

9/08/22

DRB review September 16

TEP proposed Substation at 3210 & 3255 S Cottonwood Lane

Case numbers SE-22-35 (T22SE00035)

maria.gayosso@tucsonaz.gov

As a resident of this area for 50 years we have witnessed numbers of times when the river took over this property during flooding. Though it has been used as a land fill and thus built up we question whether putting a critical infrastructure not only on a landfill but so close to the river is wisdom. There are so many variables that could put this substation in danger. This is not creating sound infrastructure acclimatized for the future disasters the changing weather conditions are and will be.

Other concerns include:

1. that a 12 foot wall is about the height of building, this seems more than needed so we question that need and also the need to wall most of the site.
2. Already have the high tension lines along the river. This substation could increase electromagnetic radiation so we worry and wonder how that will affect the health of people
3. Been told that the noise will not be much more than a lawnmower, however, we wonder how many of you would like to live beside a place that had the continues noise of a lawnmower day and night.
4. We heard windows can shake from the vibrations. Wouldn't you find that annoying at your house?
5. And lastly, for now, the tall poles that will be put up somewhere in the neighborhood. They glossed over where. Our neighborhood is a like a heritage neighborhood so we have strong concerns of where those poles will end up and how many more will have to be put up to meet TEPs goals. The impression from the pics is that the poles will be to the NW of this site which makes it start on city property but then where does it go? Poles do not make beauty only function. Would you like to see new poles parade through your neighborhood?

The only thing that we agree with is water harvesting is great but needs more thought to it. We recommend that water harvesting areas be bigger and more numerous throughout the site. Some discussion with the neighbors to the north as to what the ditch or should it be a pipe along the northside and how to manage the drop down to the river (Santa Cruz river being an established waterway may have some rules for how water is discharged into it). Also, water harvesting areas need to be farther back from the bank so they don't encourage piping by the animals that burrow.

Beryl Baker

SCSW Neighborhood Facilitator

From: [Abreeza Zegeer](#)

Sent: Thursday, September 8, 2022 10:33 AM

To: Maria.Gayoss@tucsonaz.gov

Subject: Cottonwood Substation

To: Design Review Board (DRB)

Re: TEP Cottonwood Substation DP22-0188, T22SE00035

The proposed TEP Cottonwood Substation site at 3210 S Cottonwood Ln is close to the 1970's established mobile home park, Desert Pueblo. To build here a special exception must be approved because of its relationship to the Santa Cruz River. The constant hum of the station (62 decibels) and the light pollution will affect the quality of life of both human and non-human residences. The need for bank protection and rerouting for runoff from the proposed TEP site does not guarantee protection from a catastrophic event in the future.

There were at least 8 other sites including the current temporary site. Two sites, 3 and 8 or the temporary site (where bank protection already exists) would have been more appropriate. TEP bought the cheapest land of these sites knowing that the special exception approval needed to build a substation on a property next to the Santa Cruz River that contains a mixed bag unstable fill was just a technicality and the City would just approve it.

There must accountability in the form of some type of liability insurance that does not hold Pima County or the City of Tucson or its citizens responsible this substation built so close the Santa Cruz River in the case of a catastrophic event in the future.

Thank you for your attention,
Abreeza Zegeer, Westside Neighborhood Association

Sent from [Mail](#) for Windows

September 7, 2022

City of Tucson (COT) Design Review Board (DRB)

Case# SE-22-35 (T22SE00035)

Proposed TEP Substation

3210 & 3255 S Cottonwood Lane, Parcel#119-18-030A, R-1 (88%) & R-2 Zoning

Rezoning and Special Exception Request

The Tucson Mountains Association (TMA) opposes the proposed TEP substation at the Santa Cruz River. We are concerned that the substation, a Critical Facility, will be adversely impacted by erosion and flooding, causing power outages that could affect businesses and citizens of the Tucson Mountains for days or months. The proposed TEP substation is out of character with adjacent residential properties and Paseo de las Iglesias.

I am a TMA Board member and national Certified Floodplain Manager (CFM#106), and I oppose the proposed TEP substation because it violates COT Chapter 26, Floodplain, Stormwater and Erosion Hazard Management (Floodplain Ordinance) and federal standards. The proposed substation is a Critical Facility and, as such, should not be permitted within the floodplain or Erosion Hazard Setback (EHS) of the Santa Cruz River, the major regional watercourse of southern Arizona.

Several maps are provided with this opposition letter. These maps and the following specific opposition points fall within the purview of the technical expertise of the DRB. In light of this information, we ask that the DRB recommend **DENIAL** of the rezoning and find the project **NOT IN COMPLIANCE** with land use and floodplain regulations that are required to grant a Special Exception.

Specific opposition points:

1. Decades-long history of a meandering river, flooding, and erosion to the site (see maps provided).
2. Santa Cruz River curved section and 30-degree angle of floodplain to the site are not in the Engineering Analysis used for the variance request to reduce the Erosion Hazard Setback (see topography maps).
3. No soil cement bank protection at the site; this is the only location not protected along the Santa Cruz River between Valencia Road and El Camino del Cerro, a distance of about 12 miles.
4. The proposed substation does not meet four variance criteria in the Floodplain Ordinance Section 26-12, especially Sec. 26-12(b)(1)c, because TEP has not proved an exceptional hardship at this site and did not consider other alternative sites not within the floodplain and Erosion Hazard Setback. Per Sec. 26-12(1), TEP must prove all criteria to receive a variance. The Mayor and Council, acting as the Floodplain Board, did not review any criteria when they granted the variance on March 22, 2022.
5. There is FEMA 500-year floodplain on the site. The TEP substation, owned by a private utility, is a Critical Facility that should be designed to higher protection standards such as the 500-year flood (Title 44 of the Code of Federal Regulations 44CFR 59.1 definition and Executive Order 11988).
6. FEMA Floodway of the Santa Cruz River is along the bank of the site and is the entire channel width as the river naturally widens at this location to convey the 100-year flood. The FEMA Flood Insurance Study Floodway velocity of 13 feet per second (fps) or the 500-year velocity should be used to design any proposed bank protection. The Engineering Analysis used for the variance request mentioned a lower 100-year flow velocity of 7 fps, but no velocity was given for any proposed bank protection.
7. A TEP substation is not compatible with Paseo del las Iglesias where the Santa Cruz River channel naturally widens. Along this site is the Paseo de las Iglesias, a wildlife and riparian habitat restoration area. The TEP facilities are not natural habit and could be harmful to wildlife or adjacent residents.

We emphasize that historically the proposed site is subject to channel widening and meandering of the Santa Cruz River. A future substation at this site would be impacted by erosion and flooding, resulting in emergency

closure and power outage to the electric grid of many businesses and residents. We note that similar concerns were expressed in the 3-page MAYOR & COUNCIL COMMUNICATION of March 22, 2022:

- The property has natural embankments that are subject to erosion and there is no plan to stabilize the banks in the near future. In order to develop the property, they must receive approval to develop within the Erosion Hazard setbacks established by Chapter 26 of the City Code.
- Per City Code, Chapter 26... the electric substation is a “critical facility.” A critical facility has more stringent requirements to assure it is not damaged or unable to function during an emergency.
- The minimum setback for unstabilized embankments is 1,230-feet in a curve and 490-feet in a straight section. The Santa Cruz River is straight adjacent to part of the development and in a curved section for the balance of the property.
- There are twelve criteria that must be considered...[#5 is:] The availability of alternative locations for the proposed use ...which are not subject to flooding or erosion.
- The substation is necessary to improve and support the current electric grid needed to supply power to Tucson and Pima County residents.

Note the purpose of Floodplain Ordinance **Sec. 26-7. Erosion hazard areas and setbacks from watercourses:** “The banks of watercourses constitute an erosion hazard zone which is subject to channel widening and/or meandering.”

And a January 17, 2022 letter by the TEP variance applicant’s project manager to the city engineer/floodplain administrator (FPA), including the July 17, 2021 COT staff comments and the applicant’s response:

Comment #7: Tucson Code Sec.26-12: If a variance is to be proposed, keep in mind that the *City of Tucson mayor and council requires* that the any proposal for a variance be exceptional, unusual, and peculiar to the property involved. Mere economic or financial hardship alone is not exceptional. Inconvenience or physical constraints, cannot, as a rule, qualify as an exceptional hardship. All of these problems can be resolved through other means without granting a variance, even if the alternative is more expensive, or requires the property owner to build elsewhere or put the parcel to a different use than originally intended.

Response #7: The project site location is important and has been chosen as the best available site for the project due to its location at the center of the electrical load center; Failure to grant the variance would result in exceptional hardship requiring...the site to be relocated; TEP conducted detailed analysis of future load growth across the City and determined a new substation was critical to reinforce neighborhoods between Santa Cruz and Midvale substations...and determined the ideal location to be in proximity to the intersection of Ajo Road and Cottonwood Lane.

Finally, please note that the proposed site is 0.5-mile North of the Ajo and Cottonwood intersection, **which is soil cement bank protected**. Mayor & Council did not review the EHS purpose, variance criteria, or alternative locations. The FPA reported that the Floodplain Ordinance was revised to make it more difficult to receive a variance at a regional watercourse.

TMA appreciates the Design Review Board reviewing our opposition letter and maps. With this letter we have detailed concerns of residents and a CFM floodplain regulations expert. DRB has the expertise to understand our opposition. Expertise aside, it makes common sense to avoid putting an electric substation next to the Santa Cruz River at a site that has flooding and erosion history! This is a dangerous site where damage could be exacerbated by the uncertainty of climate change to increase floods. TMA requests the DRB recommend **DENIAL** of the rezoning and find the project **NOT IN COMPLIANCE** for a Special Exception Request.

Sincerely,

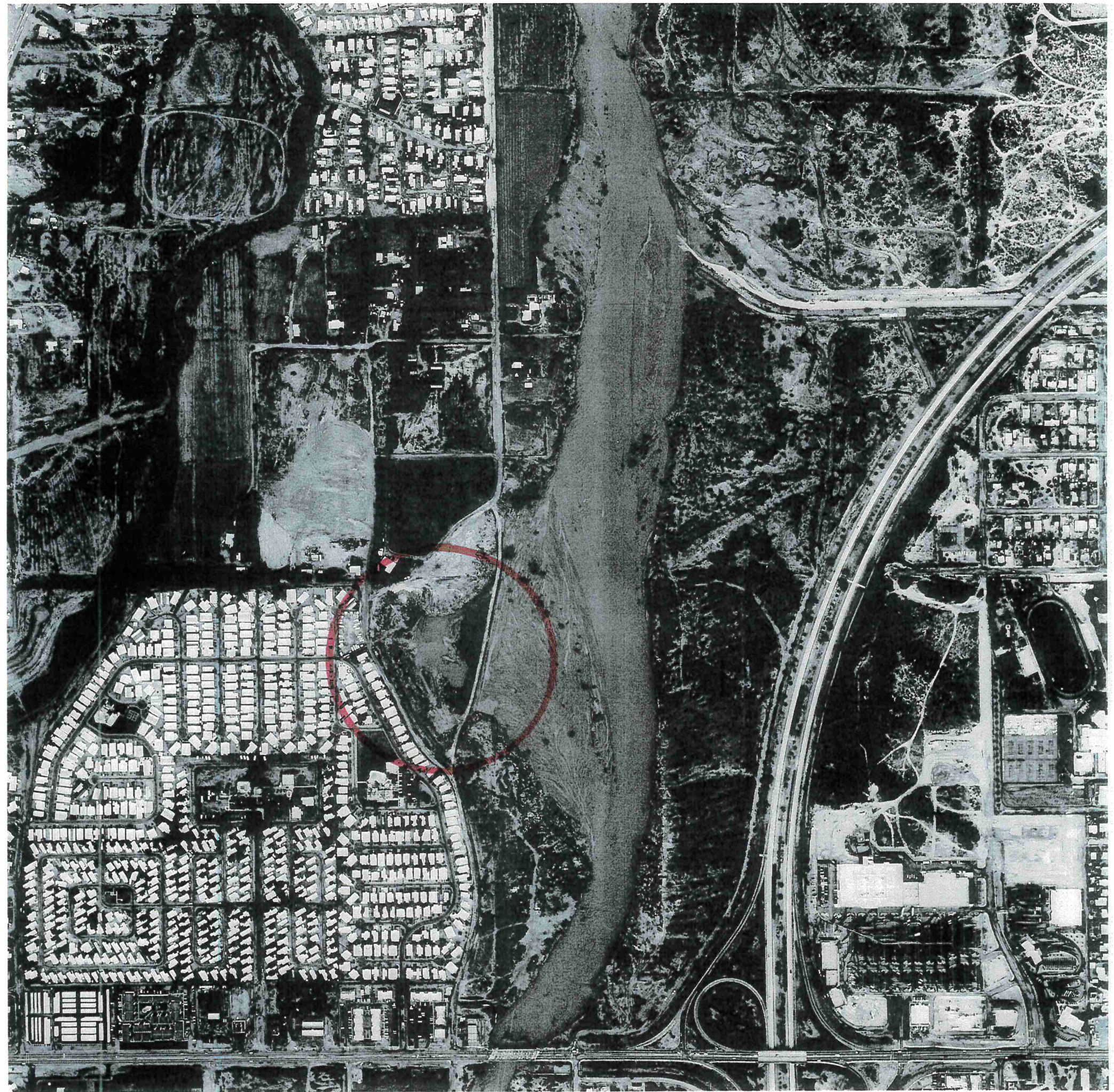


Steve Dolan

Tucson Mountains Association (TMA) Board member & Certified Floodplain Manager (CFM#106)

Provided separately: (1) Historical flooding & topographic maps; (2) Critical facility definition & standards.





 *Cooper Aerial Survey Co.*
TUCSON, ARIZONA

1"=200'

'83 TUCSON FLOOD

OCT. 3,

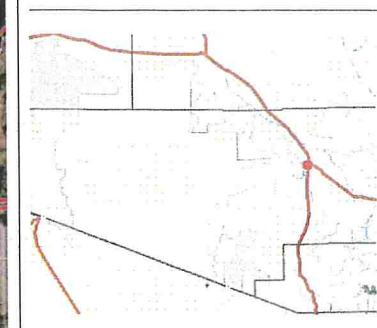
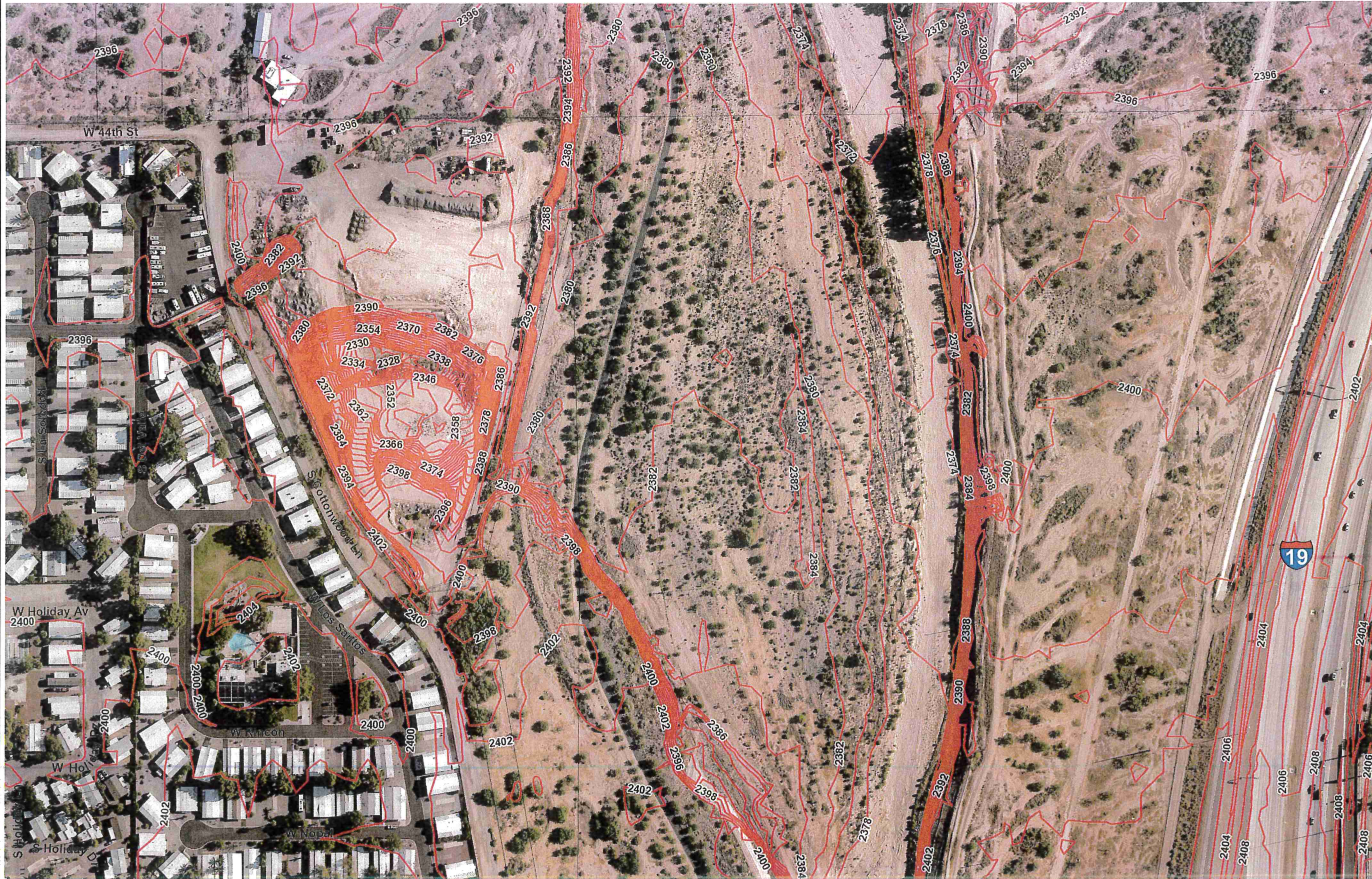
SC

1-60

Parcel 119-18-030A Topography (with aerial)

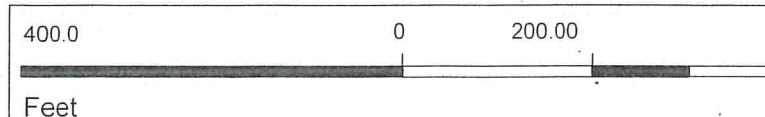
Legend

- All 2-foot Contours
- Topography - NAVD88
- Parcels



Notes:

5/2/2022

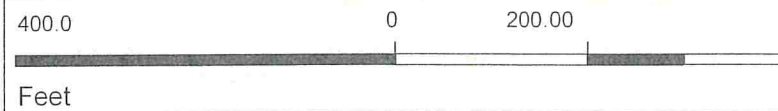
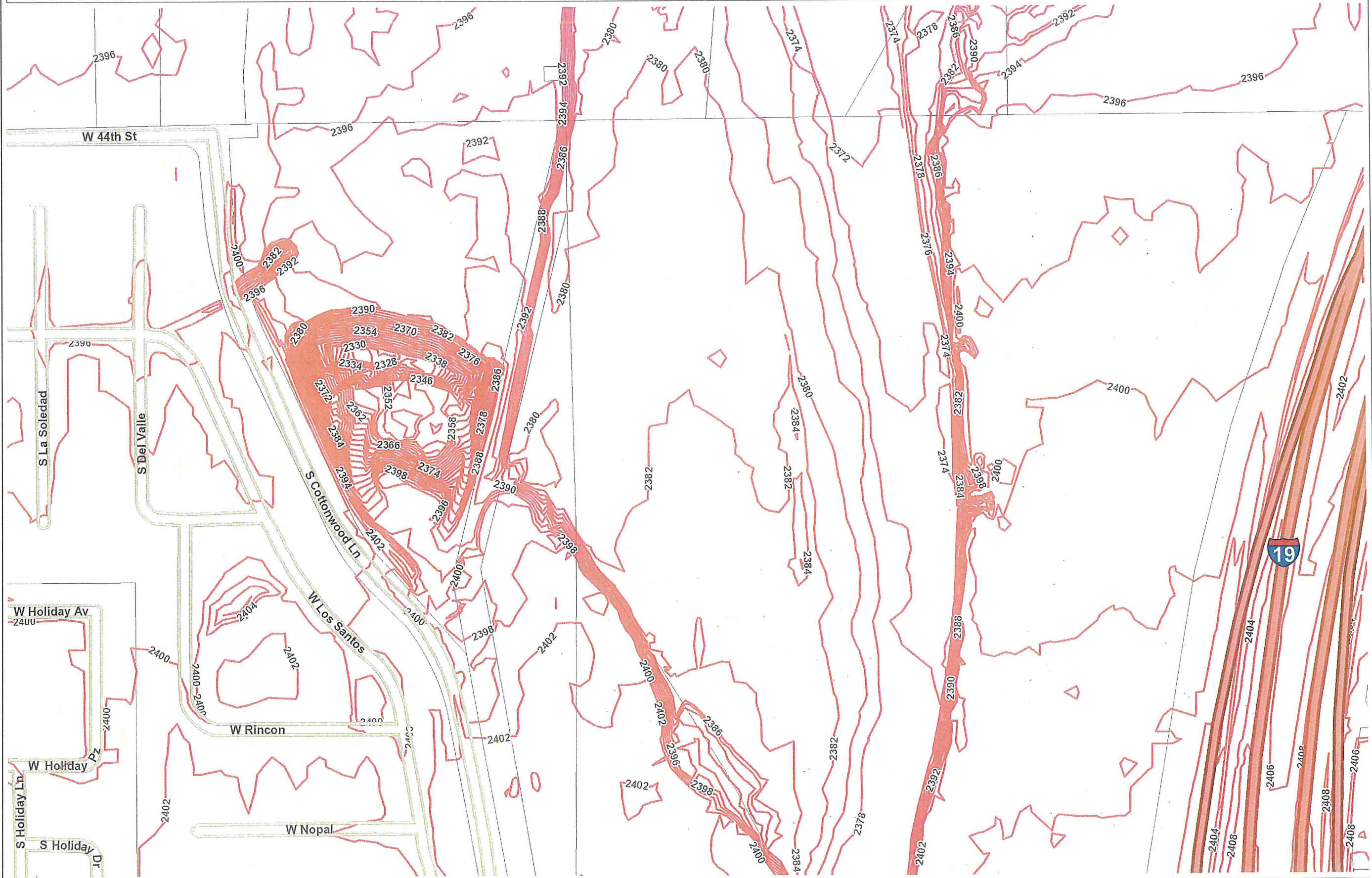


This map is static output from an internet mapping site and no warranty is expressed or implied as to the accuracy, reliability, currency or completeness of the data, and is for reference only

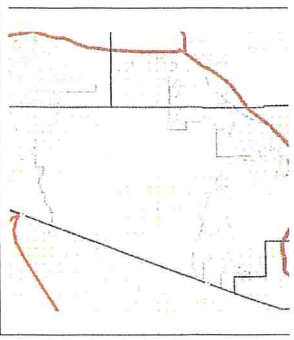
Parcel 119-18-030A Topography

Legend

- All 2-foot Contours
- Topography - NAVD88
- Parcels



This map is static output from an internet mapping site and no warranty is expressed or implied as to the accuracy, reliability, currency or completeness of the data, and is for reference only



Notes:

Santa Cruz River (Ajo Way - 44th Street)

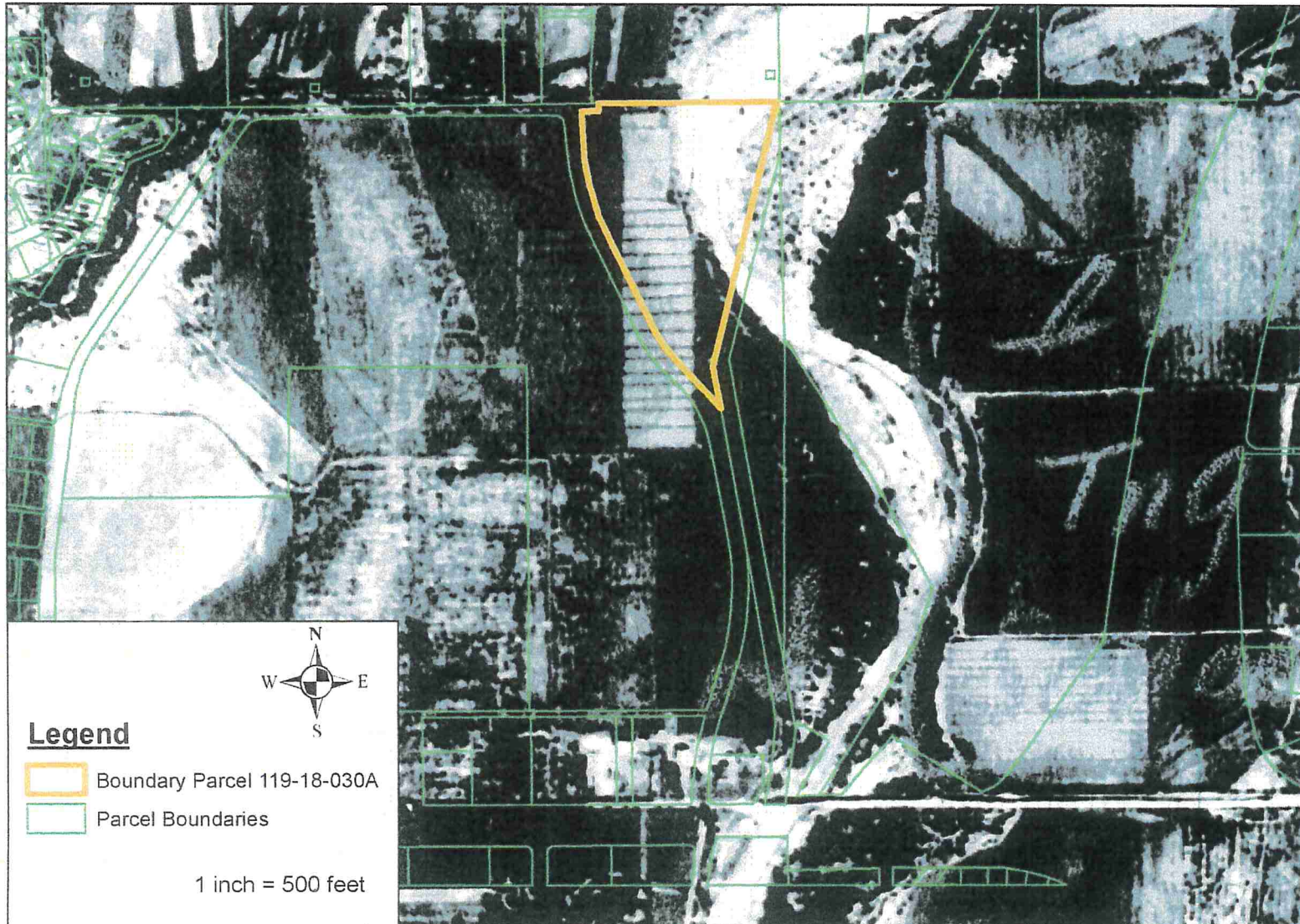


Figure 20. Aerial Photograph (1936)

Santa Cruz River (Ajo Way - 44th Street)

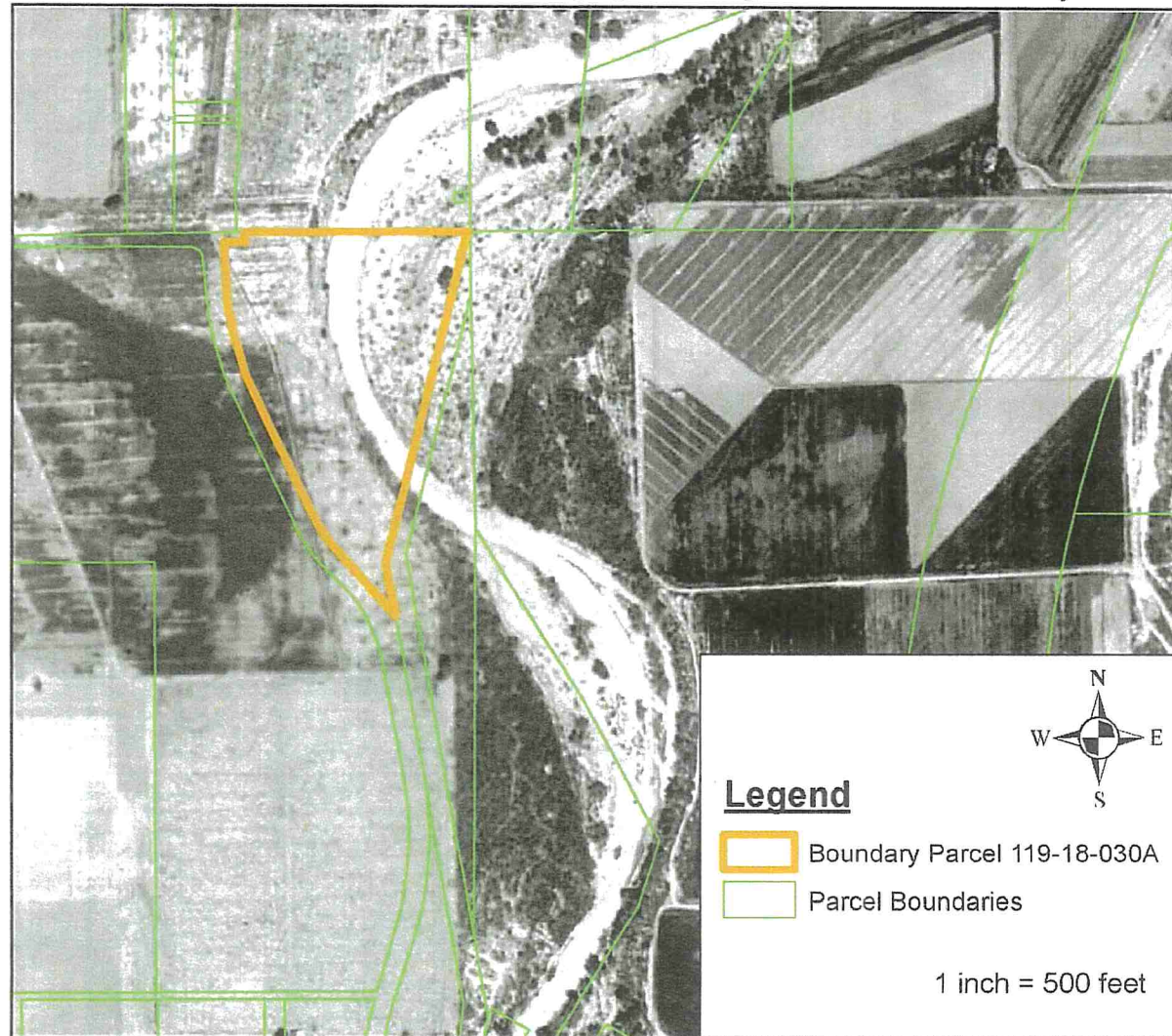


Figure 21. Aerial Photograph (1941)

Santa Cruz River (Ajo Way - 44th Street)



Santa Cruz River (Ajo Way - 44th Street)

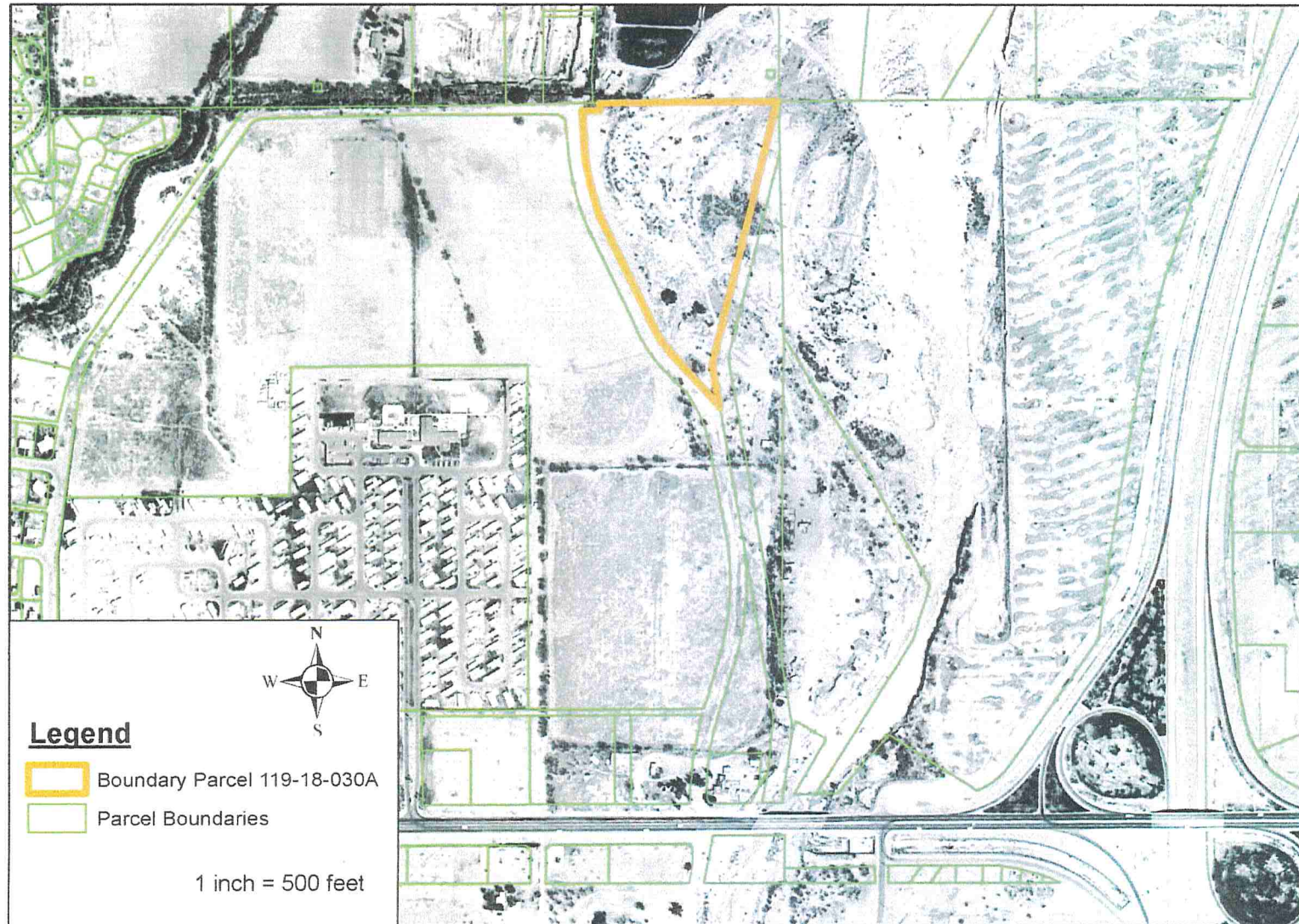


Figure 23. Aerial Photograph (1967)

SAFETY REQUIREMENTS

Critical facilities

For some activities and facilities, even a slight chance of flooding poses too great a threat. These should be given special consideration when formulating regulatory alternatives and floodplain management plans.

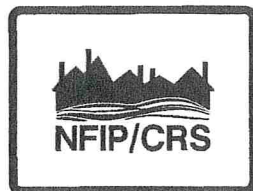
The following are examples of the types of critical facilities that should be given special attention:

- ◆ Structures or facilities that produce, use, or store highly volatile, flammable, explosive, toxic and/or water-reactive materials.
- ◆ Hospitals, nursing homes and housing likely to have occupants who may not be sufficiently mobile to avoid injury or death during a flood.
- ◆ Police stations, fire stations, vehicle and equipment storage facilities, and emergency operations centers that are needed for flood response activities before, during and after a flood.
- ◆ Public and private utility facilities that are vital to maintaining or restoring normal services to flooded areas before, during and after a flood.

A critical facility should not be located in a floodplain. Communities often prohibit critical or hazardous facilities or uses from the floodway, the V Zone, or the entire floodplain. While a building may be considered protected from the base flood, a higher flood or an error on the builder's or operator's part could result in a greater risk than the community is willing to accept.

If a critical facility must be located in a floodplain, then it should be designed to higher protection standards and have flood evacuation plans. The more common standards—freeboard, elevation above the 500-year floodplain and elevated access ramps—should be required.

According to Executive Order 11988, federal agencies must meet rigorous alternative site evaluations and design standards before funding, leasing or building critical facilities in the 500-year floodplain. Executive Order 11988 is discussed further in Section E of this unit.



The Community Rating System provides credits for prohibiting critical facilities from the 500-year floodplain or requiring them to be protected from damage by the 500-year flood in Activity 430. See the *CRS Coordinator's Manual* and the *CRS Application*. See *CRS Credit for Higher Regulatory Standards* for example regulatory language.