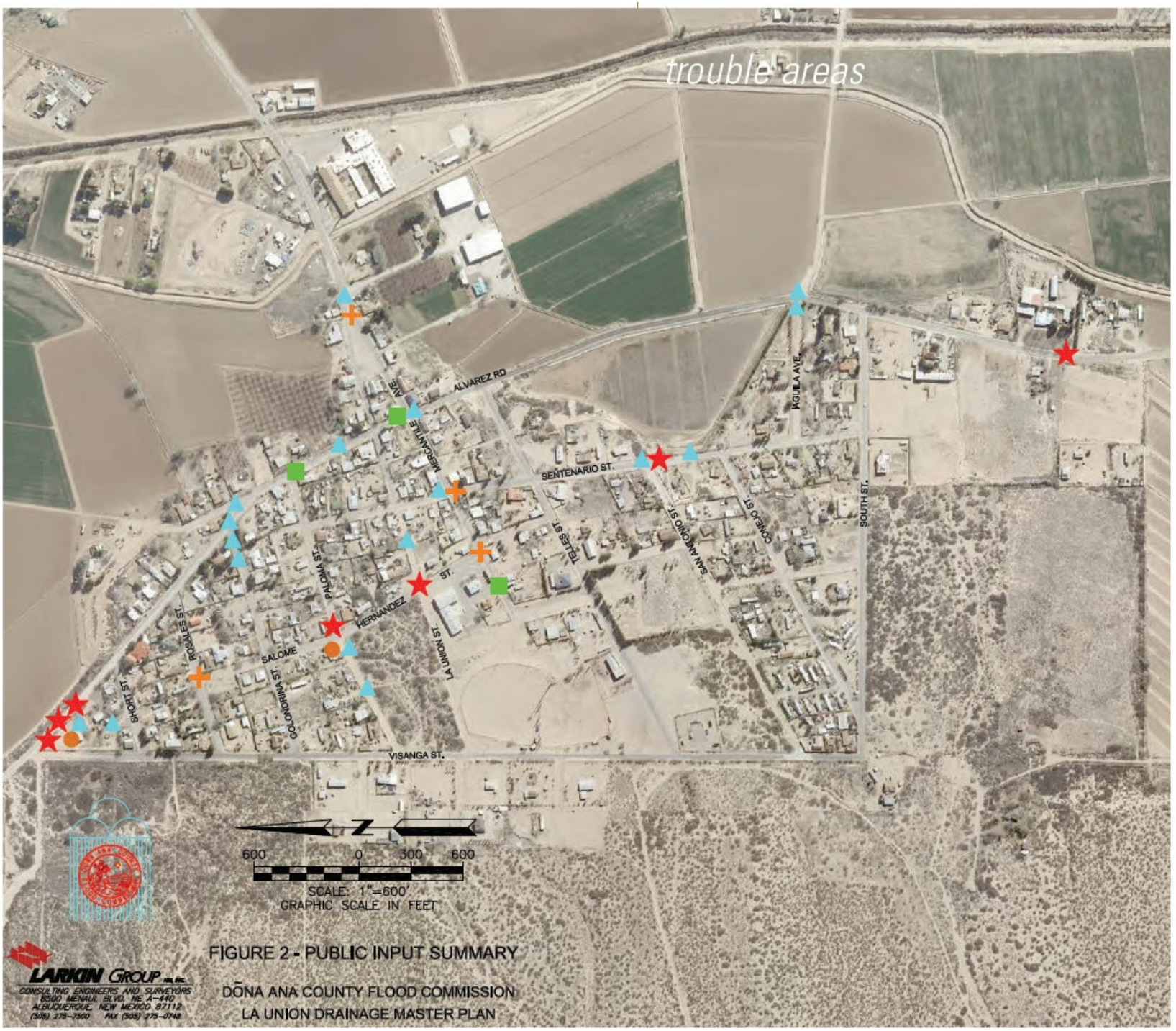


FIGURE 2 - PUBLIC INPUT SUMMARY

DOÑA ANA COUNTY FLOOD COMMISSION

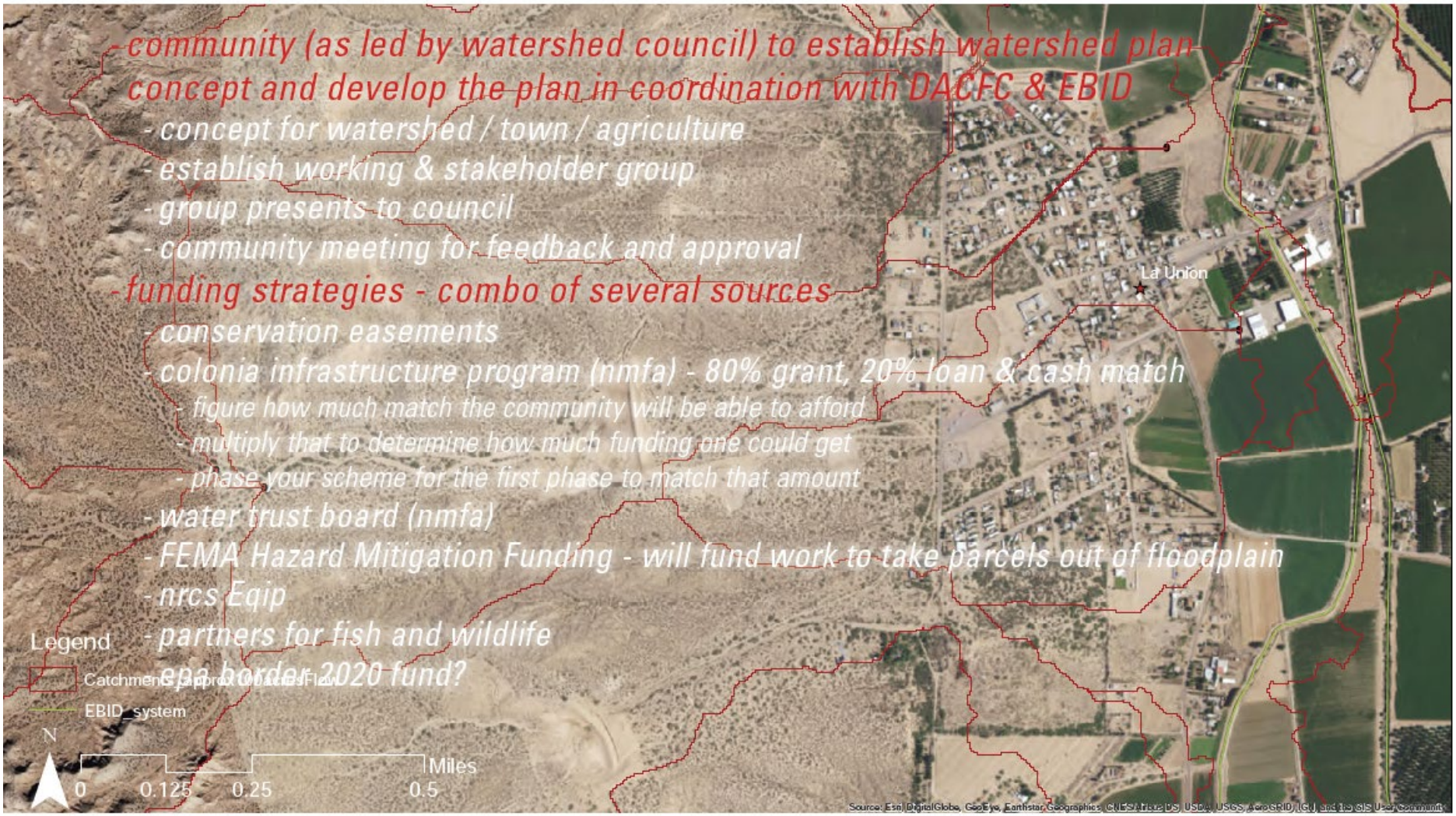
LA UNION DRAINAGE MASTER PLAN

reduce flood energy, infiltrate, revegetate

infiltrate along flow paths - consider strategy for narrow roads - some roads become one-way?

use agriculture as a system for handling stormwater and recharging the aquifer

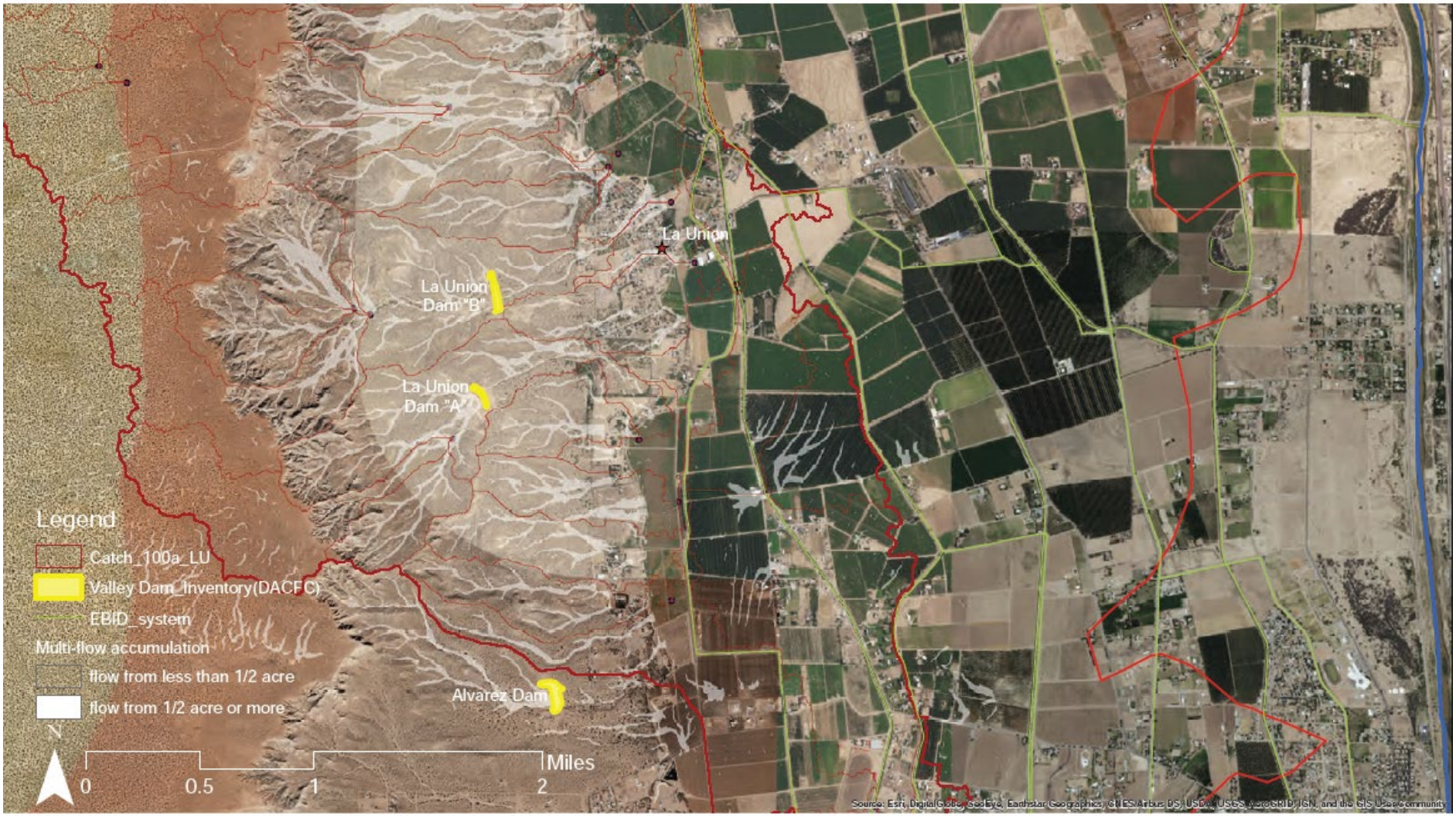
identify overflow fields for recharge, settling, and distribution to irrigation infrastructure


- community (as led by watershed council) to establish watershed plan
concept and develop the plan in coordination with DACFC & EBID
- concept for watershed / town / agriculture
- establish working & stakeholder group
- group presents to council
- community meeting for feedback and approval
- funding strategies - combo of several sources
- conservation easements
- colonia infrastructure program (nmfa) - 80% grant, 20% loan & cash match
- figure how much match the community will be able to afford
- multiply that to determine how much funding one could get
- phase your scheme for the first phase to match that amount
- water trust board (nmfa)
- FEMA Hazard Mitigation Funding - will fund work to take parcels out of floodplain
- nrcs Eqip
- partners for fish and wildlife
- epa border 2020 fund?
La Union
Legend
EBID_system
N
Miles
0
0.125
0.25
0.5

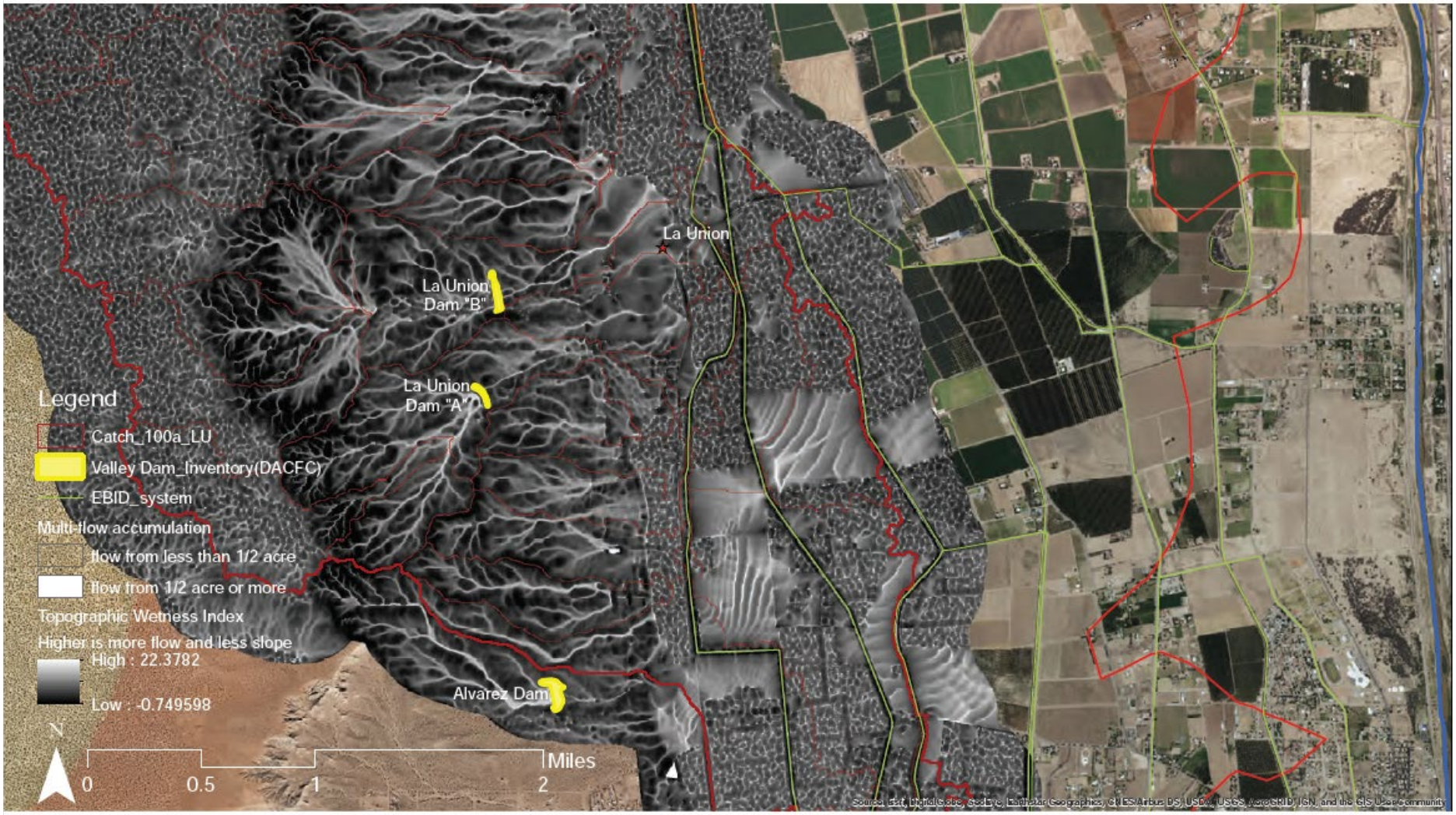
additional flow maps

reference

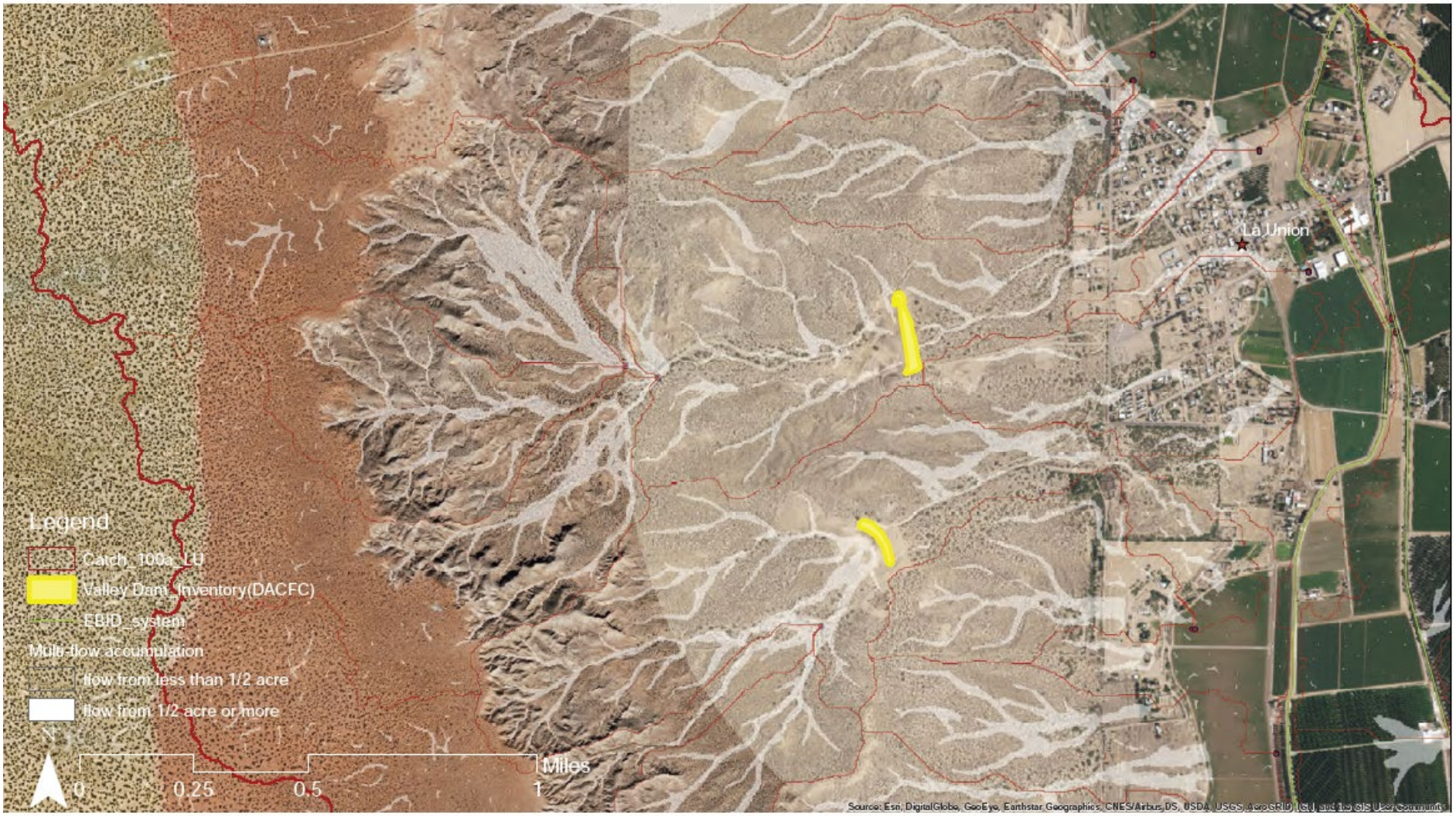
overall watershed flow patterns



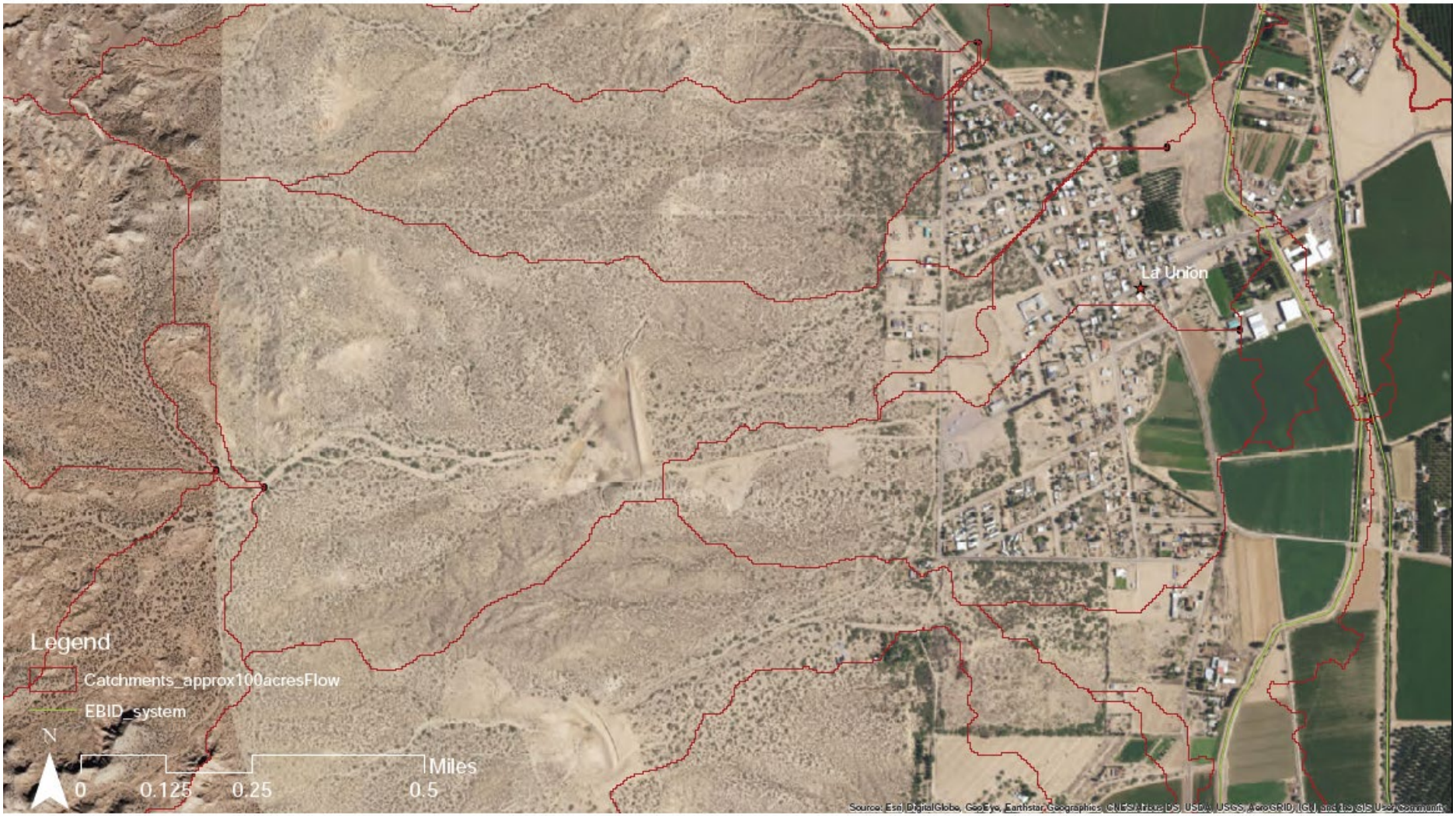
overall watershed flow patterns



overall watershed flow patterns



overall watershed flow patterns



overall watershed flow patterns