SACRAMENTO REGION Blueprint TRANSPORTATION/LAND USE PLAN

SACRAMENTO REGION RURAL-URBAN CONNECTIONS STRATEGY

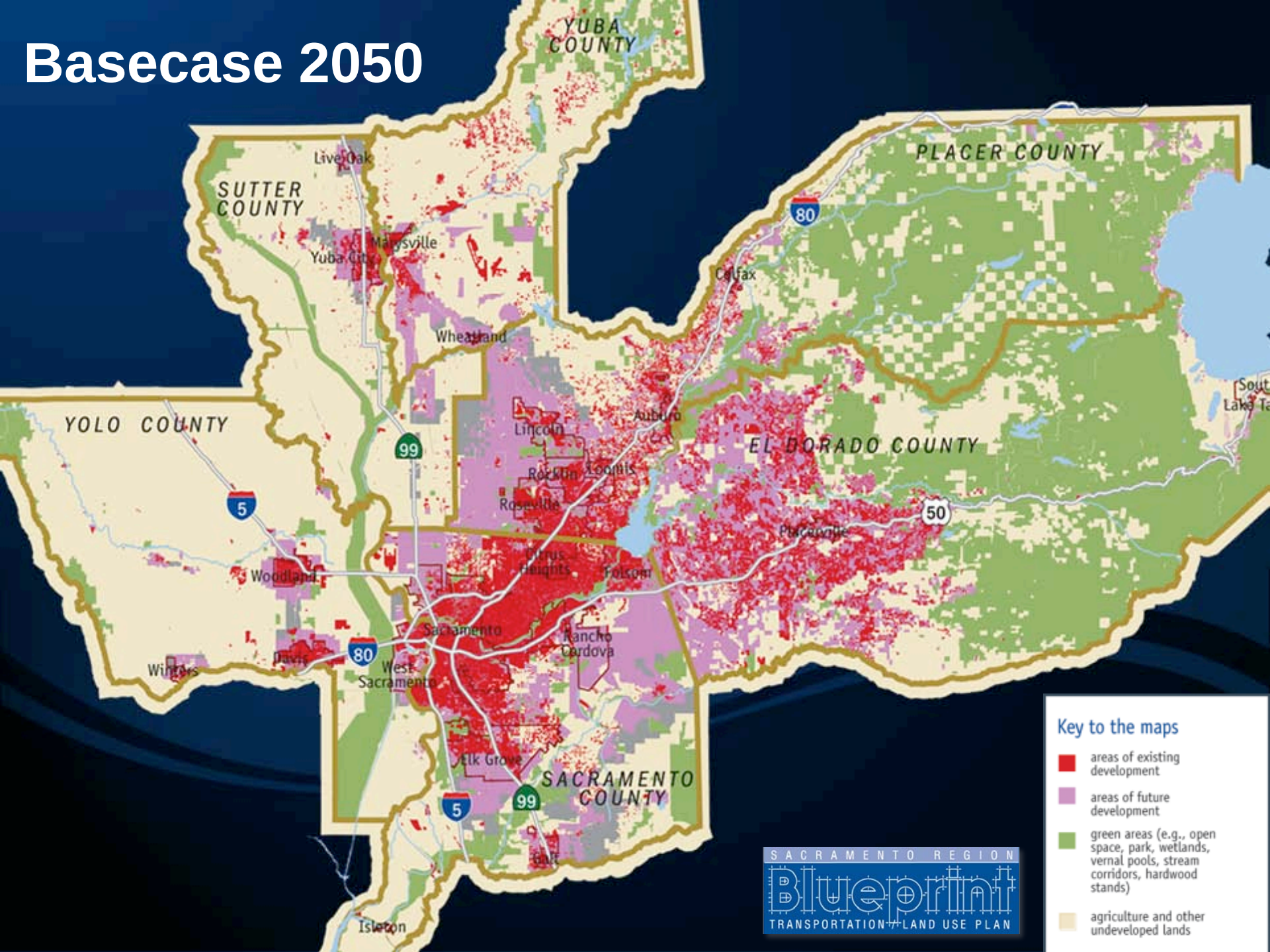
Regional Planning in the Sacramento Region

Blueprint Growth Principles

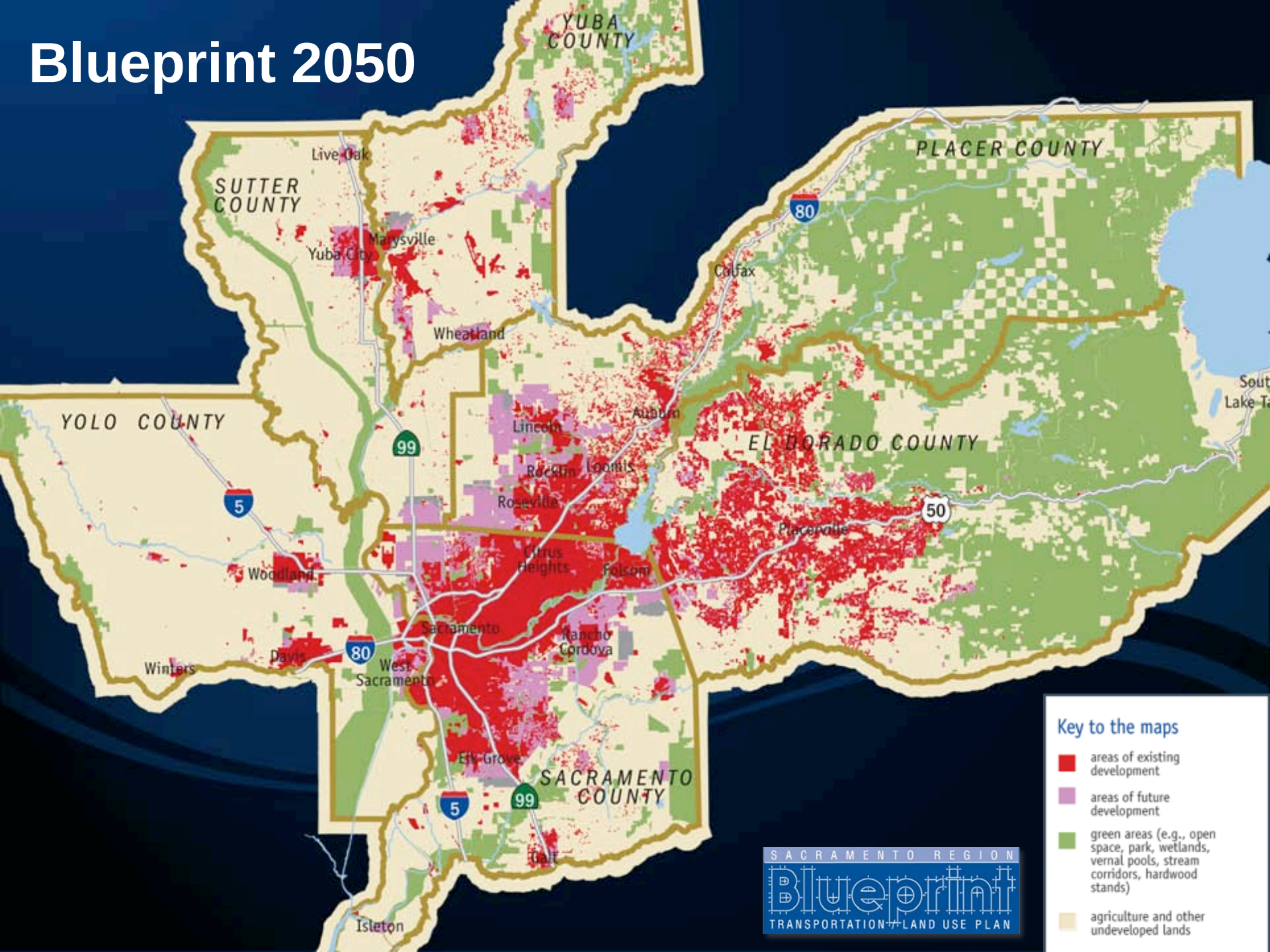
- Housing Choices
- Mix Land Uses
- Transportation Choices
- High Quality Design
- Compact Development
- Protect Natural Resources
- Use Existing Assets

SACRAMENTO REGION Blueprint TRANSPORTATION + LAND USE PLAN

Basecase 2050



Blueprint 2050



Less Urban Land

SACRAMENTO REGION Blueprint TRANSPORTATION + LAND USE PLAN

Land Use-Transportation Plan

For every 1,000 new residents:

1988-2005

333

acres

2008-2035

42

acres

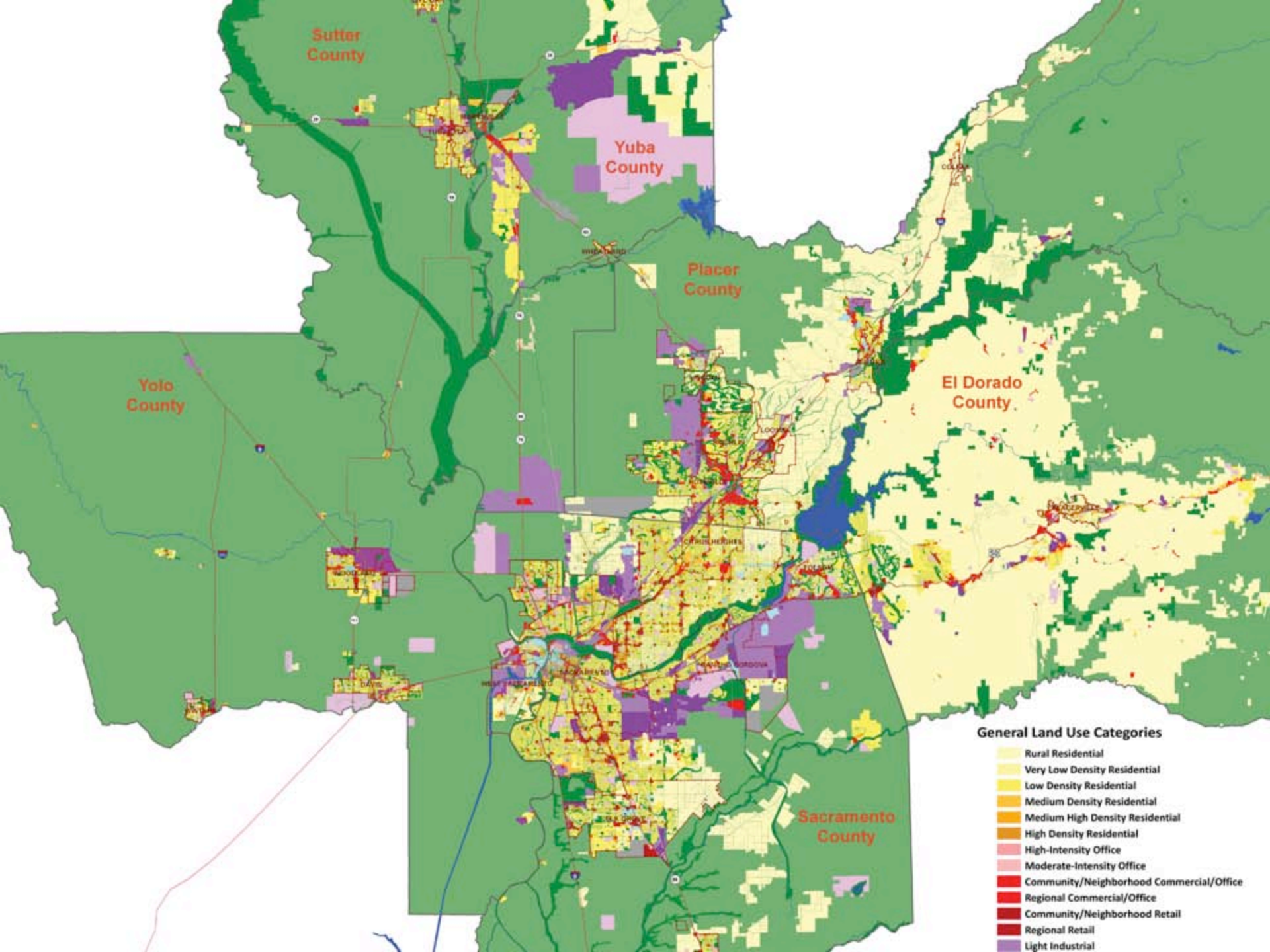
Rural-Urban Connections Strategy

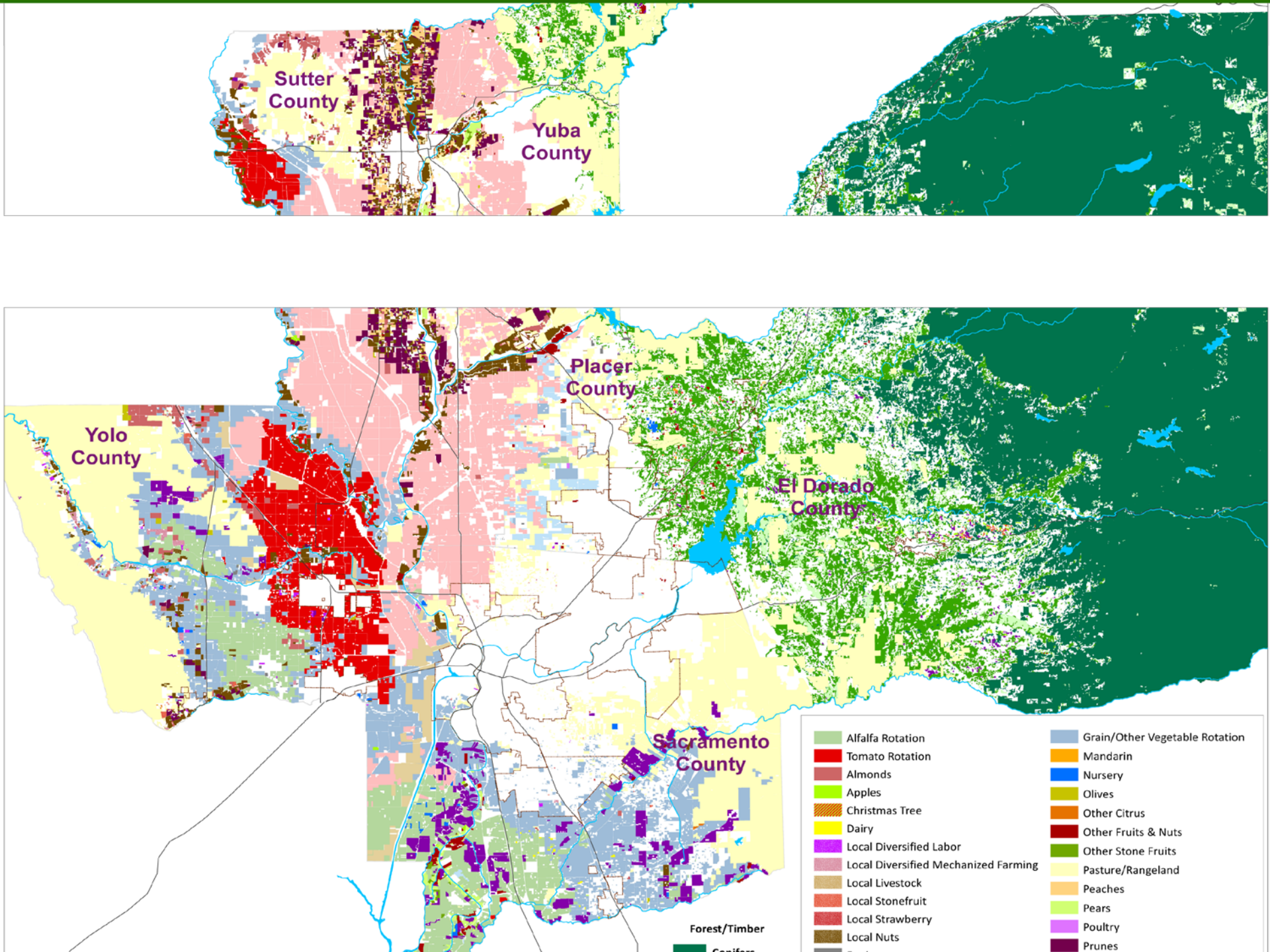
Enhancing Rural Economic Viability and Environmental Sustainability

SACRAMENTO REGION
RURAL-URBAN
CONNECTIONS STRATEGY

RUCS Objectives

- Enhance rural economic viability and environmental sustainability
- Identify rural challenges and opportunities
- Test agricultural market changes, policies and economic development strategies
- Determine rural transportation and other infrastructure needs


Sutter County
Yuba County
Placer County
Yolo County
El Dorado County
Sacramento County
General Land Use Categories
Rural Residential
Very Low Density Residential
Low Density Residential
Medium Density Residential
Medium High Density Residential
High Density Residential
High-Intensity Office
Moderate-Intensity Office
Community/Neighborhood Commercial/Office
Regional Commercial/Office
Community/Neighborhood Retail
Regional Retail
Light Industrial

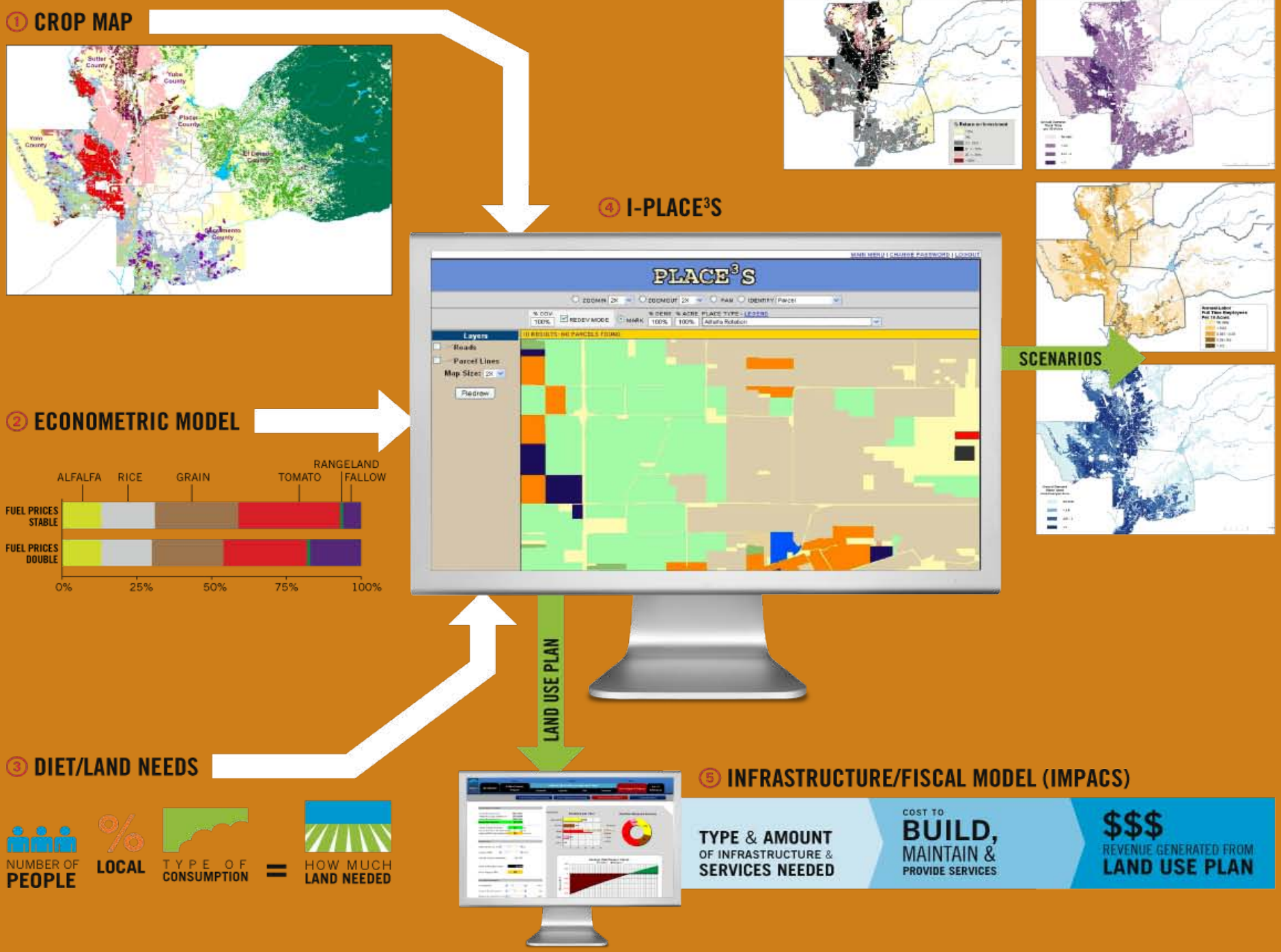

Sutter County
Yuba County
Placer County
Yolo County
El Dorado County
Sacramento County
Alfalfa Rotation
Tomato Rotation
Almonds
Apples
Christmas Tree
Dairy
Local Diversified Labor
Local Diversified Mechanized Farming
Local Livestock
Local Stonefruit
Local Strawberry
Local Nuts
Grain/Other Vegetable Rotation
Mandarin
Nursery
Olives
Other Citrus
Other Fruits & Nuts
Other Stone Fruits
Pasture/Rangeland
Peaches
Pears
Poultry
Prunes
Forest/Timber

Cost and Return Conventional Almond Production

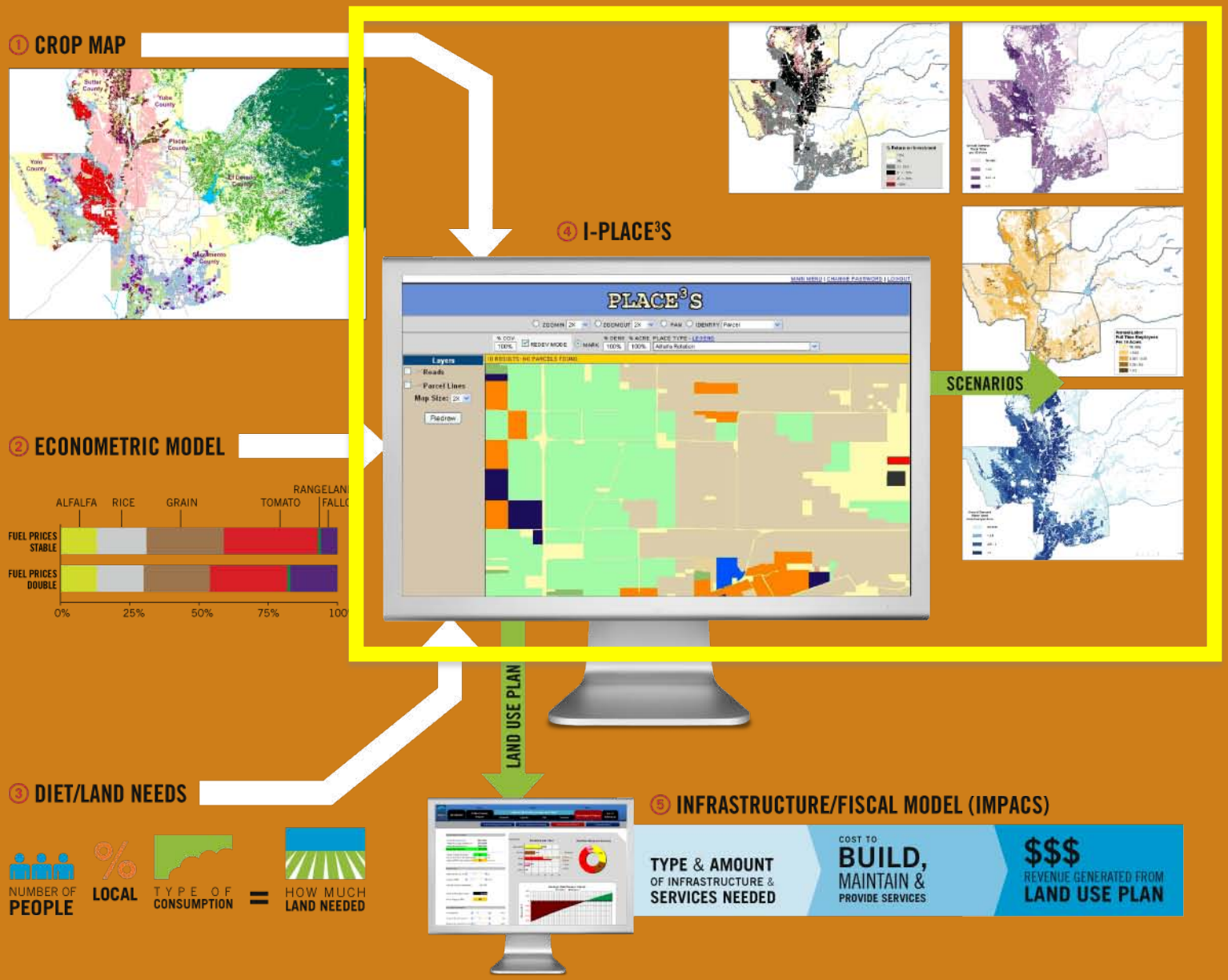
Sacramento Region

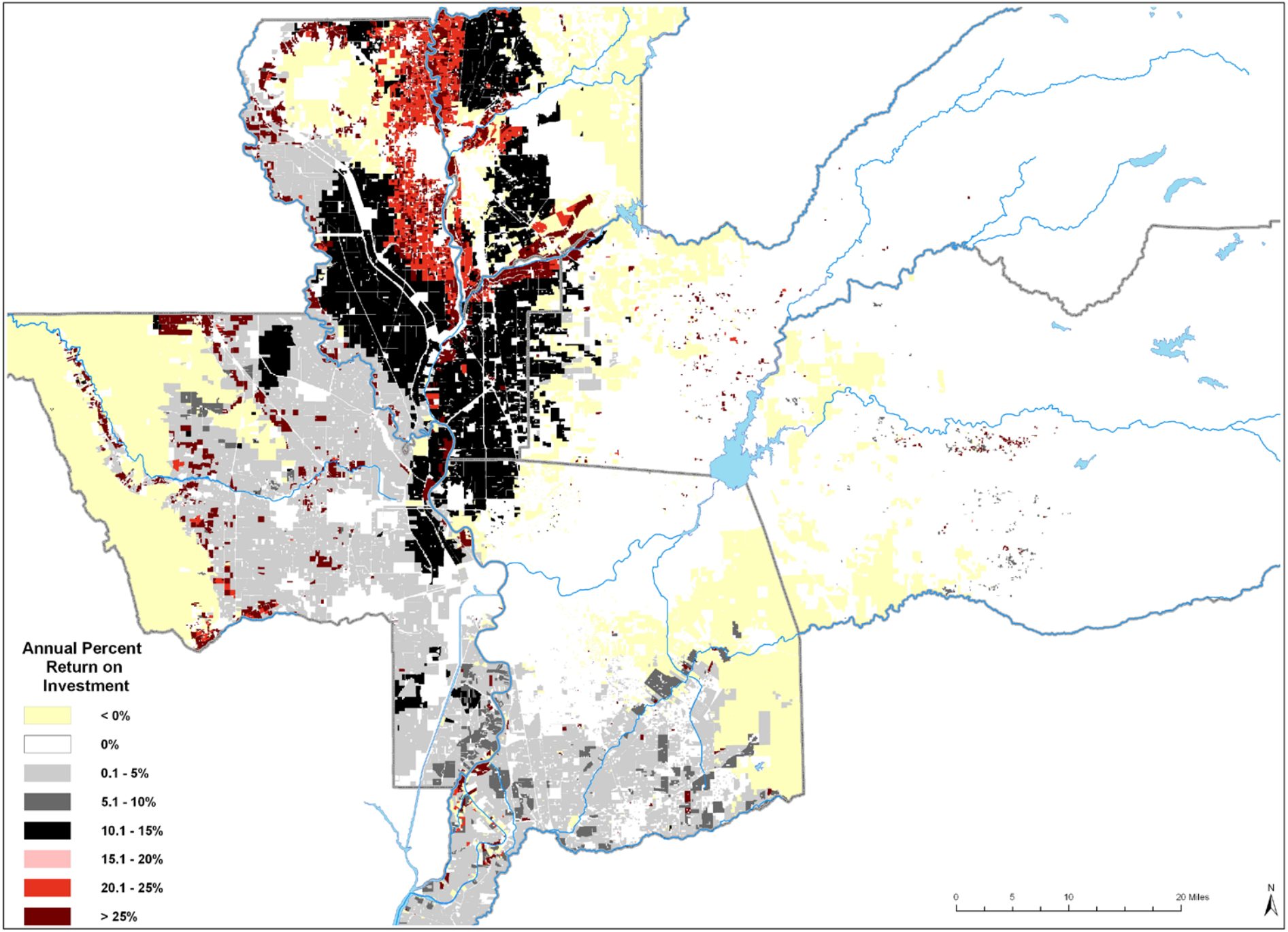
Cost category	Input	Quantity	Unit/acre	Price	Cost
Chemical	Roundup	3.00	pt	$ 8.40	$ 25.20
Chemical	Surflan	3.00	pt	$ 16.96	$ 50.88
Chemical	Goal 2XL	3.00	pt	$ 13.50	$ 40.50
Chemical	Rodent Bait	1.00	lb	$ 4.50	$ 4.50
Chemical	Rovral	1.00	lb	$ 25.00	$ 25.00
Chemical	Abound	14.00	floz	$ 2.78	$ 38.92
Chemical	Ziram	8.00	lb	$ 2.80	$ 22.40
Chemical	Dipel	2.00	lb	$ 15.63	$ 31.26
Chemical	Lorsban	4.00	pint	$ 4.00	$ 16.00
Chemical	Omite	7.50	lb	$ 8.23	$ 61.73
Chemical	Vanguard	5.00	oz	$ 4.09	$ 20.45
Contract	Consultant	1.00	acre	$ 25.00	$ 25.00
Contract	Hives	2.50	hive	$ 140.00	$ 350.00
Contract	Leaf Analysis	1.00	acre	$ 2.00	$ 2.00
Contract Labor	Shake Nuts	2.00	hour	$ 80.00	$ 160.00
Contract Labor	Sweep	2.00	hour	$ 55.00	$ 110.00
Contract Labor	Pick up, haul, hull and shell	2200.00	lb	$ 0.11	$ 242.00
Fertilizer	UN-32	220.00	lb	$ 0.29	$ 63.80
Fertilizer	Zinc Sulfate	30.00	lb	$ 0.50	$ 15.00
Fertilizer	Potassium Sulfate	500.00	lb	$ 0.23	$ 115.00
Irrigation	Water	36.00	acin	$ 2.67	$ 96.12
Fuel	Gasoline	11.15	gallons	$ 3.98	$ 44.38
Fuel	Diesel	11.88	gallons	$ 3.84	$ 45.62
Labor	Labor (machine)	11.56	machine hrs	$ 15.00	$ 173.40
Labor	Labor (nonmachine)	11.72	hrs	$ 12.00	$ 140.64
Total Operating Cost/Acre					$ 1,919.79

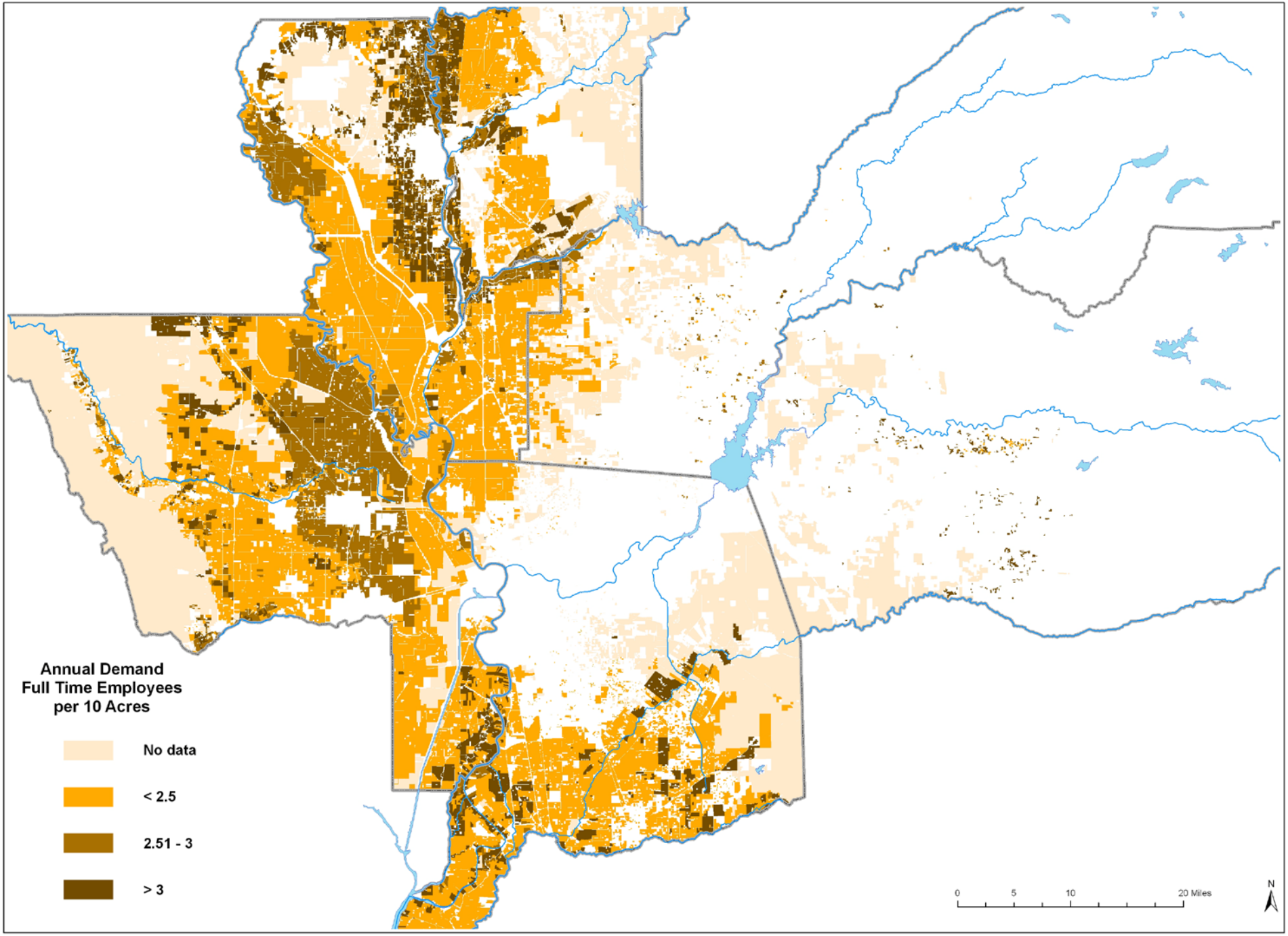
New Tools for Understanding Agricultural Viability

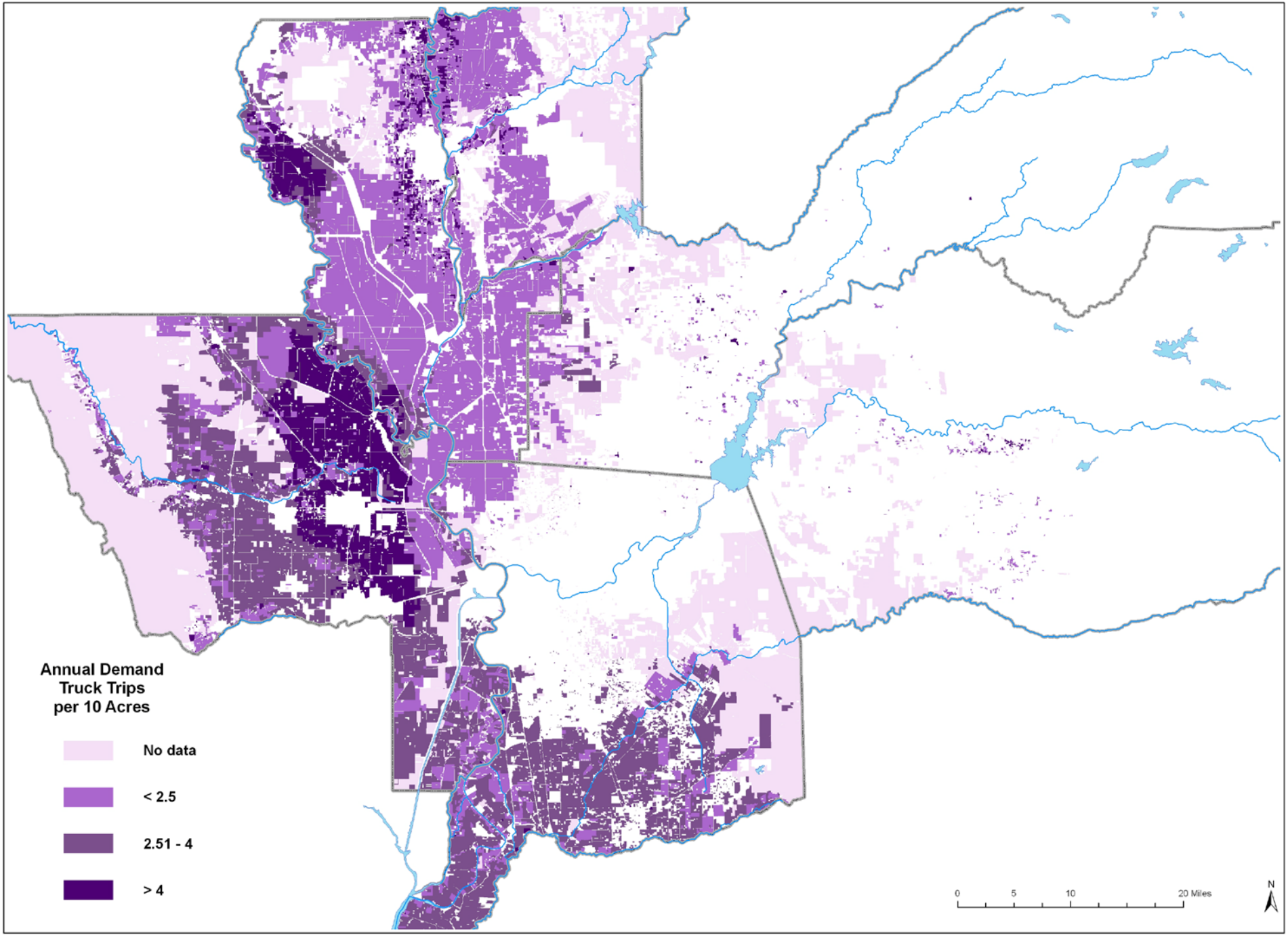

① CROP MAP
② ECONOMETRIC MODEL
ALFALFA
RICE
GRAIN
TOMATO
RANGELAND FALLOW
FUEL PRICES STABLE
FUEL PRICES DOUBLE
0%
25%
50%
75%
100%
③ DIET/LAND NEEDS
NUMBER OF PEOPLE
LOCAL
TYPE OF CONSUMPTION
=
HOW MUCH LAND NEEDED
④ I-PLACE³S
PLACE³S
Layers
Roads
Parcel Lines
Map Size:
Redraw
SCENARIOS
LAND USE PLAN
⑤ INFRASTRUCTURE/FISCAL MODEL (IMPACS)
TYPE & AMOUNT OF INFRASTRUCTURE & SERVICES NEEDED
COST TO BUILD, MAINTAIN & PROVIDE SERVICES
$$$
REVENUE GENERATED FROM LAND USE PLAN

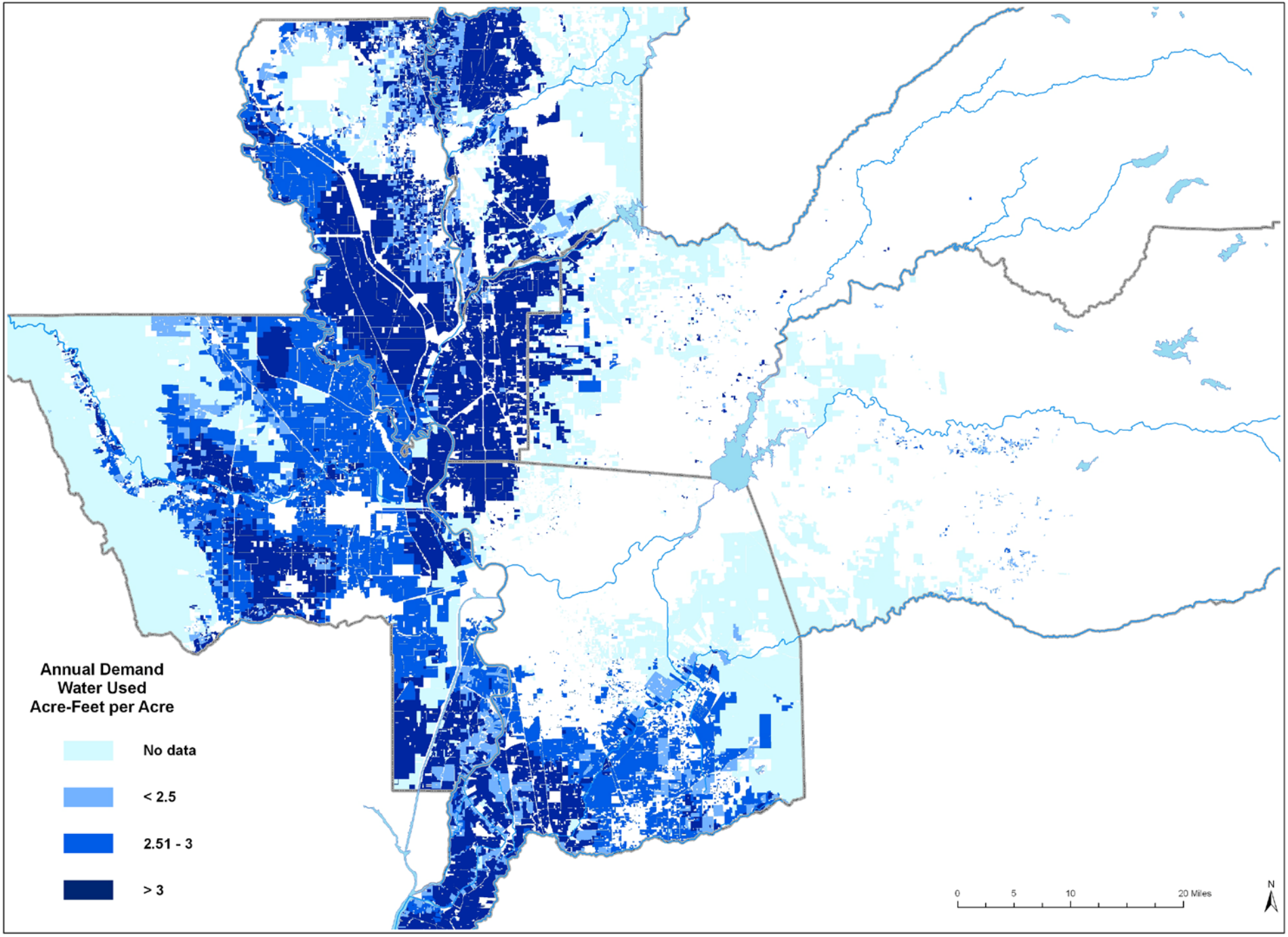
PLACE³S Scenario Model




Annual Percent Return on Investment
< 0%
0%
0.1 - 5%
5.1 - 10%
10.1 - 15%
15.1 - 20%
20.1 - 25%
> 25%
0
5
10
20 Miles
N


Annual Demand
Full Time Employees
per 10 Acres
No data
< 2.5
2.51 - 3
> 3
0
5
10
20 Miles
N


Annual Demand
Truck Trips
per 10 Acres
No data
< 2.5
2.51 - 4
> 4
0
5
10
20 Miles
N


Annual Demand
Water Used
Acre-Feet per Acre
No data
< 2.5
2.51 - 3
> 3
0
5
10
20 Miles
N

PLACE^{3}S

ZOOMIN 2X | ZOOMOUT 2X | PAN | IDENTIFY Parcel

% COV 100% | REDEV MODE | MARK | % DENS 100% | % ACRE 100% | PLACE TYPE - LEGEND | ALFALFA ROTATION- 100% FUEL CHANGE

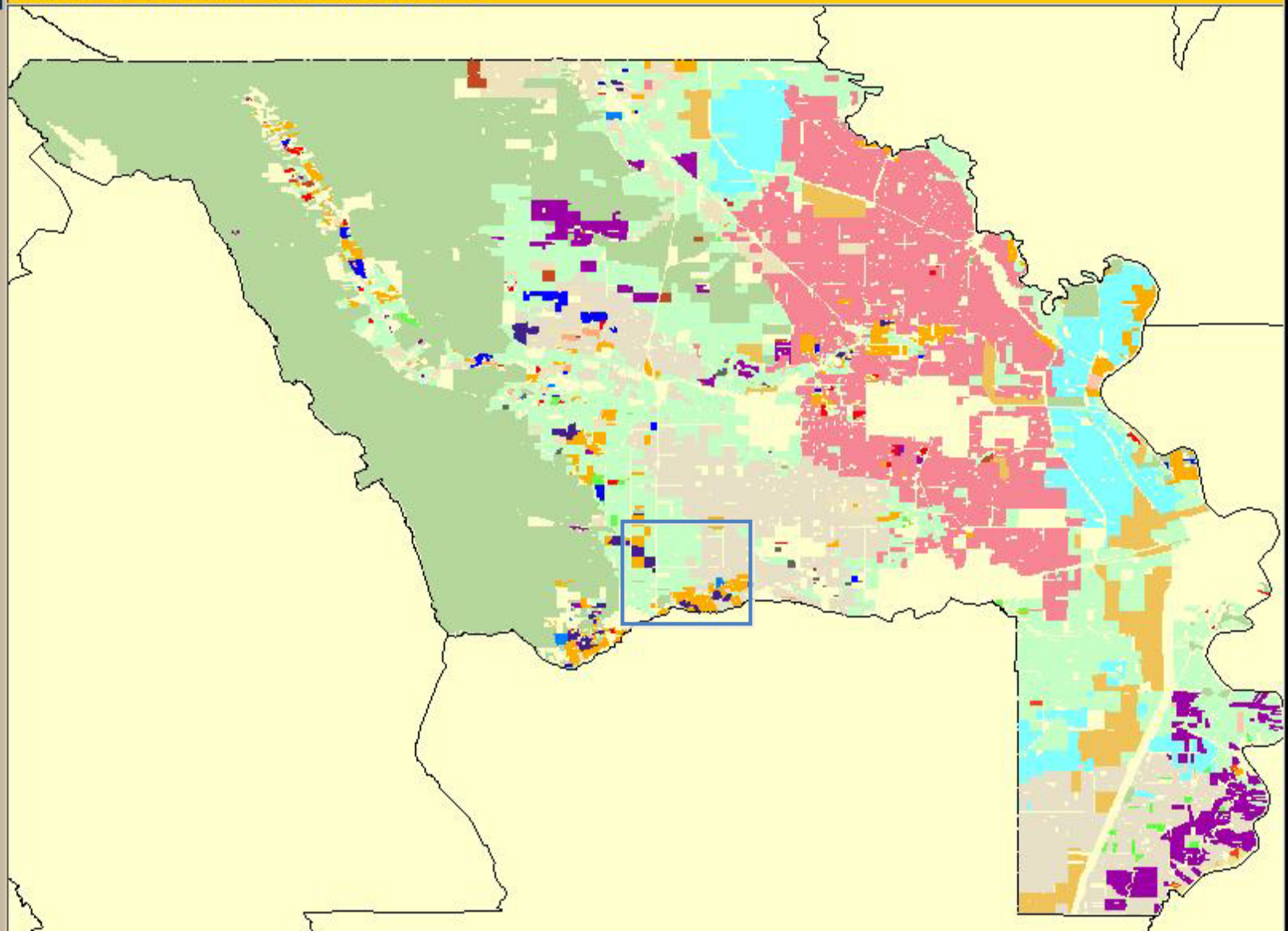
Layers

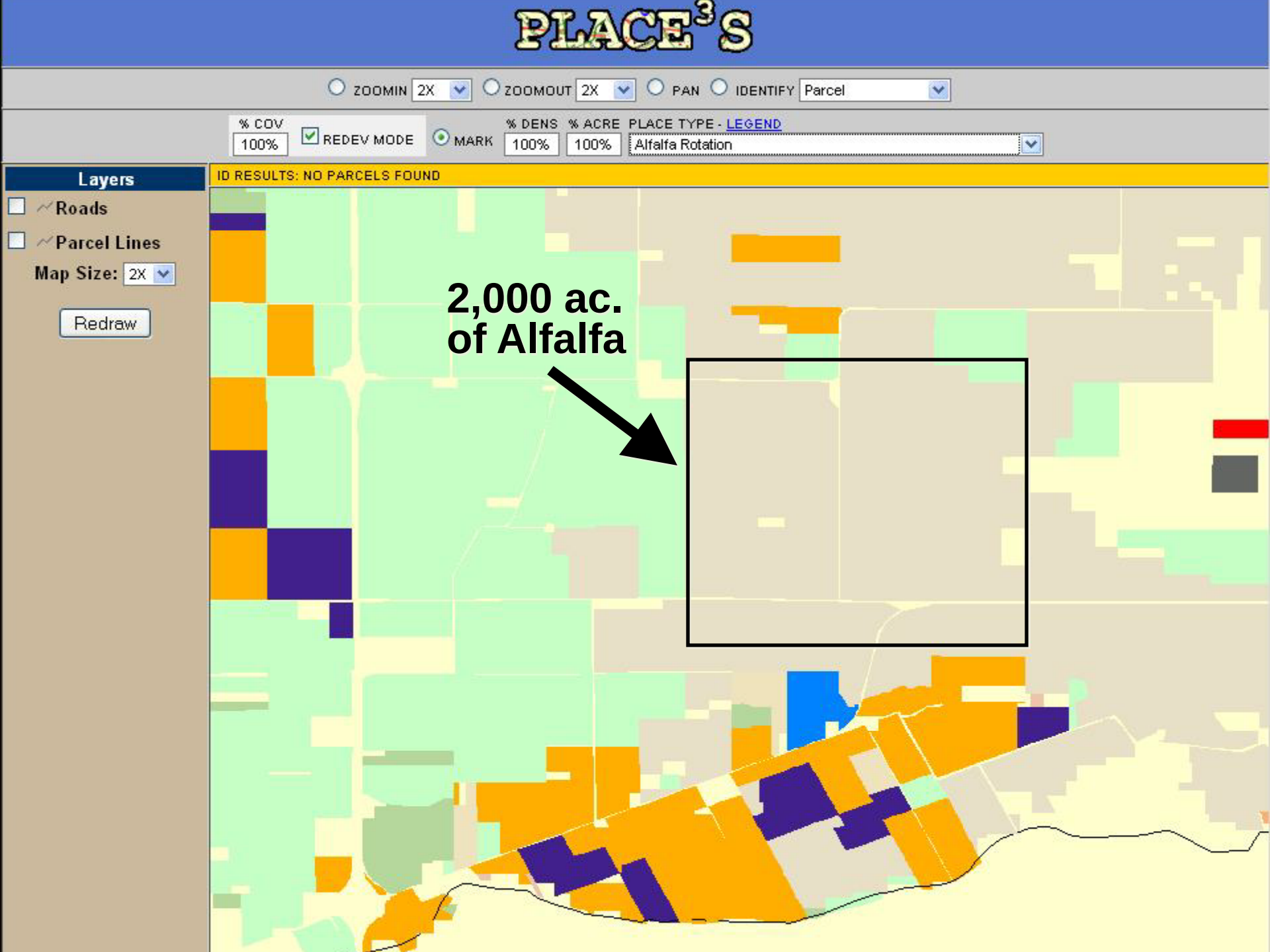
- Roads
- Parcel Lines

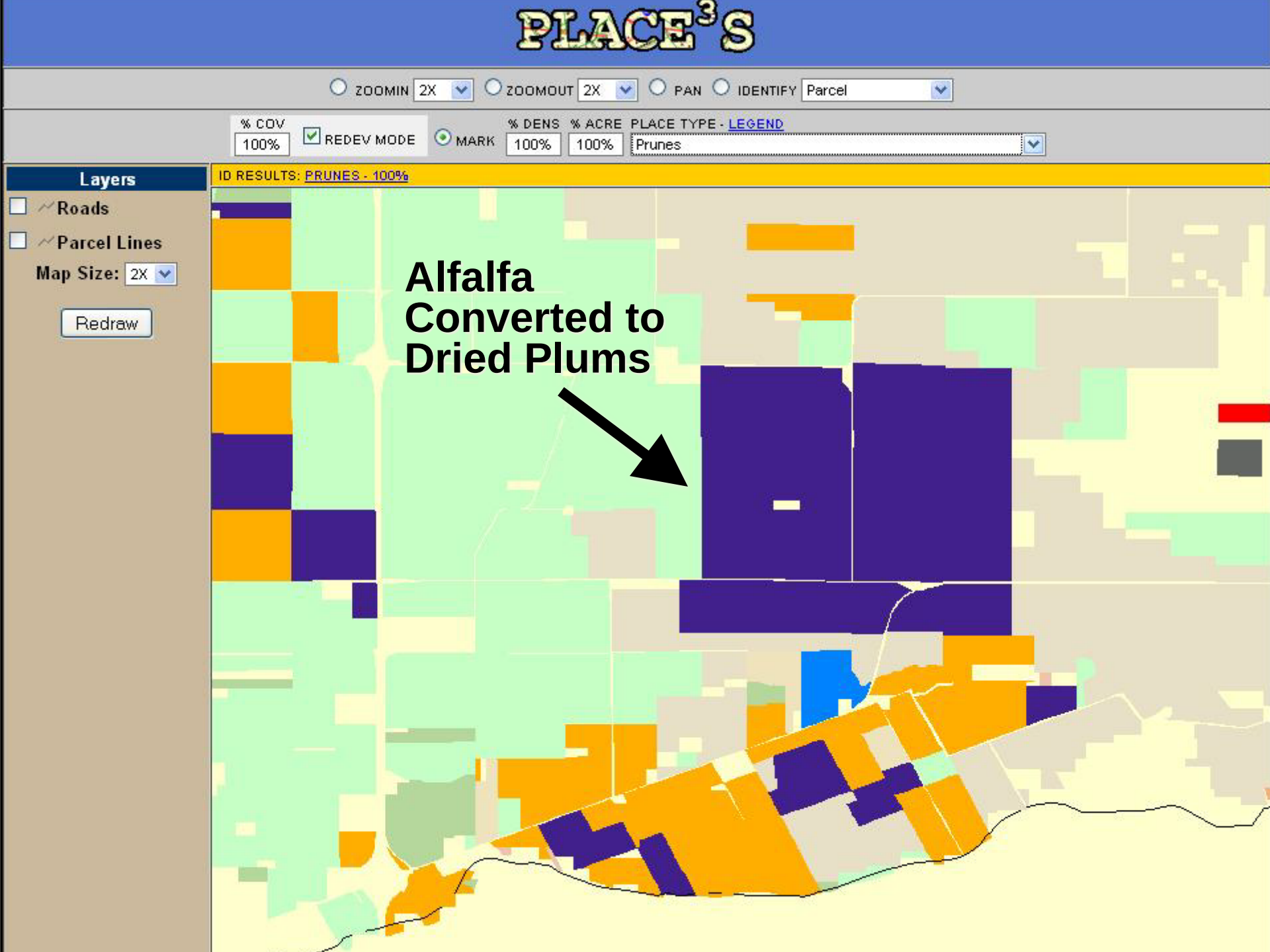
Map Size: 2X

Redraw

CLICK ON THE MAP TO PERFORM THE SELECTED ACTION




PLACE3S
ZOOMIN 2X
ZOOMOUT 2X
PAN
IDENTIFY Parcel
% COV 100%
REDEV MODE
MARK
% DENS 100%
% ACRE 100%
PLACE TYPE - LEGEND
Alfalfa Rotation
Layers
Roads
Parcel Lines
Map Size: 2X
Redraw
ID RESULTS: NO PARCELS FOUND
2,000 ac.
of Alfalfa


PLACE3S
ZOOMIN 2X
ZOOMOUT 2X
PAN
IDENTIFY Parcel
% COV 100%
REDEV MODE
MARK
% DENS 100%
% ACRE 100%
PLACE TYPE - LEGEND
Prunes
Layers
Roads
Parcel Lines
Map Size: 2X
Redraw
ID RESULTS: PRUNES - 100%
Alfalfa Converted to Dried Plums

MAIN MENU | CHANGE PASSWORD | LOGOUT

PLACE^{3}S

COMPARE SCENARIOS - RESULTS

CURRENT PROJECT	PROJECT TYPE	LEAD ORGANIZATION	STUDY AREA
RUCS YOLO DAVID	NEIGHBORHOOD	SACOG	CUSTOM STUDY SHAPEFILE

CURRENT SCENARIO : *ALFALFA TO DRIED PLUMS*

SCENARIO COMPARISON

SCENARIO NAME	TOTAL ACRES	AG ACRES	AG VALUE	AG COST	AG RETURN	AG PCT RETURN	AG WATER ACRE / FEET	AG LABOR FTE	AG TRUCK TRIPS
BASE CASE	259,715	555,346.0	$600,156,047	$506,819,215	$93,336,832	18.4%	662,613	1,989.2	99,939
ALFALFA TO DRIED PLUMS	261,653	555,344.7	$608,653,171	$513,458,345	$95,194,826	18.5%	663,557	2,025.4	99,689

JOB DIVERSITY CHART | HOUSING DIVERSITY CHART

LOGGED IN AS SHABAZIAN

CONTACT SITE HELPDESK

Value: + $8M

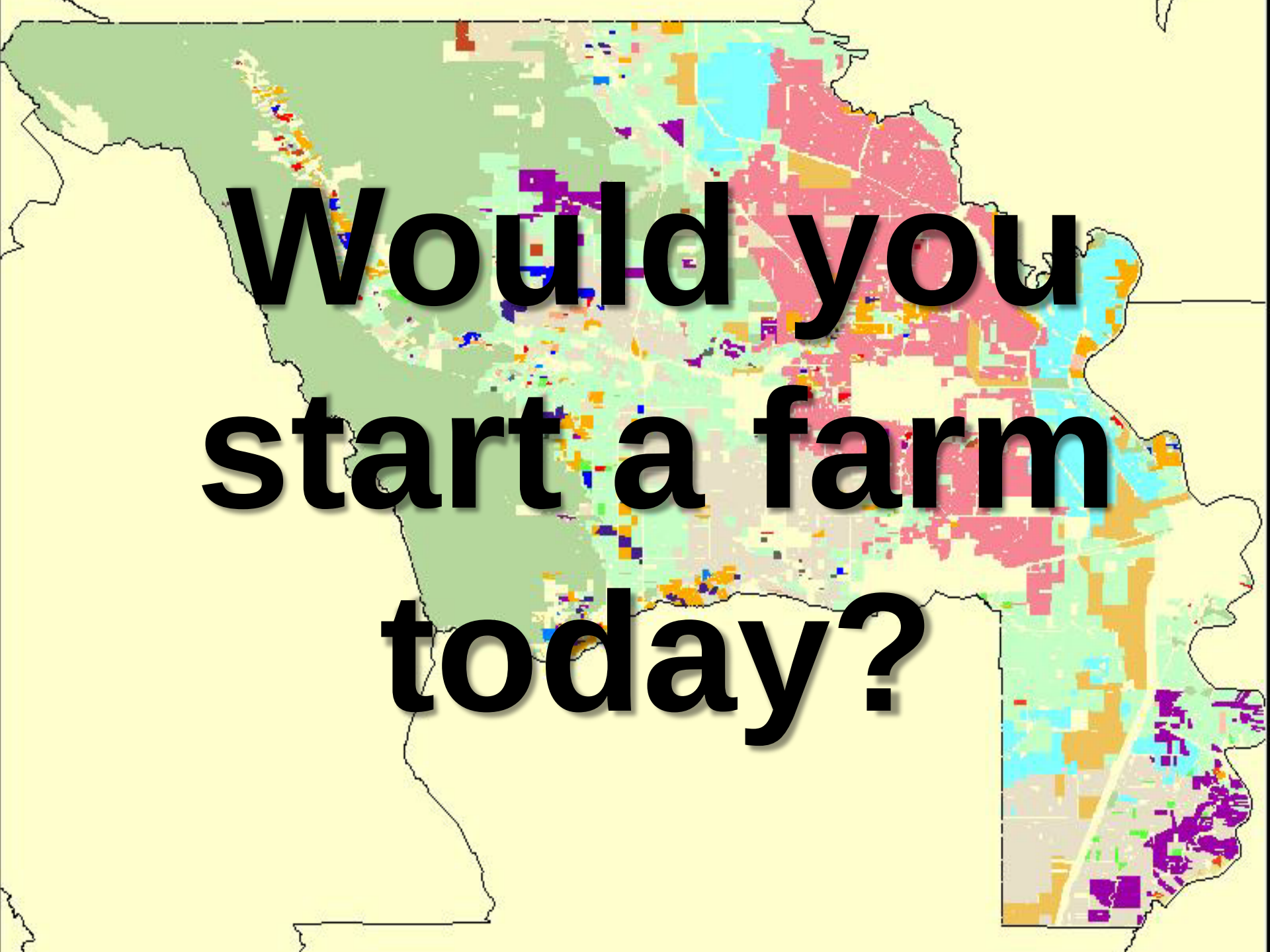
Return: + $2M

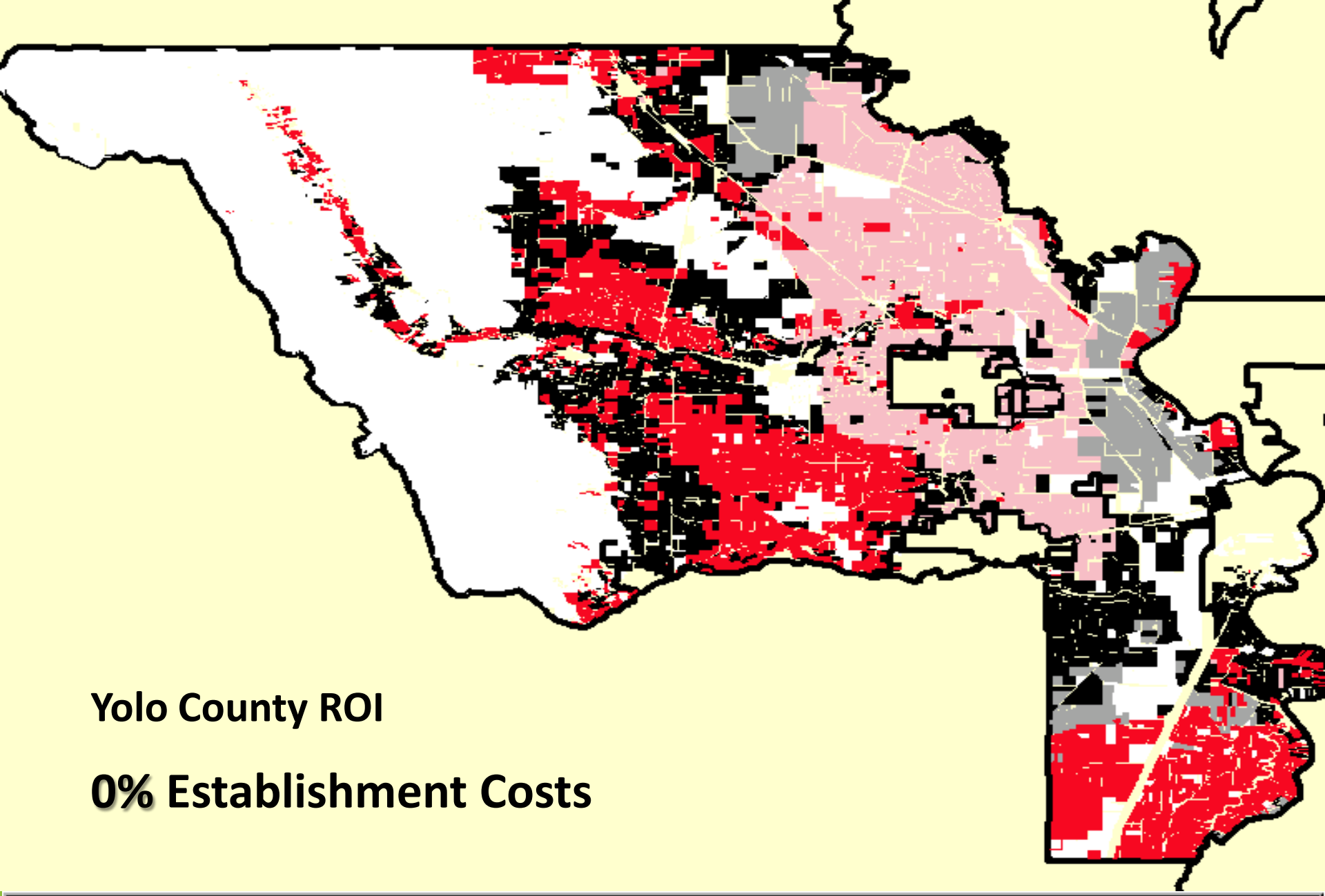
Water: + 1,000 ac-ft

Labor: + 35 workers

Trucks: - 250 trips

What’s the effect on the region?


Would you
start a farm
today?

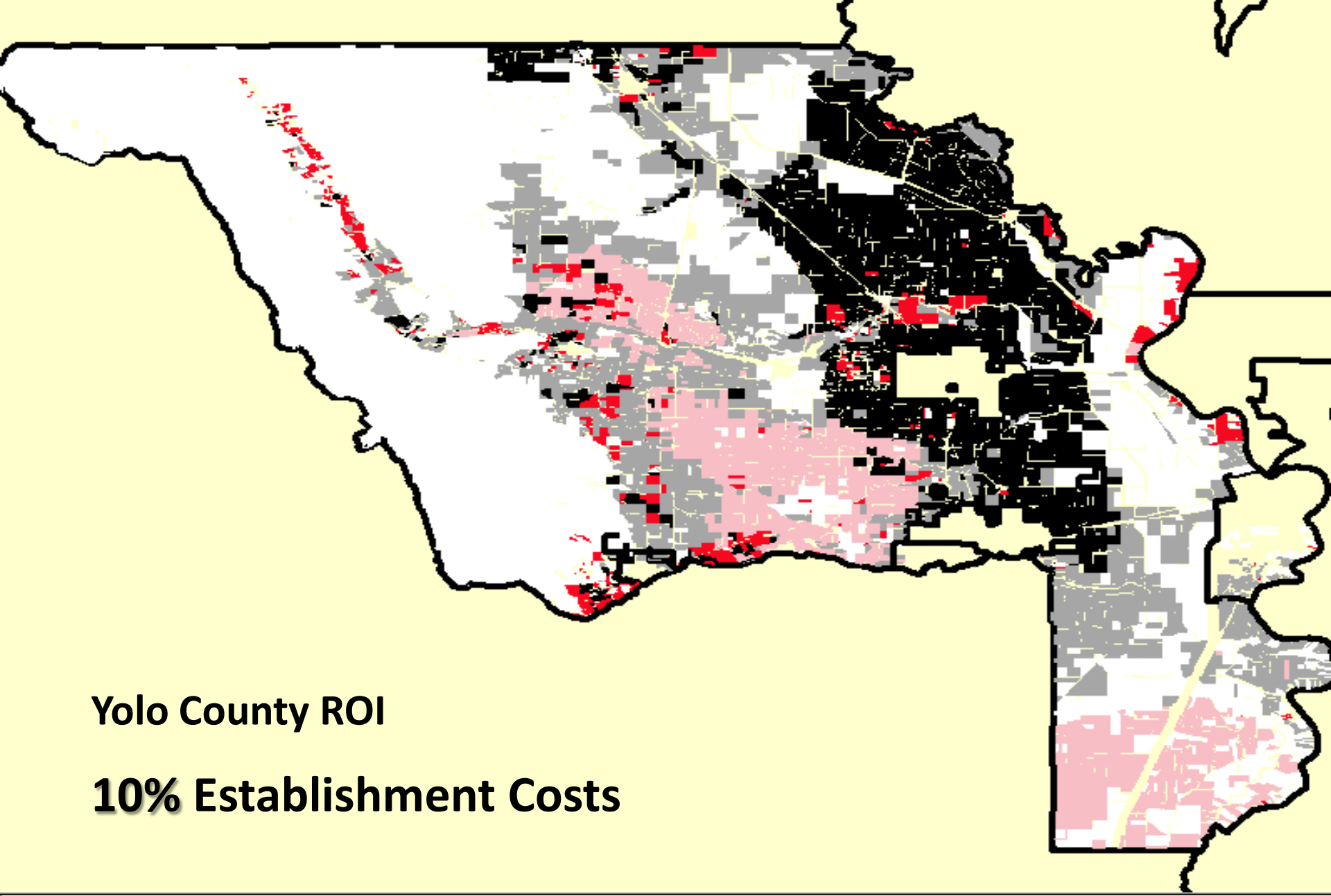


Yolo County ROI

0% Establishment Costs

PERCENT RETURN

- 0
- 0 to 10
- 10 to 30
- 30 to 40
- 40 and above

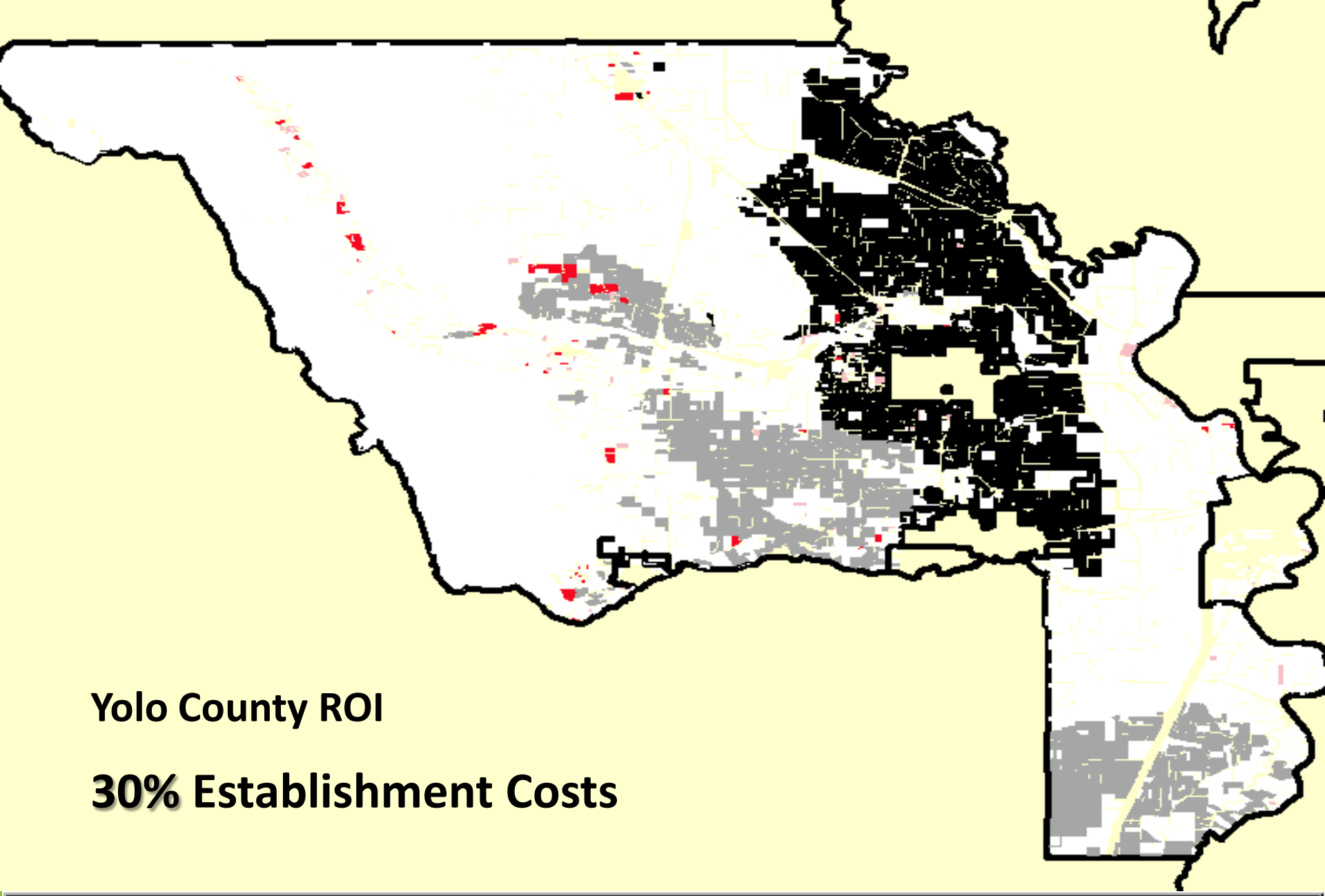


Yolo County ROI

10% Establishment Costs

PERCENT RETURN

- 0
- 0 to 10
- 10 to 30
- 30 to 40
- 40 and above

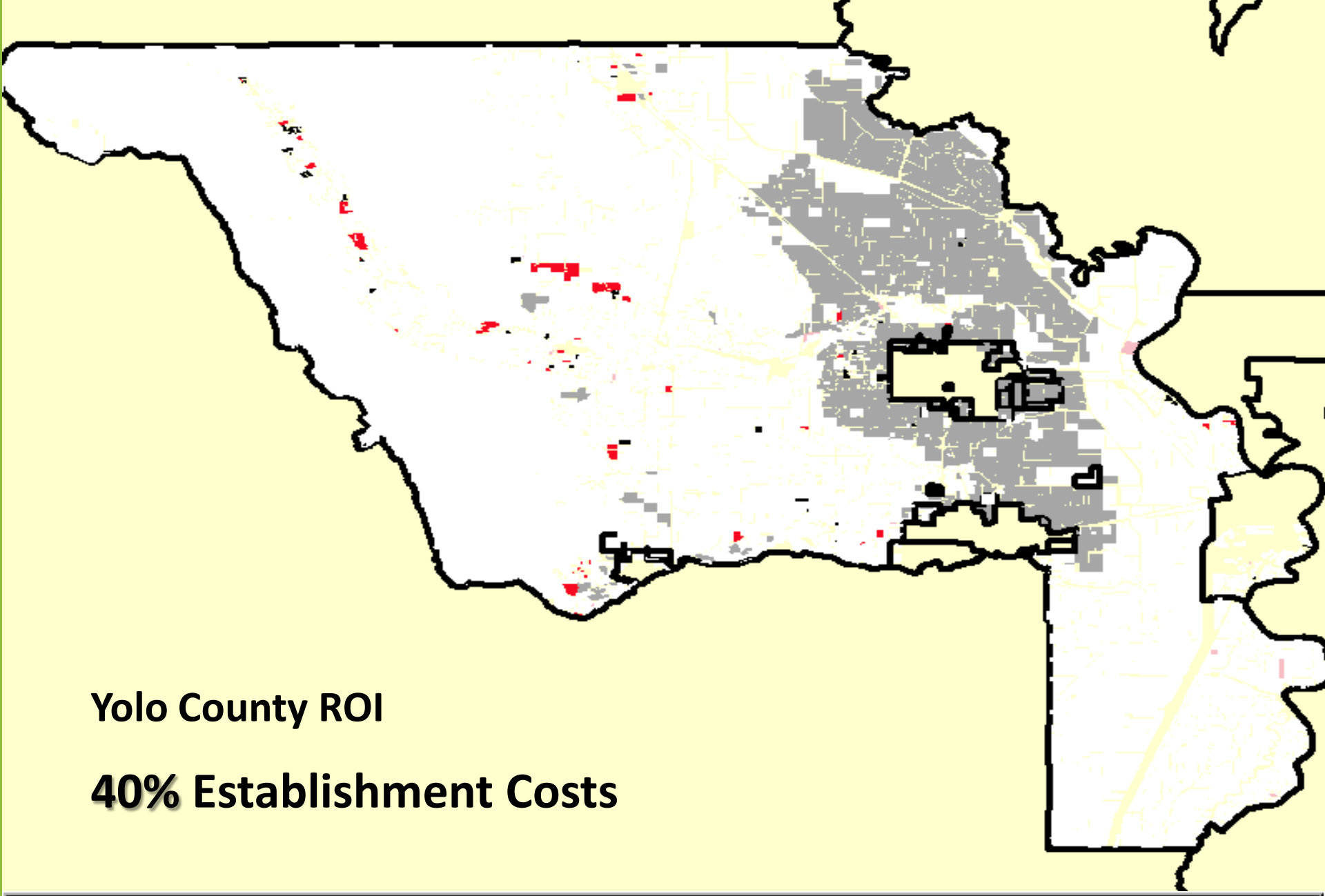


Yolo County ROI

30% Establishment Costs

PERCENT RETURN

- 0
- 0 to 10
- 10 to 30
- 30 to 40
- 40 and above

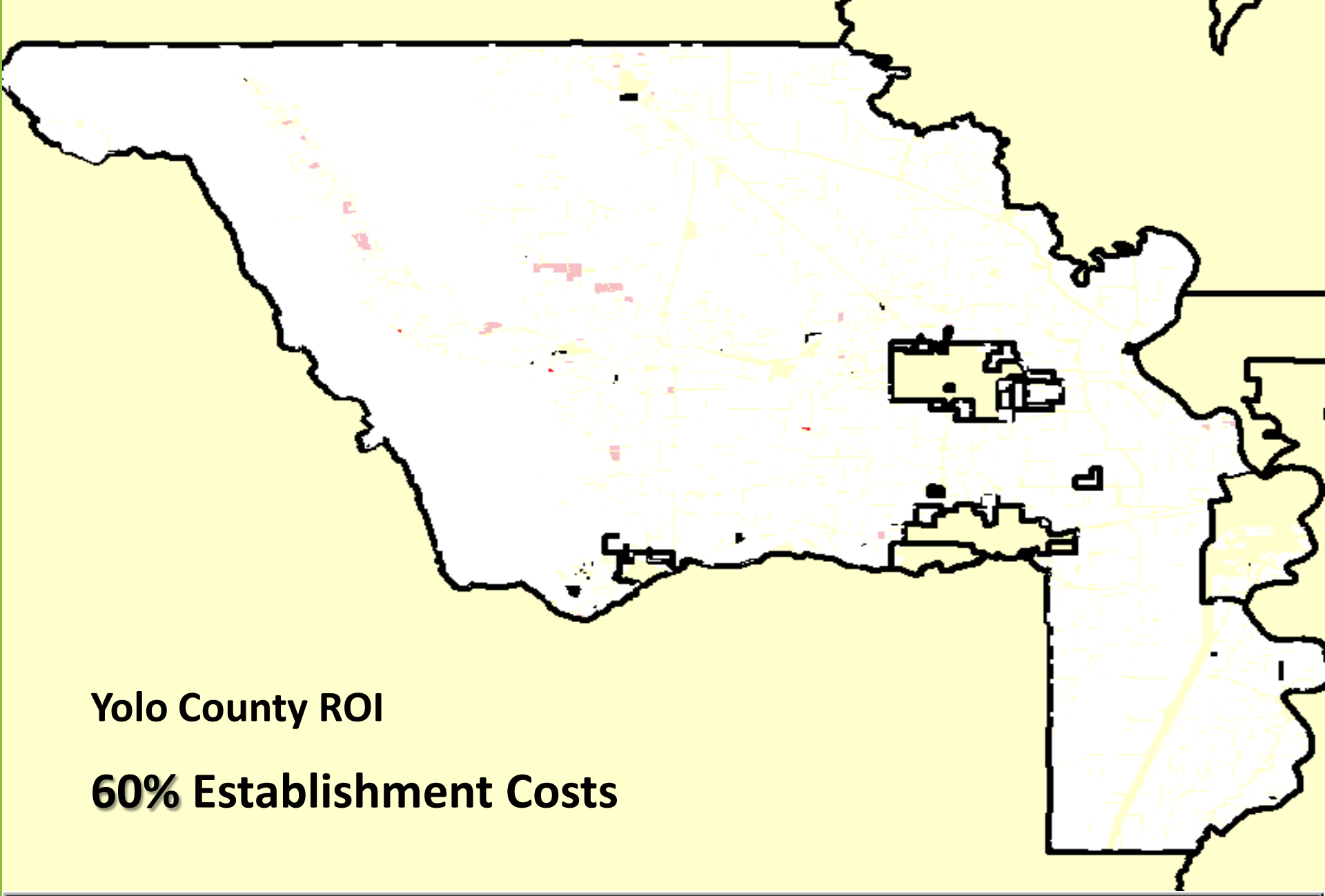


Yolo County ROI

40% Establishment Costs

PERCENT RETURN

- 0
- 0 to 10
- 10 to 30
- 30 to 40
- 40 and above



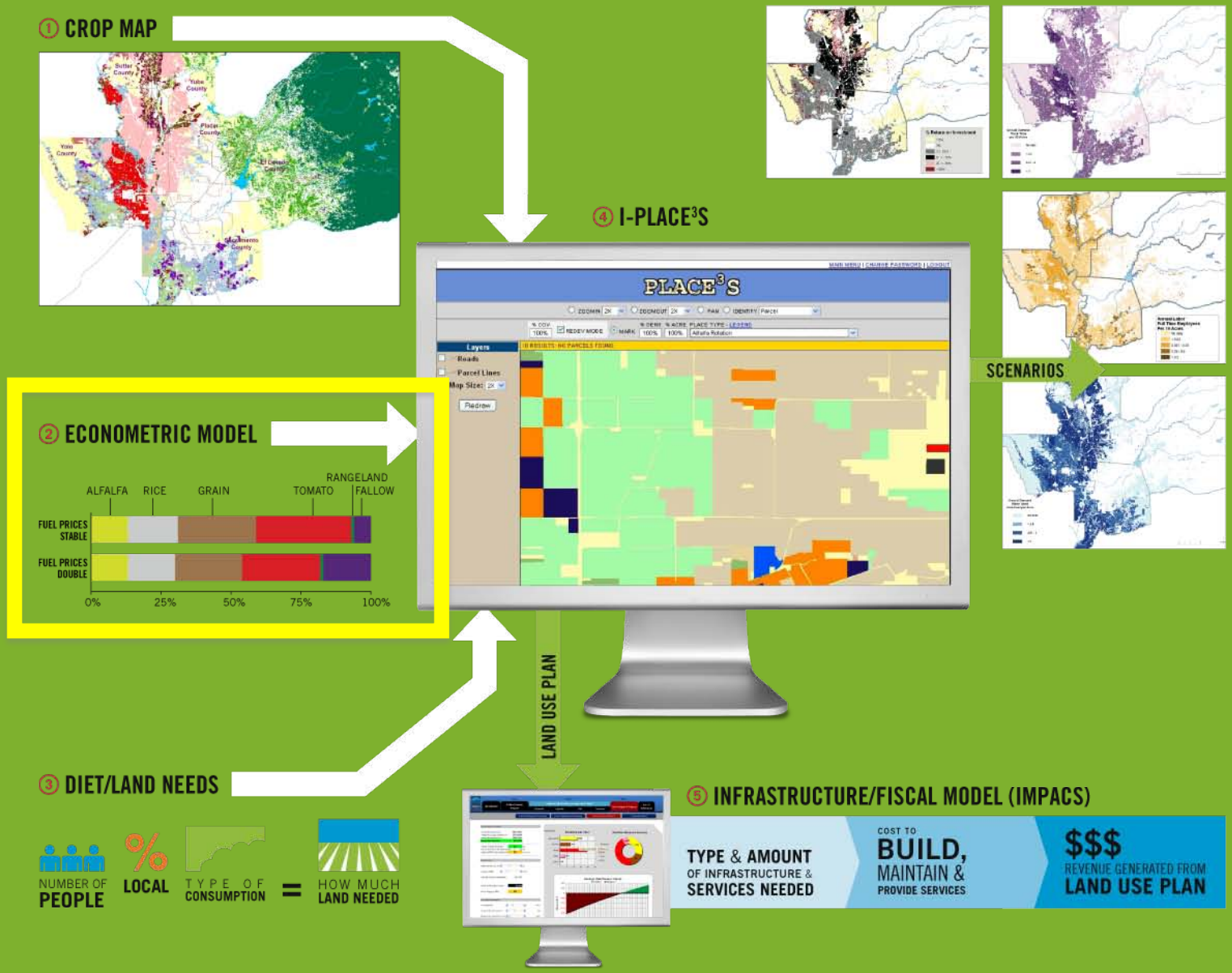
Yolo County ROI

60% Establishment Costs

PERCENT RETURN

- 0
- 0 to 10
- 10 to 30
- 30 to 40
- 40 and above

Econometric (Predictive) Model



Predictive Model: Scenario Examples

Russian drought and fire reduce wheat harvest

→ Grain prices increase

Oil resources become more scarce

→ Fuel, chemical and fertilizer prices increase

Construction industry heats up again

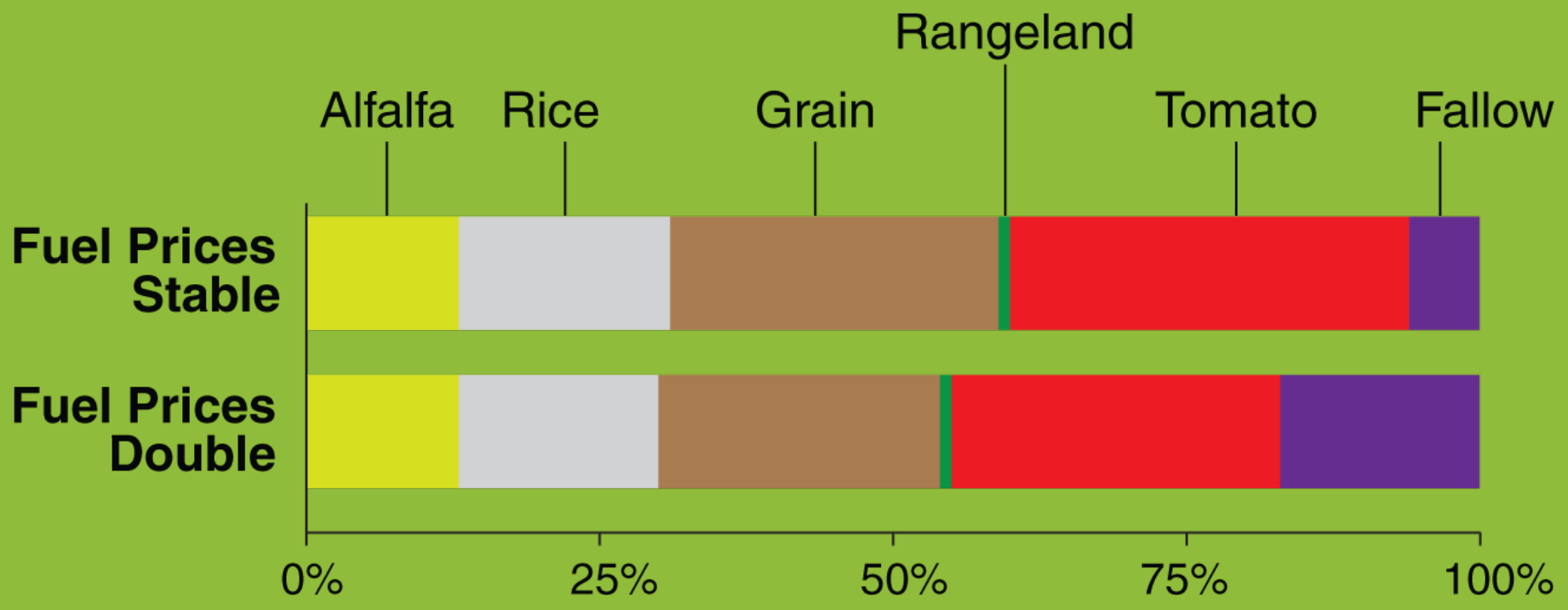
→ Labor prices increase

Drought persists

→ Surface water decrease, Irrigation costs increase

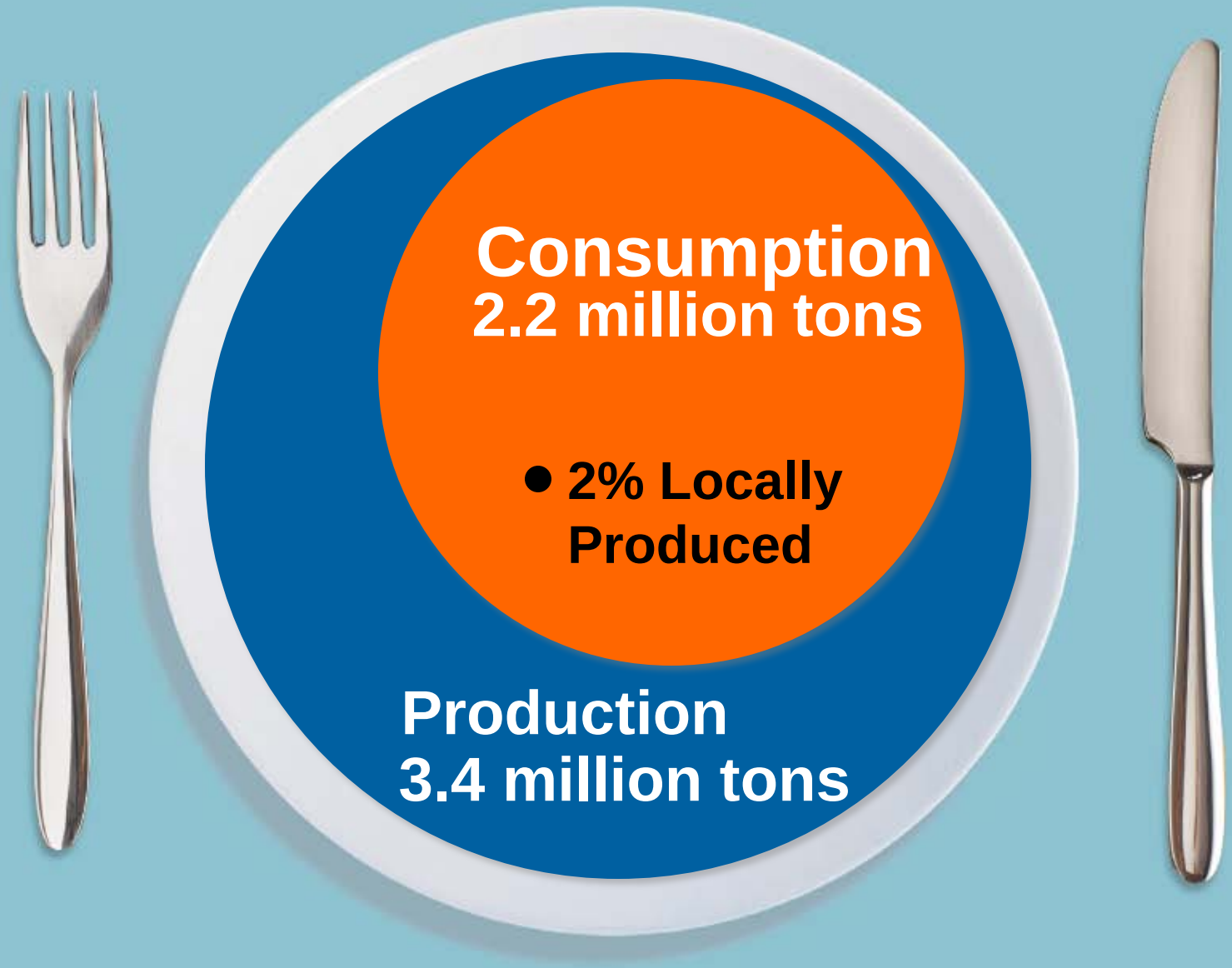
Predictive Model:
Stable vs. Double Fuel Prices

Crop Type: Tomato

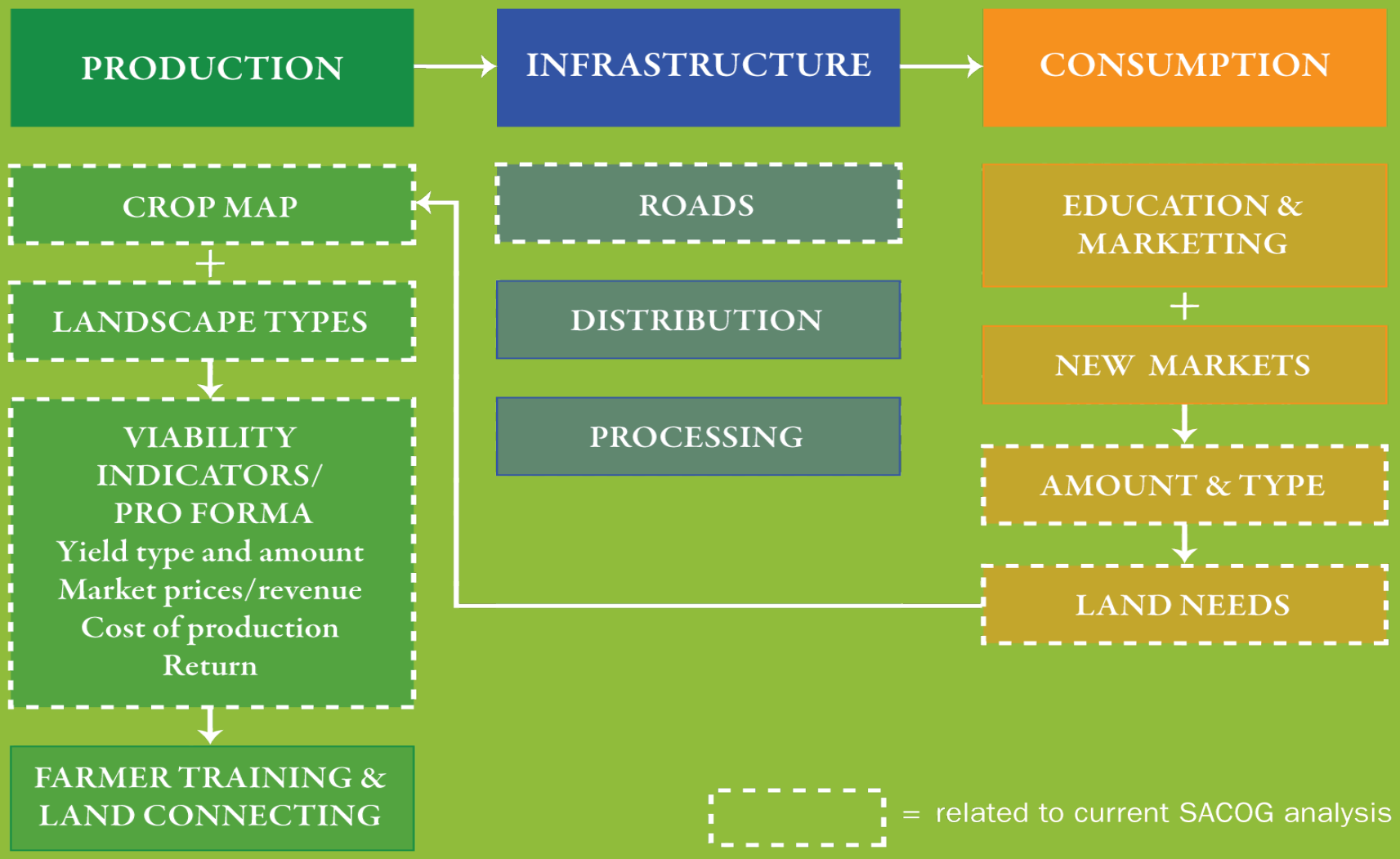


Understanding the Local Food Economy

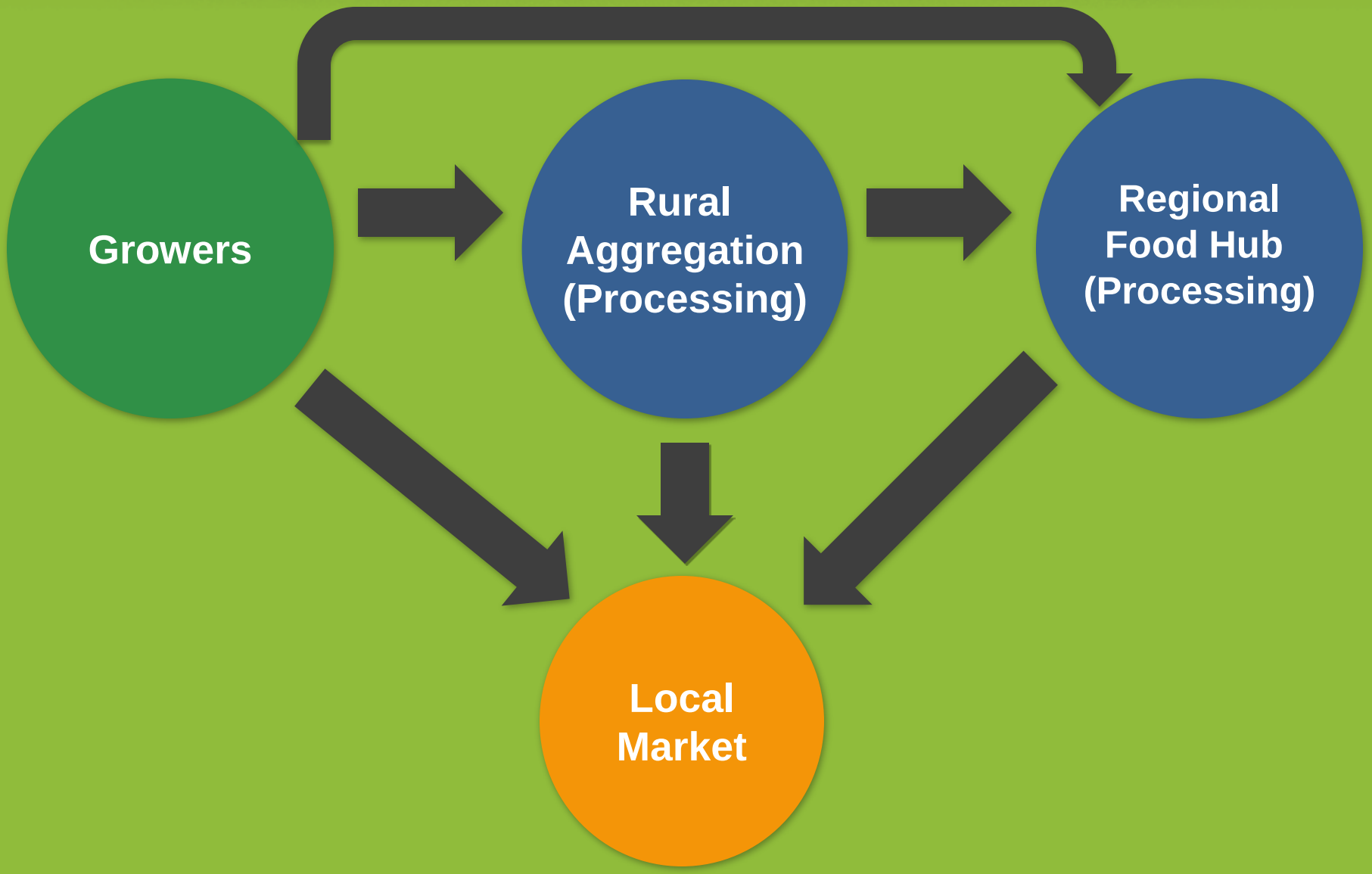
Production and Consumption



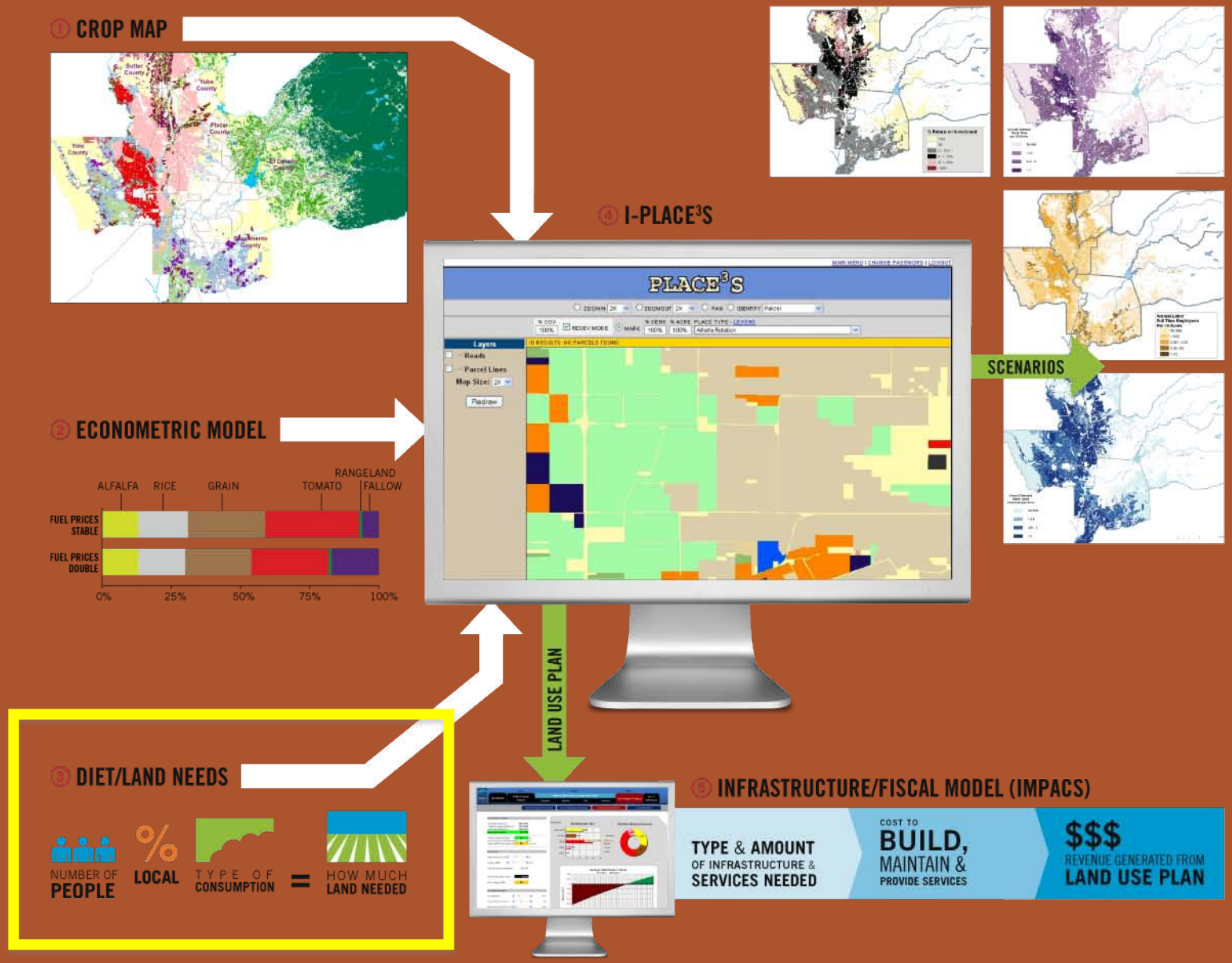
Local Food System Analysis



Regional Food Systems

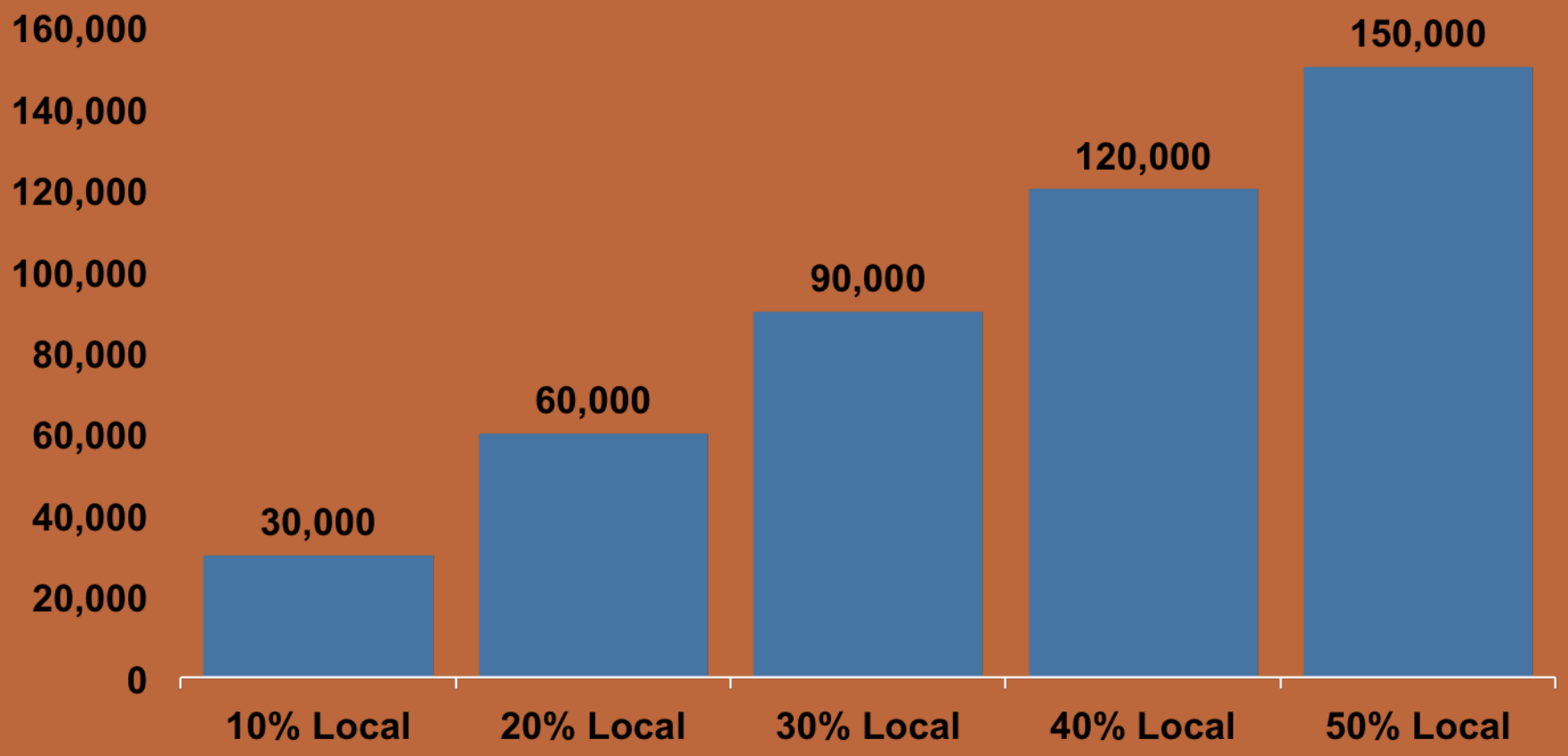


Diet-Land Needs Model



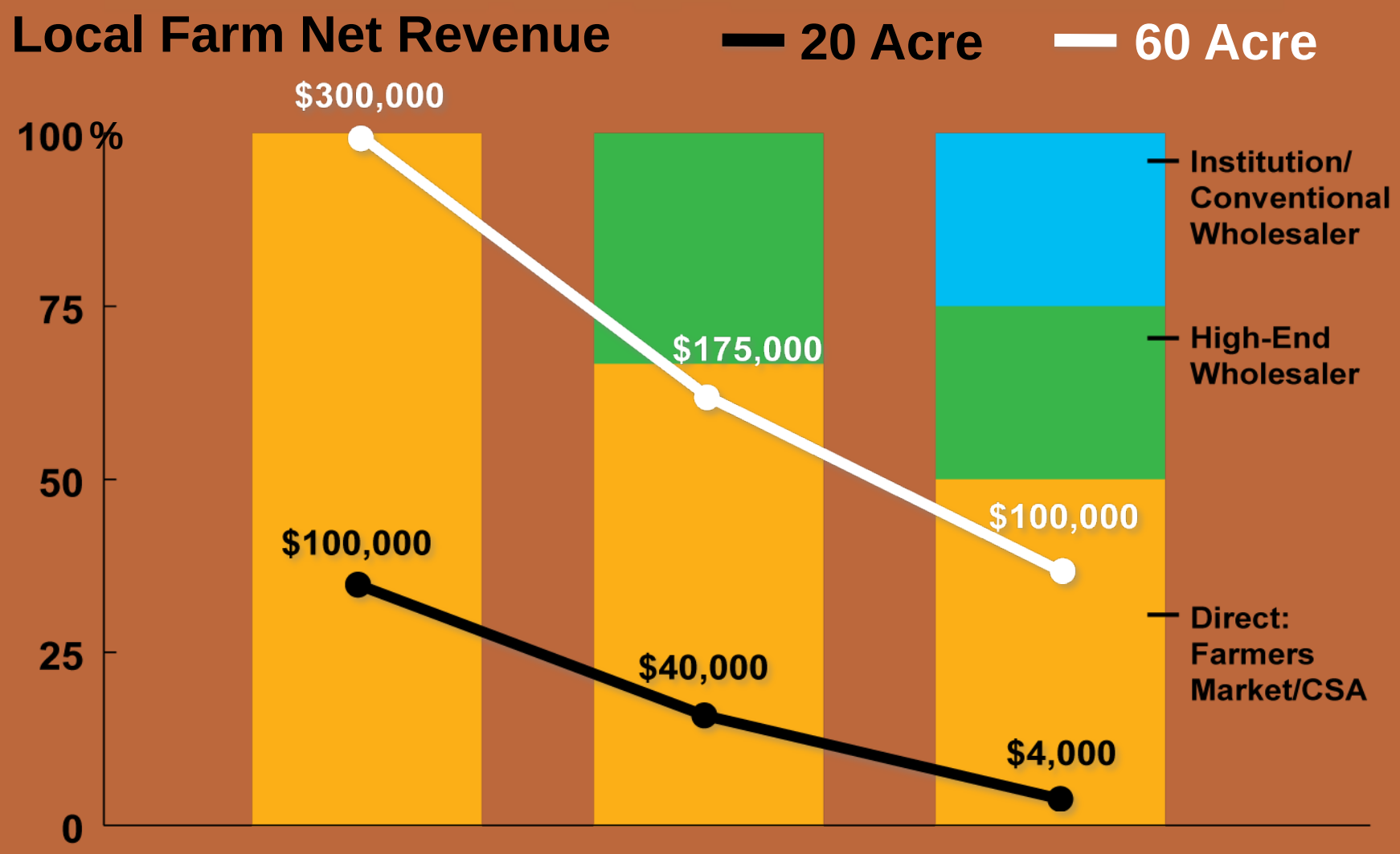
Farmland Needs for Local Food

Acres (*excluding meat and dairy production*)



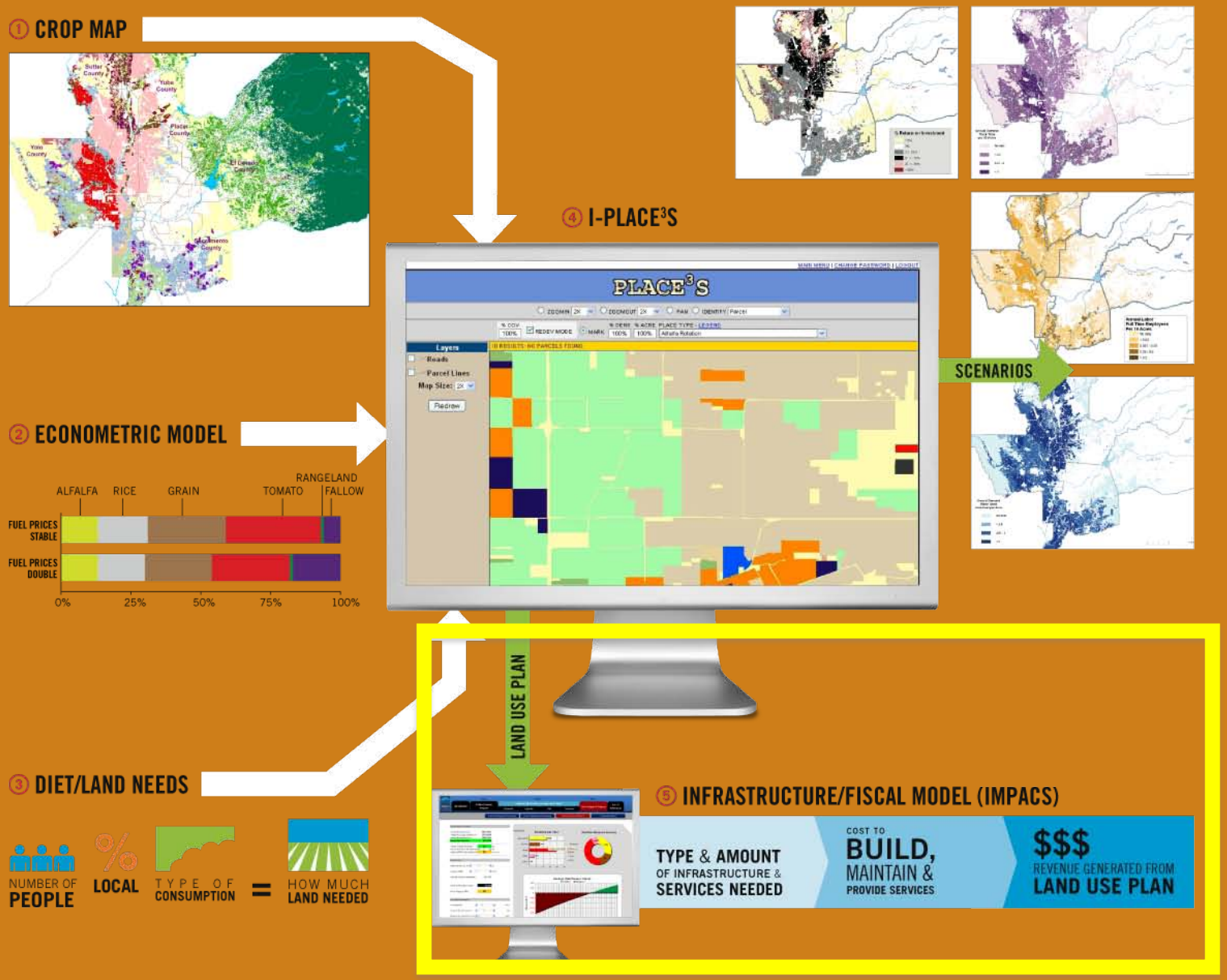
Assumes 1) USDA recommended diet, and 2) mostly expert farmers

Markets and Revenue



Rural Communities

Infrastructure Fiscal Model



Simple Payback Analysis

Total Public Sector Costs	$811,830
Public Sector Annual O&M Costs	$115,498
Annual Revenue (Taxes etc.)	$144,785
Annual Net Revenue	**$29,287**

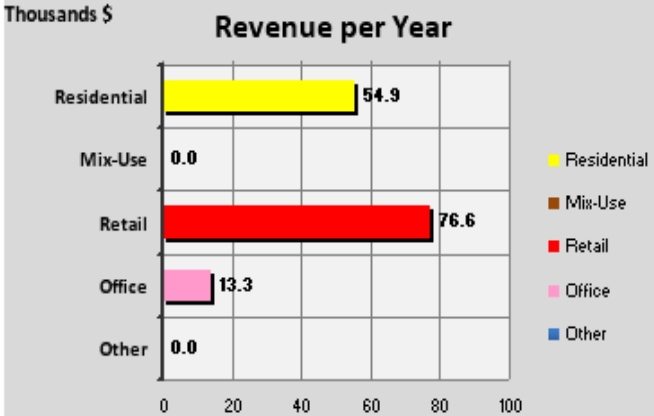
Actual Simple Payback:	27.7	yrs
Desired Simple Payback (yrs	20	
Gap per ERU (desired payba	$110	per year

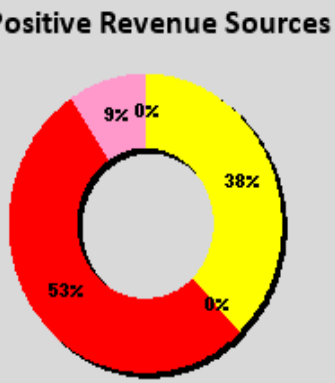
Bond Analysis

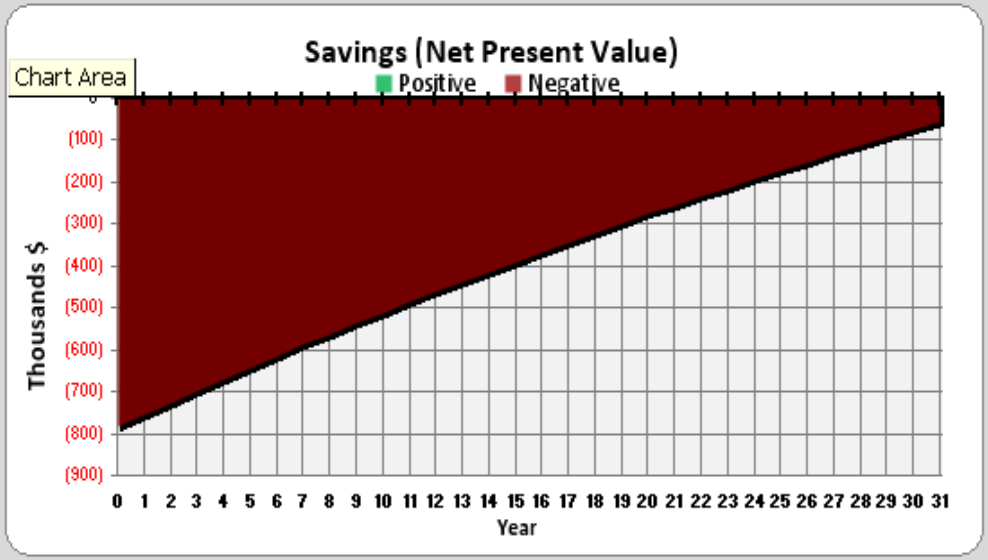
Maturity period (yrs	20
Coupon Rate	5.0%
Annual Coupon Payments	$40,591
Total Additional Funds:	-$11,305
Bond Gap per ERU:	$31

Life Cycle Cost Analysis

Discount Rate	5.0%
Analysis Time Period (yrs)	20
Maintenance Escalation rate	0.0%
Net Present Value (NPV) savings (20 yrs)	-$277,203







Land Use

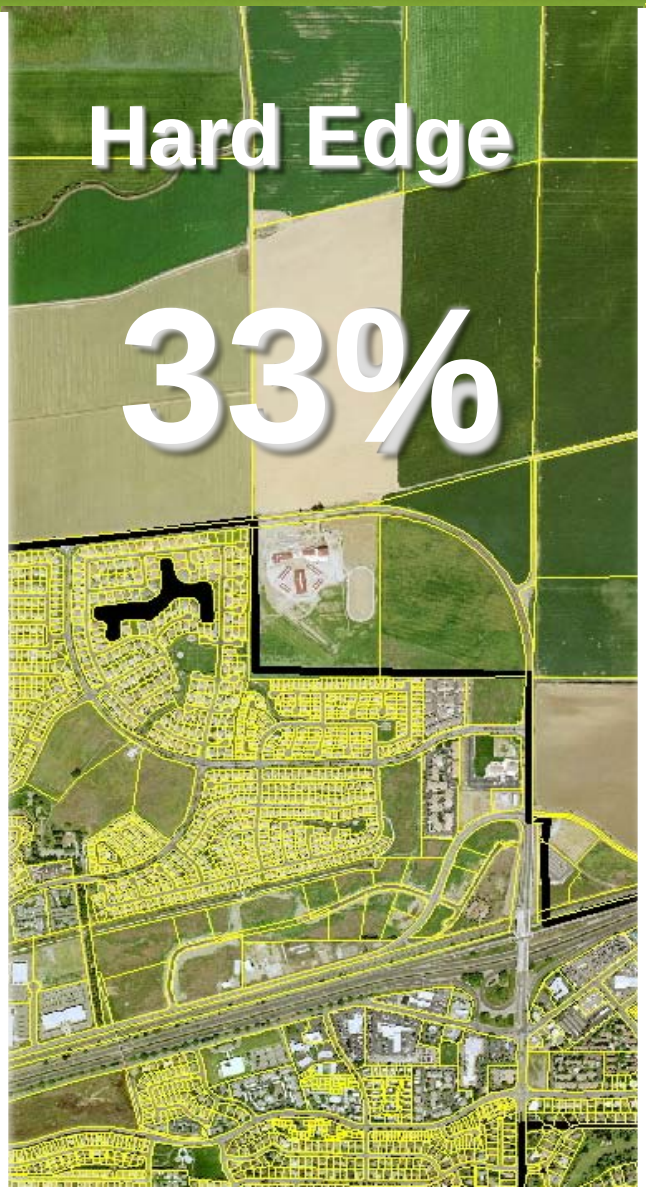
Reducing Conflict

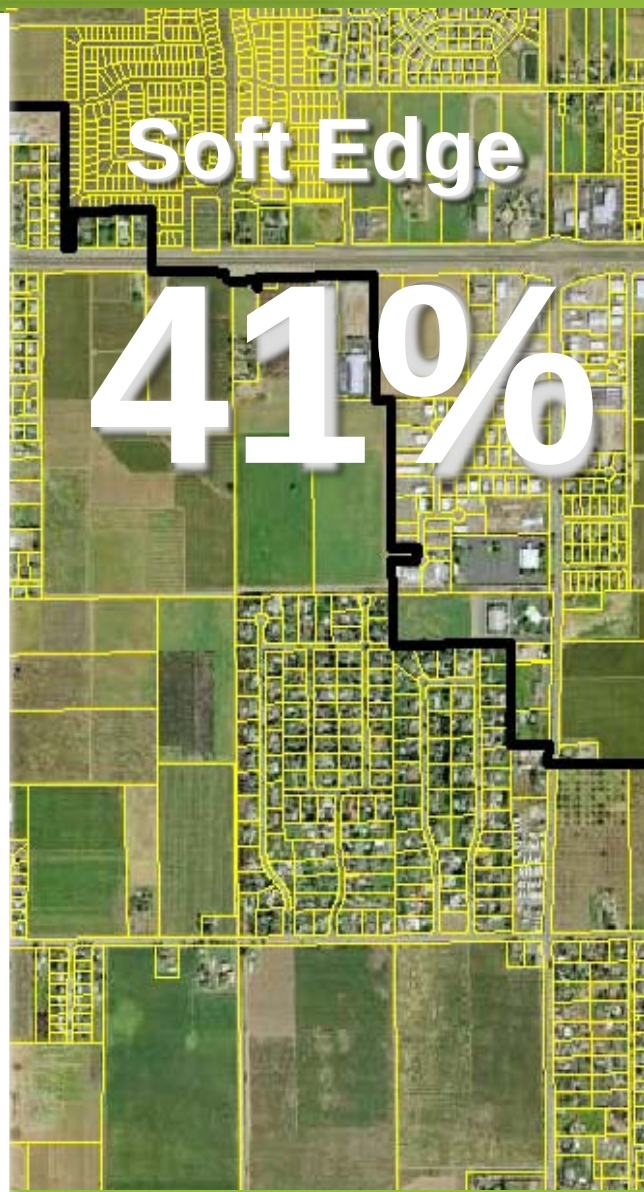
Rural

Urban

Rural-Urban Interface:

Percent likelihood of fallowing at…





Innovations at the Edge and Beyond

Infill & Redevelopment

SACRAMENTO REGION Blueprint TRANSPORTATION/LAND USE PLAN

Rural-Urban Edge

SACRAMENTO REGION RURAL-URBAN CONNECTIONS STRATEGY

- Buffers
- Ag Parks
- Right-to-Farm
- Policy Boundaries
- City-County Agreements

Supporting Ag Viability Beyond the Edge

- City-County Agreements
- Voter Initiatives
- Supportive Zoning
- Open Space Plans
- Easements, TDRs, etc.

Habitat Opportunities on Agriculture Lands

Rice
10 species including Swainson's hawk, burrowing owl, peregrine falcon

Row Crops
7 species including Swainson's hawk, burrowing owl, loggerhead shrike

Irrigated Pasture
10 species including Swainson's hawk, burrowing owl, peregrine, falcon

Alfalfa
9 species including Swainson's hawk, burrowing owl, ferruginous hawk

Orchards
3 species including Cooper's hawk, yellow warbler

Grazing, no vernal pools
16 species including Swainson's hawk, burrowing owl

Grazing, with vernal pools
16 species including fairy shrimp, tadpole shrimp

Source: Sierra Club, Mother Lode Chapter

Ag Land Conversion: Vehicle $C0_2$ Emissions

For every 10 acres:

Agriculture = 0.5–1.0 ton / **YEAR**

Development = 0.5–1.0 ton / **DAY**

Transportation

Challenges

Urbanizing rural roads

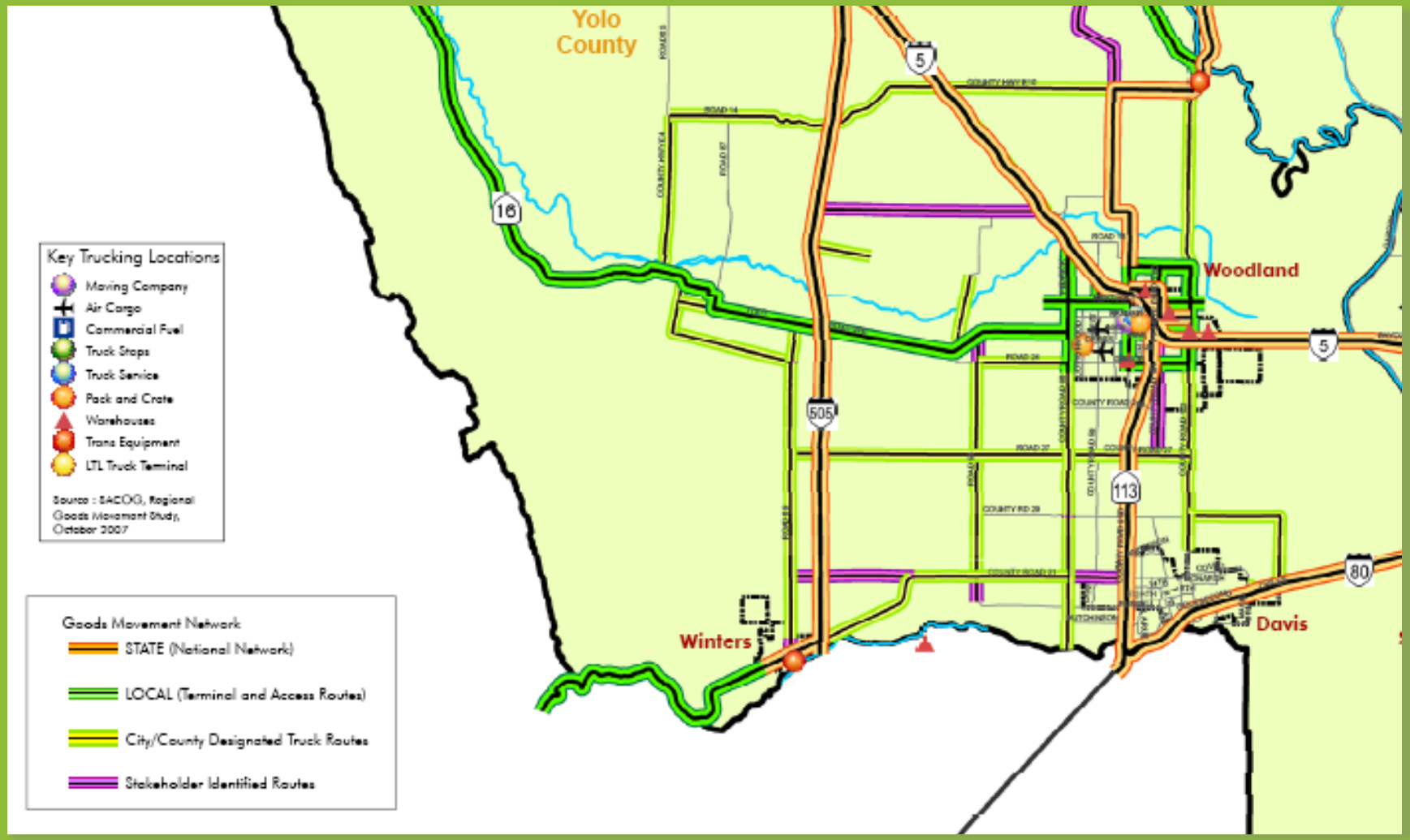
Conflicts/accidents

Farm worker transport

Road standards

Maintenance

Farm to Market Travel



Agritourism

Port of West Sacramento