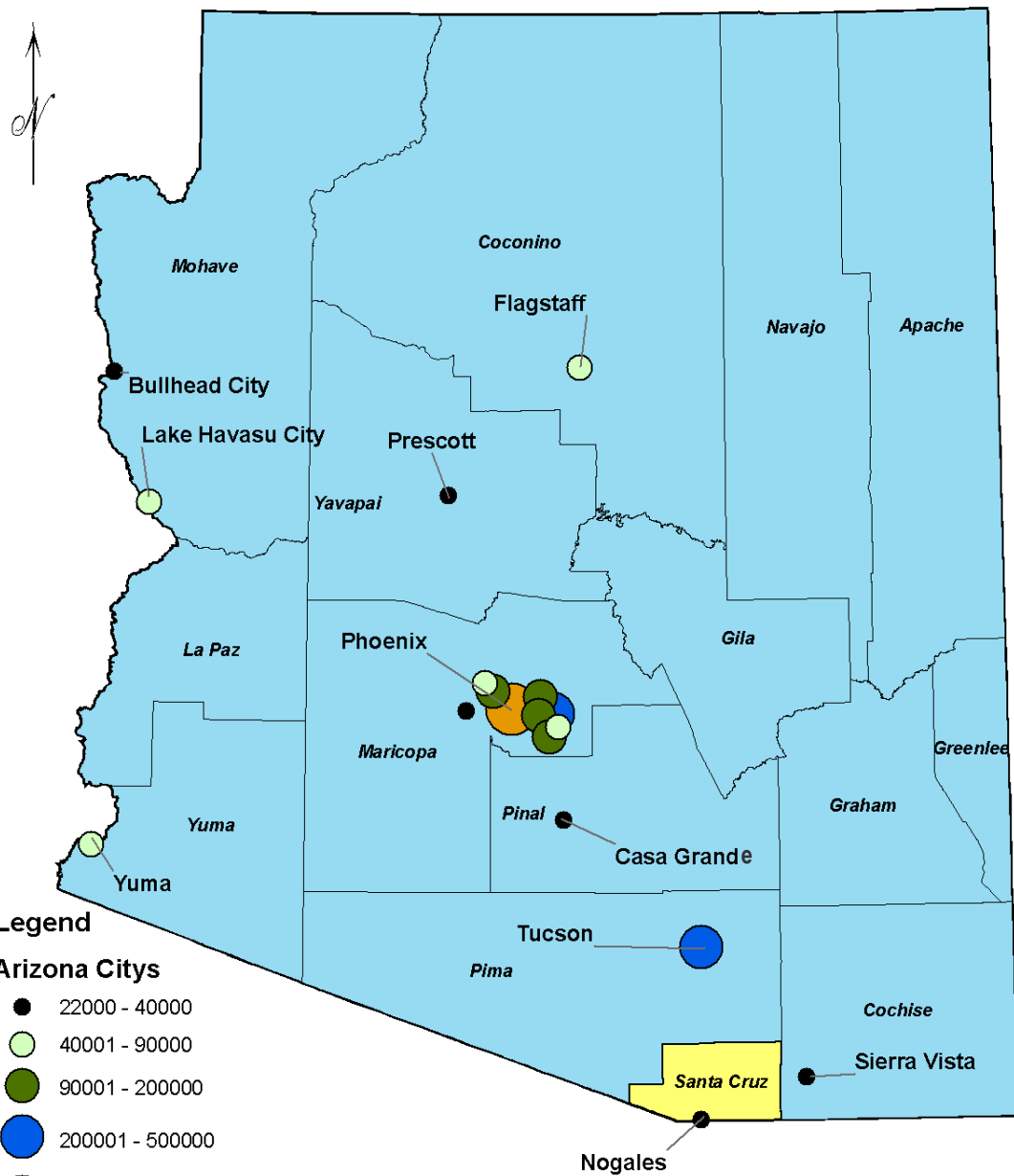


New Mapping, Recent Events...

What do we know?

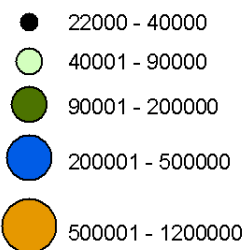
June 9, 2011



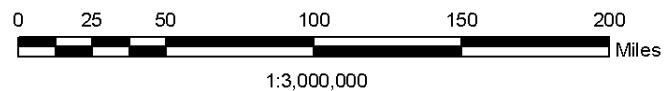


Legend

Arizona Cities



AZ Counties





FEMA Mapping Process

- Current Flood Insurance Rate Maps (FIRMs) or Floodplain Maps date back to the early 1970's.
- The District contracted with Stantec Consulting of Tucson to perform the engineering required to create the new floodplain maps.
- First round of Public Review and Comment resulted in changes in mapping more inline with original preference of Staff and Consultant for floodplains within Nogales.

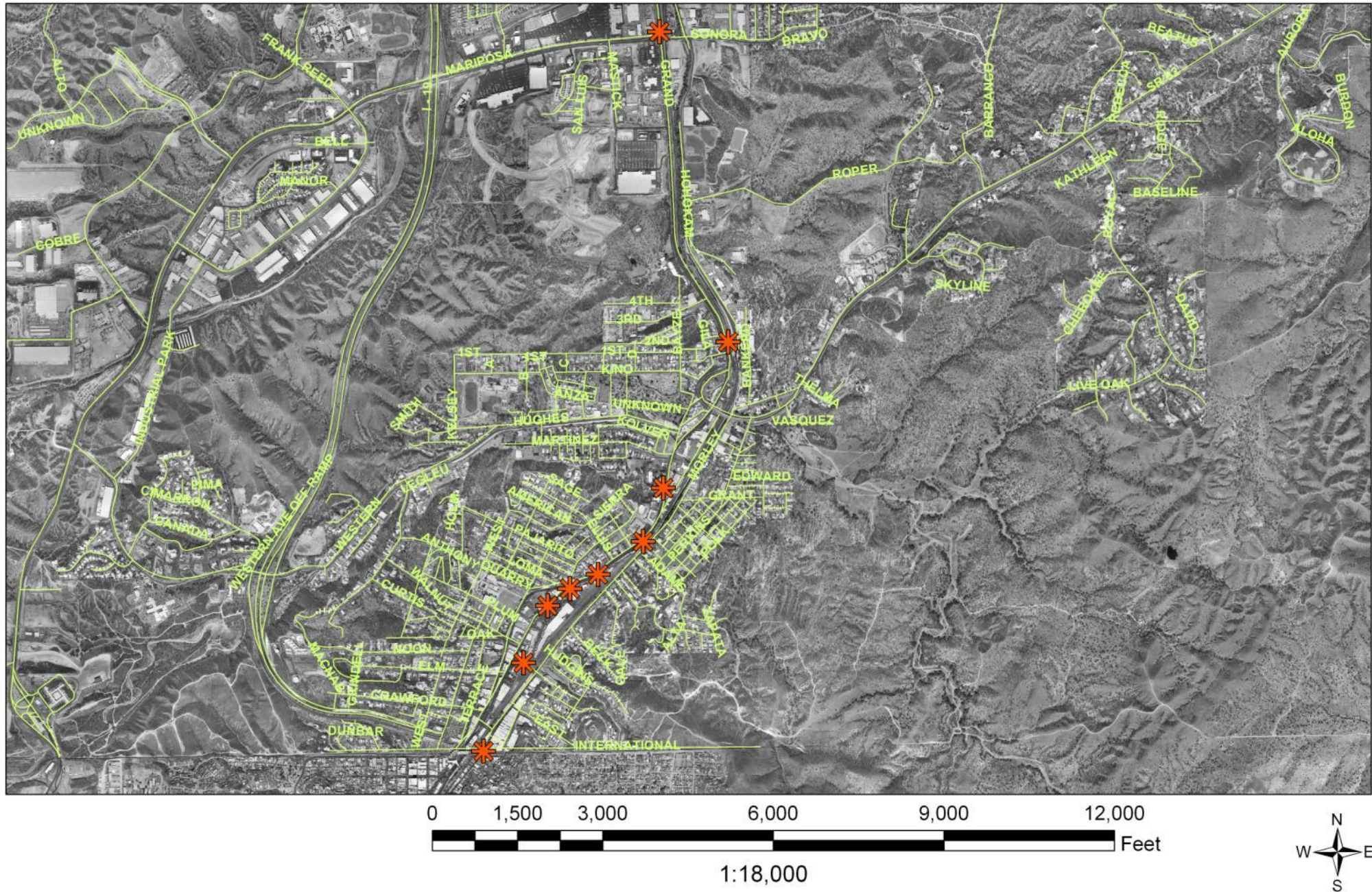
- Second round of Public Review and Comment, resulted in minor changes in the City of Nogales, but no substantive changes requiring further review.
- FEM and the DFIRMs implement changes from the Public Comment periods.
- Letter of Final Approval to be issued in early June 2011.



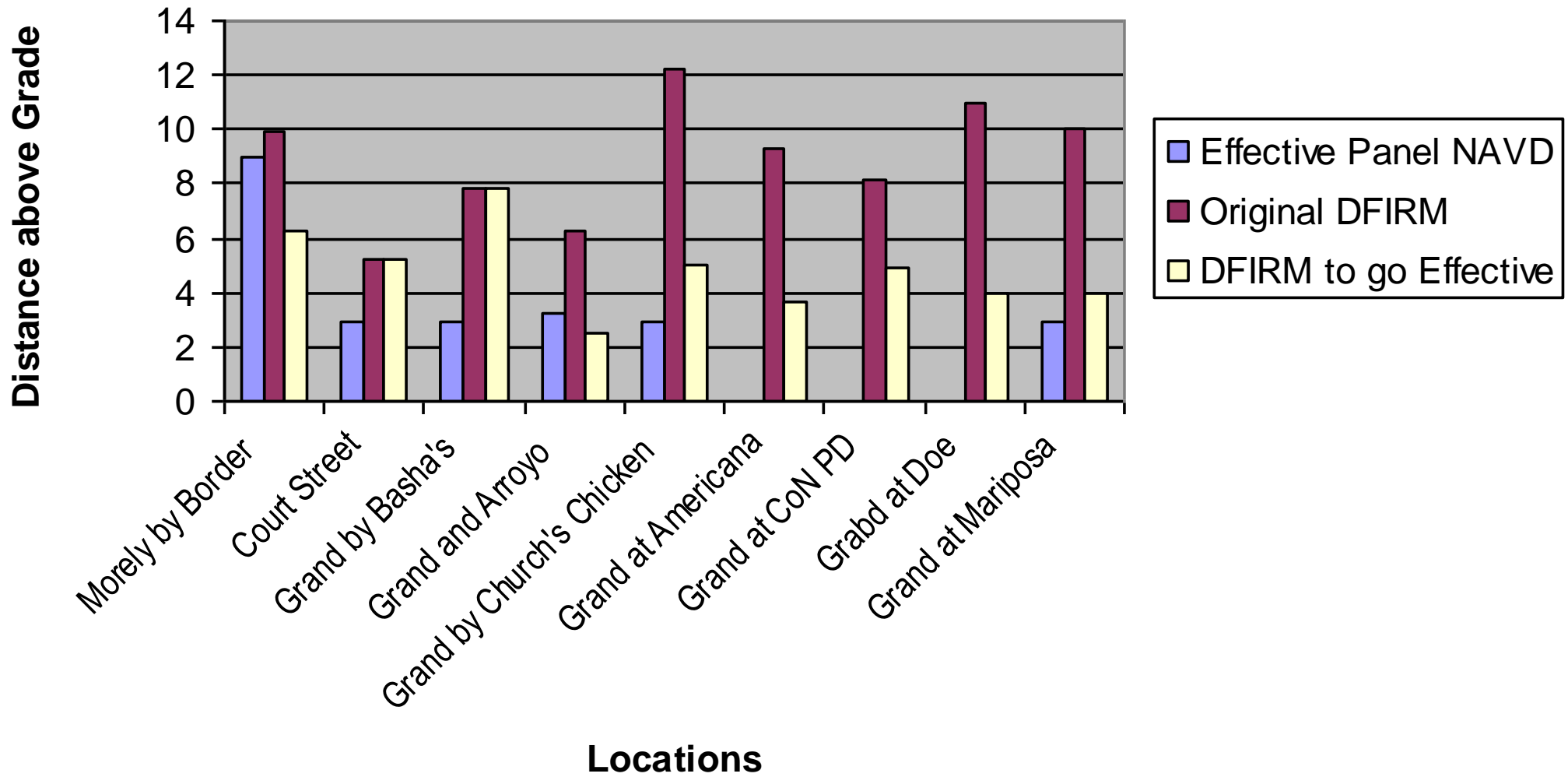
Changes in Mapping

- Changes in the mapping have resulted depths of water generally deeper than shown on the effective panels, but not as deep on the original Preliminary DFIRMs.
- Areas that were previously not mapped because of a lack of structures or infrastructure, or funding have been mapped to so the risk for both existing structures and infrastructure, and to allow future development to know of the risks.
- Total Re-Study of Approximately 900 Stream Miles
 - New & Revised Detailed Floodplains – 99 Stream Miles
 - New Limited Detailed Floodplains – 85 Stream Miles
 - New and Revised Approximate Floodplains – Approximately 700 Stream Miles

Comparison Locations



Floodplain Elevation Changes



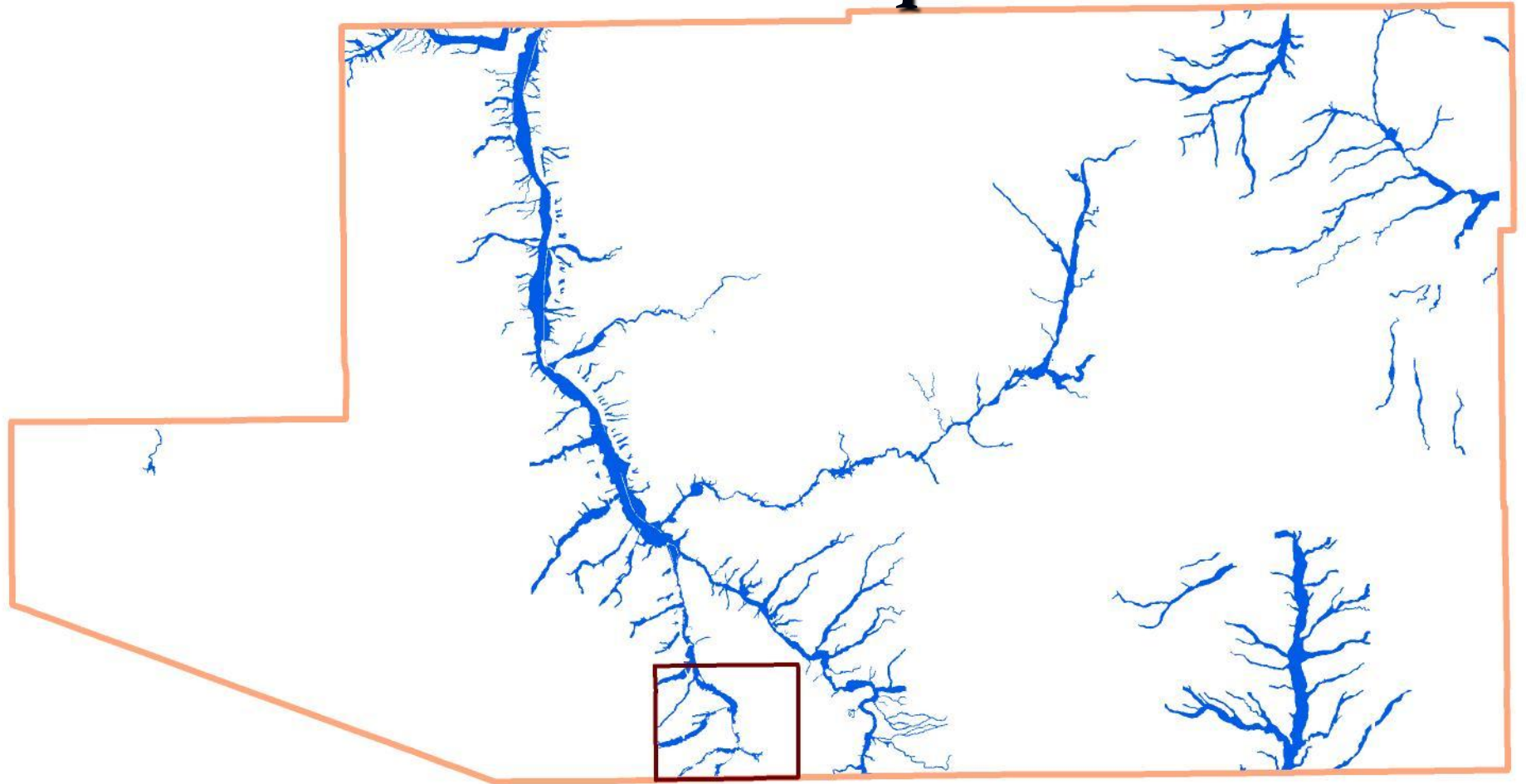
Comparison of Floodplain Boundaries

Effective FIRM_s


Original Preliminary DFIRM_s

Final Preliminary DFIRM_s

Current Floodplains



Legend

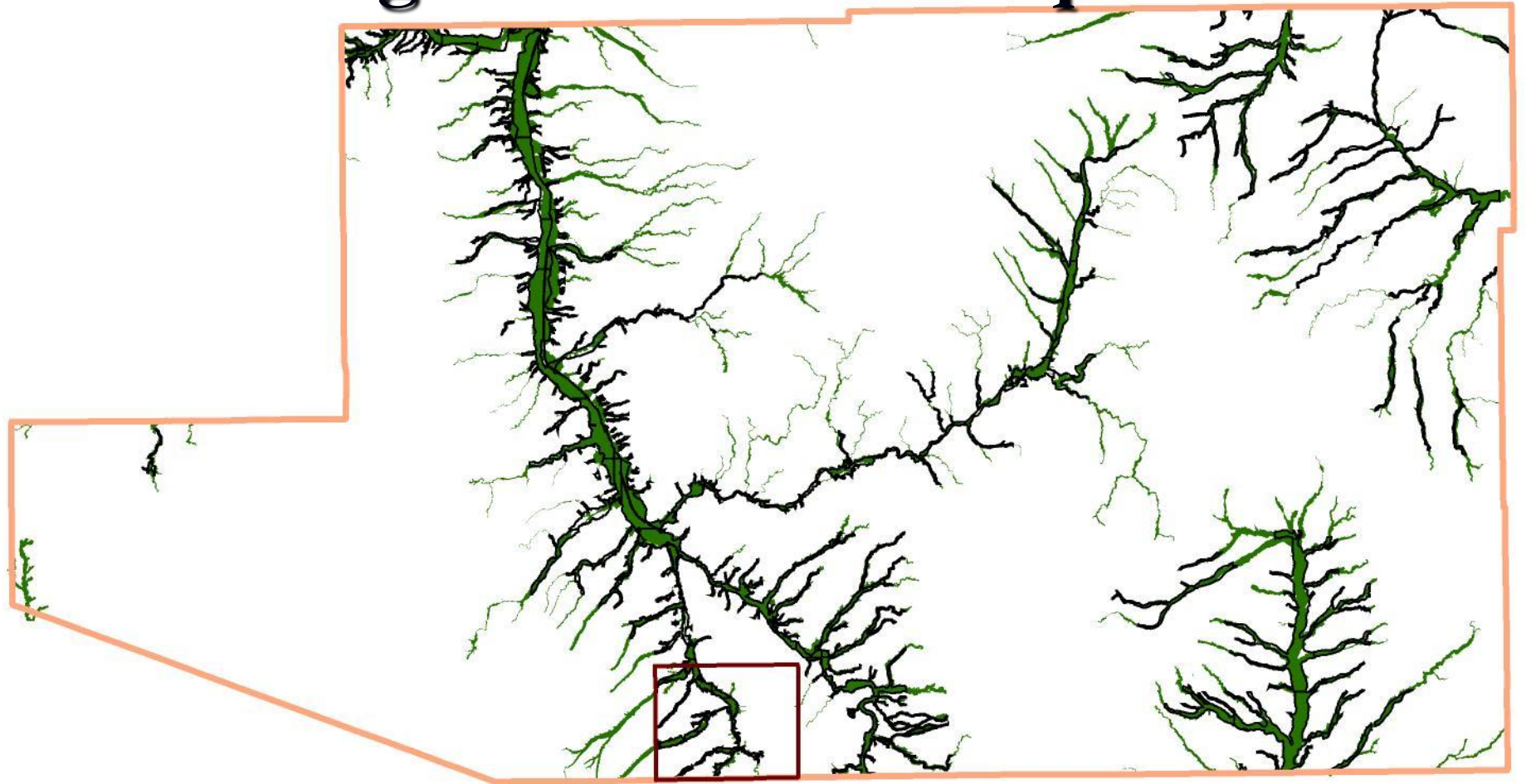
 Existing FEMA Floodplains





1:362,115



Original DFIRM Floodplains



Legend

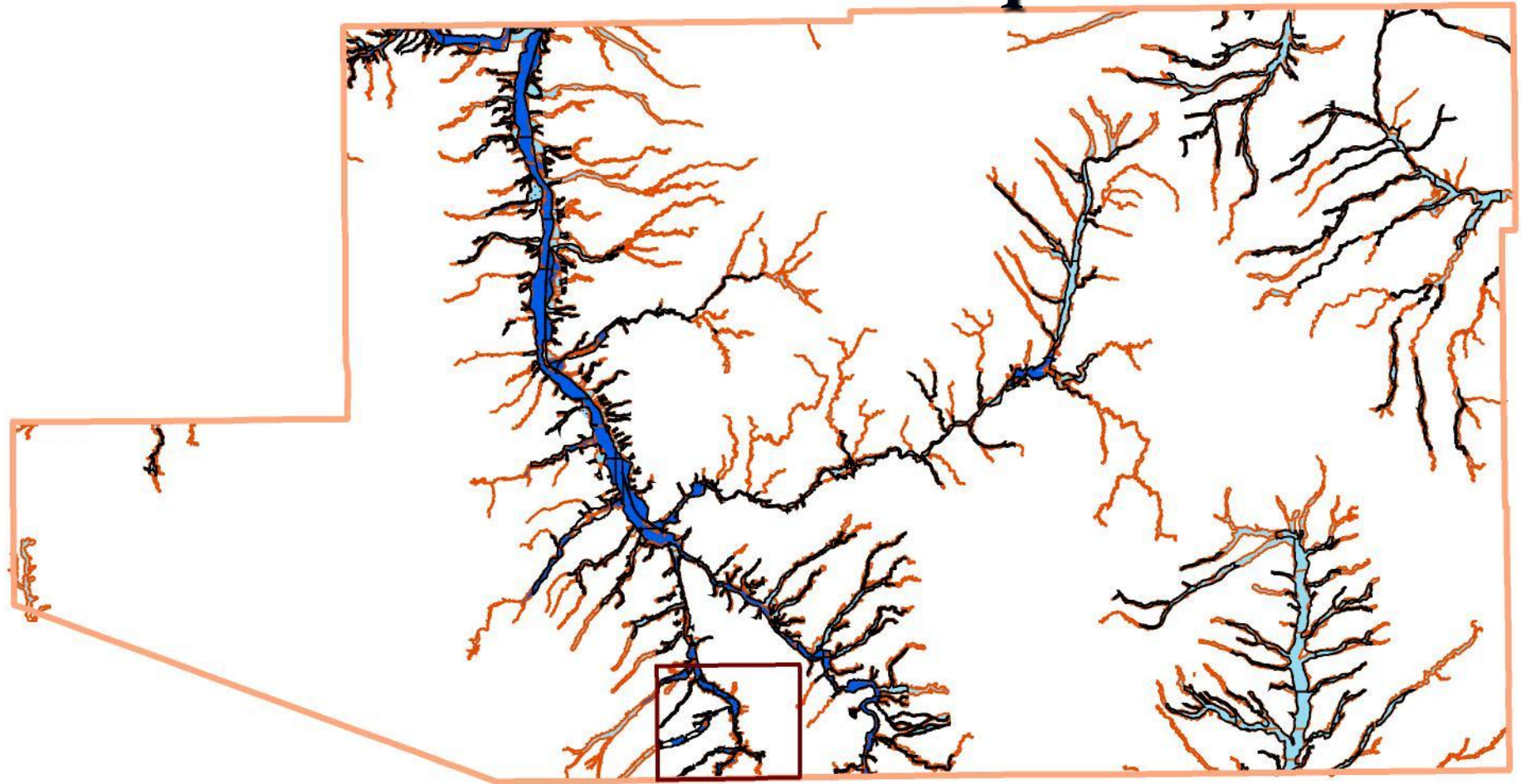
-  Existing FEMA Floodplains
-  Original DFIRM Floodplains



1:362,115



Final DFIRM Floodplains



Legend

- Existing FEMA Floodplains
- Original DFIRM Floodplains

Final DFIRM FLOOD ZONE

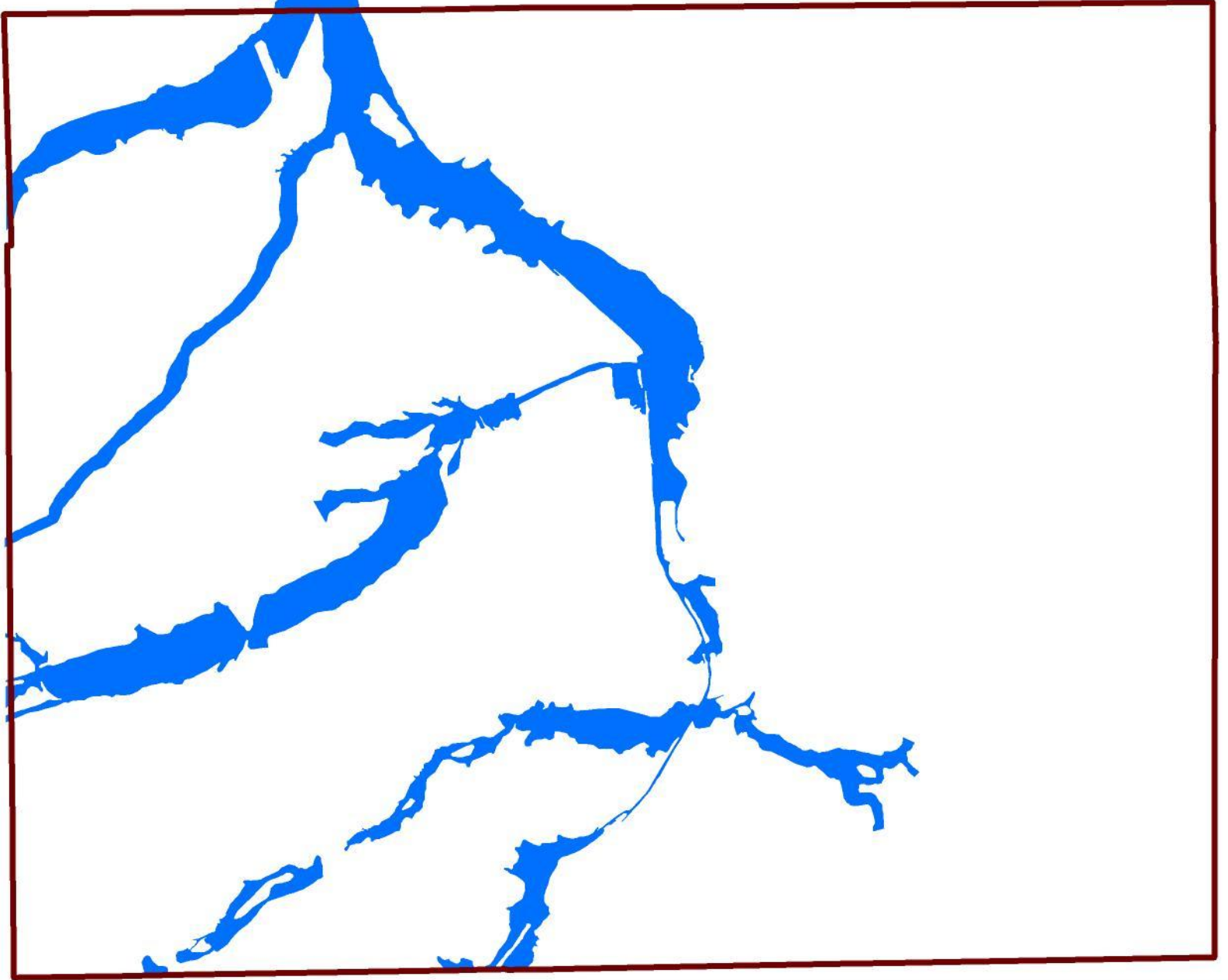
- A
- AO
- AE



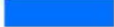
1:362,115



Current Floodplains – C of Nogales



Legend

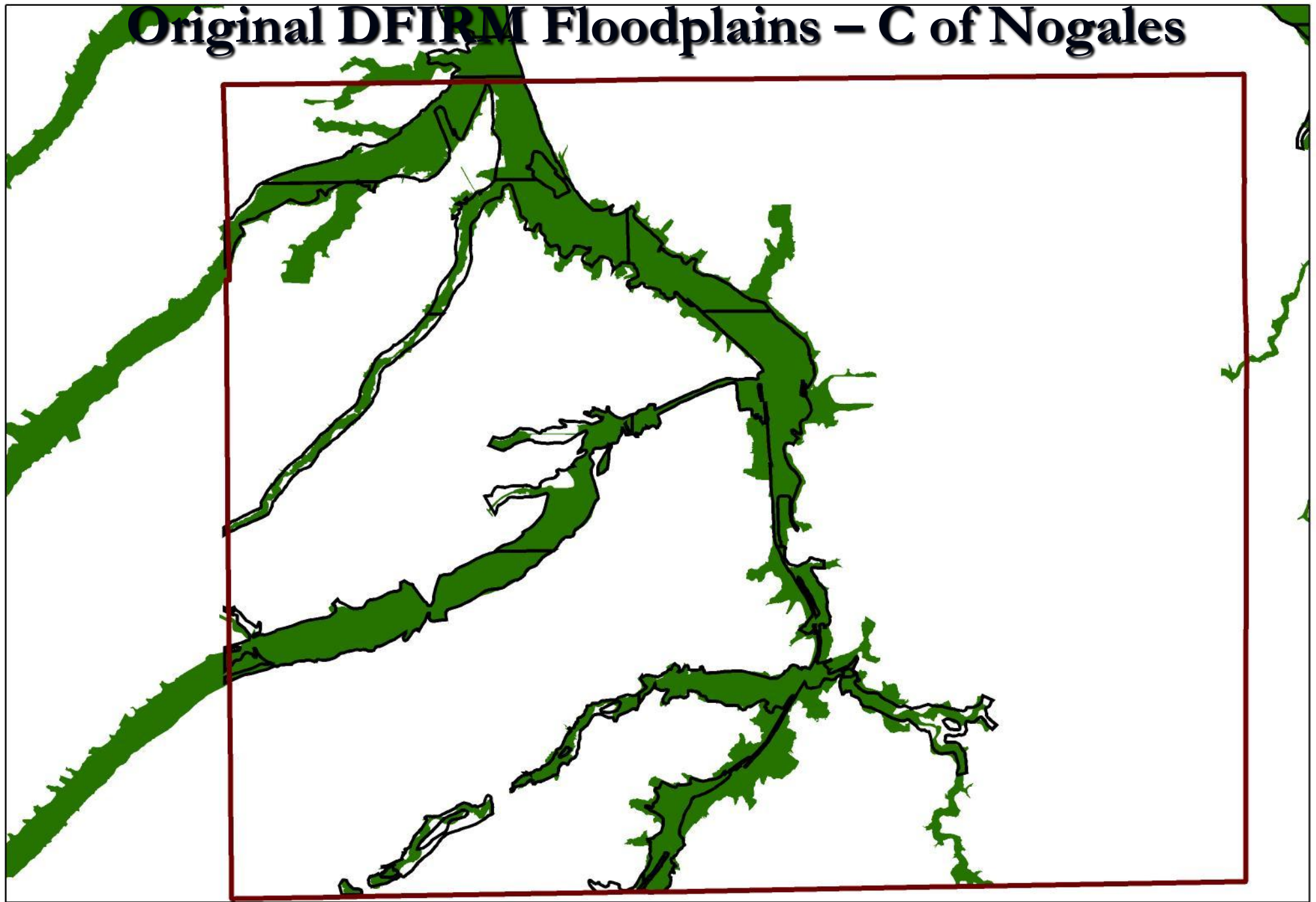
 Existing FEMA Floodplains





1:40,000



Original DFIRM Floodplains – C of Nogales



Legend

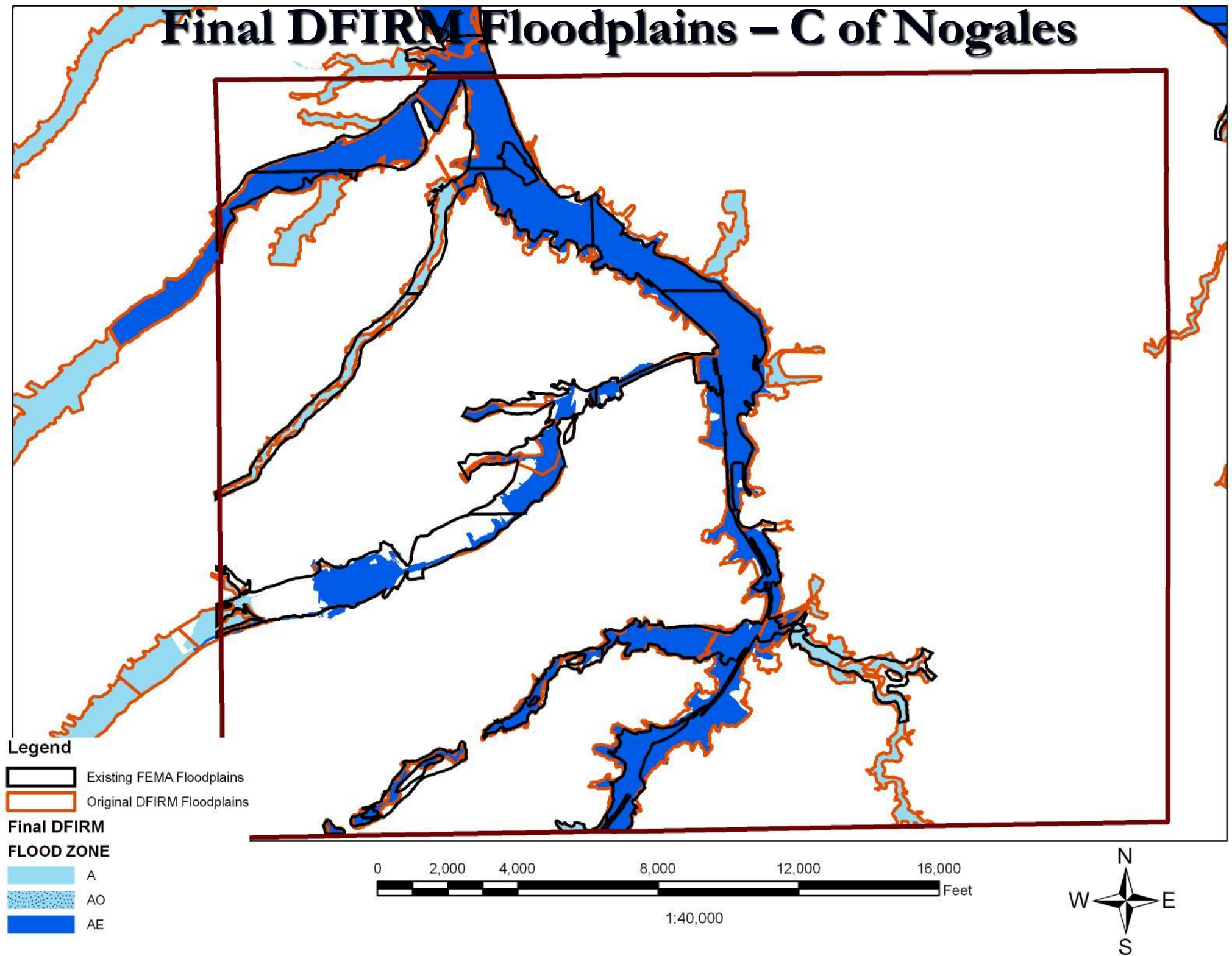
-  Existing FEMA Floodplains
-  Original DFIRM Floodplains



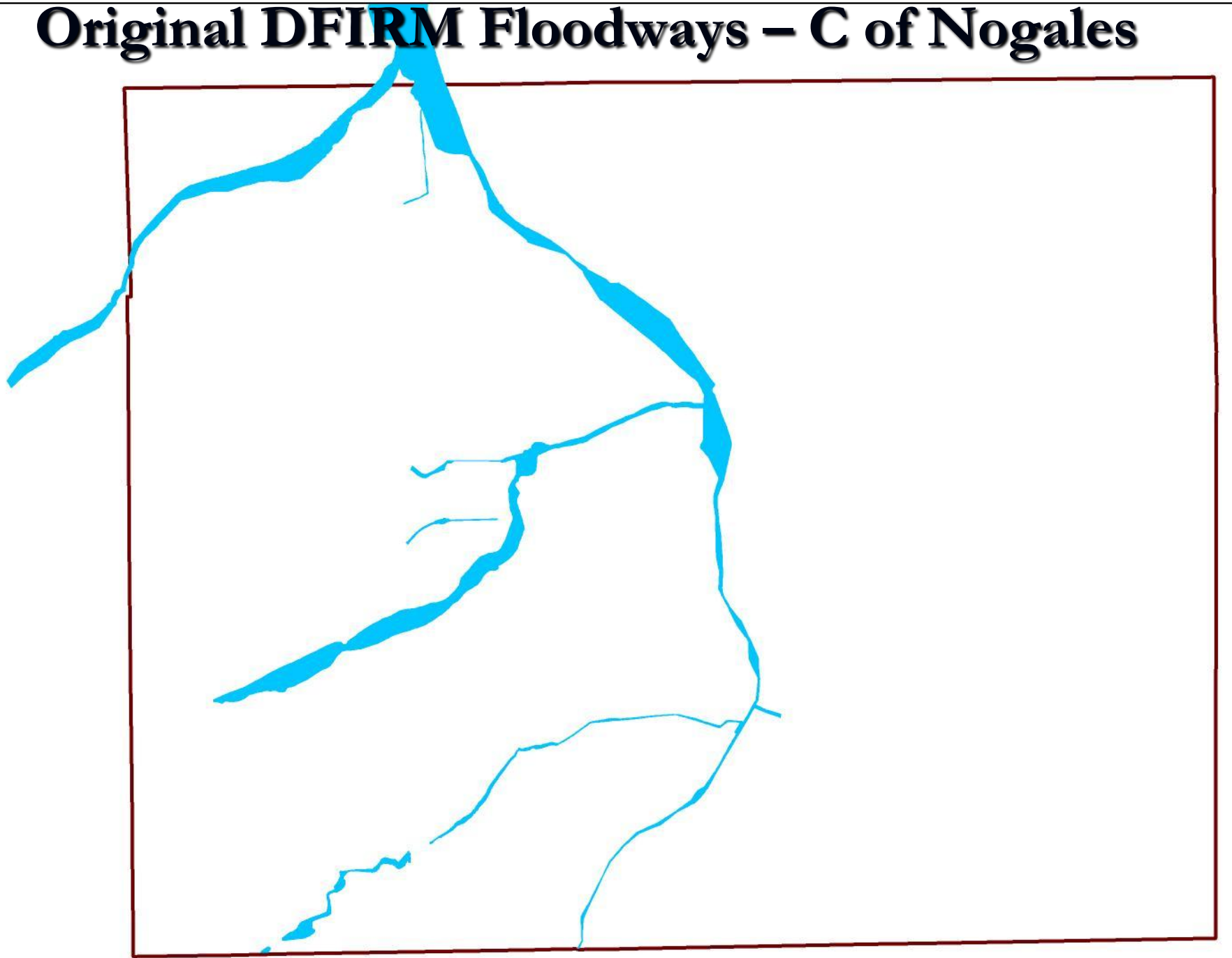
1:40,000



Final DFIRM Floodplains – C of Nogales



Original DFIRM Floodways – C of Nogales



Legend

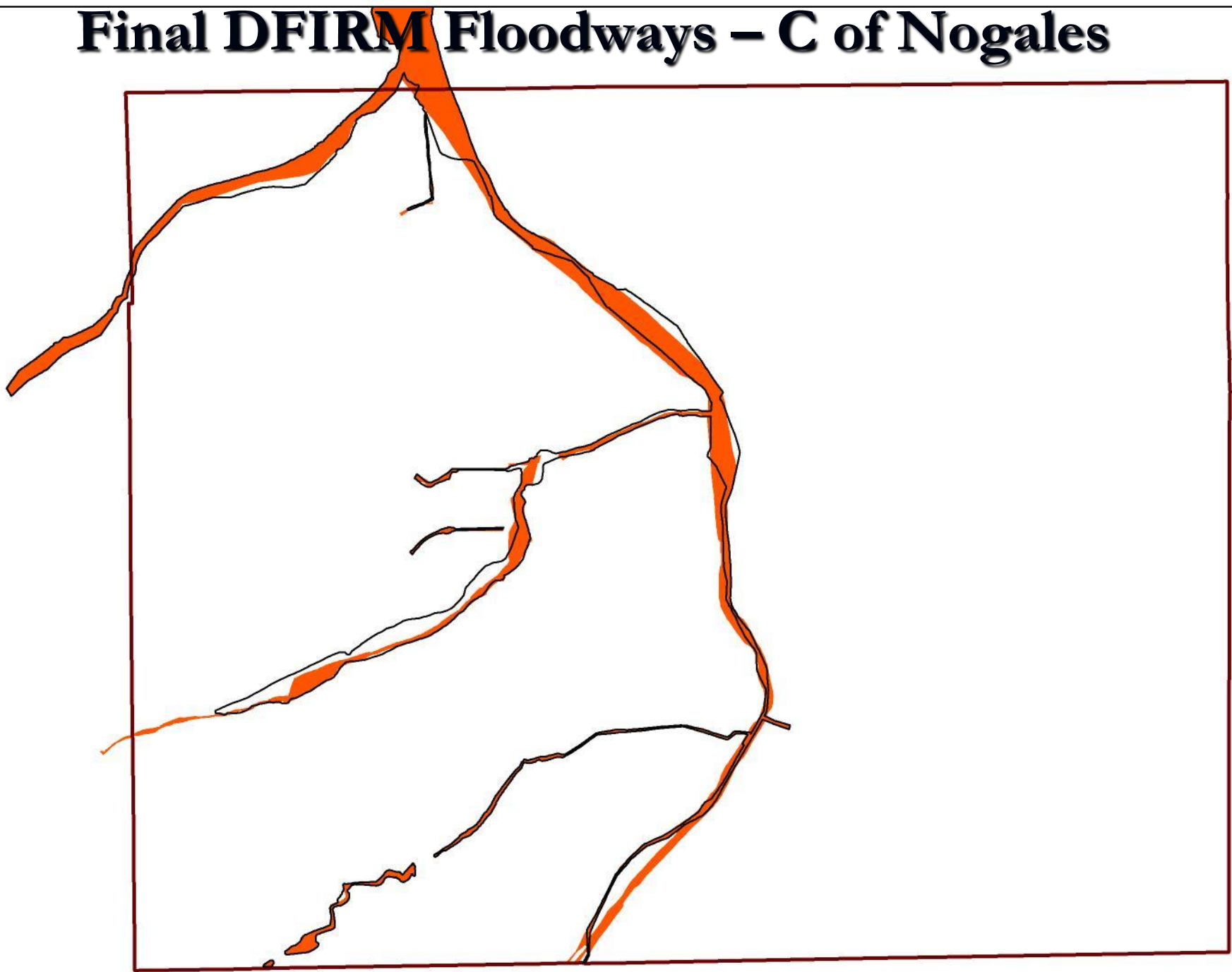
 Original DFIRM Floodway



1:40,000



Final DFIRM Floodways – C of Nogales



Legend

- Original DFIRM Floodway
- FLOODWAY

0 2,000 4,000 8,000 12,000 16,000 Feet
1:40,000



Effects of New Mapping

- Floodplains and the risk they pose to the community is better illustrated and more accurate than any previous version of the mapping.
- Many structures will be changing floodplain designation. Based on the 2004 aerials, 744 are going into the floodplain and 330 are coming out. Approximately $\frac{1}{2}$ of those going in are because of newly mapped floodplains.
- In general, the floodways are larger and affect a greater number of structures, especially in the City of Nogales.

Recent Events

- During the past few monsoons, even though the total precipitation has been below average, the Santa Cruz County area, especially the City of Nogales, has experienced periodic high frequency flood event. 2010 was no exception.

Events of July/August 2010

- The events of July and August 2010 resulted in flows of up to a 15 year event through the City of Nogales. The largest of which occurred in the middle of the night, and in some areas resulted in as much as three to four feet of water along buildings adjacent to the Nogales Wash Channel.

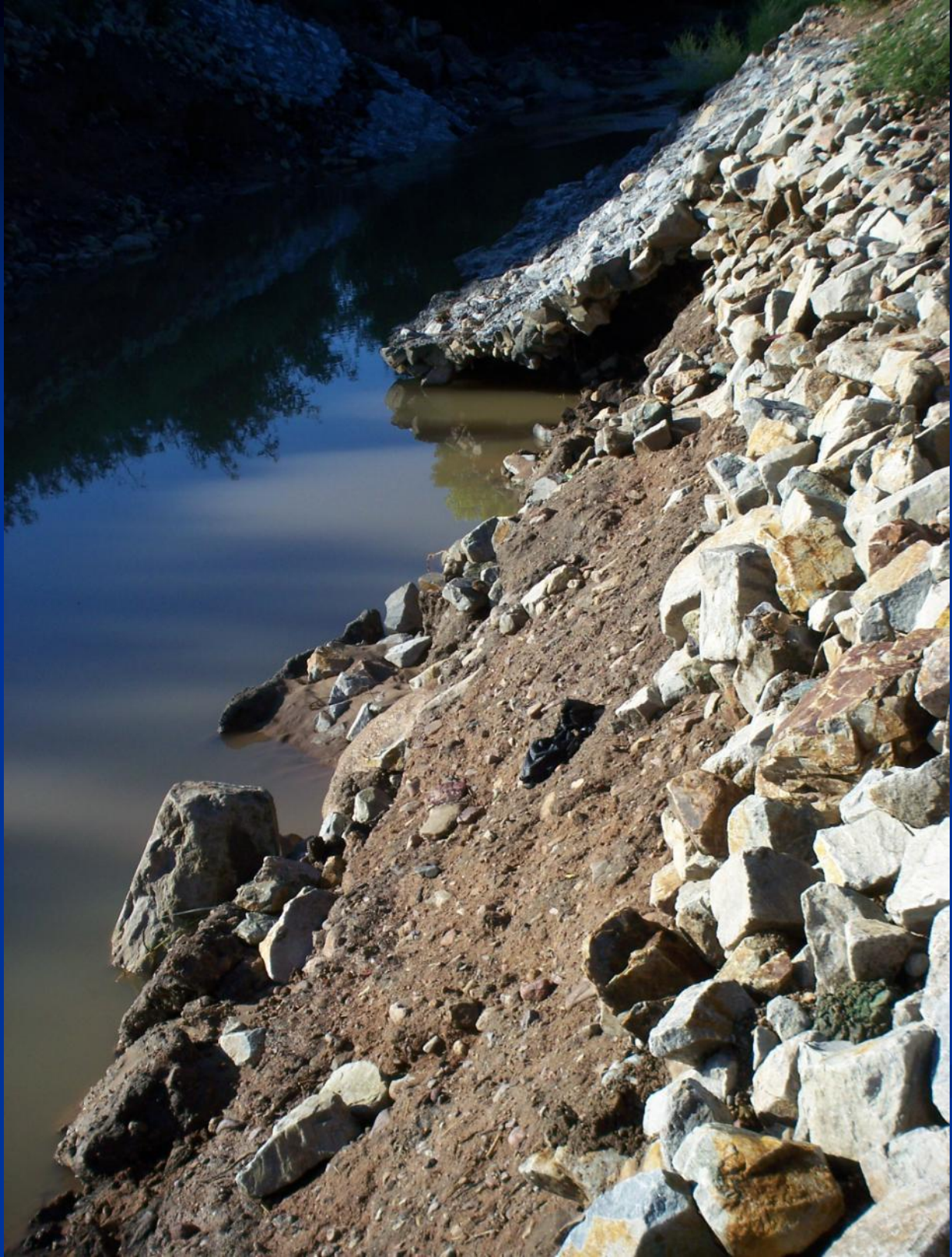
ARROYO
HOTEL

32.95 POOL
KITCHEN
WEEKLY RATES
FREE WIFI



















JUL 30 2010









Events vs. Mapping

- Based upon the new data from our DFIRM project, the events were determined to be between a 10 and 15 year event. Unfortunately there were approximately 4 of them in a 5 day period.
- Eyewitness reports of water levels and measured high water marks near specific locations were used to determine event size.
- Rainfall totals for the storms are essentially unknown as the majority of the precipitation occurred to the south in Nogales, Sonora.

- Damages were widespread and may have totaled several millions of dollars, especially when including the numerous businesses that were inundated. Unfortunately, of some 60 to 70 businesses District Staff noted as having some degree of flooding and flood damages, only six (6) officially reported problems.
- More photos can be found at <http://www.flickr.com/photos/matthays/sets/72157624493588773/>

Lessons Learned?



Questions?

