

FARMWORKER HOUSING ASSESSMENT FOR THE 2014 UC DAVIS SOLAR DECATHLON TEAM

SOCIAL & SPATIAL CONSIDERATIONS

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FARMWORKER DEMOGRAPHICS

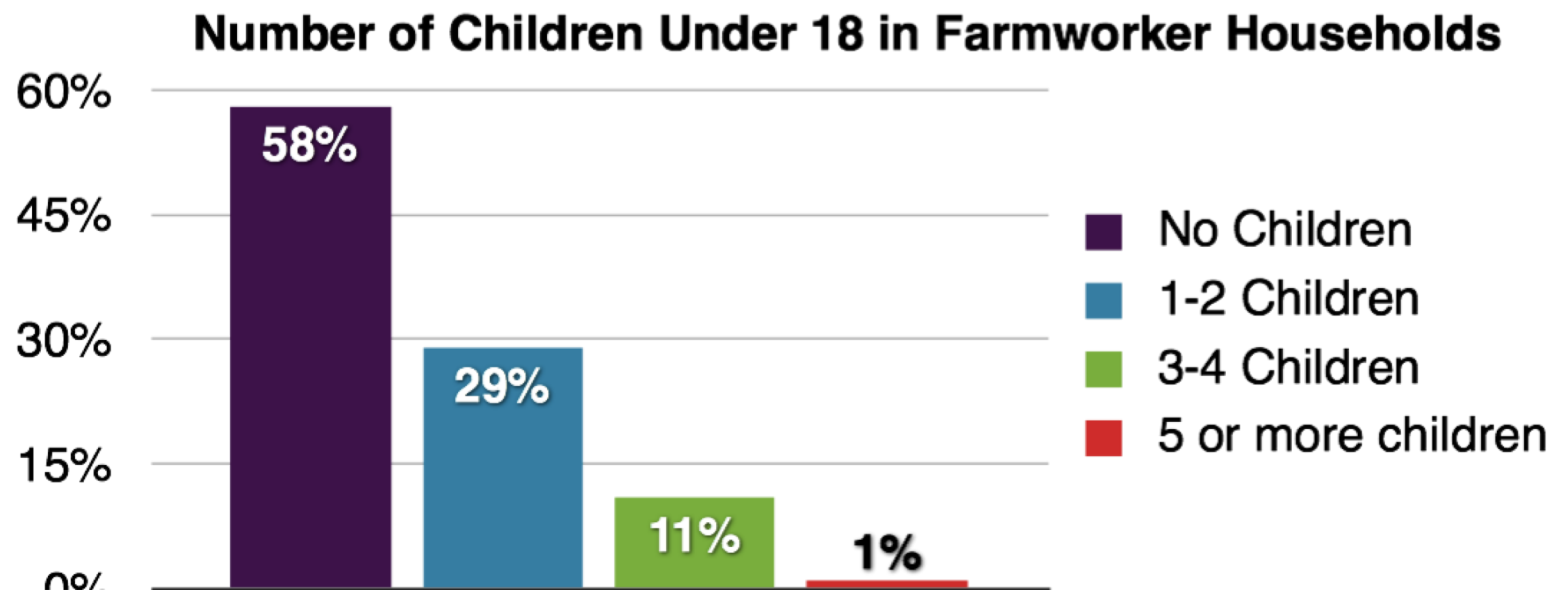
- **Around 350,000 farmworkers in California (1 million total in U.S.)**
- **96% of farmworkers in CA were born in Mexico.**
 - 20% of these workers are from regions in Mexico where indigenous languages are spoken.

FARMWORKER DEMOGRAPHICS

- **Majority of CA farmworkers are men (73%).**
- **59% of farmworkers are married.**
- **Around half (54%) of all farmworkers are parents.**
 - 95% of mothers live with their children.
 - 62% of fathers live with their children.

FARMWORKER DEMOGRAPHICS

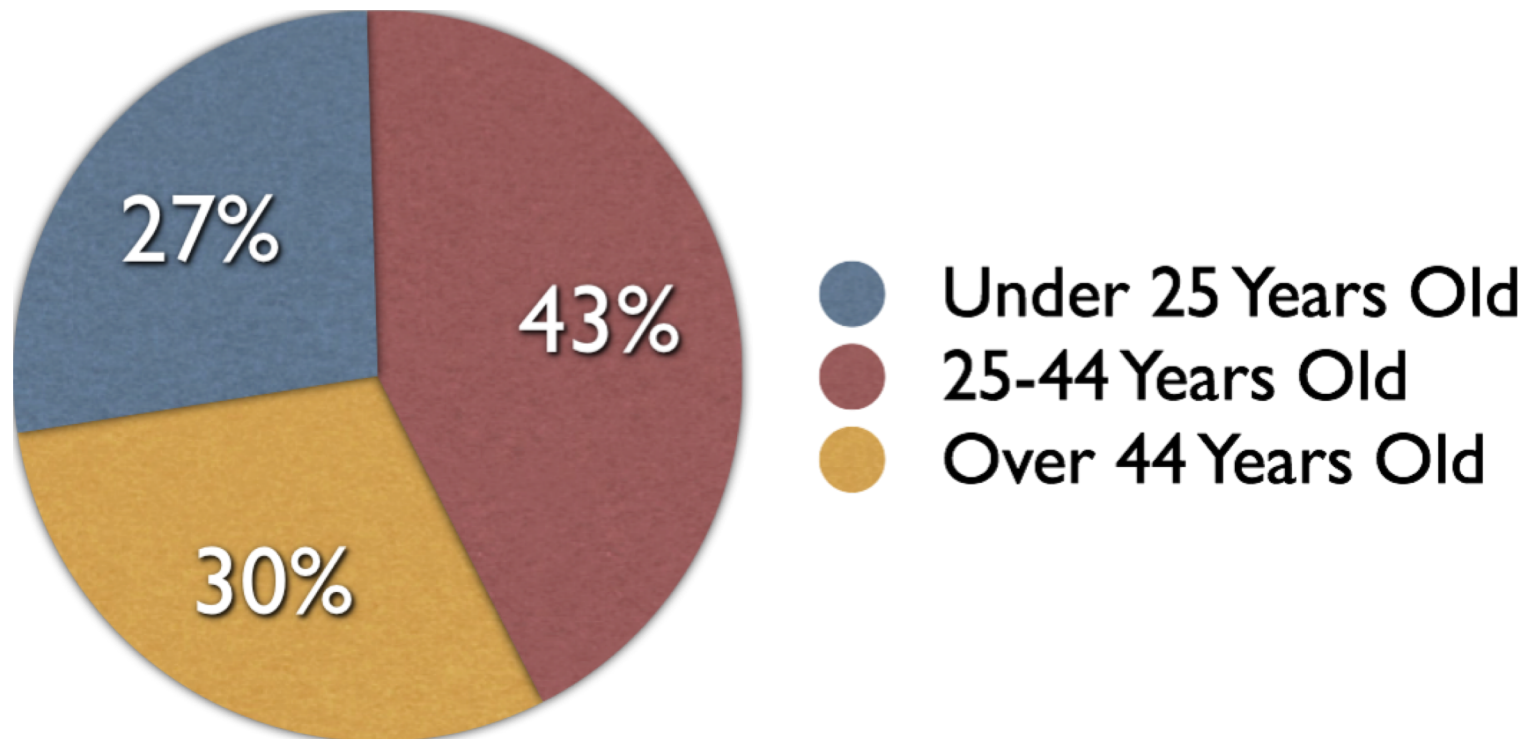
- **Farmworkers have an average of 2 children.**



Source: National Agricultural Workers Survey, 2009-2010.

FARMWORKER DEMOGRAPHICS

- **Median age of farmworkers is 34.**

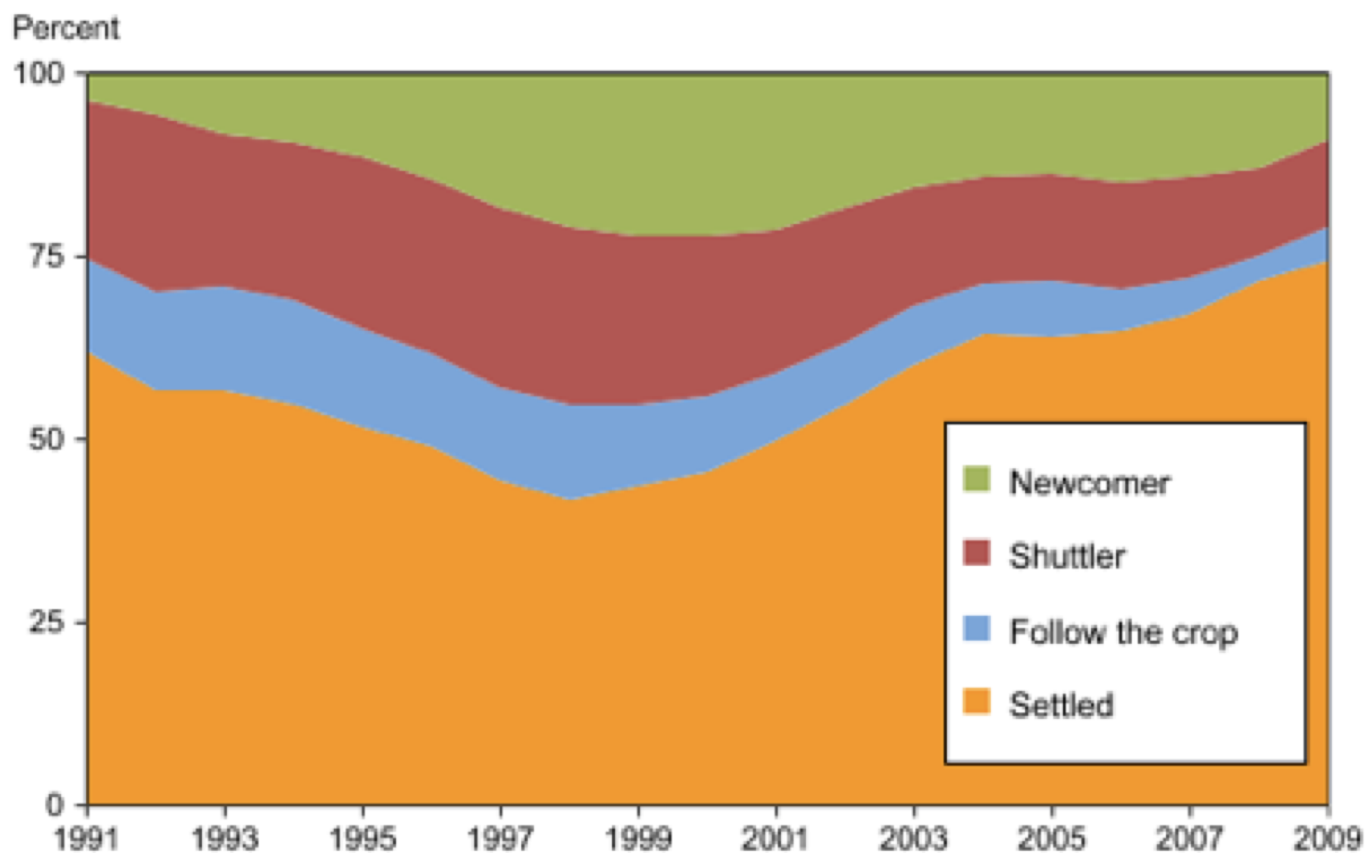


FARMWORKER DEMOGRAPHICS

- **Half of all farmworkers do not have legal authorization to work in the U.S.**
- **30% of farmworkers are U.S. citizens.**
- **20% possess green cards or other forms of authorization.**
- **Most farmworker households have mixed immigration status.**

FARMWORKER DEMOGRAPHICS

Migration patterns of hired farmworkers, 1991-2009

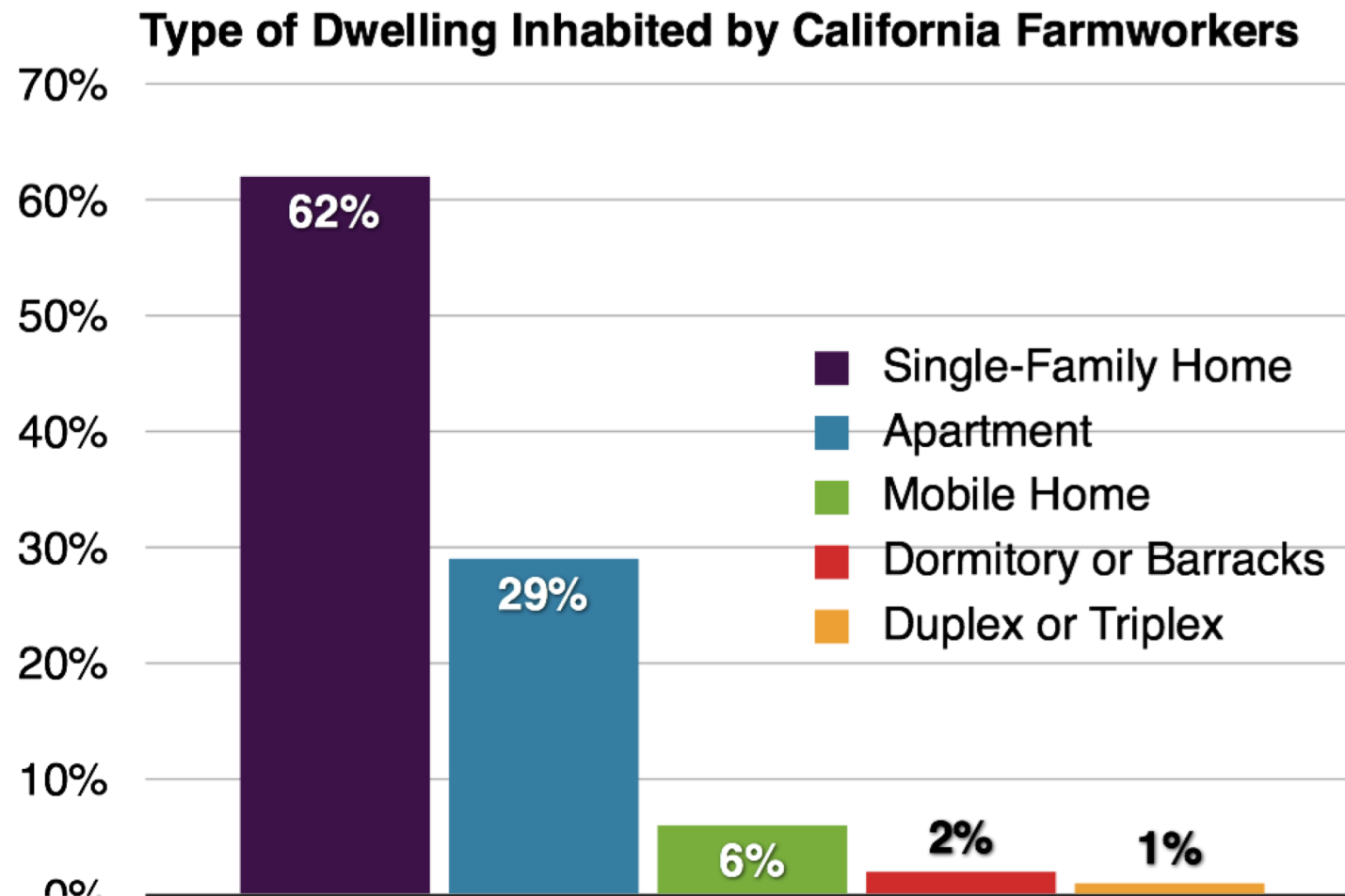


Note: Values for each year are rolling averages of three years of data to smooth fluctuations. For example, the figures for 2009 are 2007-2009 averages.
Source: USDA-ERS analysis of National Agricultural Workers Survey data.

FARMWORKER DEMOGRAPHICS

- **Today, most farmworkers live in cities.**
- **Less than 4% of farm owners provide housing for seasonal employees.**
- **Farmworkers often share dwellings with non-family members.**
- **Overcrowding is a critical challenge.**
 - 50% of CA farmworkers live in crowded housing.
 - 25% of dwellings are considered “extremely crowded.”

FARMWORKER DEMOGRAPHICS



Source: National Agricultural Workers Survey, 2004

FARMWORKER FAMILIES & UNACCOMPANIED WORKERS

- **Over half (57%) of all migrant crop workers are unaccompanied.**
- **43% of migrant crop workers live with parents, spouses, or children.**

FARMWORKER FAMILIES & UNACCOMPANIED WORKERS

- **Among *farmworker families*, both parents are usually employed.**
- **Key concerns for farmworker families include safety, privacy, and proximity to social services (e.g., childcare and schools).**

FARMWORKER FAMILIES & UNACCOMPANIED WORKERS

- **Undocumented, unmarried men from Mexico are most likely to be *unaccompanied workers*.**
- **Unaccompanied workers have a harder time finding housing than farmworker families. They consistently live in the worst housing conditions.**
- **Housing for unaccompanied workers should be flexible & sturdy enough for transient occupants, provide ample privacy for many unrelated individuals, and include ample storage space.**

INFORMANT-INSPIRED DESIGN CONSIDERATIONS

- 1. Affordability & accessibility should be a top priority.**
- 2. Design a structure that respects farmworkers rather than stigmatizes them.**
- 3. Design flexible housing for different types of households.**
- 4. Design comfortable outdoor spaces with ample shade.**
- 5. Create a clear separation between indoor & outdoor spaces, with an area to transition between them.**
- 6. Design living spaces with privacy in mind.**

INFORMANT-INSPIRED DESIGN CONSIDERATIONS

7.Design for large households.

8.Provide residents with a large kitchen and room for a garden.

9.Design for the community, not just the individual household.

10.Provide residents with a garage and a place to work on their car.

11.Design for intensive laundry needs.

12.Design with the local community in mind.

SPATIAL ANALYSIS

- **Purpose**

- Improve understanding of demographics, environmental conditions, and structural aspects of current farmworker housing
- Contribute relevant findings to design process in order to improve upon current conditions

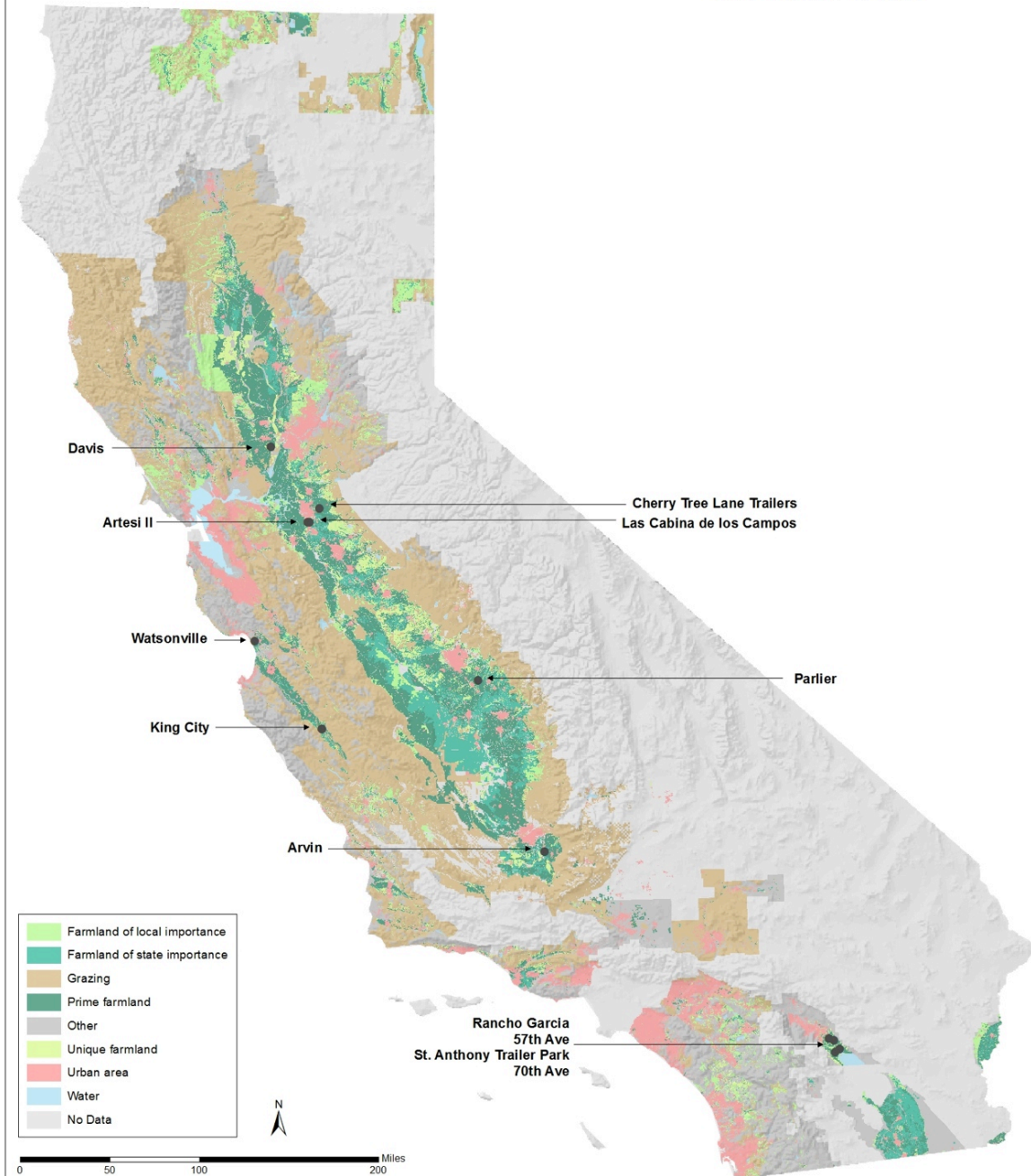
- **Methods**

- Satellite imagery analysis in a GIS at multiple scales representing a range of housing scenarios
 - Small scale – position within broader landscape
 - Large scale – structure and arrangement of housing and immediate surroundings

- **Range of conditions:**

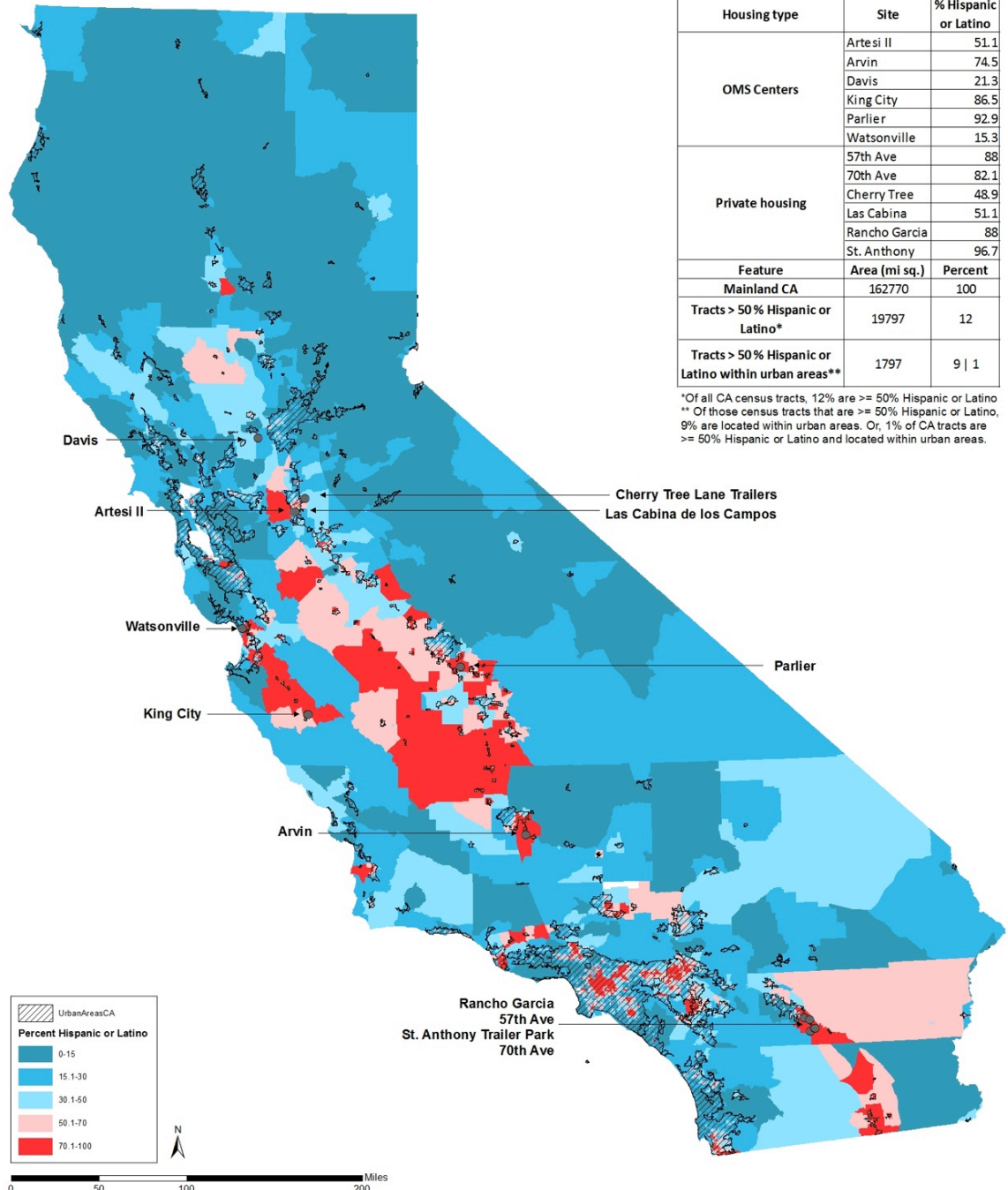
- State managed:
 - Office of Migrant Services housing
- Privately managed:
 - Reservation land (not regulated)
 - Private land
 - Permitted housing provided by farm owners
 - Unpermitted trailer parks / housing on private land

California MFW Housing & Land Use



Projection: NAD83 California Teale Albers Source: Fresno, Kern, Monterey, San Joaquin, Riverside Santa Cruz, and Yolo Counties GIS Offices; Department of Conservation Farmland Mapping and Monitoring Program; California Department of Fish and Wildlife via ArcGIS online

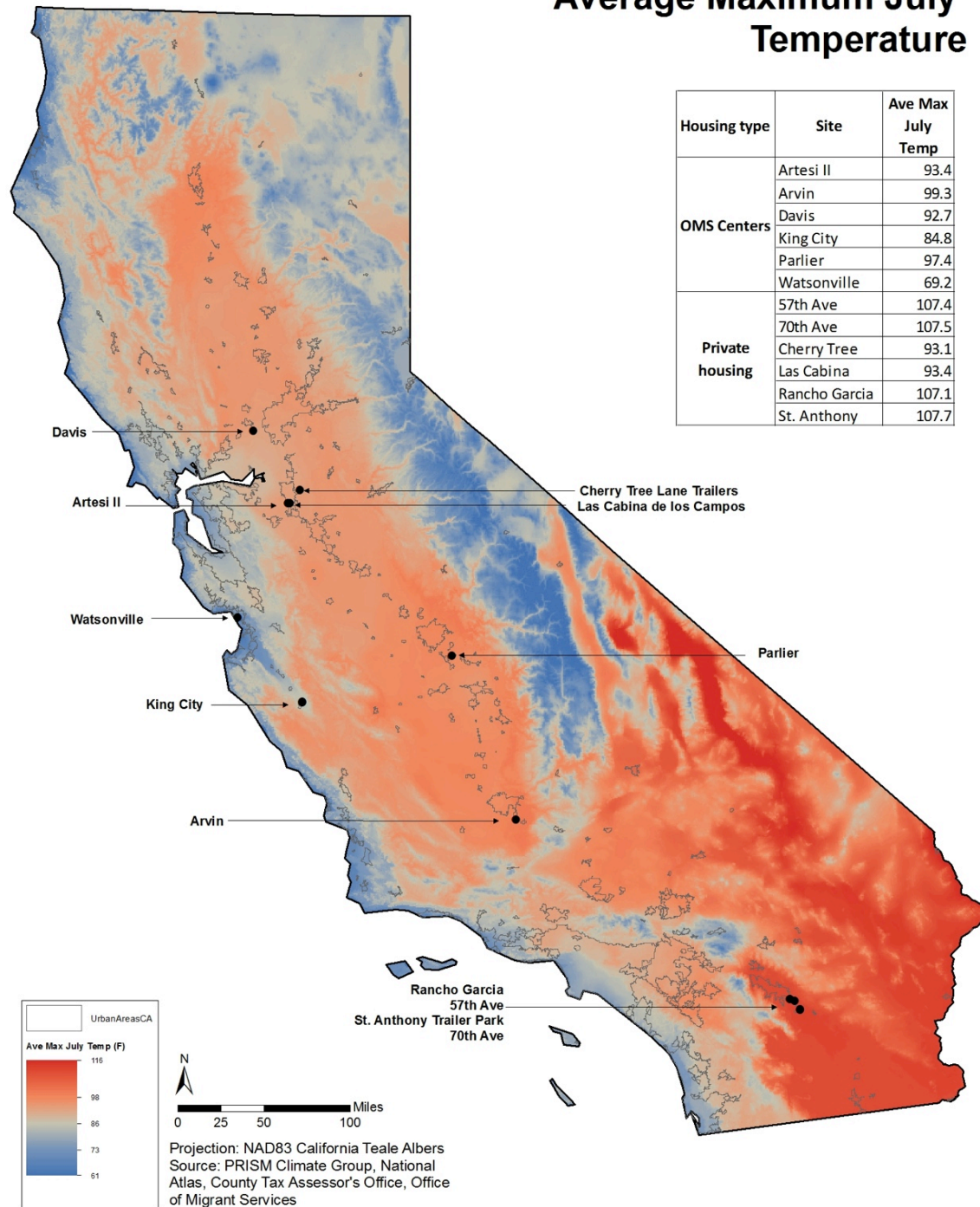
California MFW Housing & Demographics



Housing type	Site	% Hispanic or Latino
OMS Centers	Artesi II	51.1
	Arvin	74.5
	Davis	21.3
	King City	86.5
	Parlier	92.9
	Watsonville	15.3
Private housing	57th Ave	88
	70th Ave	82.1
	Cherry Tree	48.9
	Las Cabina	51.1
	Rancho Garcia	88
	St. Anthony	96.7
Feature	Area (mi sq.)	Percent
Mainland CA	162770	100
Tracts > 50% Hispanic or Latino*	19797	12
Tracts > 50% Hispanic or Latino within urban areas**	1797	9 1

*Of all CA census tracts, 12% are >= 50% Hispanic or Latino
 ** Of those census tracts that are >= 50% Hispanic or Latino, 9% are located within urban areas. Or, 1% of CA tracts are >= 50% Hispanic or Latino and located within urban areas.

California OMS Centers & Average Maximum July Temperature

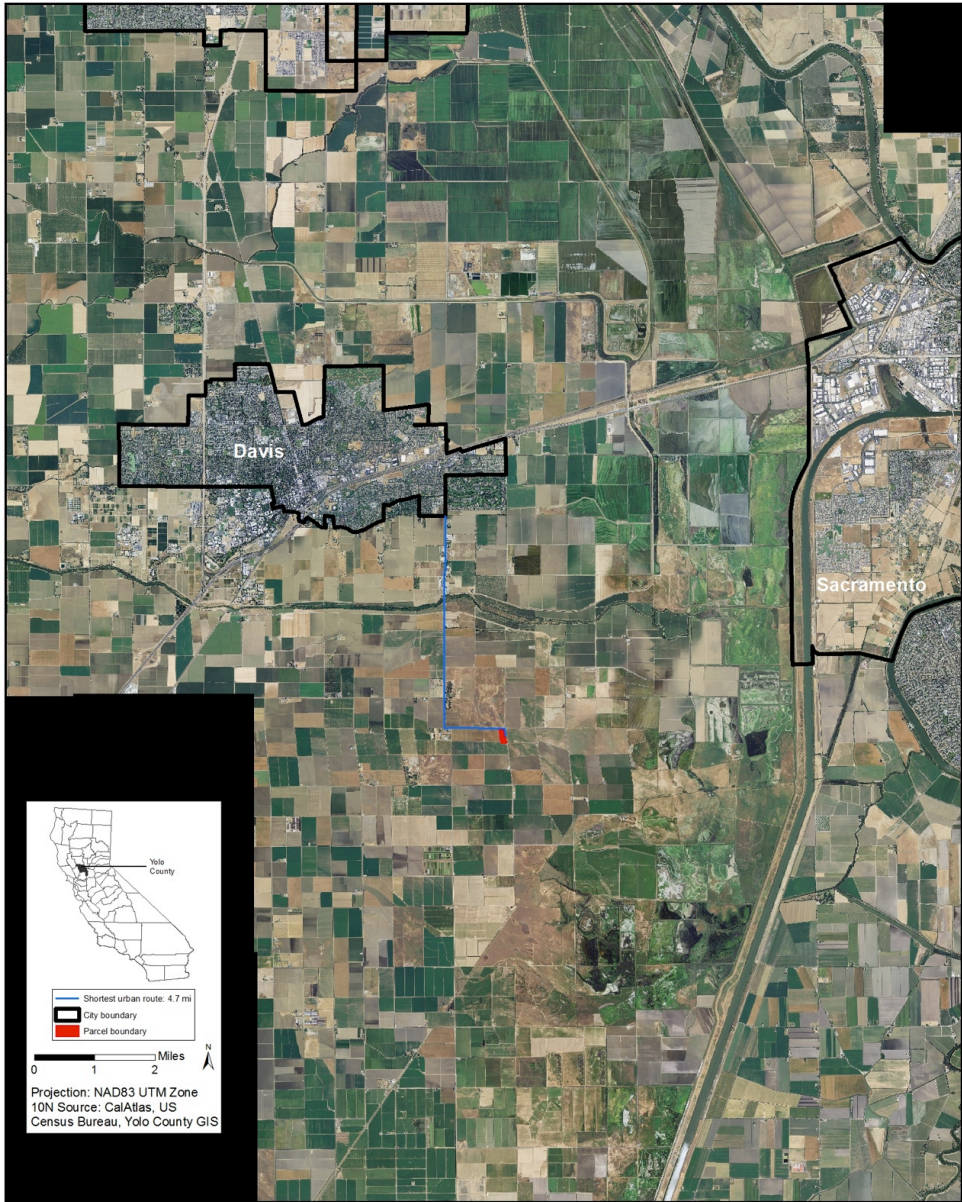


STATE OMS CENTERS

- **Two primary scenarios**
 - External – Positioned outside of city limits
 - Artesi II
 - Arvin
 - **Davis**
 - Watsonville

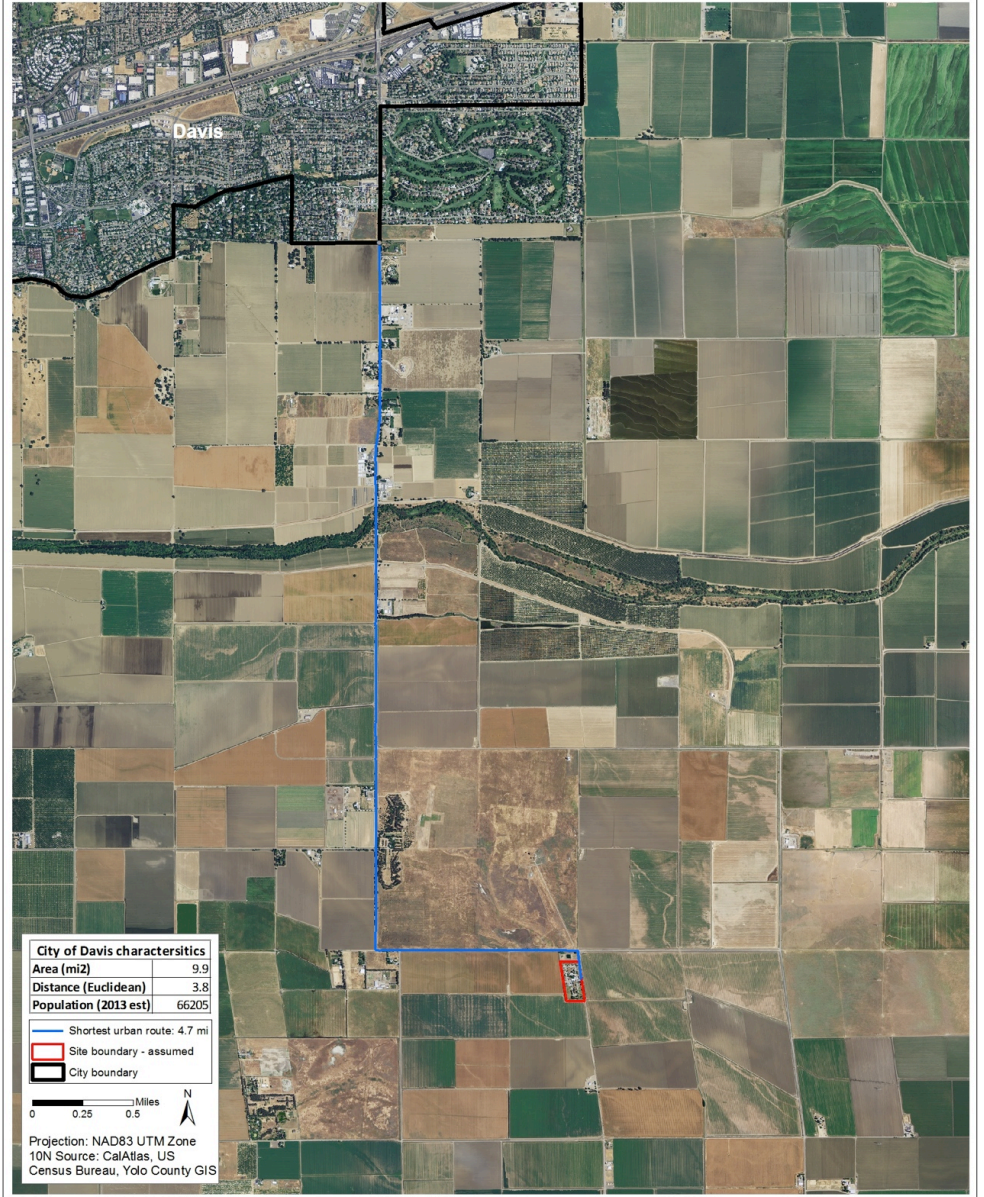
Average Euclidean (straight-line) distance: 2.3 mi
Average network (road) distance: 2.7mi
 - Contained – Positioned along city edge
 - **King City**
 - Parlier

Davis OMS Center



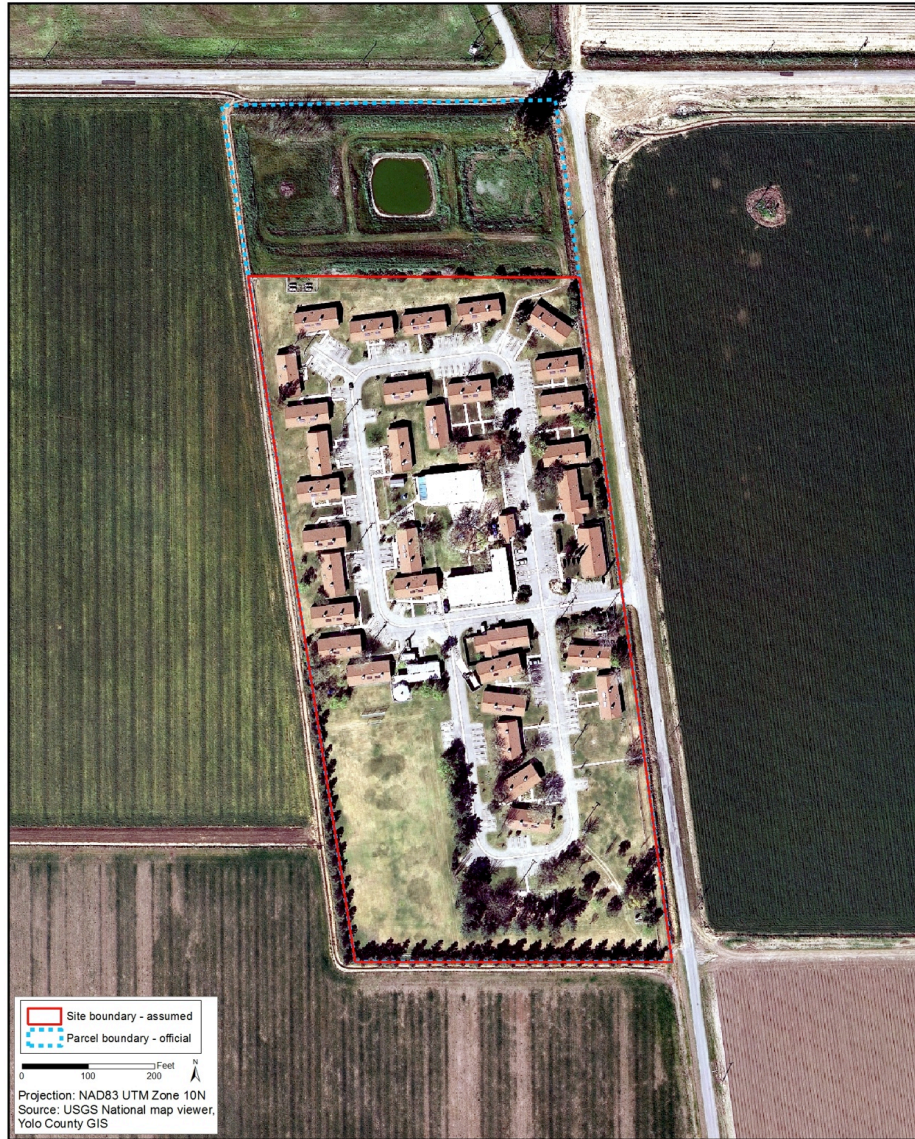
Landscape

Davis OMS Center



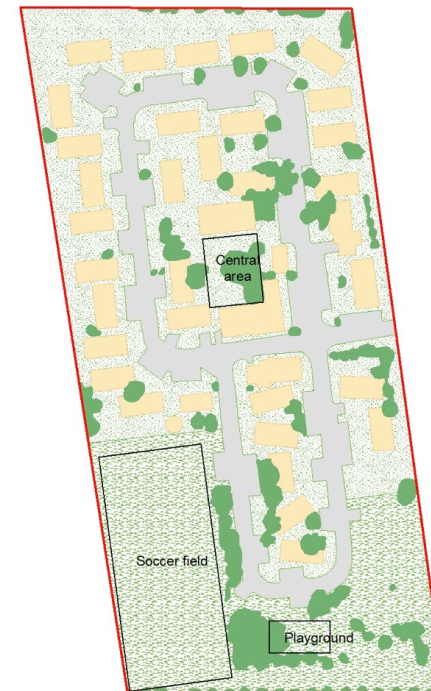
Urban route

Davis OMS Center



Site boundary

Davis OMS Center



Davis Center Site Characteristics		
Feature	Area covered (ft ²)	% Total
Asphalt	89484	18
Building	84397	17
Community Space	68208	13
Open Space	134835	27
Tree Canopy	56353	11
Site	505893	100

- Asphalt
- Buildings
- Community space
- Open space
- Site boundary - assumed
- Tree canopy

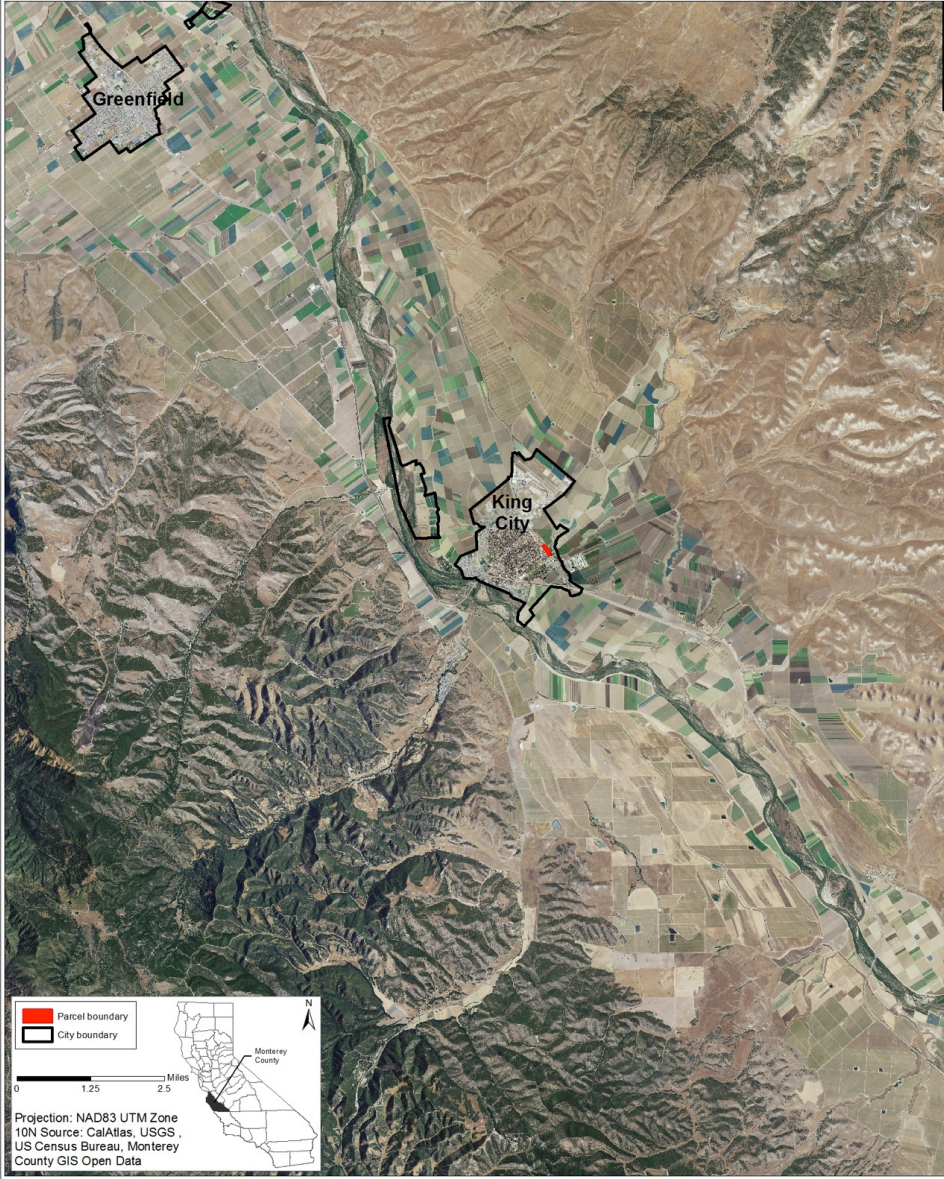
N

0 100 200 Feet

Projection: NAD83 UTM Zone 10N
Source: USGS National Map Viewer; Yolo County GIS

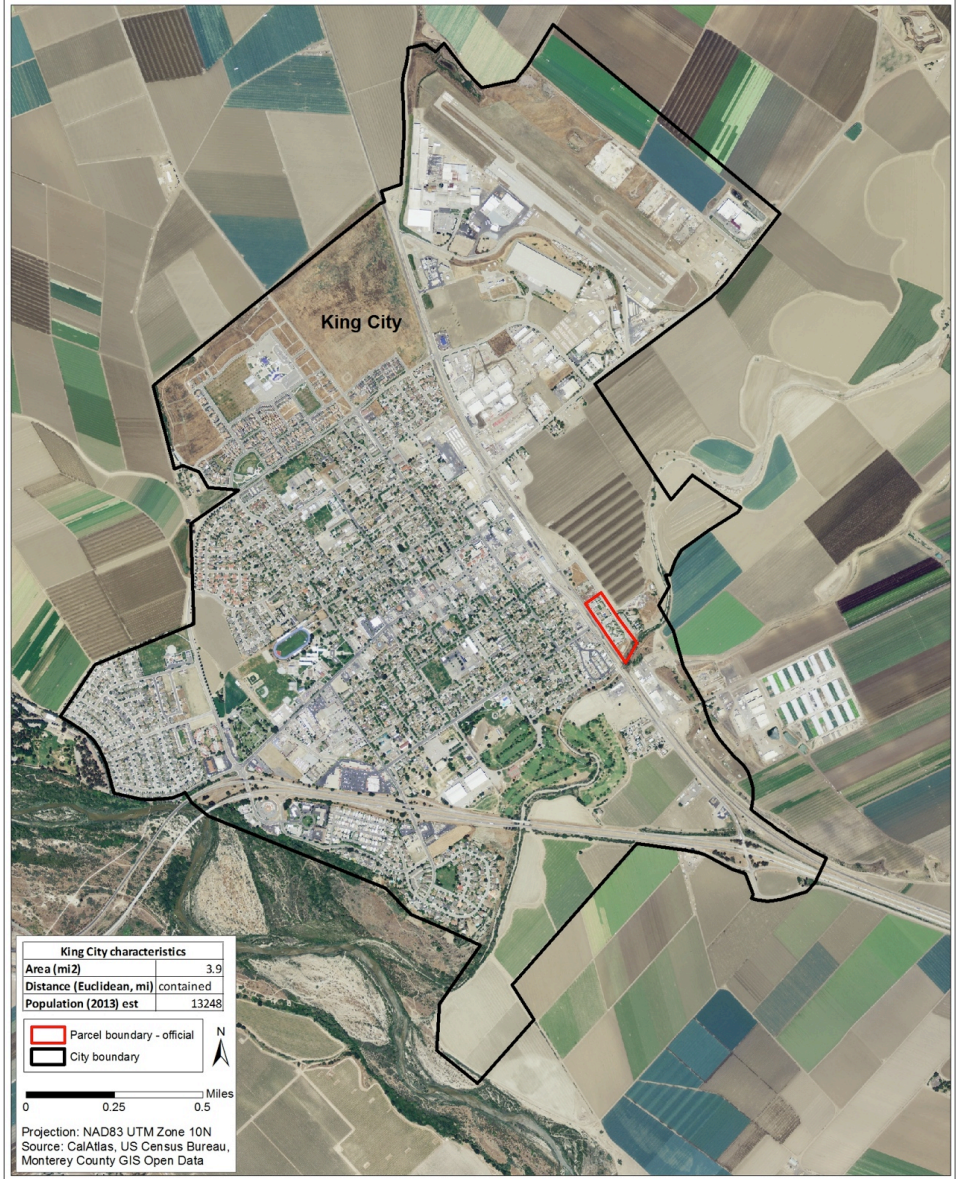
Major features

King City OMS Center



Landscape

King City OMS Center



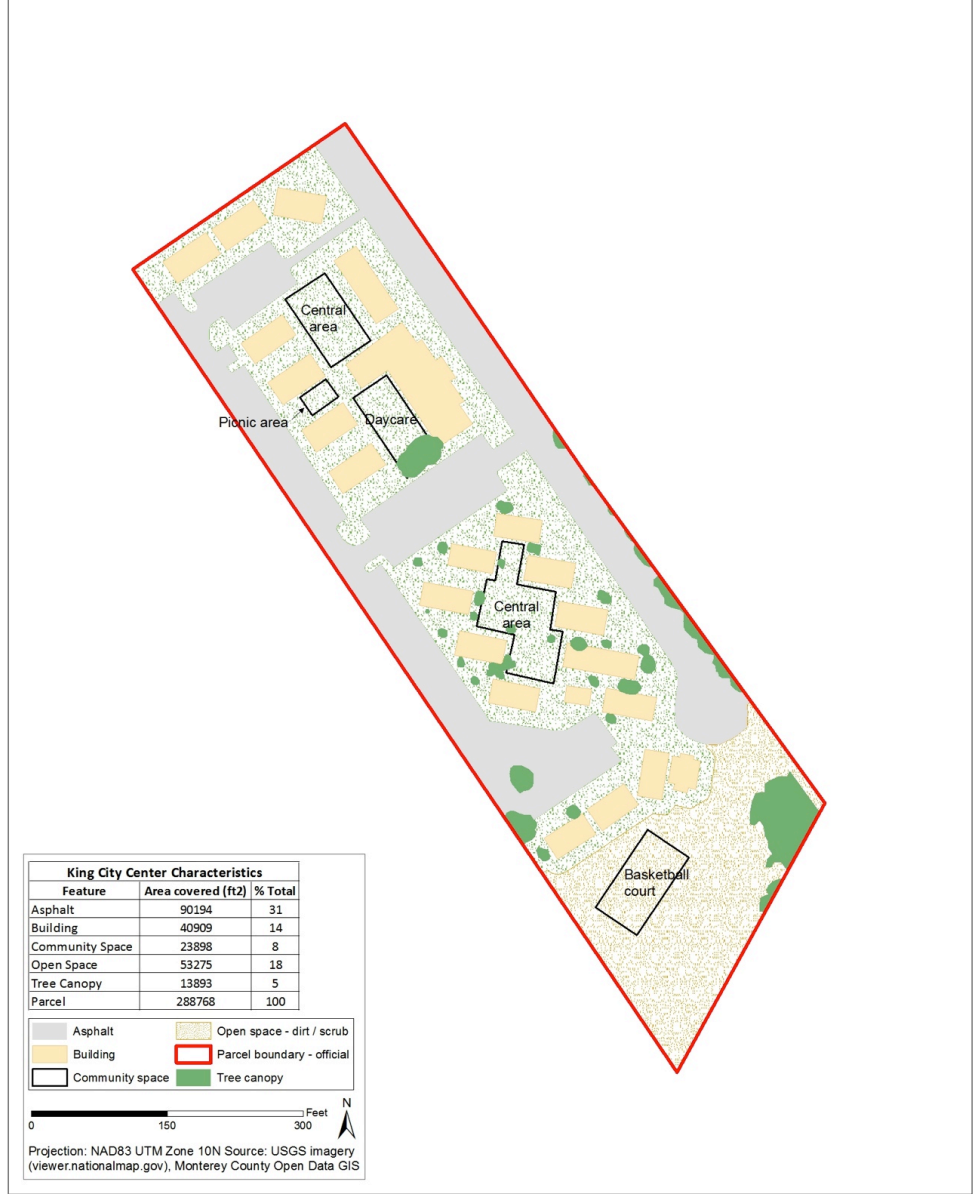
Urban location

King City OMS Center



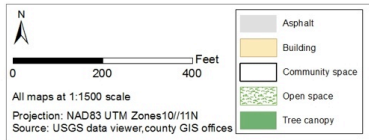
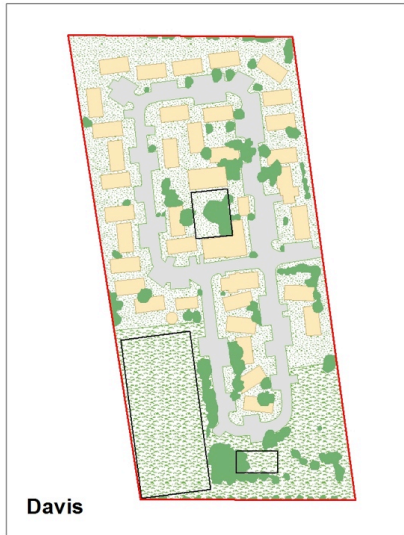
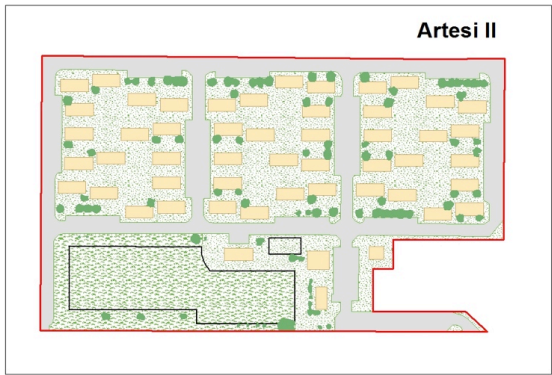
Site boundary

King City OMS Center

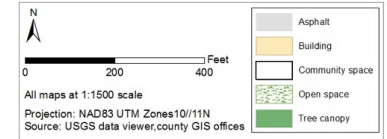
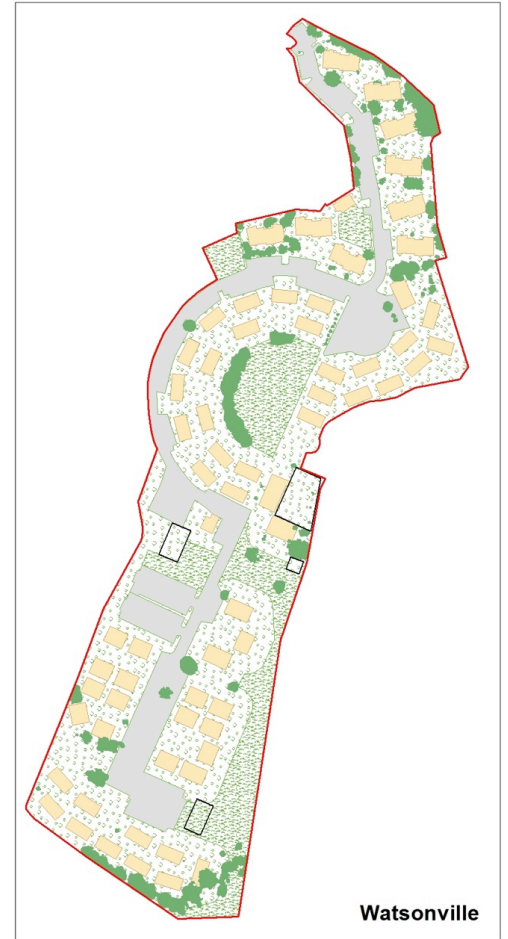
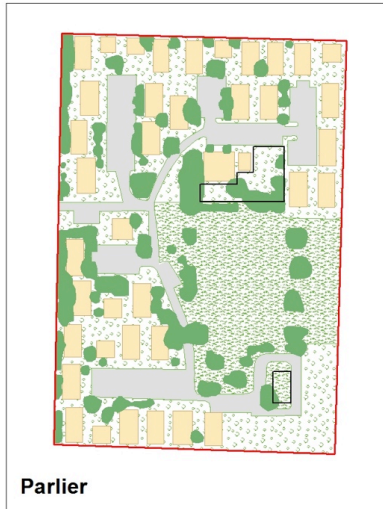


Major features

OMS Center Major Features



OMS Center Major Features



PRIVATE HOUSING

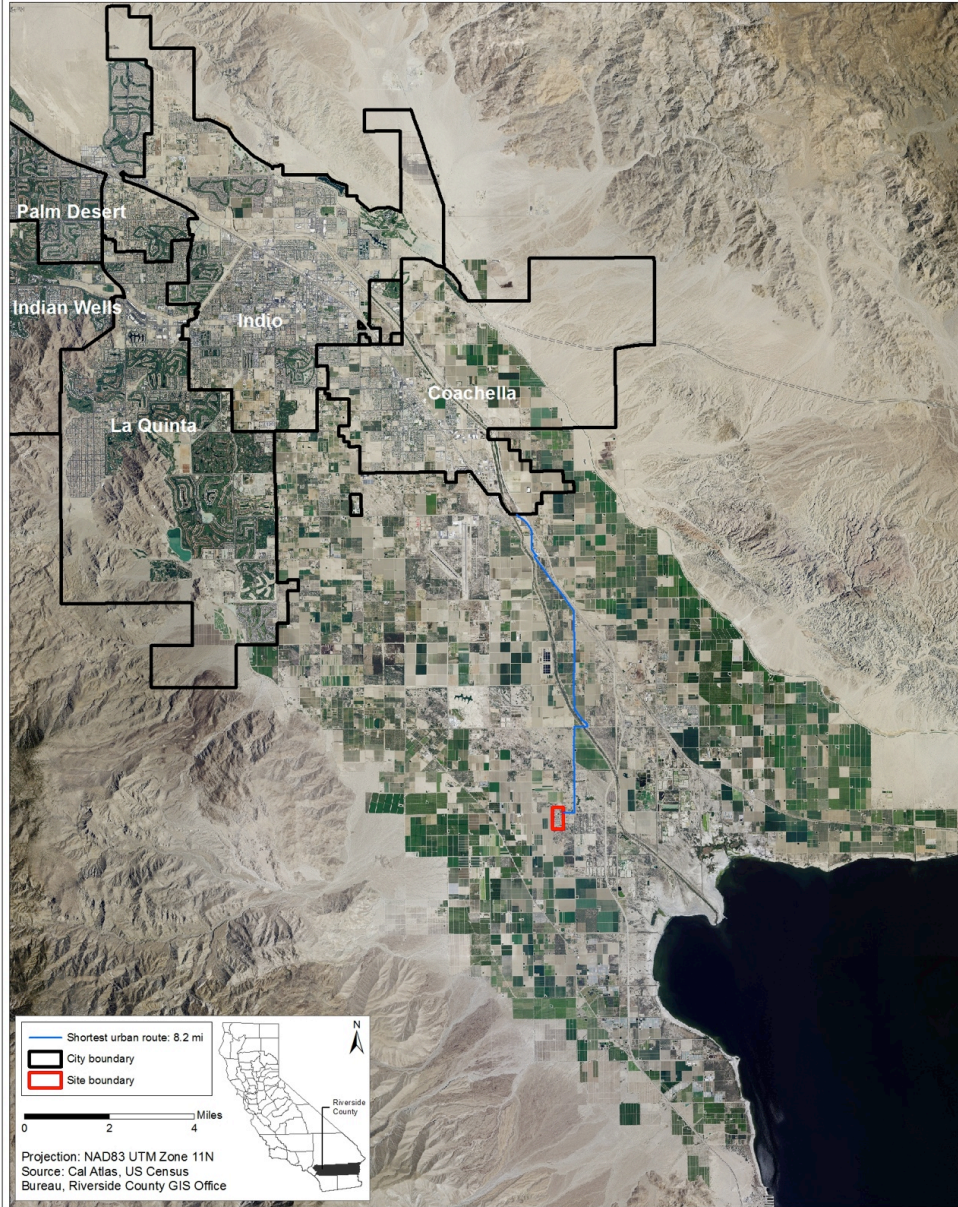
- **Three scenarios**
 - Reservation land
 - **70th Ave**
 - Private land – permitted housing provided by farm owner
 - **57th Ave**
 - Private land – housing provided landowner/unpermitted trailer parks
 - Cherry Tree Lane Trailers
 - Rancho Garcia
 - **St. Anthony Trailer Park**
 - Las Cabinas de los Campos

Average Euclidean distance: 3.2mi

Average network distance: 3.6mi

Unofficial MFW Housing: 70th Ave

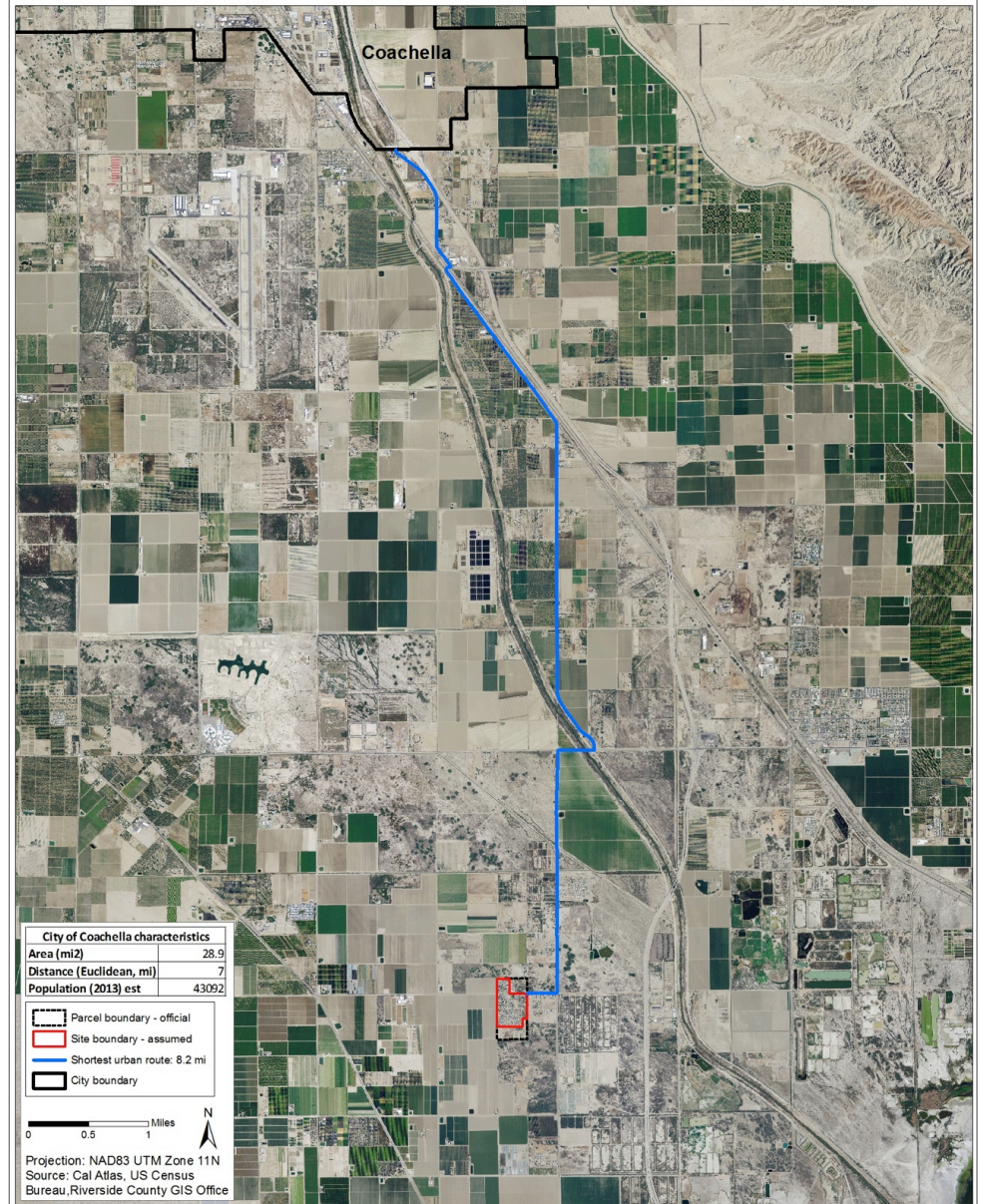
Tribal land



Landscape

Unofficial MFW Housing: 70th Ave

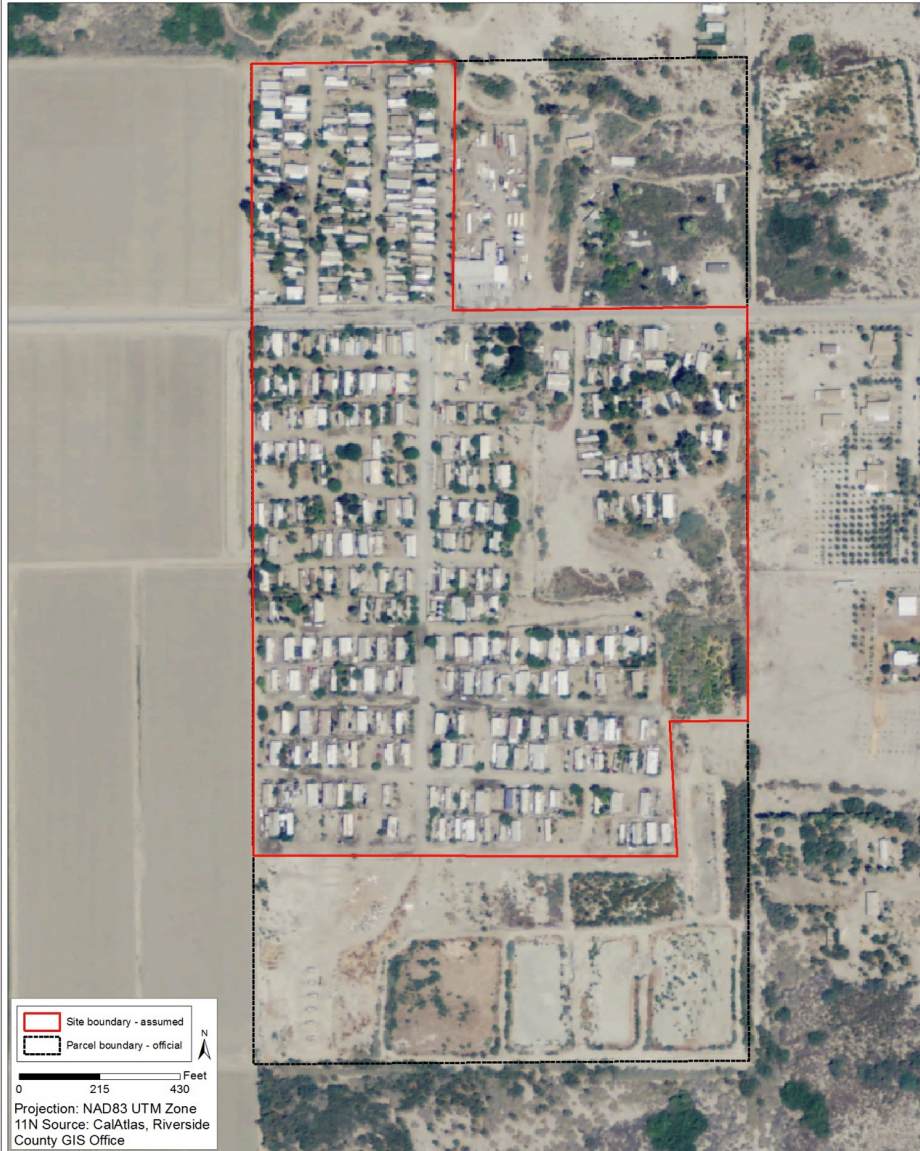
Tribal land



Urban route

Unofficial MFW Housing: 70th Ave

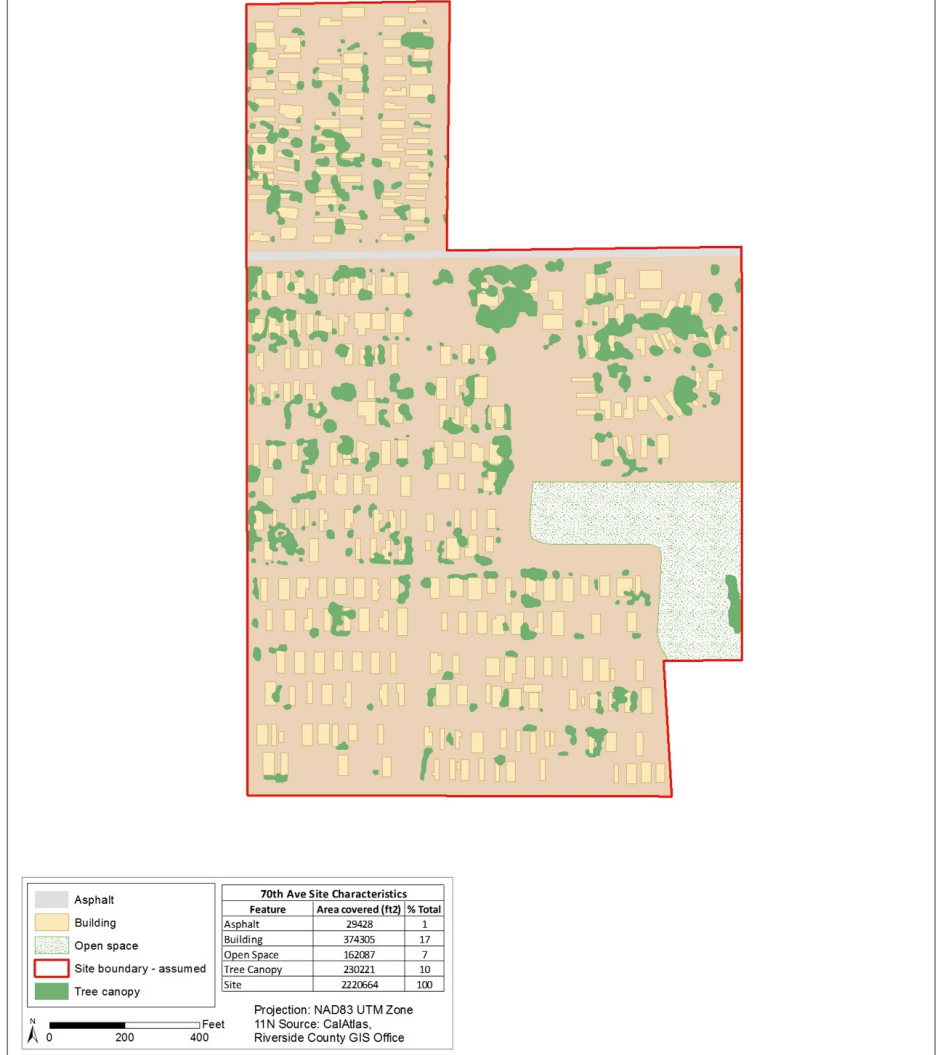
Tribal land



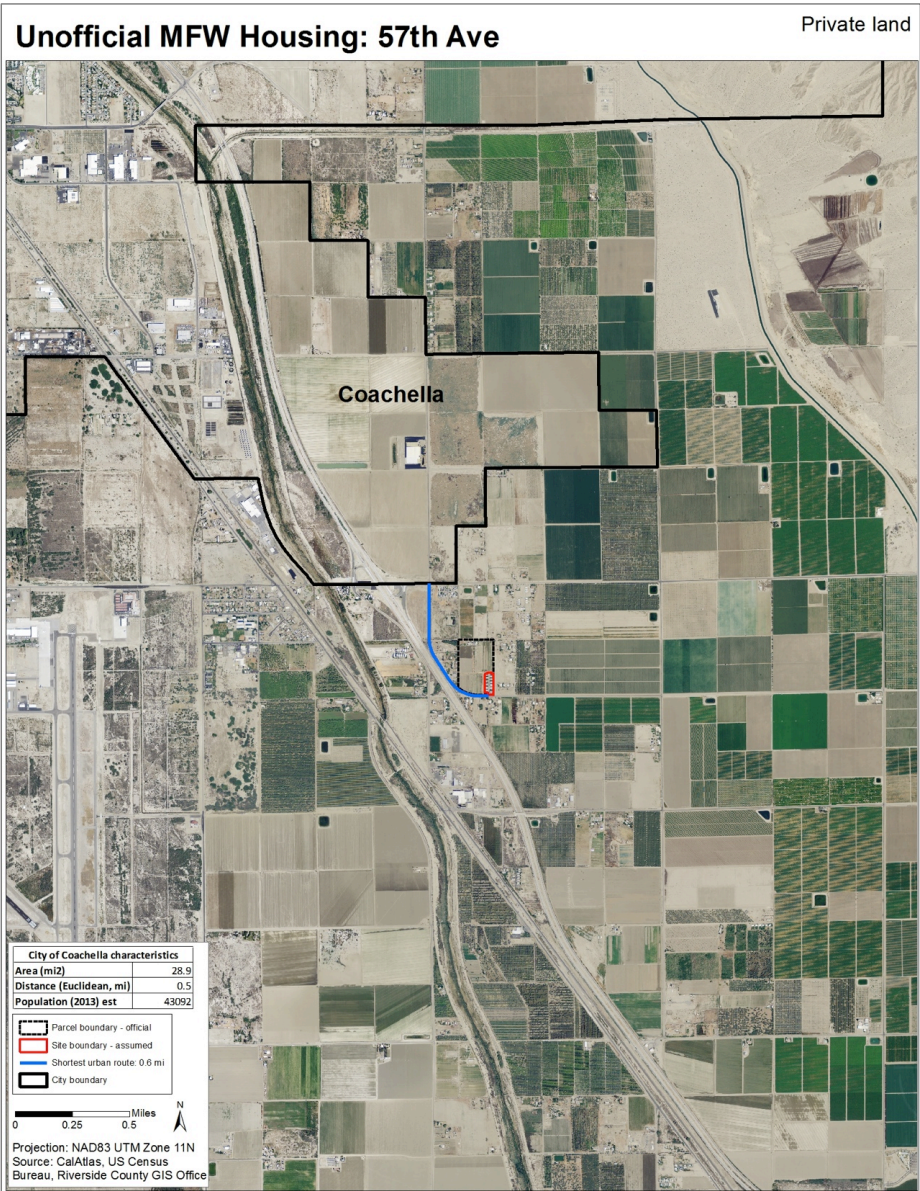
Site boundary

Unofficial MFW Housing: 70th Ave

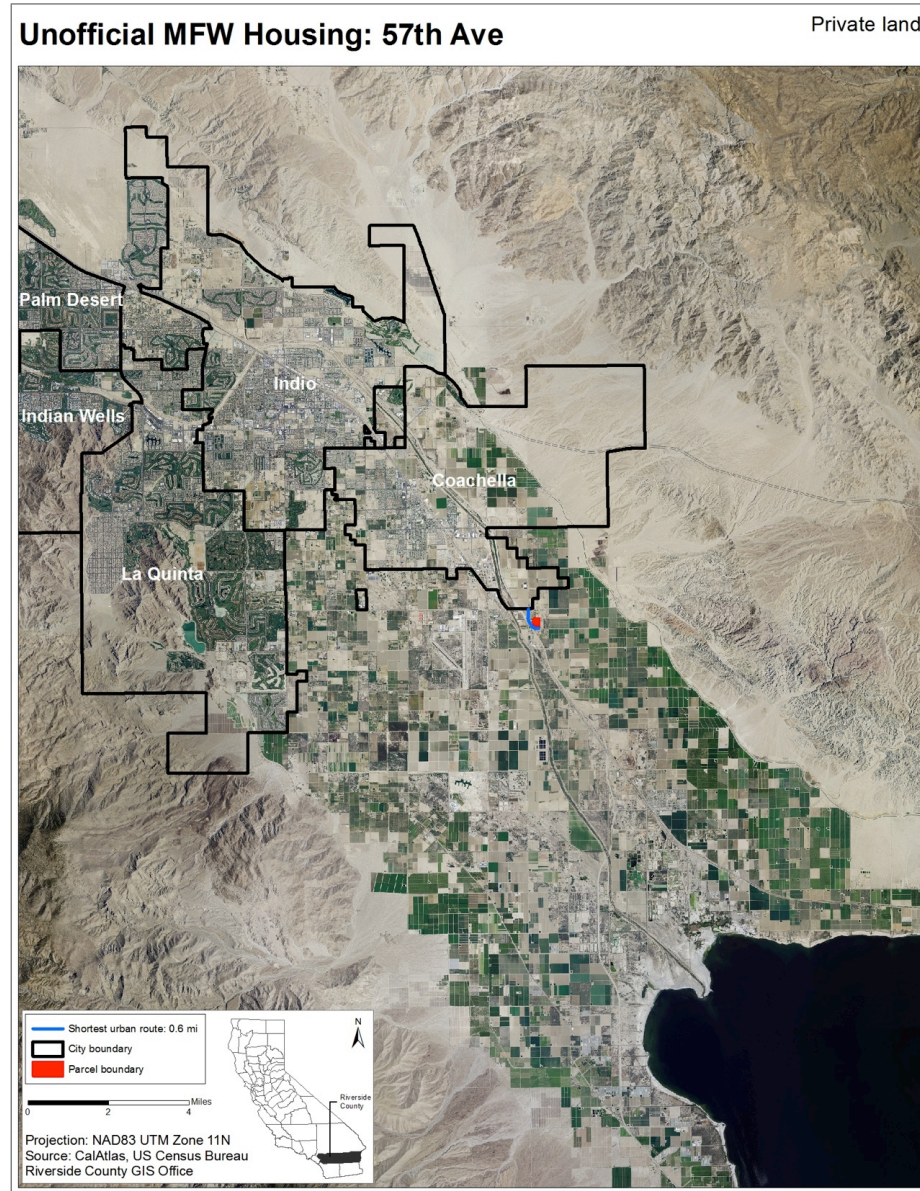
Tribal land



Major features



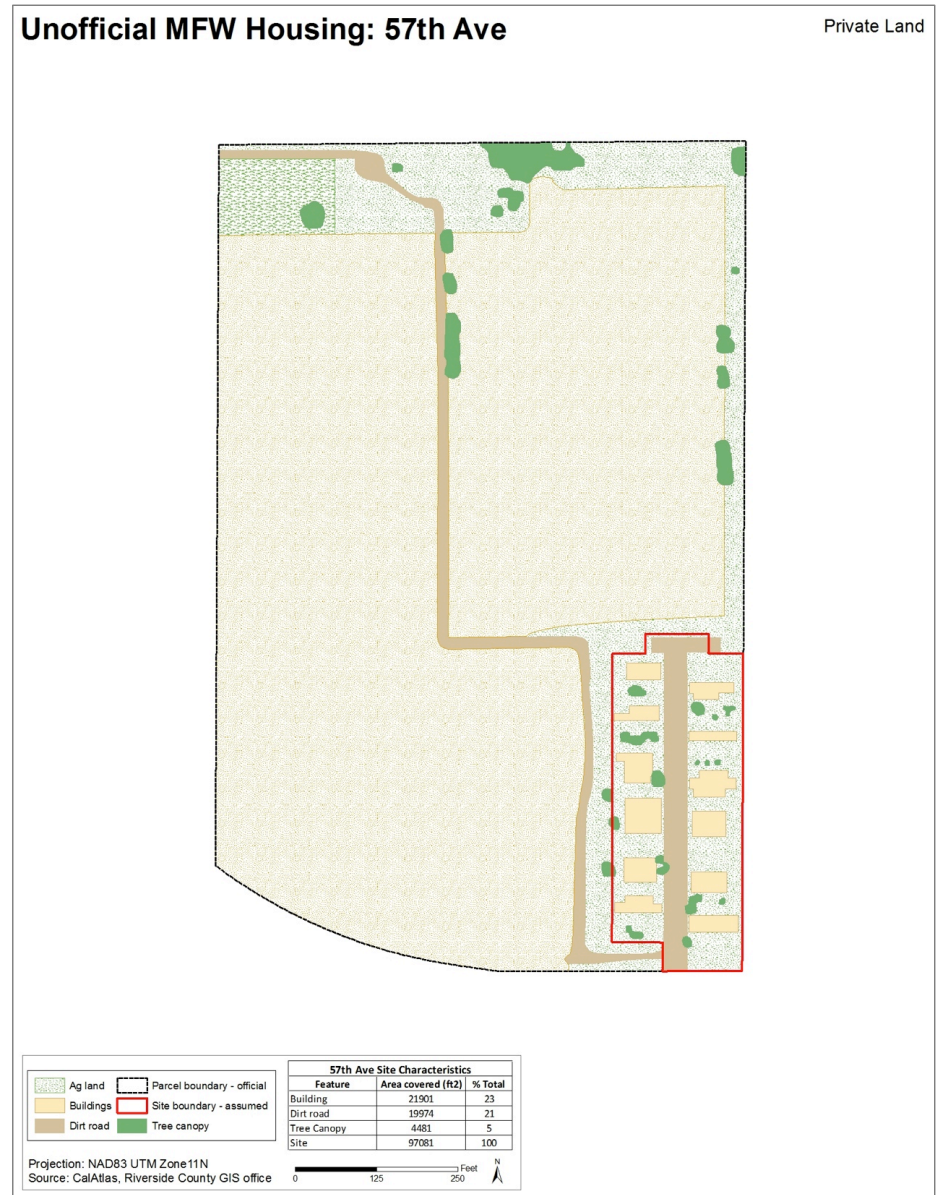
Landscape



Urban route



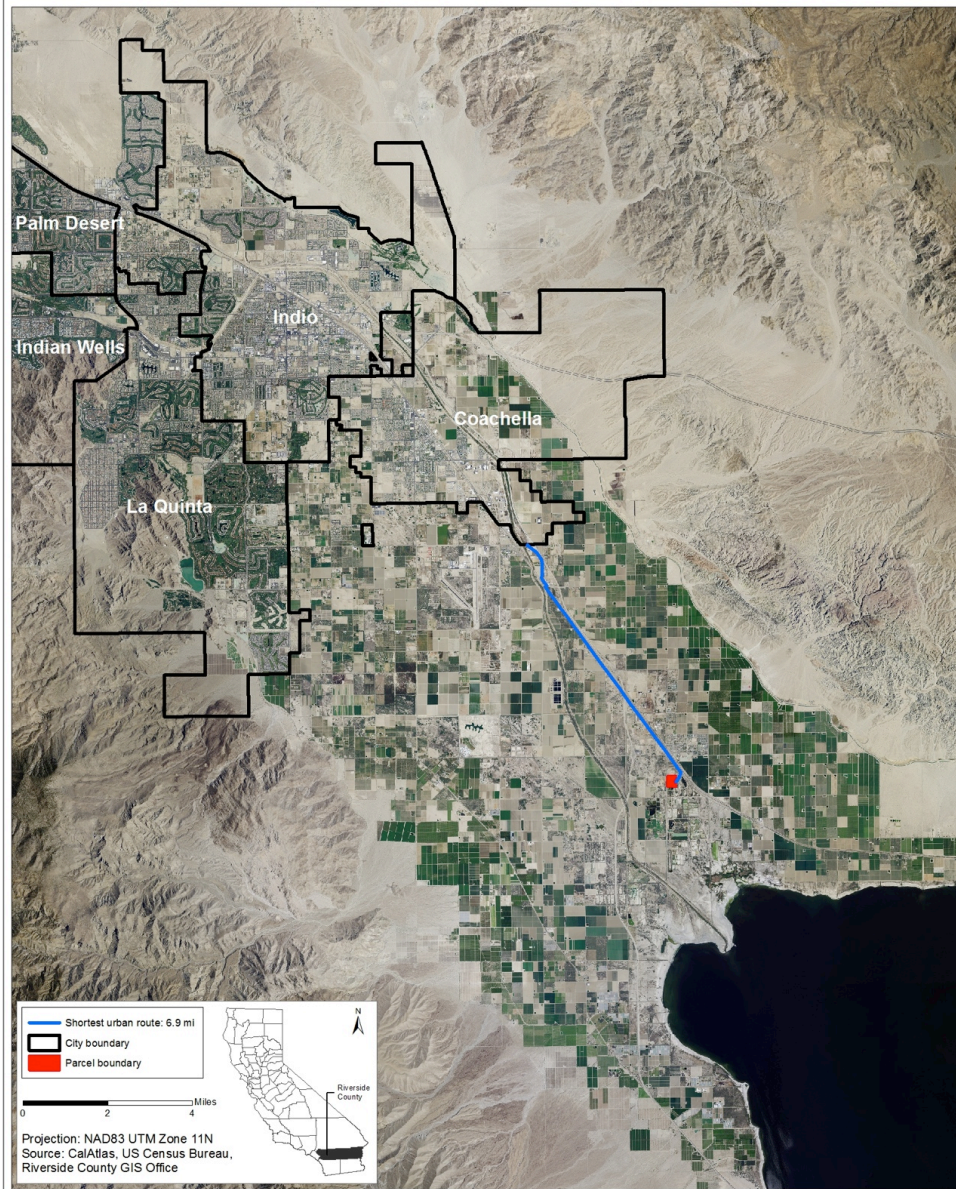
Site boundary



Major features

Unofficial MFW Housing: St. Anthony Trailer Park

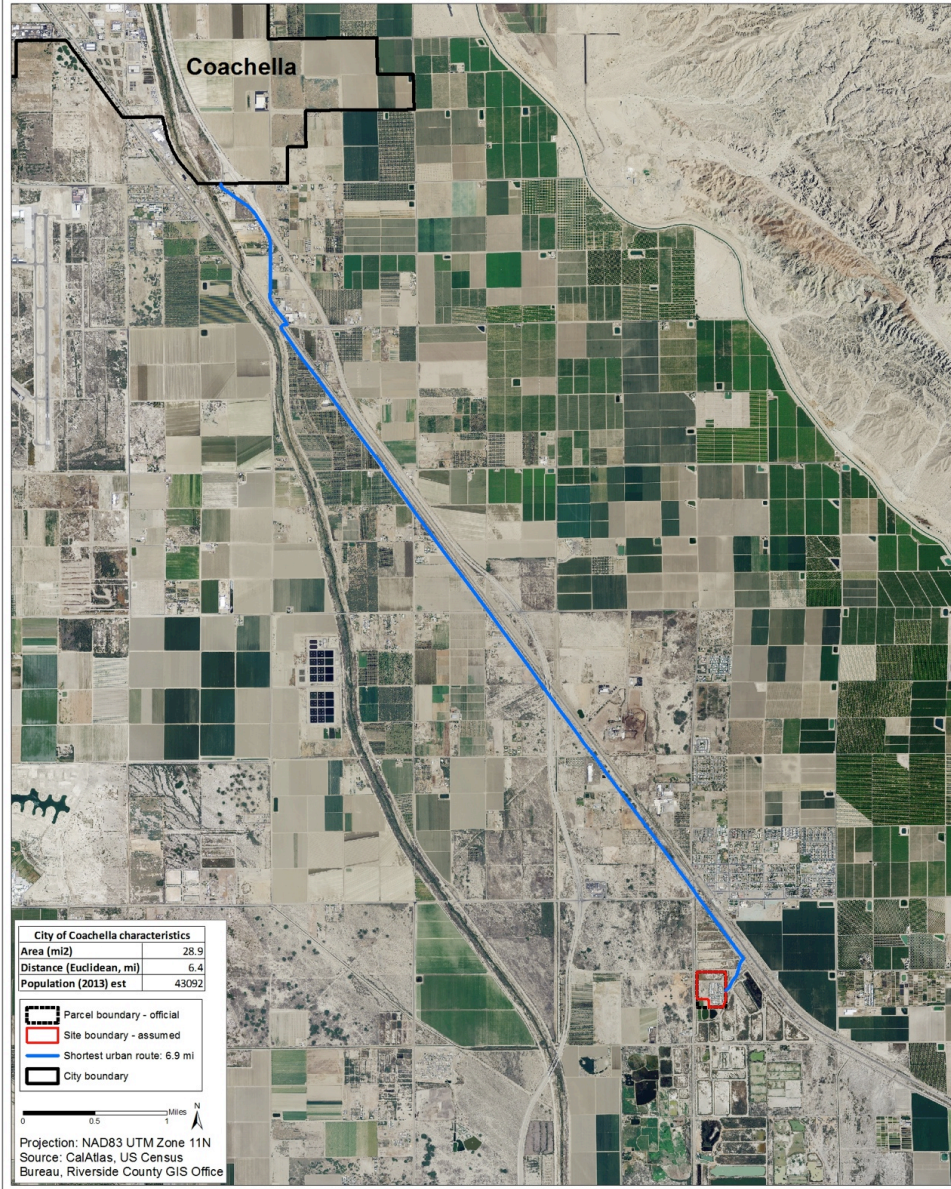
Private land



Landscape

Unofficial MFW Housing: St. Anthony Trailer Park

Private land



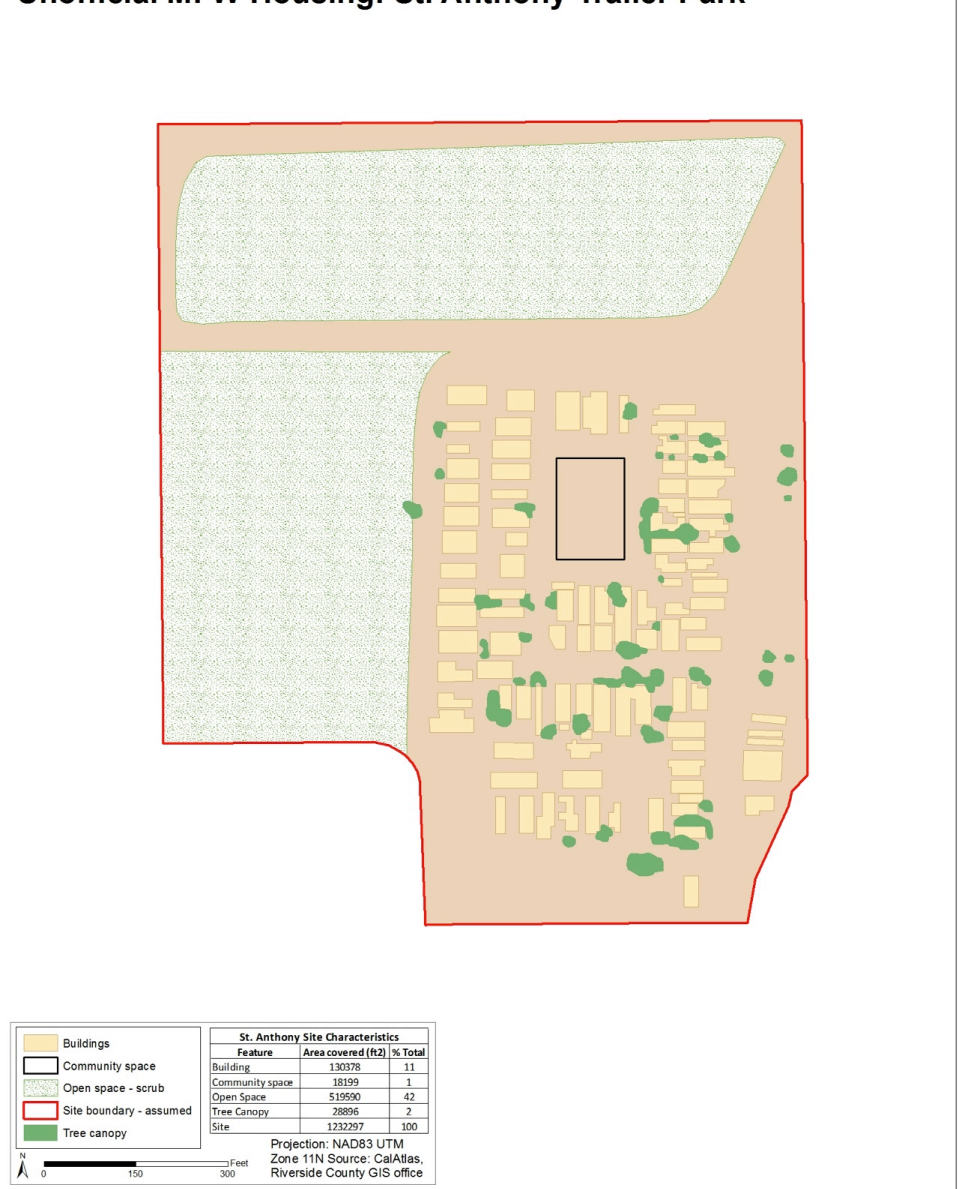
Urban route

Unofficial MFW Housing: St. Anthony Trailer Park Private land



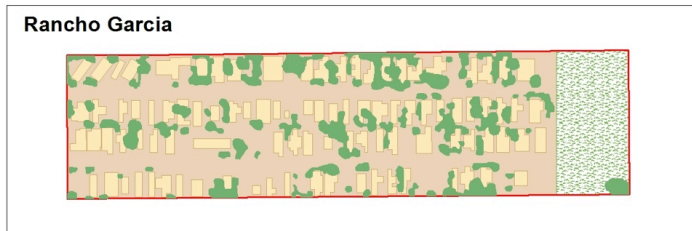
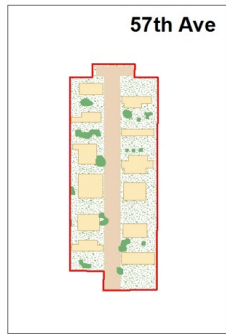
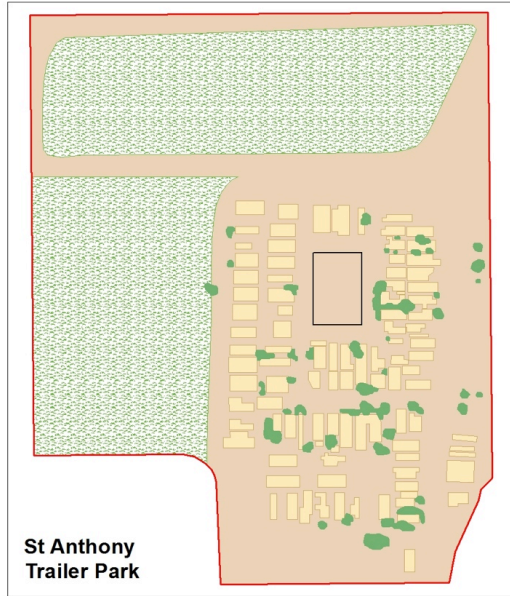
Site boundary

Unofficial MFW Housing: St. Anthony Trailer Park Private land



Major features

Unofficial MFW Housing Major Features

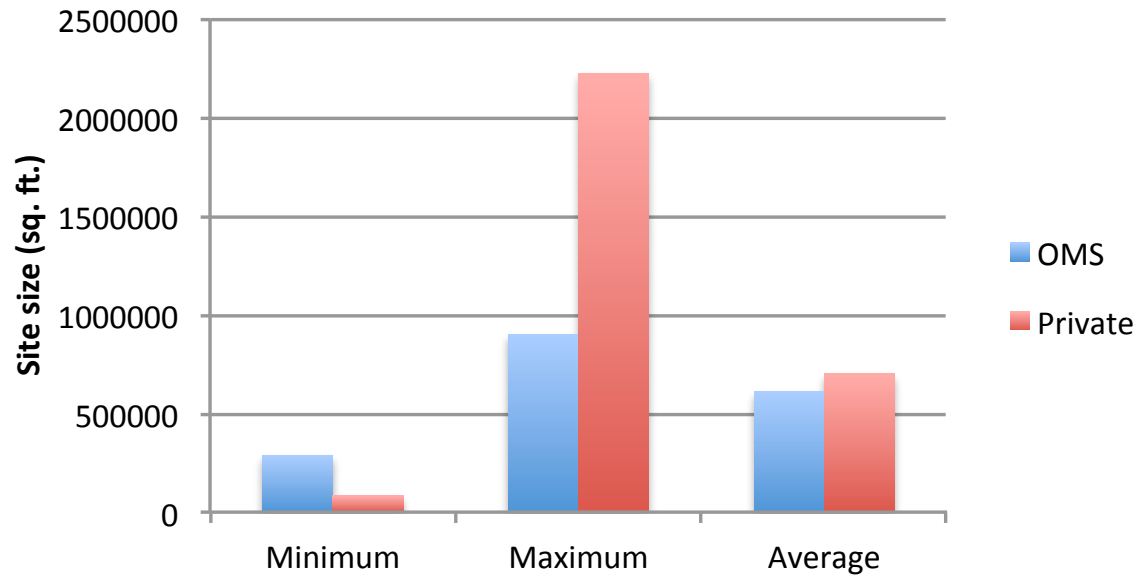


Unofficial MFW Housing Major Features

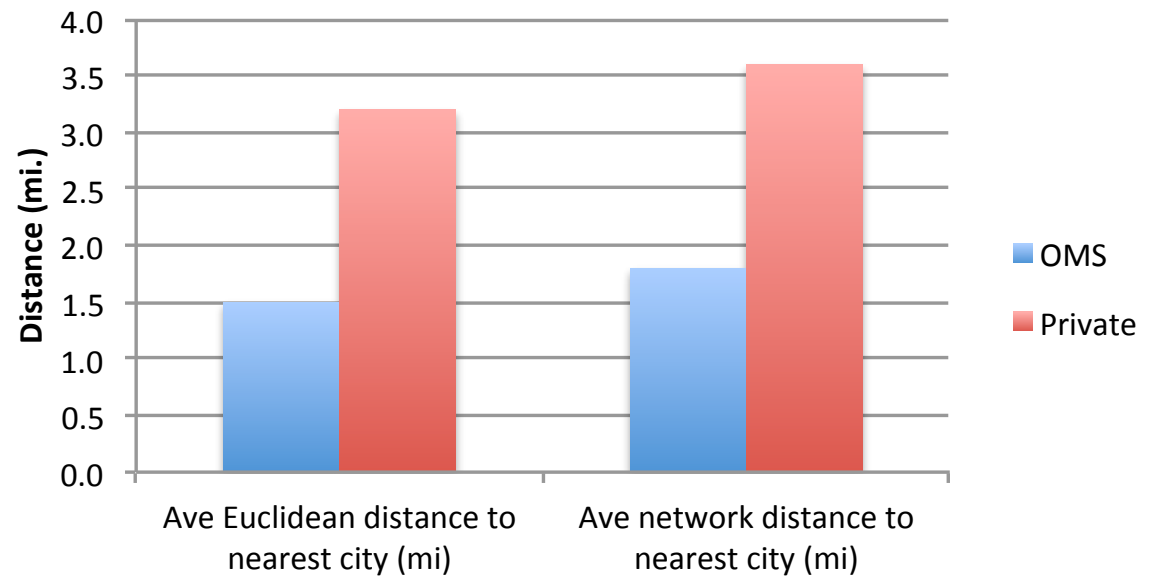


Site boundary (for analysis)	Community space	 All maps at 1:1500 scale Projection: NAD83 UTM Zones 10/11N Source: USGS National map viewer, CalAtlas, County GIS portals
Tree canopy	Building	
Open space	Asphalt	
Exposed dirt (including informal road)		

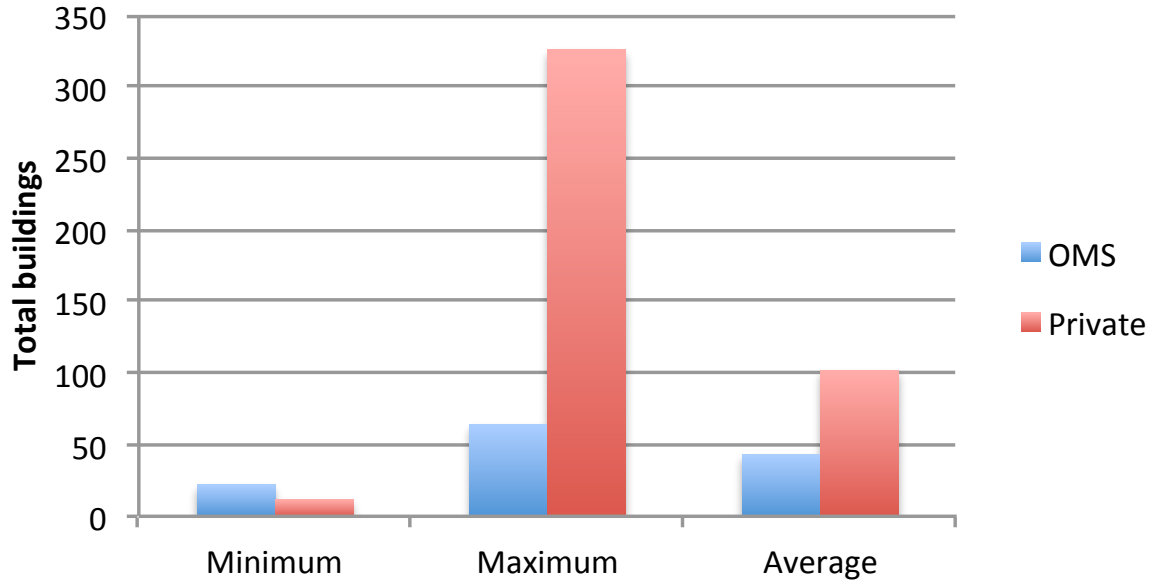
Site Size Comparison



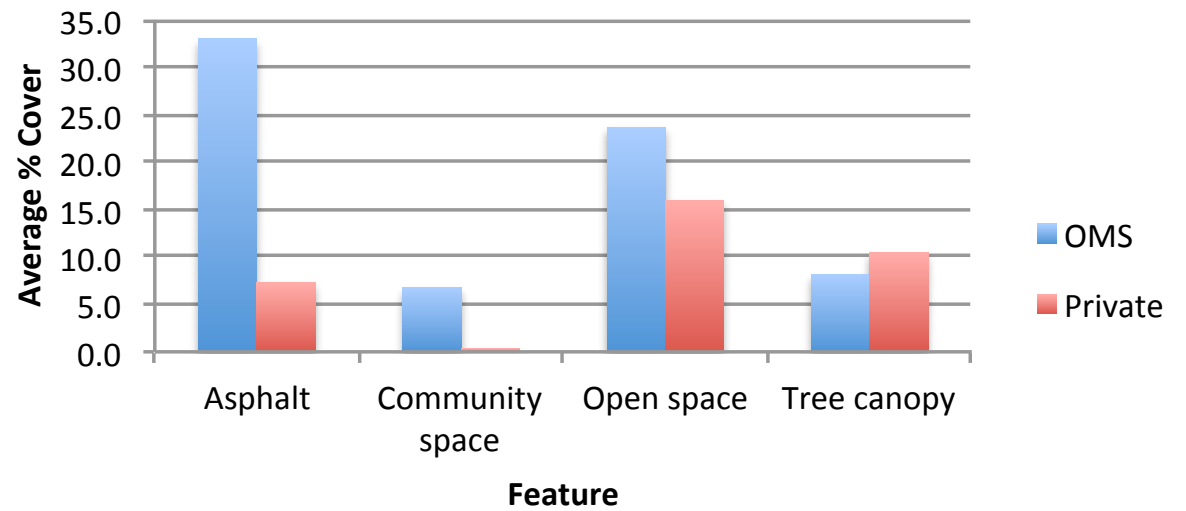
Proximity to Nearest City



Structure Comparison



Major Feature Comparison



DESIGN CONSIDERATIONS

- **Air quality**
 - Pesticide drift
 - Dust
- **Community space**
- **Site fluidity / lack of structural permanence**