

# Regional Planning in the Sacramento Region



# SACOG Region



**2.3 million people**  
**6 Counties, 22 Cities**  
**15% Urban / 85% Rural**



SACRAMENTO REGION

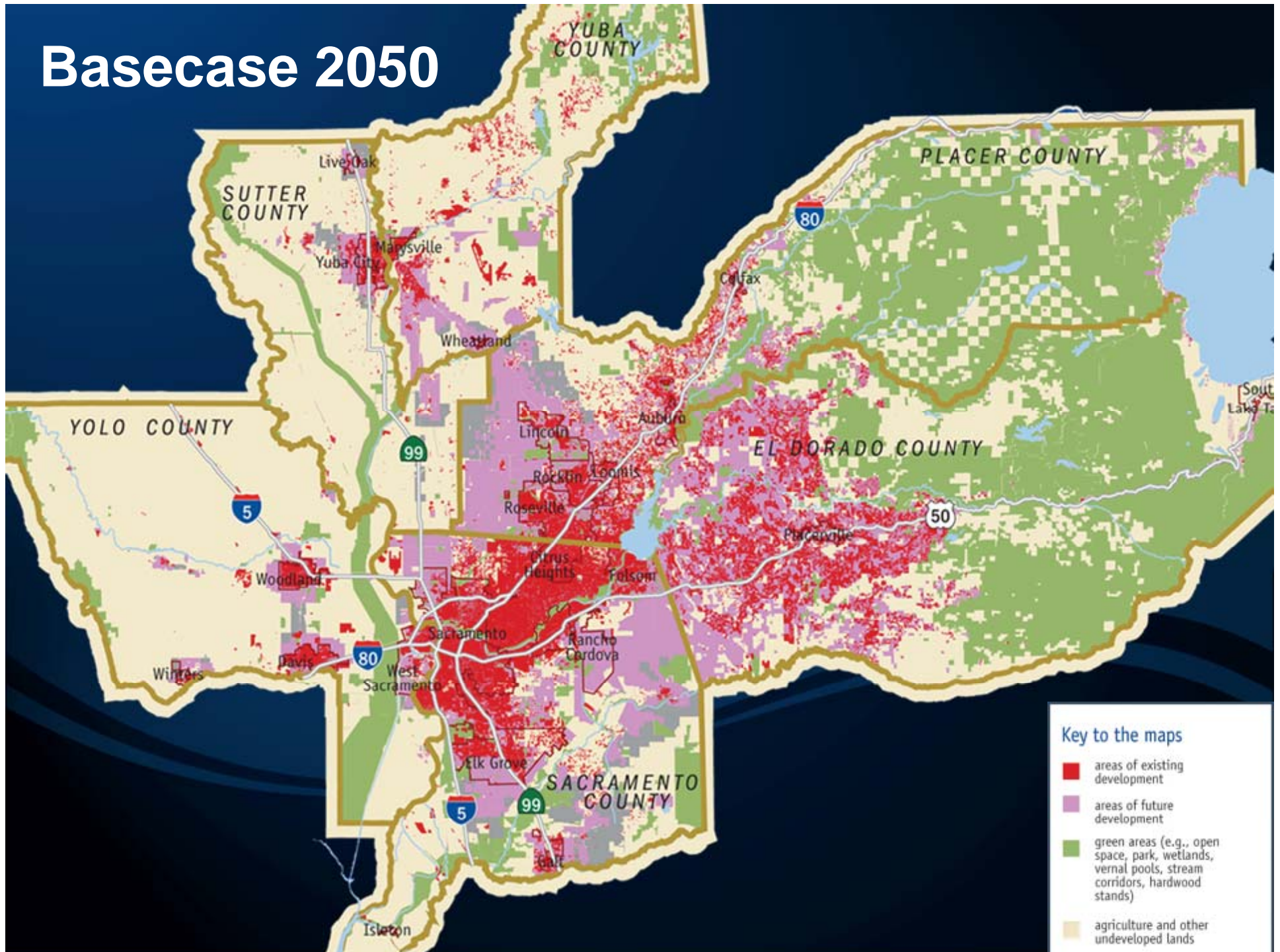
# Blueprint

TRANSPORTATION / LAND USE PLAN





# Basecase 2050









# 2012 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



# RUCS Objectives

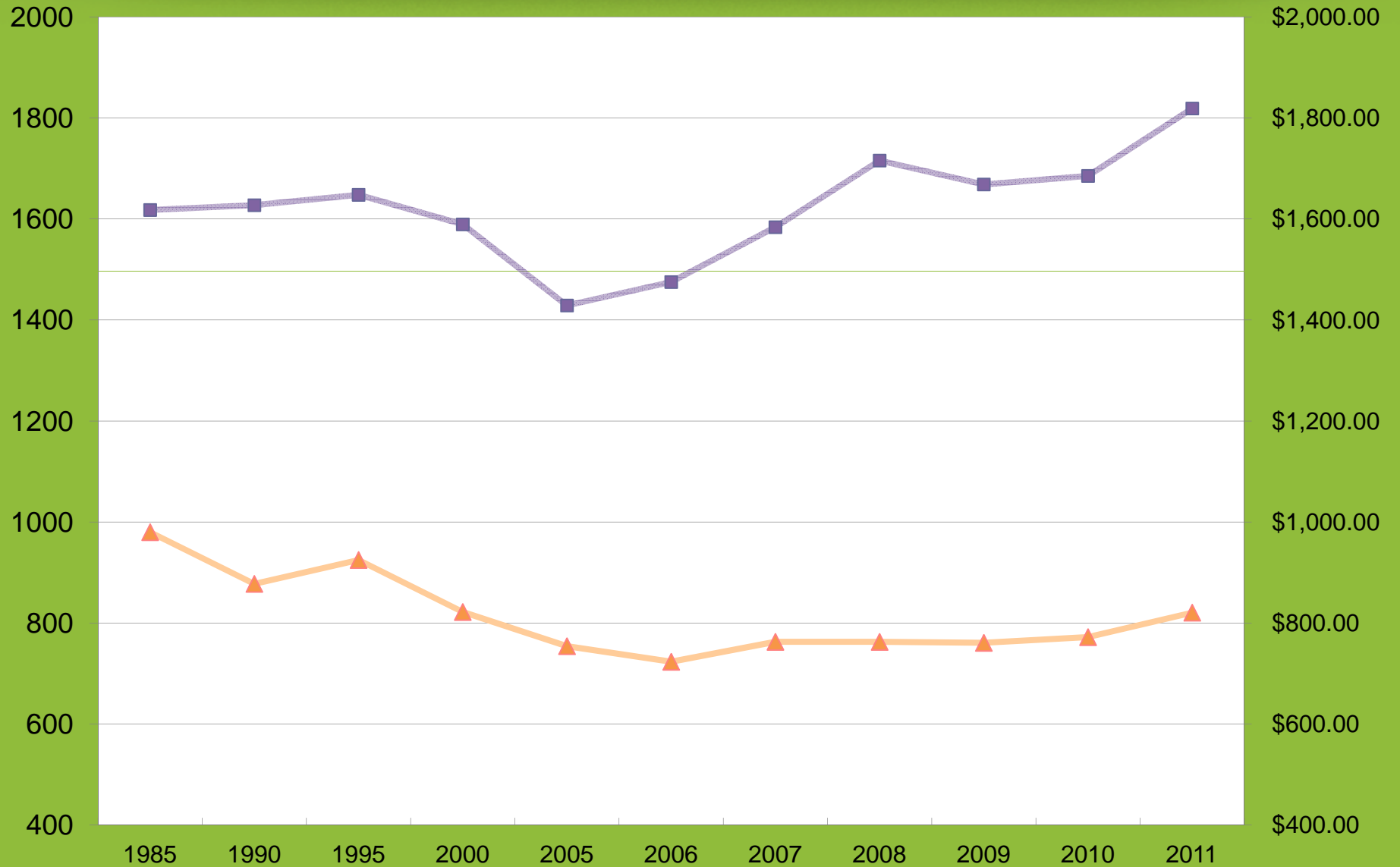
- Enhance rural economic viability and environmental sustainability
- Identify challenges and opportunities
- Test agricultural market changes, policies and economic development strategies
- Determine transportation and other infrastructure needs



# Agricultural Commodities

Harvested Acres (thousands)

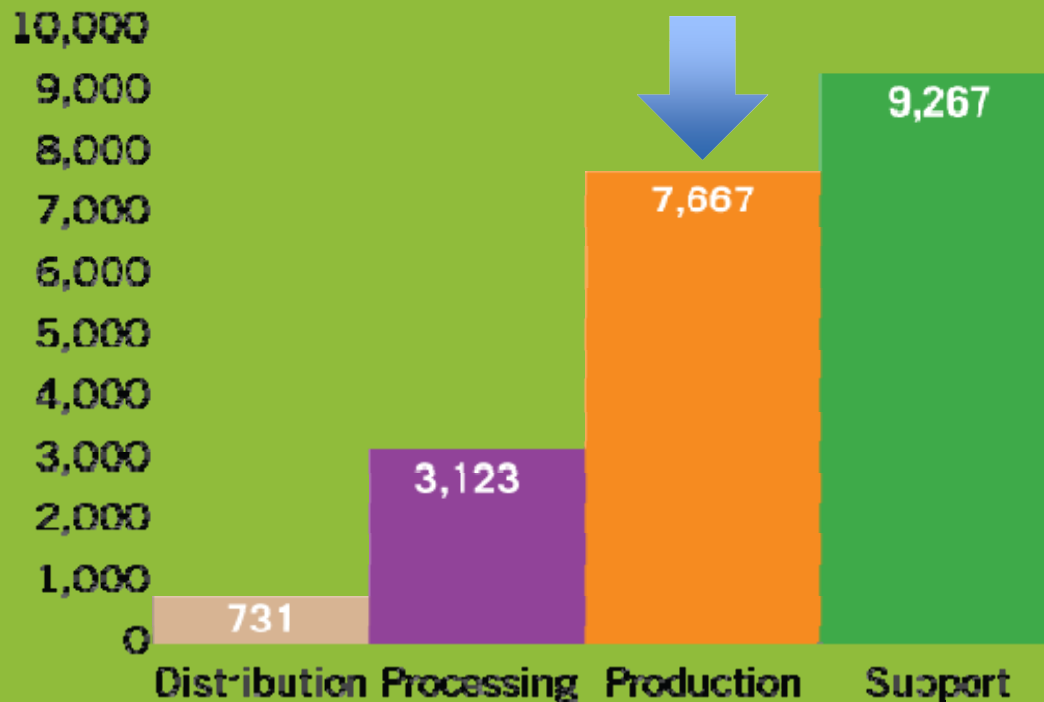
Real Value (millions)



# Ag Industry in SACOG Region

## Agriculture Industry Employment

Source EDD CREE Data



**\$1.8B**

**Farm Gate Value**

**\$4.1B**

**Ag Sector Value**

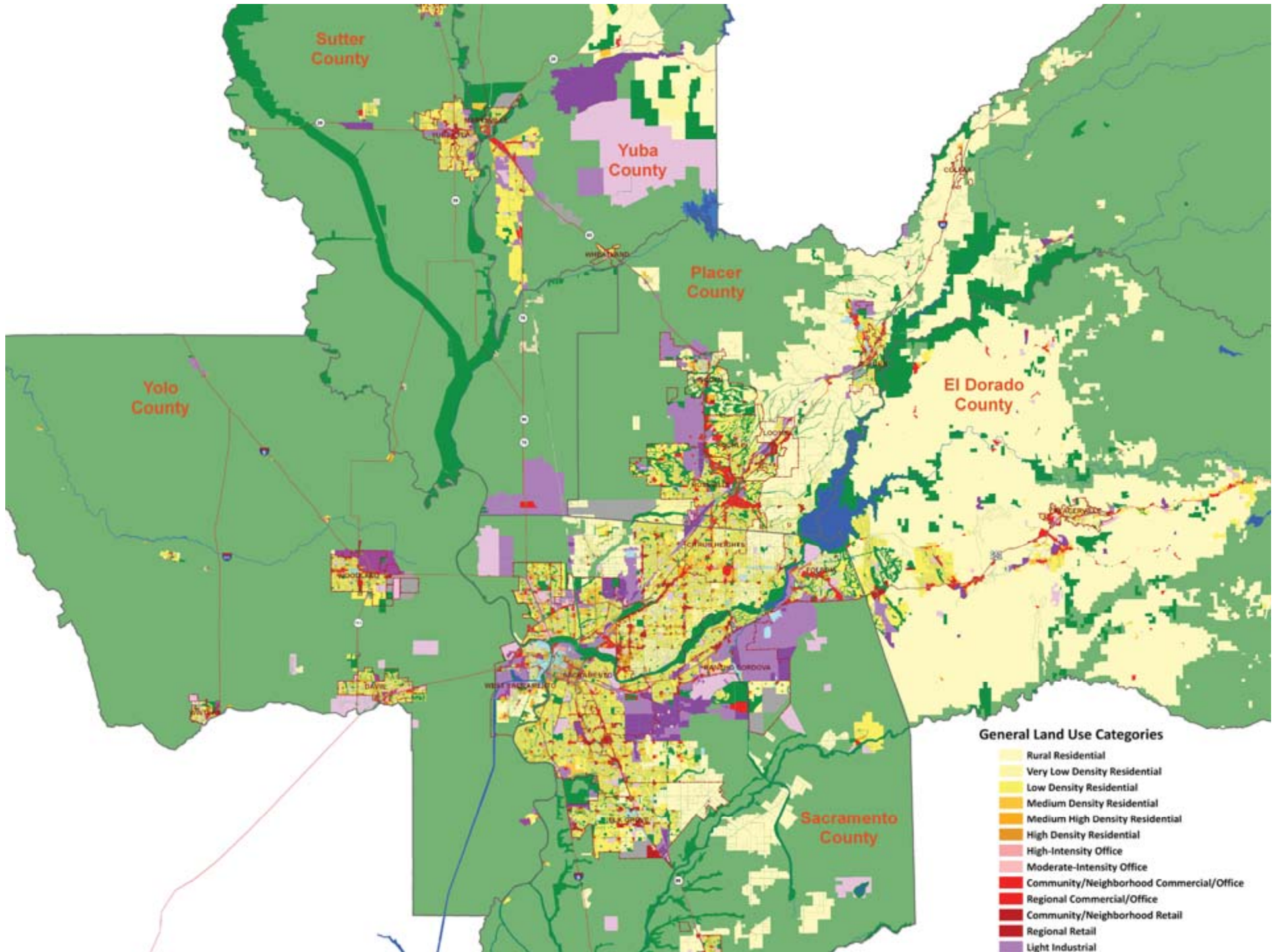


# For every food dollar, 16¢ goes to Ag

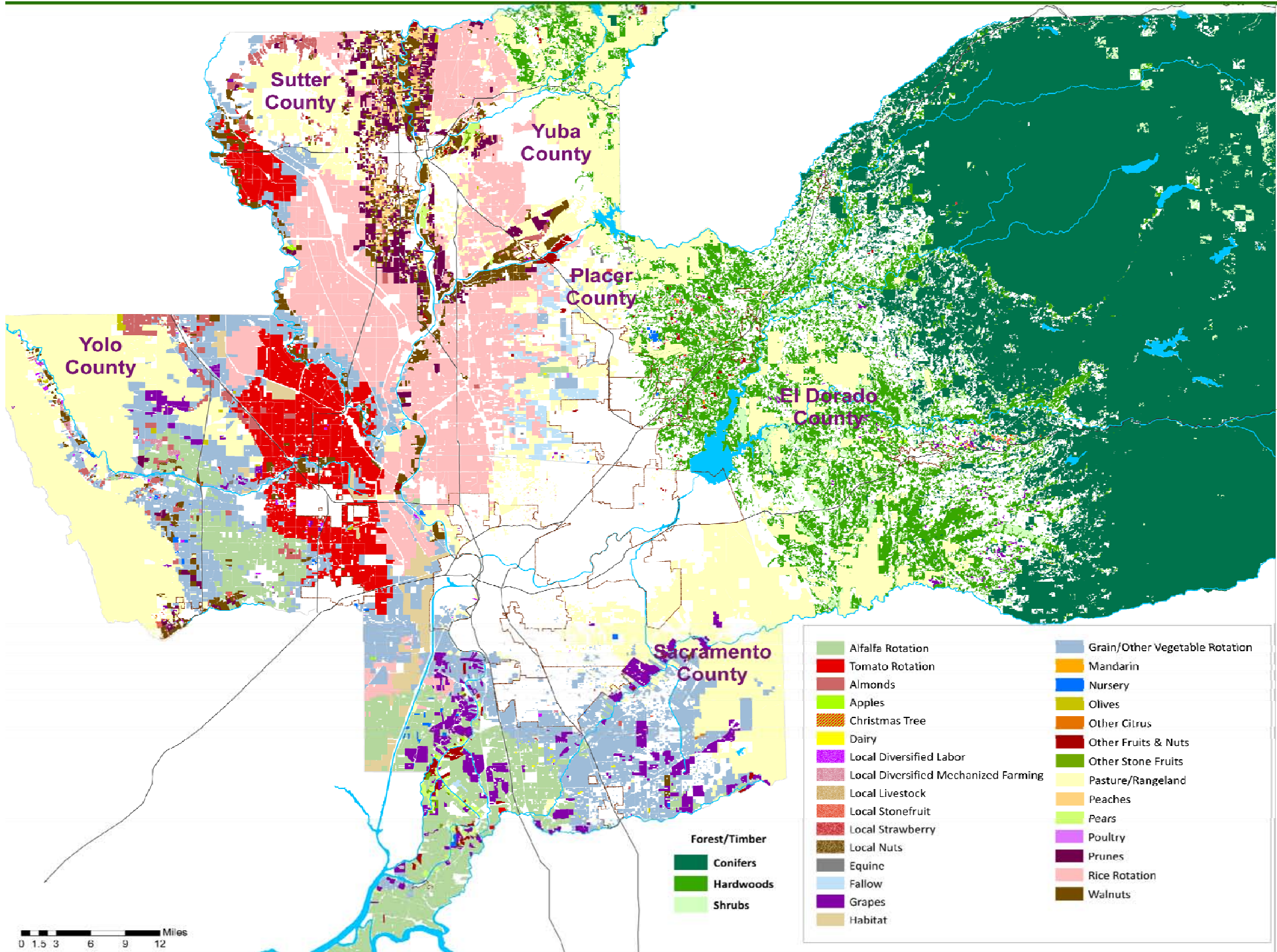
2010 Food at home dollar: Industry Group (nominal)



Source: USDA Economic Research Service Food Dollar Series (2010)

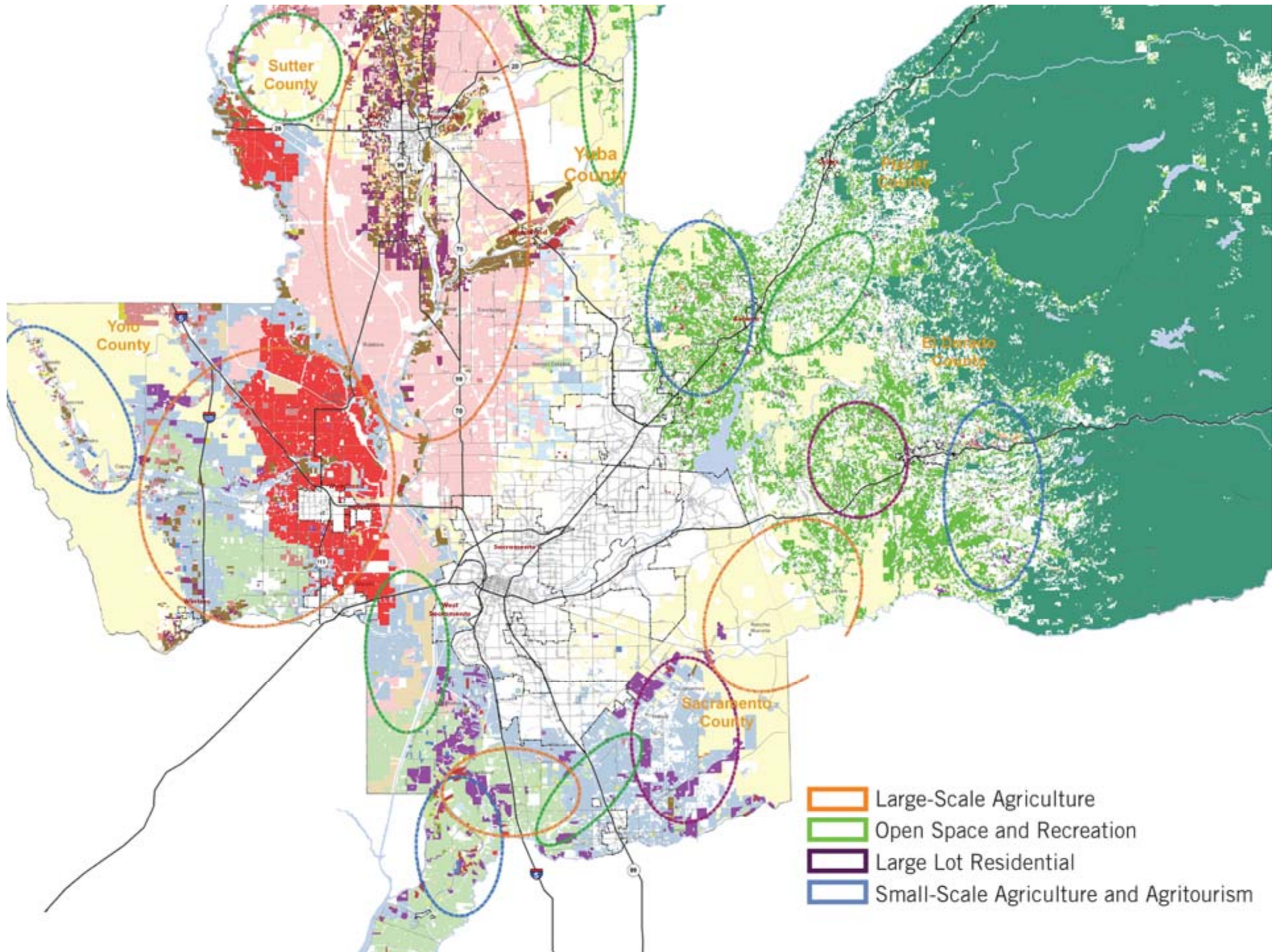






0 1.5 3 6 9 12 Miles





## Cost and Return Conventional Almond Production

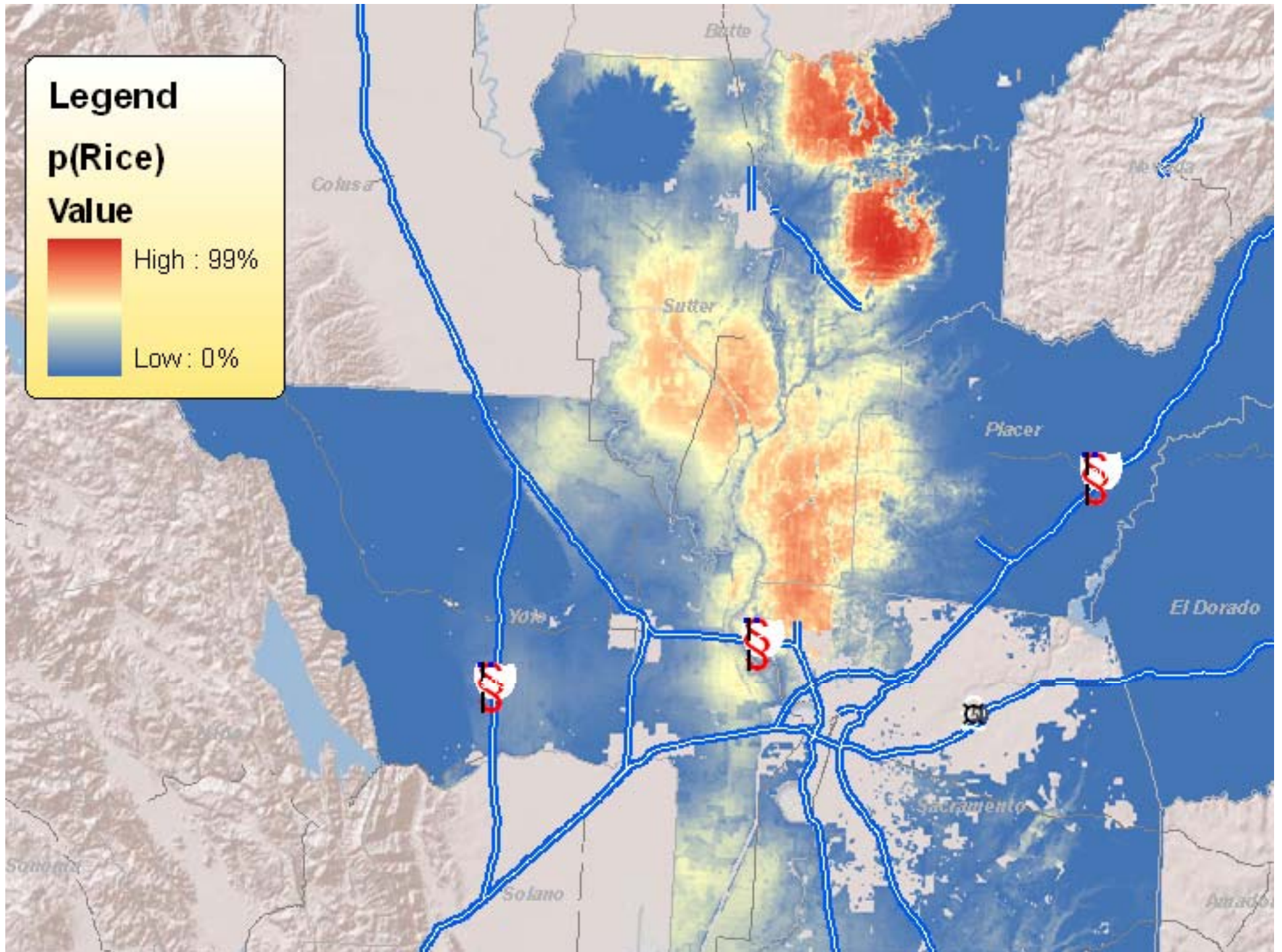
### Sacramento Region

<u>Cost category</u>	<u>Input</u>	<u>Quantity</u>	<u>Unit/acre</u>	<u>Price</u>	<u>Cost</u>
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
<b>Total Operating Cost/Acre</b>					<b>\$ 1,919.79</b>

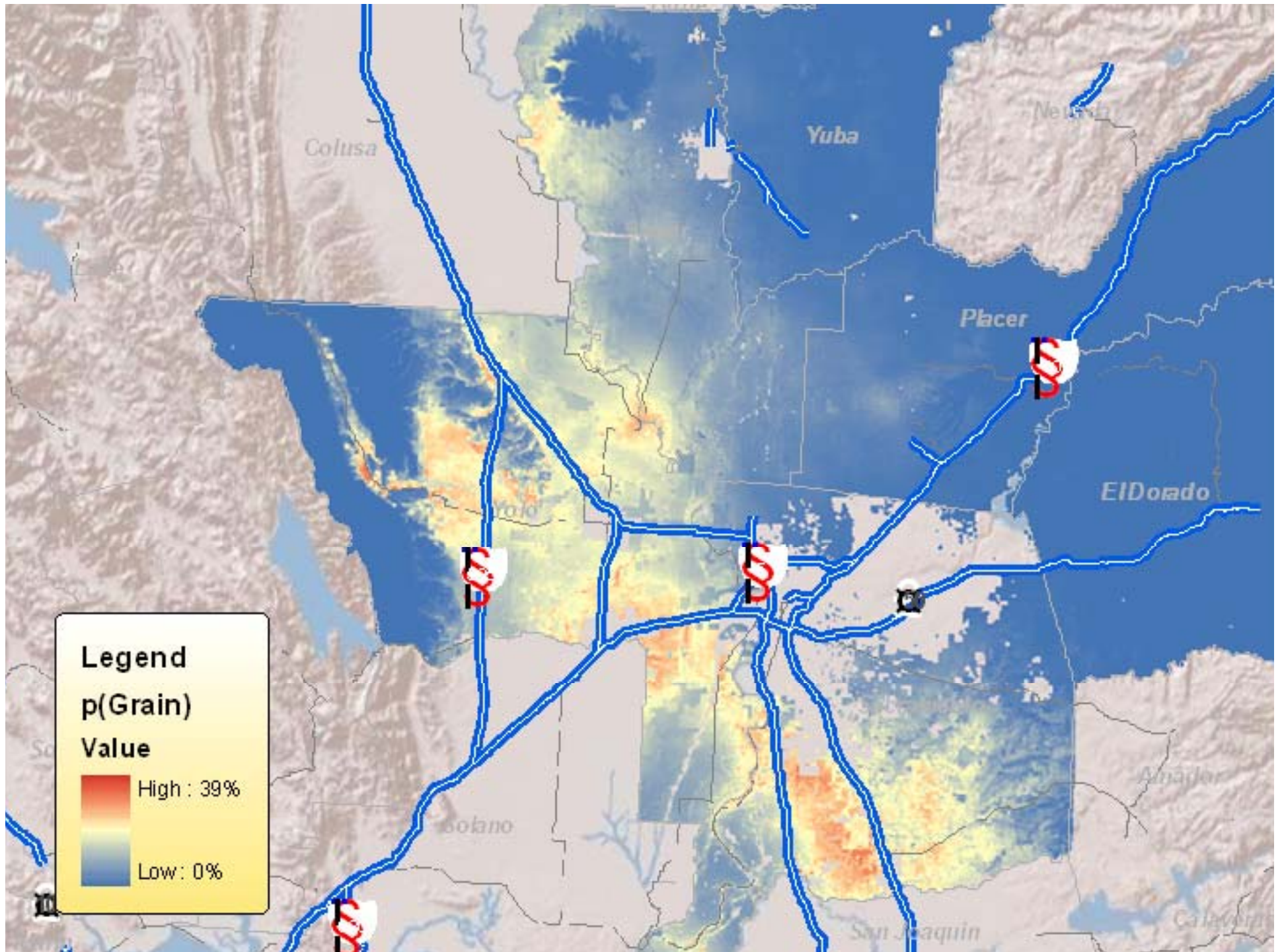
# Building a Crop Map

- Pesticide Use Report data
- Department of Water Resources data
- Satellite data
- Windshield surveys
- Ground truth with growers
- 1 year, \$700,000 +/- to build crop map
- Data for 1 year (2008), but includes rotations









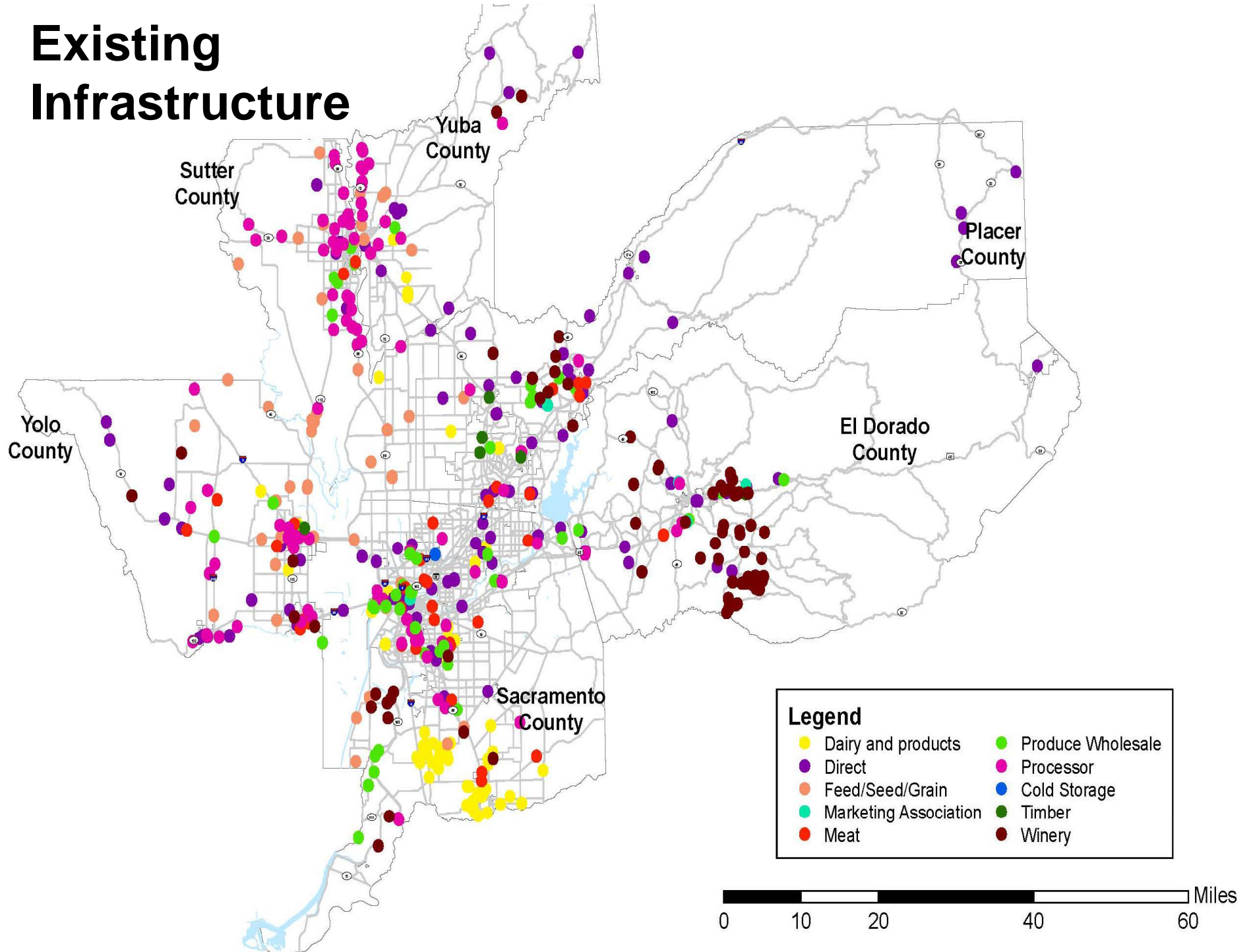
# Importance of Crop Maps

## Land use/crop maps

- Planning level resources
- Used by several organizations/entities
- Timing/frequency of current data (DWR)
  - Once every 4–8 years
  - Crops/fallowing change annually
- Costs can be significant to update manually
- Consider remote sensing data!



# Existing Infrastructure





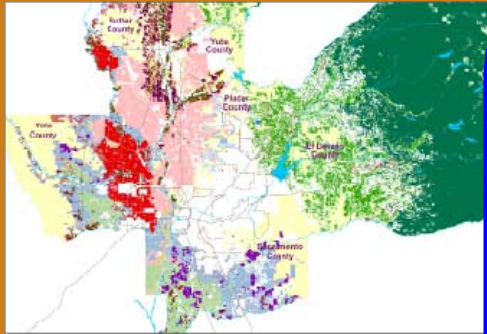
# New Tools for Understanding Agricultural Viability



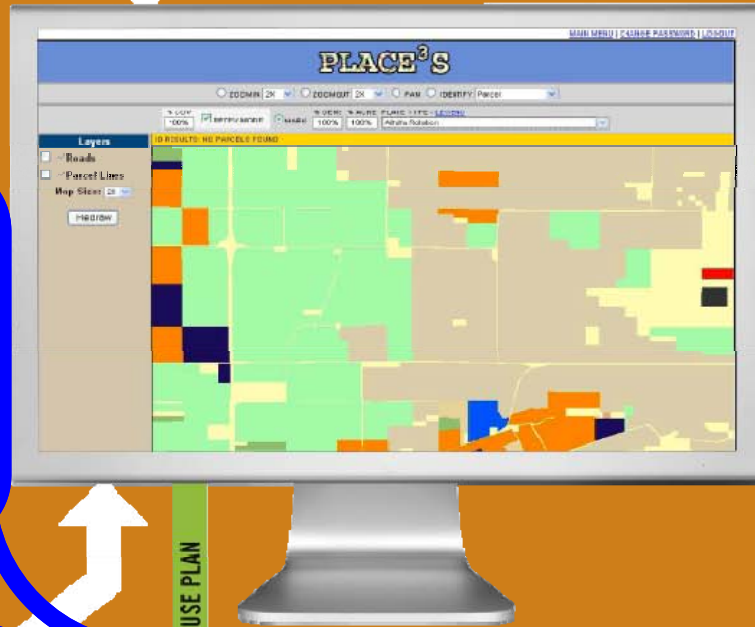


# RUCS Toolkit

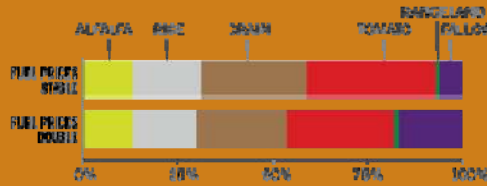
## 1 CROP MAP



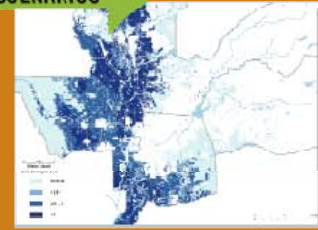
## I-PLACE'S



## 2 ECONOMETRIC MODEL



## SCENARIOS



## DIET/LAND NEEDS



## INFRASTRUCTURE/FISCAL MODEL (IMFACS)



TYPE & AMOUNT OF INFRASTRUCTURE & SERVICES NEEDED

COST TO BUILD, MAINTAIN & PROVIDE SERVICES

\$\$\$ REVENUE GENERATED FROM LAND USE PLAN



# Scenario Analysis Tool: Farmer's Economic Pro Forma

**Purpose:** Understand agricultural viability by using "what if" scenarios:

- Market changes
- Cropping patterns
- Farm practices
- Planning that supports agriculture

**Example:** Changing alfalfa rotation to dried plums improved economic return

# PLACE<sup>3</sup>S Model Design

## **Model Inputs**

Current or future crops

Costs (labor, fuel, fertilizer, etc.)

Crop yield and price

Other factors (e.g., habitat, easement value)

## **Model Outputs**

Crop value

Demand for inputs (water, seed, trucking, etc.)

Profit (Revenue – Cost)

# PLACE<sup>3</sup>S

ZOOMIN 2X  ZOOMOUT 2X  PAN  IDENTIFY Parcel

% COV 100%  REDEV MODE  MARK % DENS 100% % ACRE 100% PLACE TYPE - [LEGEND](#)  
Alfalfa Rotation

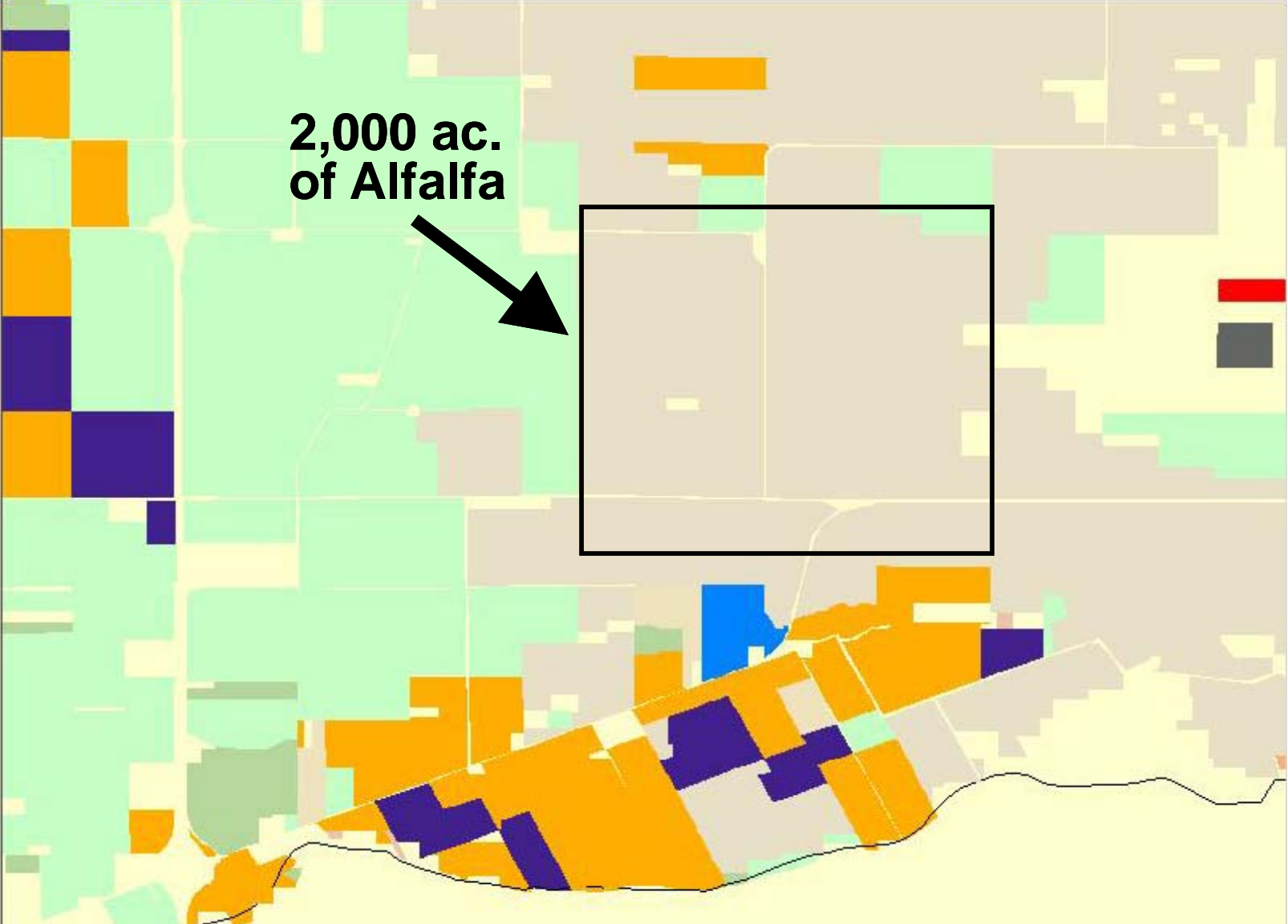
**Layers**

- Roads
- Parcel Lines

Map Size: 2X

Redraw

ID RESULTS: NO PARCELS FOUND





# PLACE<sup>3</sup>S

ZOOMIN 2X  ZOOMOUT 2X  PAN  IDENTIFY Parcel

% COV 100%  REDEV MODE  MARK % DENS 100% % ACRE 100% PLACE TYPE - LEGEND Prunes

## Layers

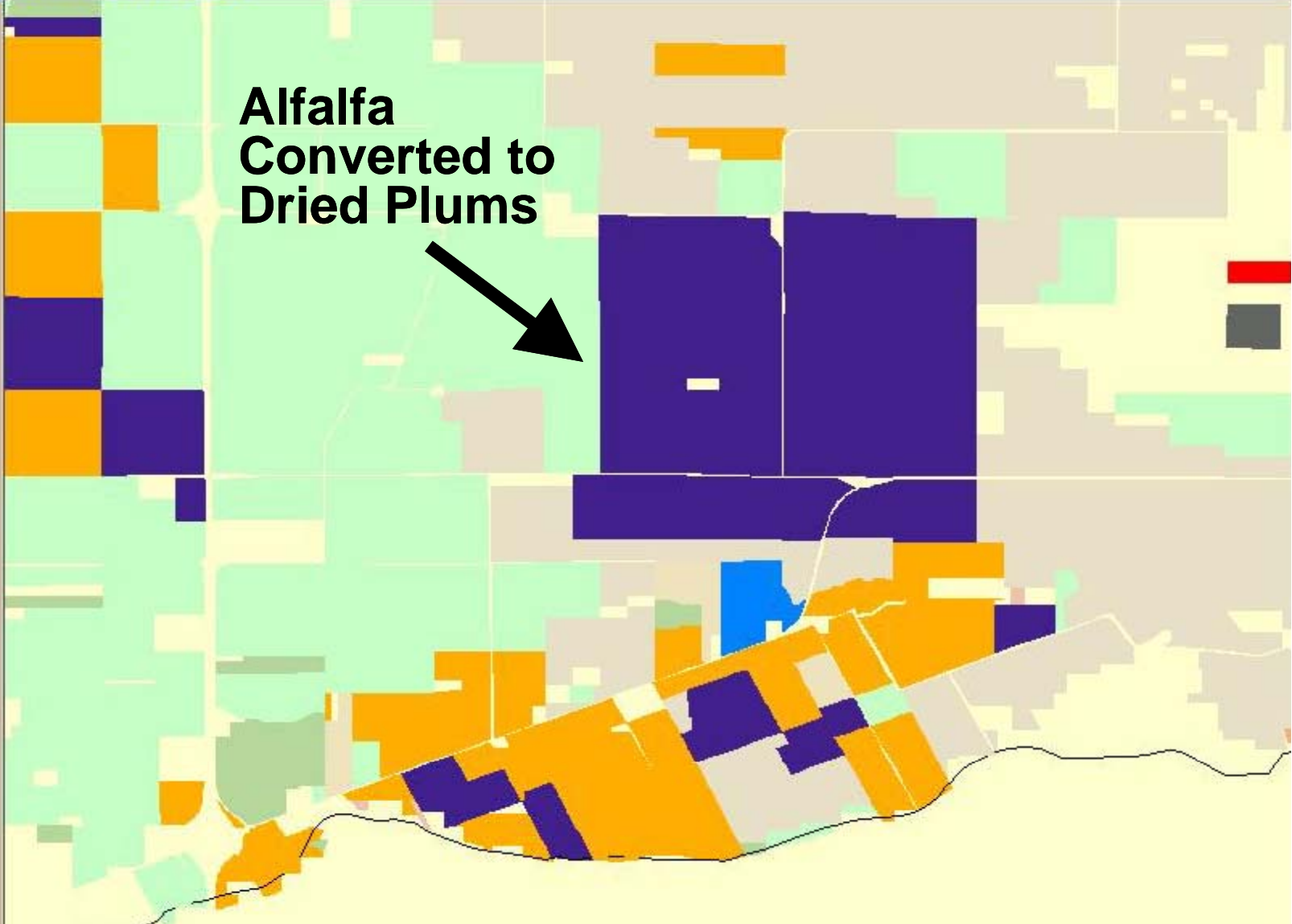
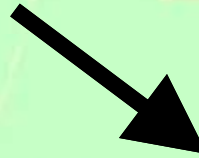
- Roads
- Parcel Lines

Map Size: 2X

Redraw

ID RESULTS: PRUNES - 100%

**Alfalfa  
Converted to  
Dried Plums**



# PLACE<sup>3</sup>S

## COMPARE SCENARIOS - RESULTS

<u>CURRENT PROJECT</u> YOLO SGC SCENARIOS	<u>PROJECT TYPE</u> NEIGHBORHOOD	<u>LEAD ORGANIZATION</u> SACOG	<u>STUDY AREA</u> CUSTOM STUDY SHAPEFILE
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**CURRENT SCENARIO : *BASE CASE***

### SCENARIO COMPARISON

<u>SCENARIOS</u>	<u>AG ACRES</u>	<u>AG VALUE</u>	<u>AG COST</u>	<u>AG RETURN</u>	<u>AG PCT RETURN</u>	<u>AG WATER ACRE / FEET</u>	<u>AG LABOR FTE</u>	<u>AG TRUCK TRIPS</u>
BASE CASE	562,360.4	\$708,969,323	\$567,227,852	\$141,741,471	25.0%	995,064	2,677.1	112,912
ALAFLEA TO PRUNE	562,360.4	\$711,029,876	\$568,792,417	\$142,237,459	25.0%	994,567	2,686.9	112,865

[JOB DIVERSITY CHART](#)

[HOUSING DIVERSITY CHART](#)

LOGGED IN AS [LIBBYOS123](#)

[CONTACT SITE](#) [HELPDESK](#)

**Value: + \$2M**

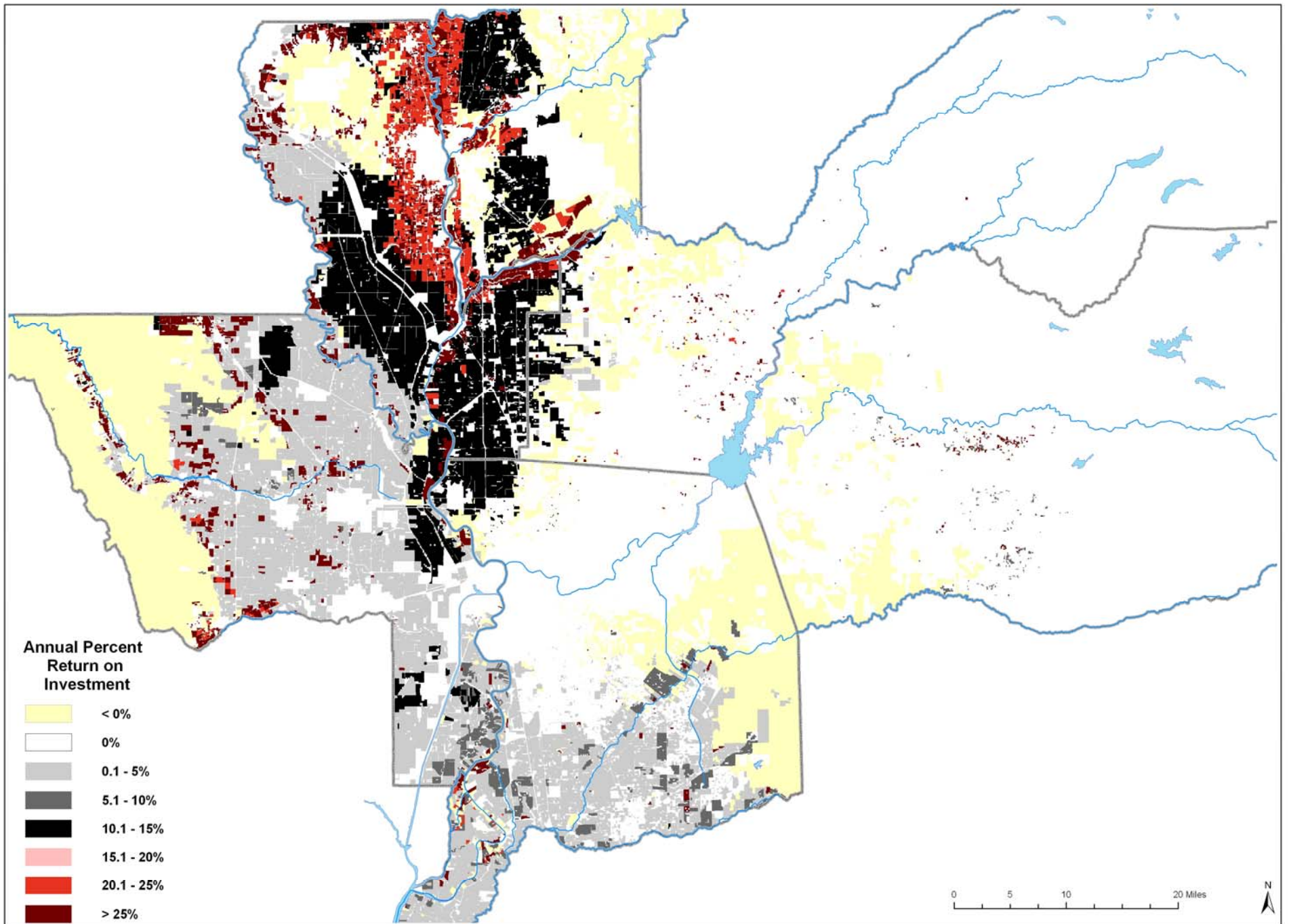
**Return: + \$500,000**

**Water: -500 ac-ft**

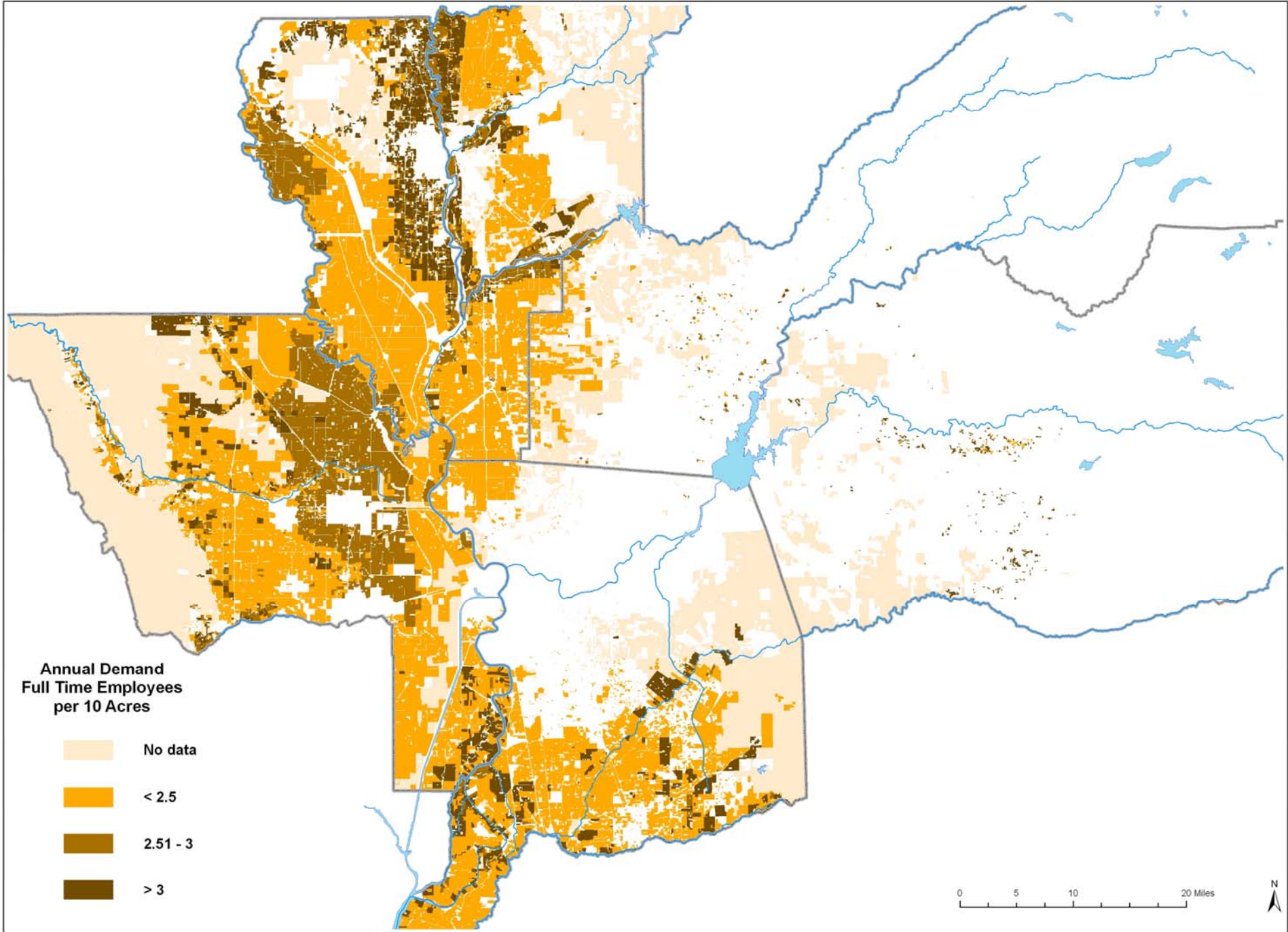
**Labor: + 10 workers**

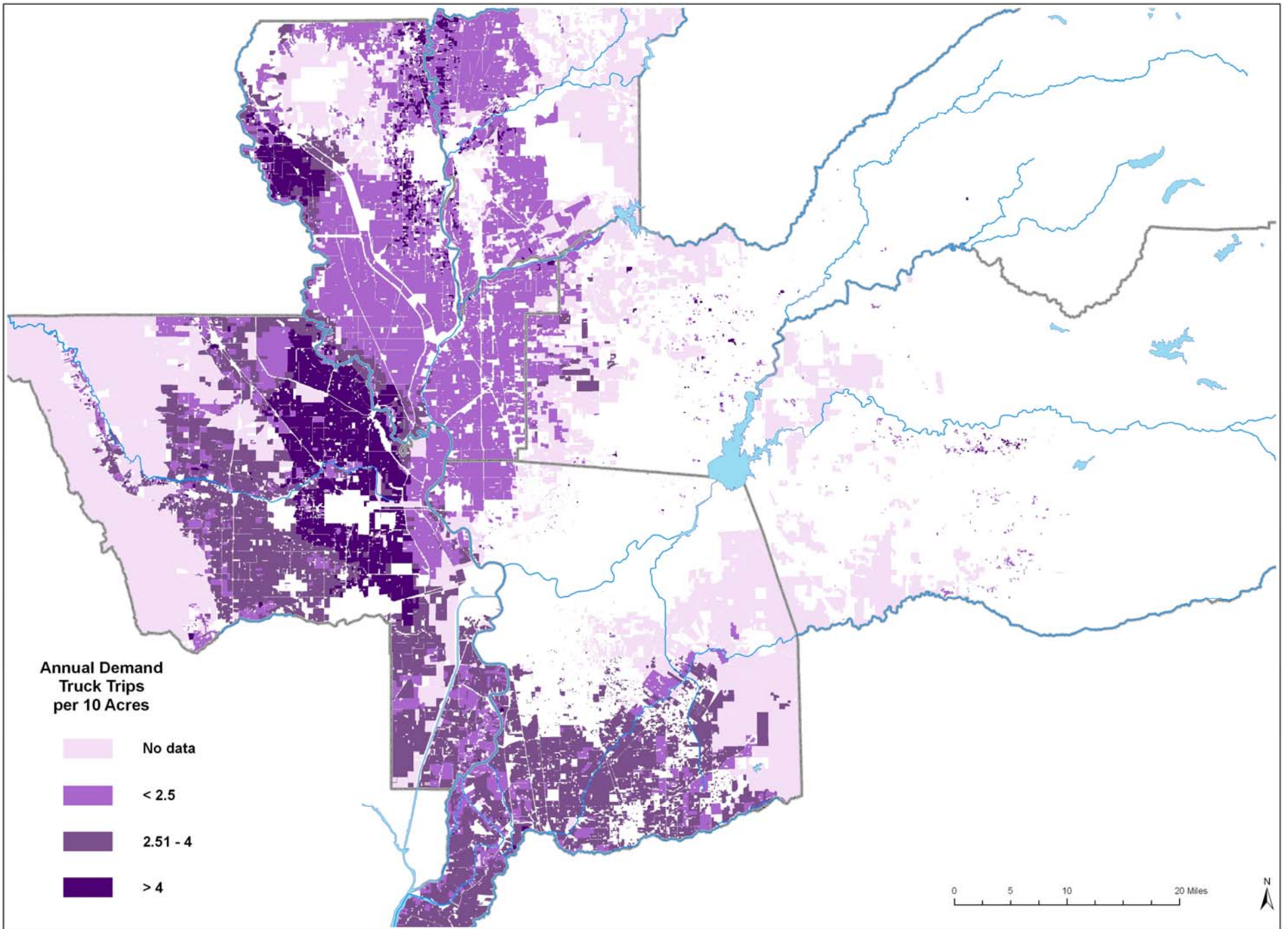
**Trucks: - 47 trips**

# What's the impact on the region?

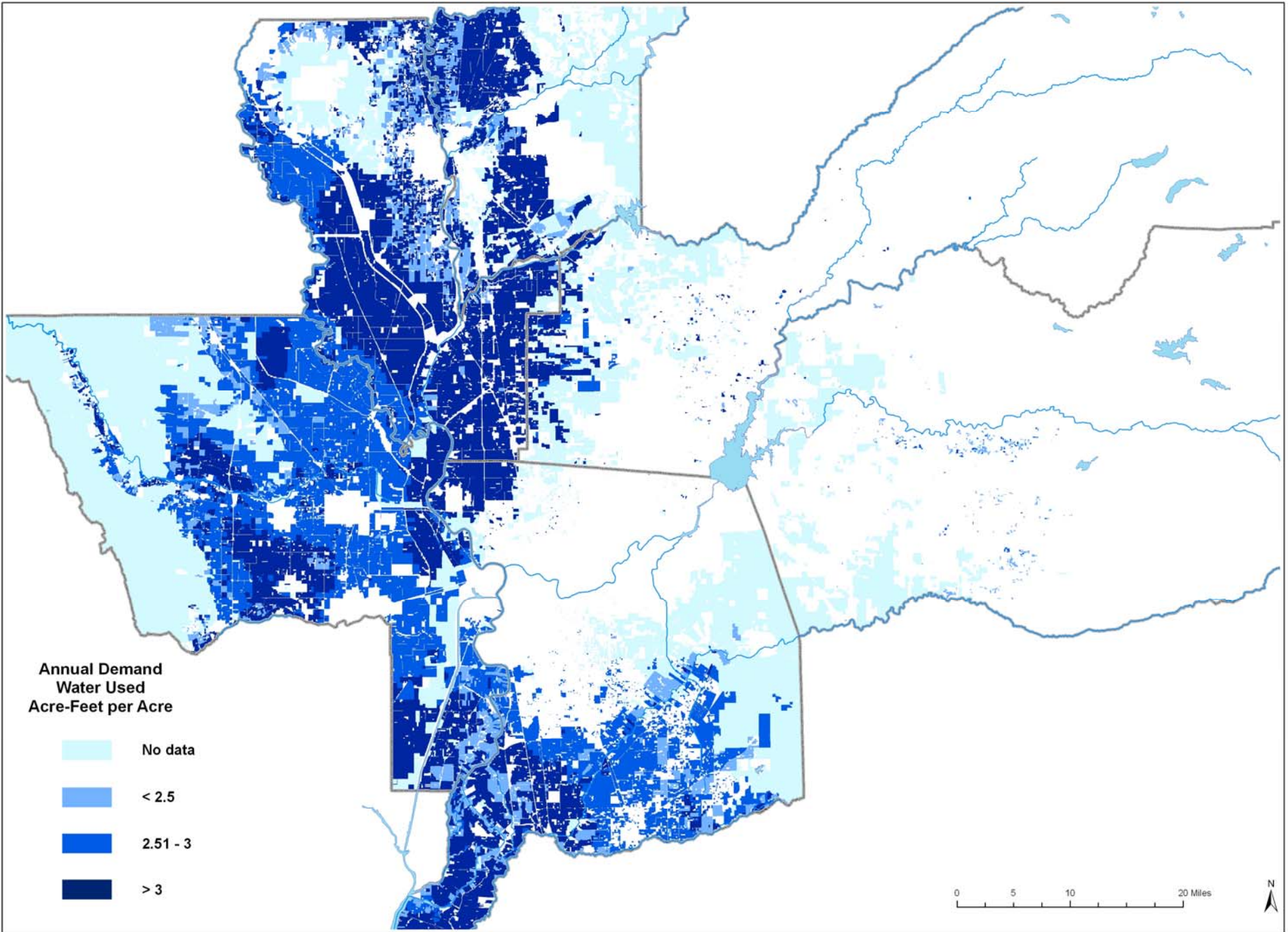






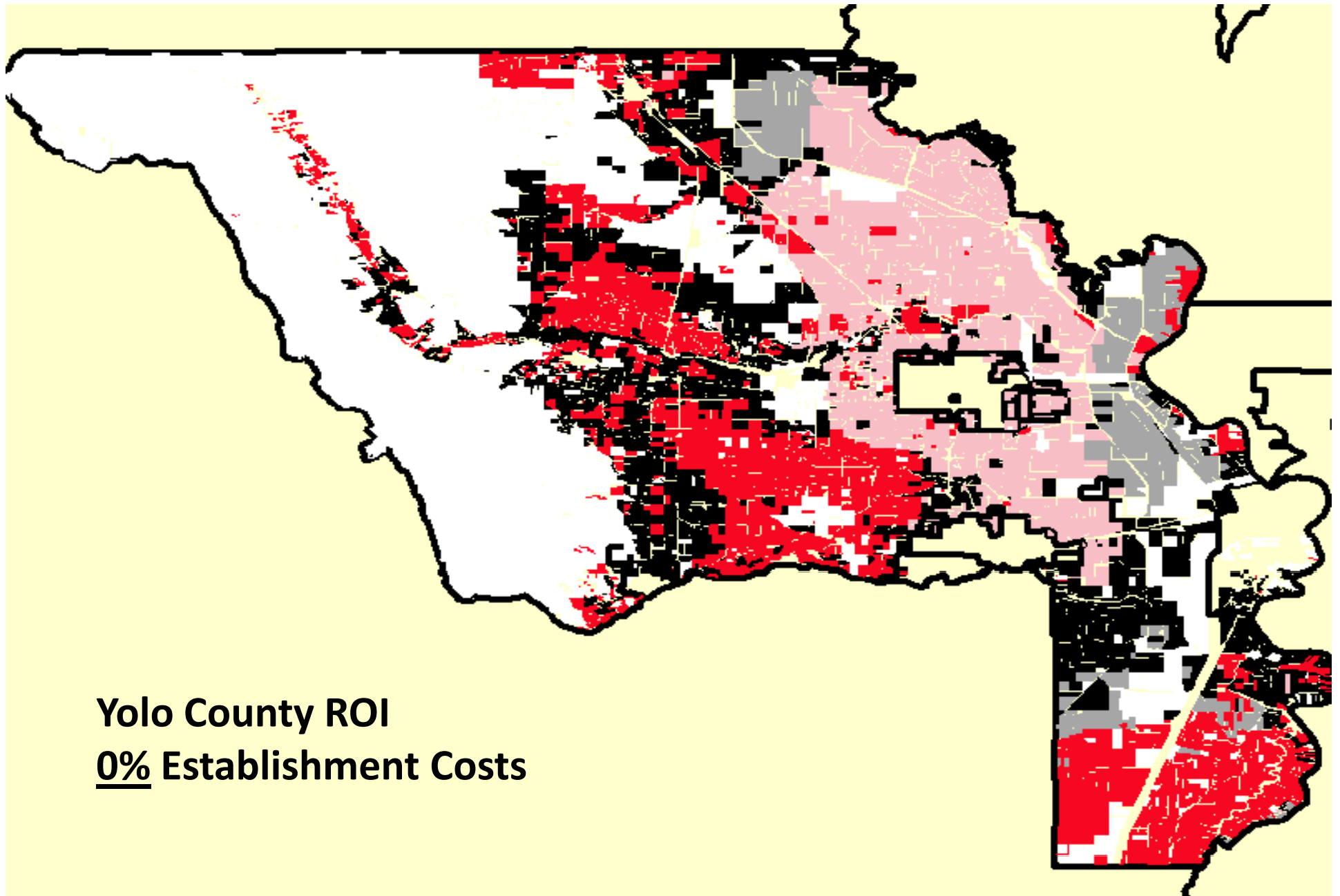








**Would you  
start a farm  
today?**



**Yolo County ROI**  
**0% Establishment Costs**

PERCENT RETURN

□ 0

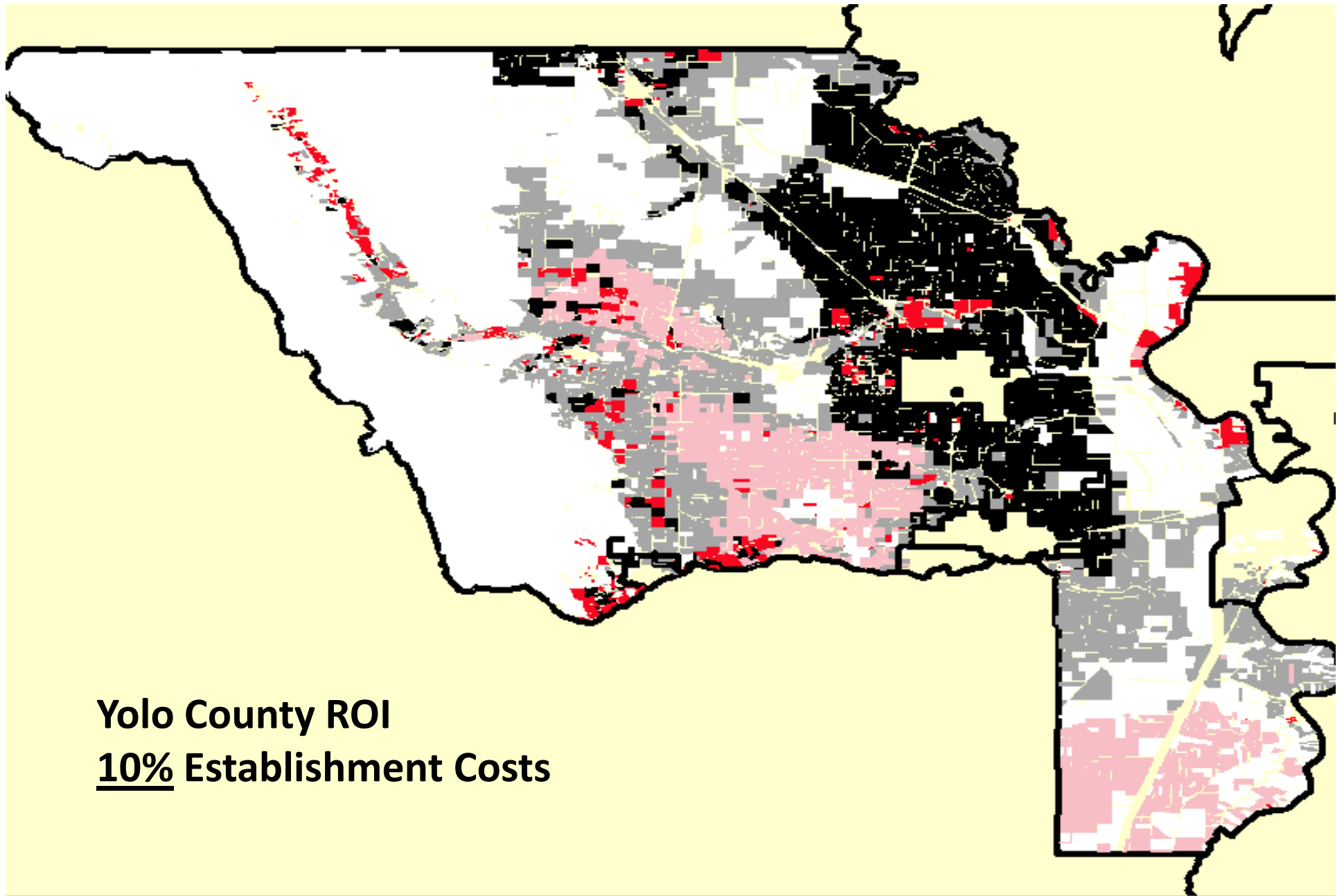
■ 0 to 10

■ 10 to 30

■ 30 to 40

■ 40 and above





**Yolo County ROI**  
**10% Establishment Costs**

PERCENT RETURN

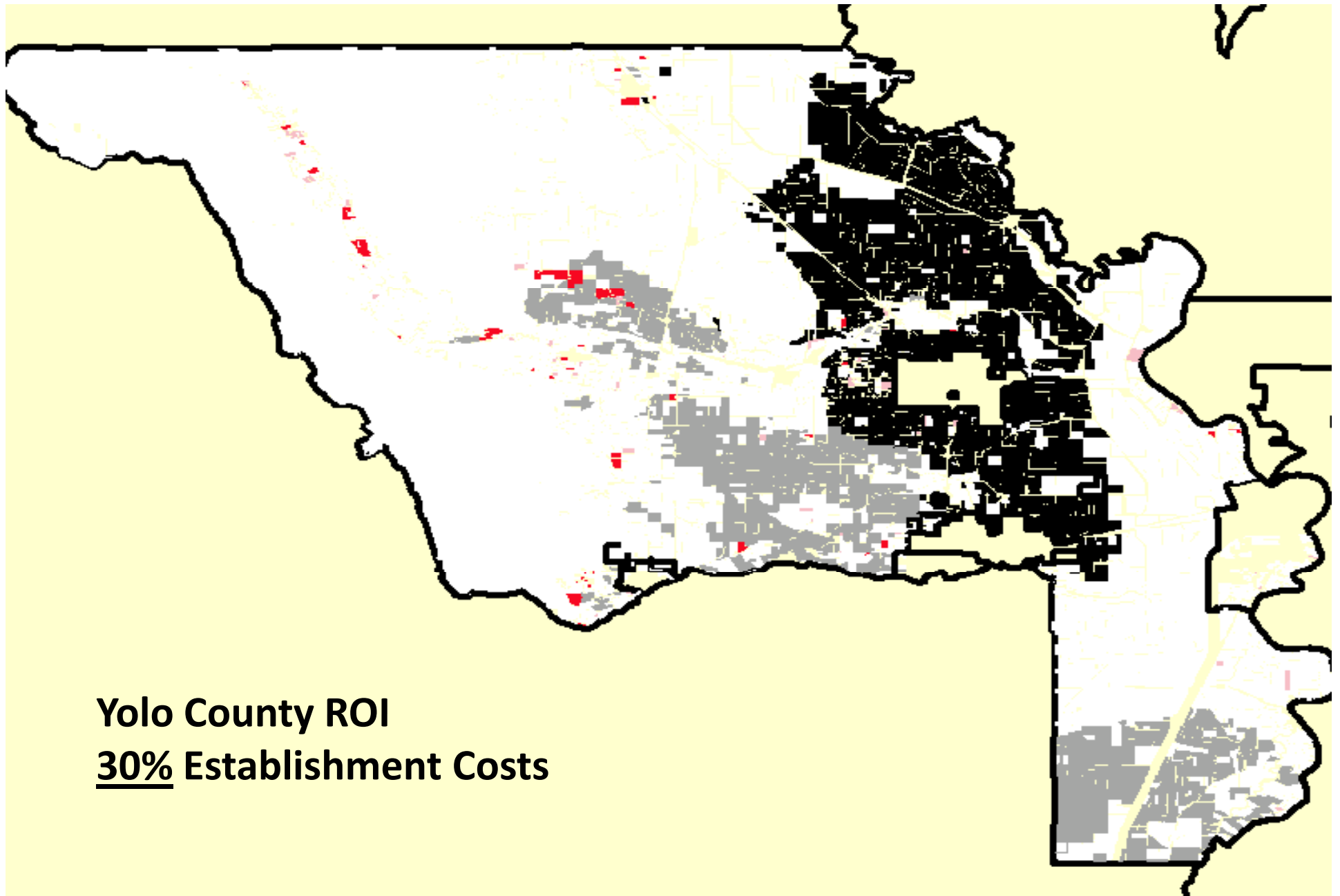
□ 0

■ 0 to 10

■ 10 to 30

■ 30 to 40

■ 40 and above



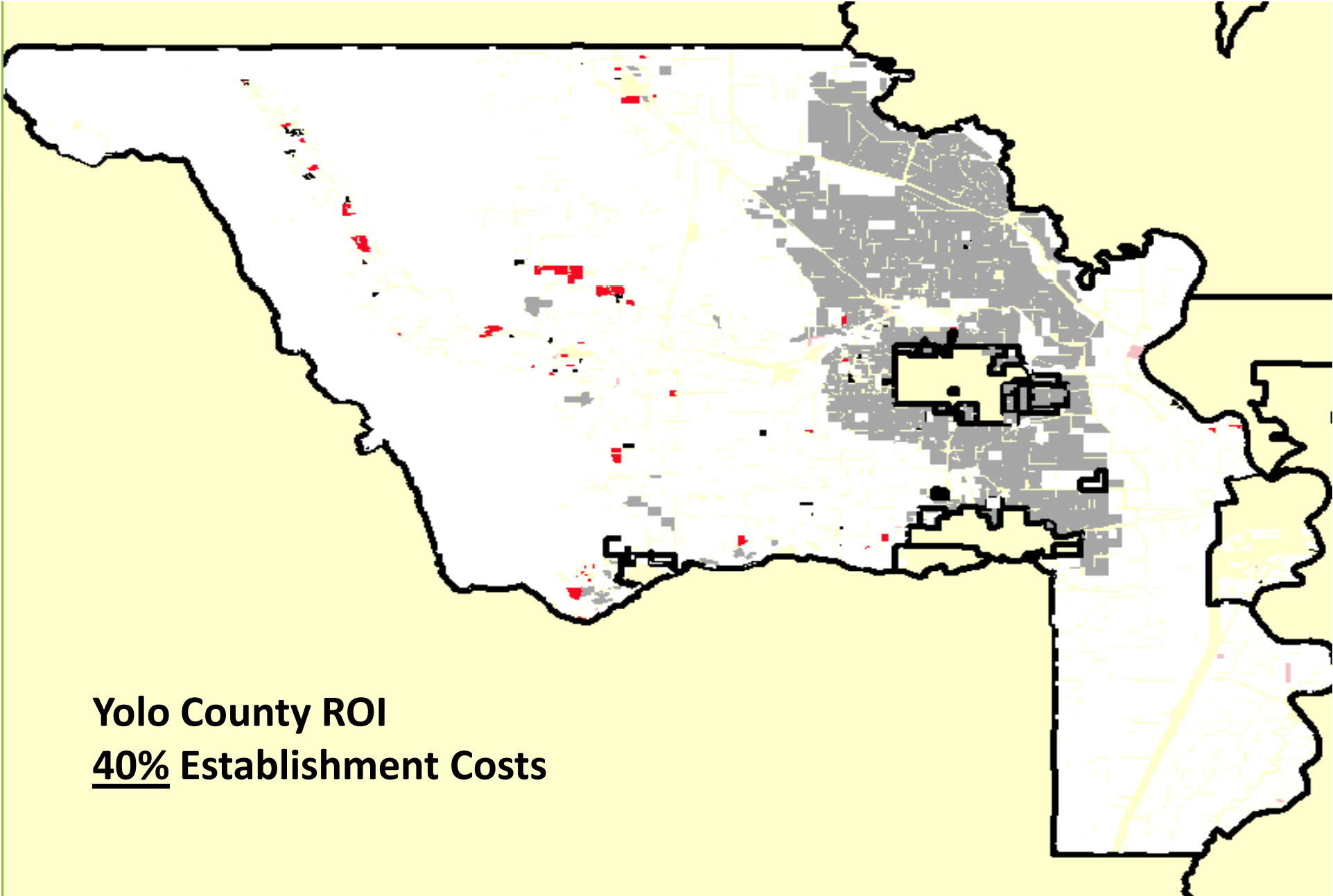
**Yolo County ROI**  
**30% Establishment Costs**

PERCENT RETURN

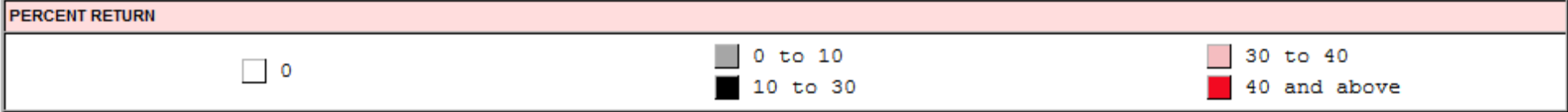
□ 0

■ 0 to 10  
■ 10 to 30

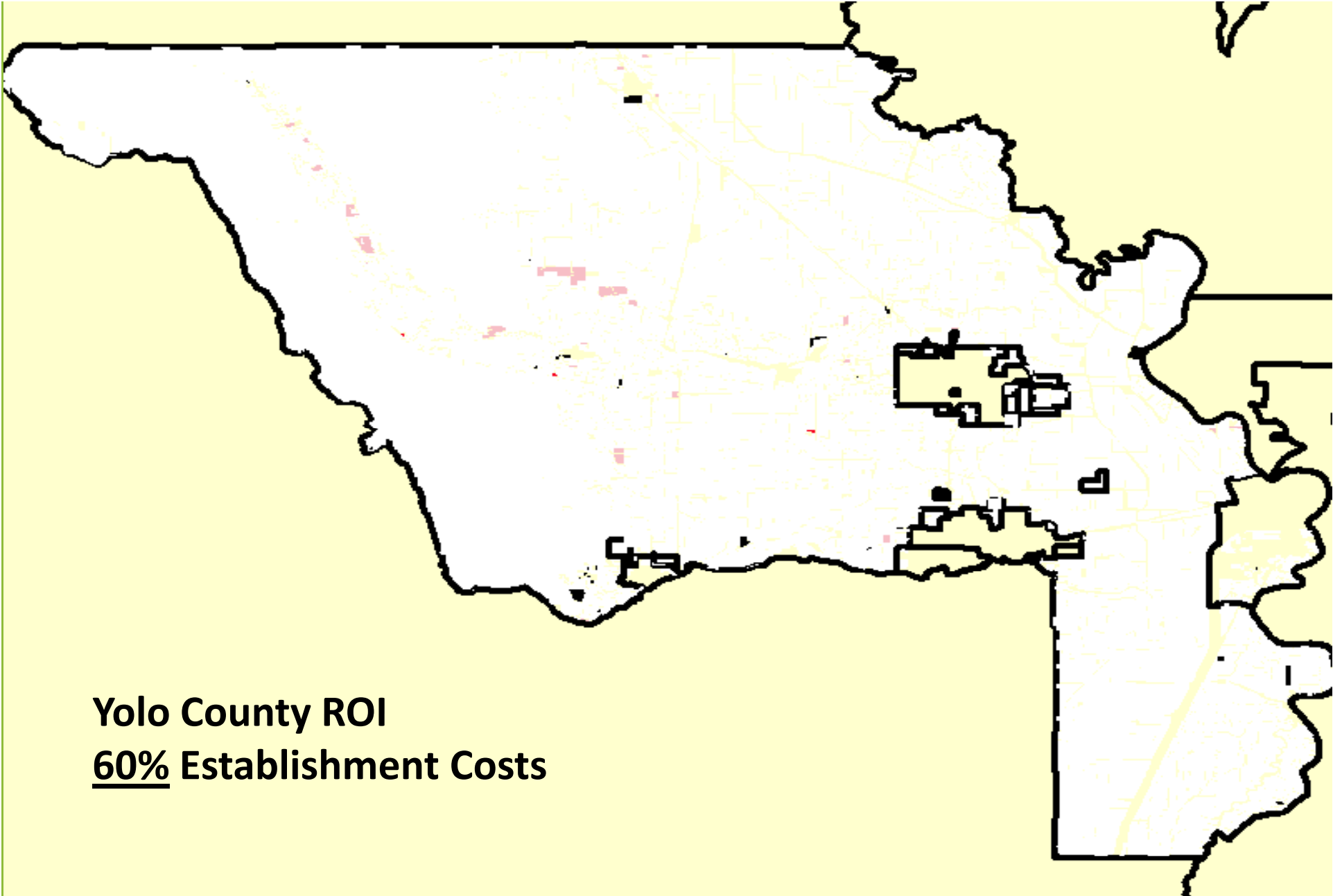
■ 30 to 40  
■ 40 and above








**Yolo County ROI**  
**40% Establishment Costs**







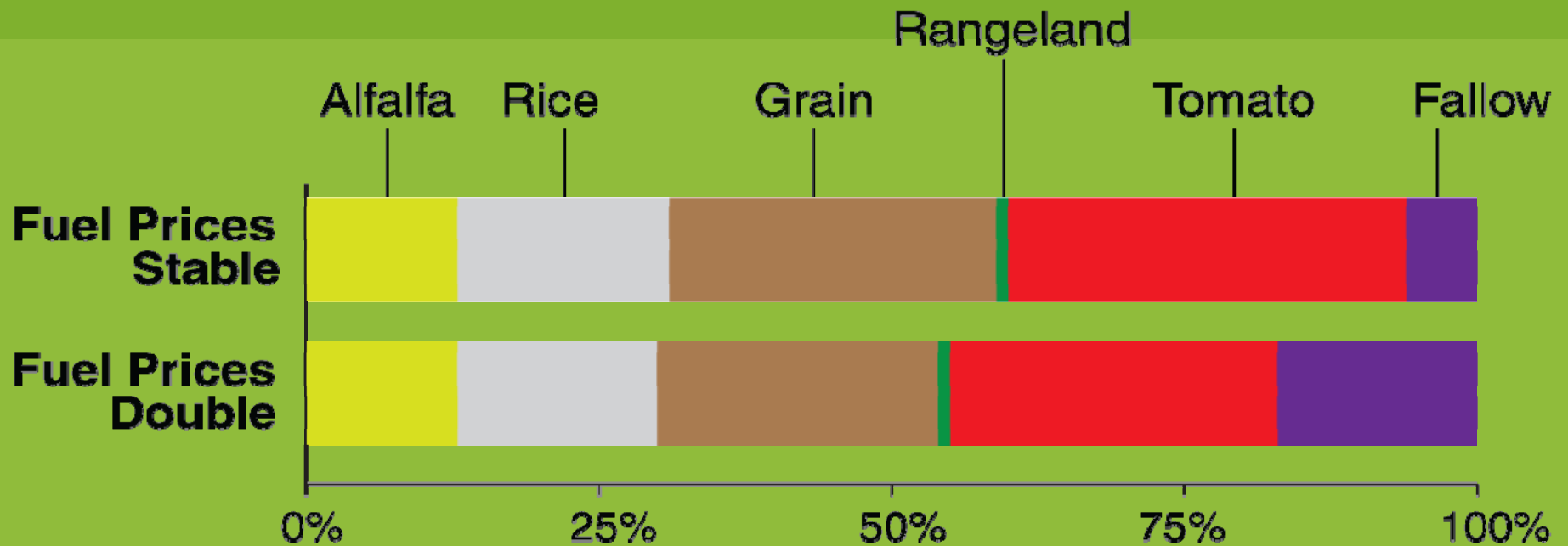
**Yolo County ROI**  
**60% Establishment Costs**

PERCENT RETURN					
	0		0 to 10		30 to 40
			10 to 30		40 and above

# Econometric Model

*Crop Type: Tomato Rotation*

*Scenario: Fuel Prices Double*

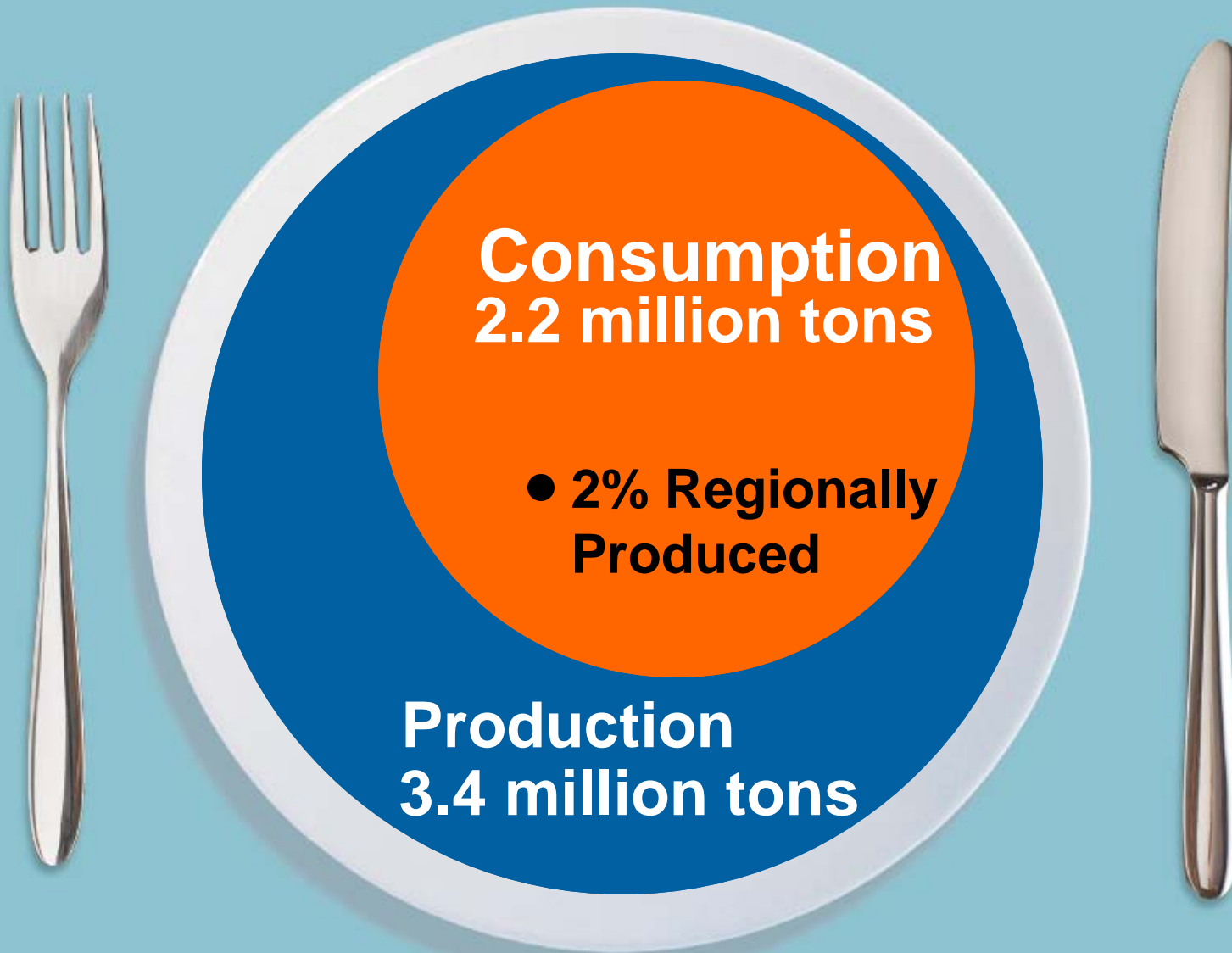




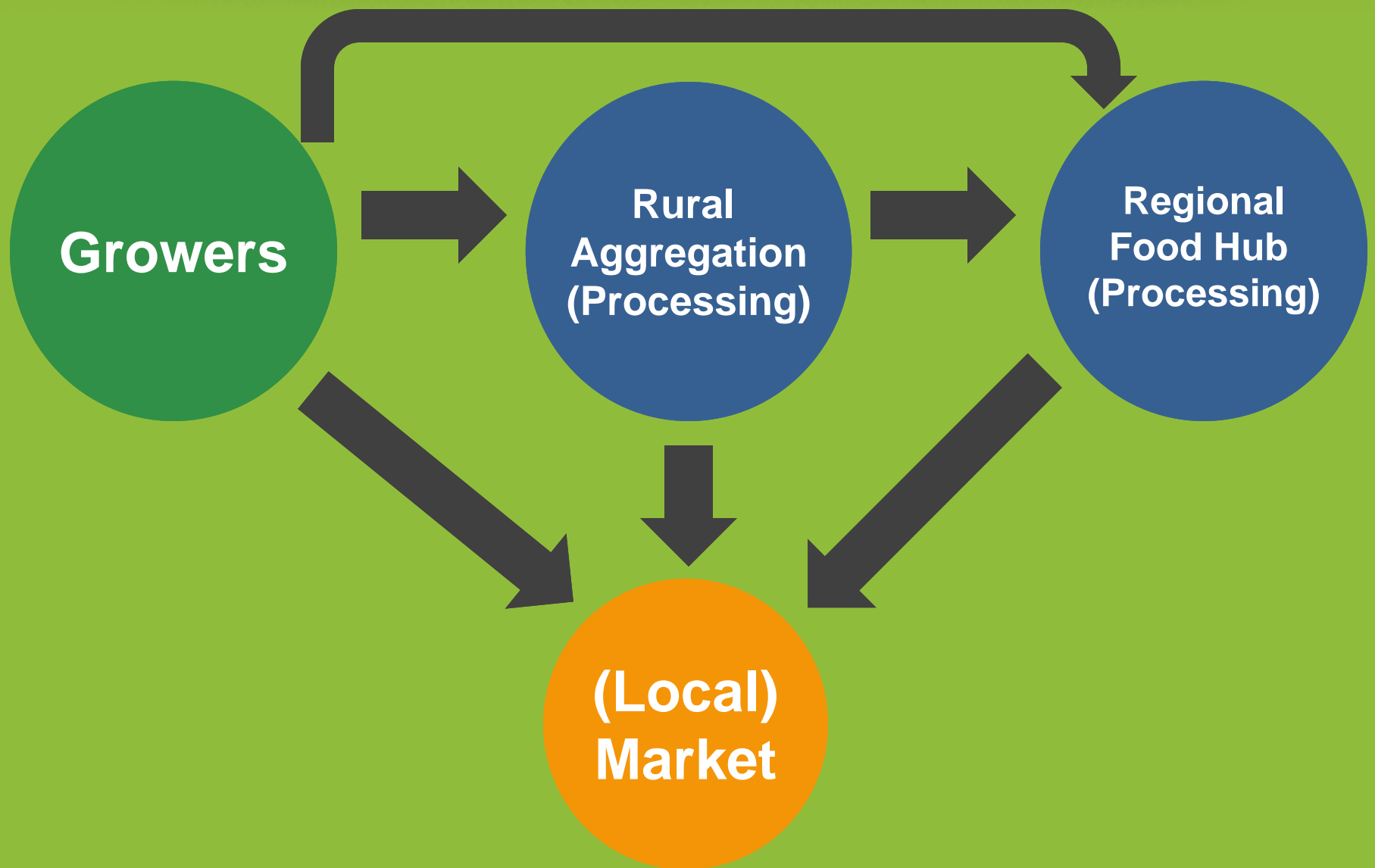
# Understanding the Regional Food Economy



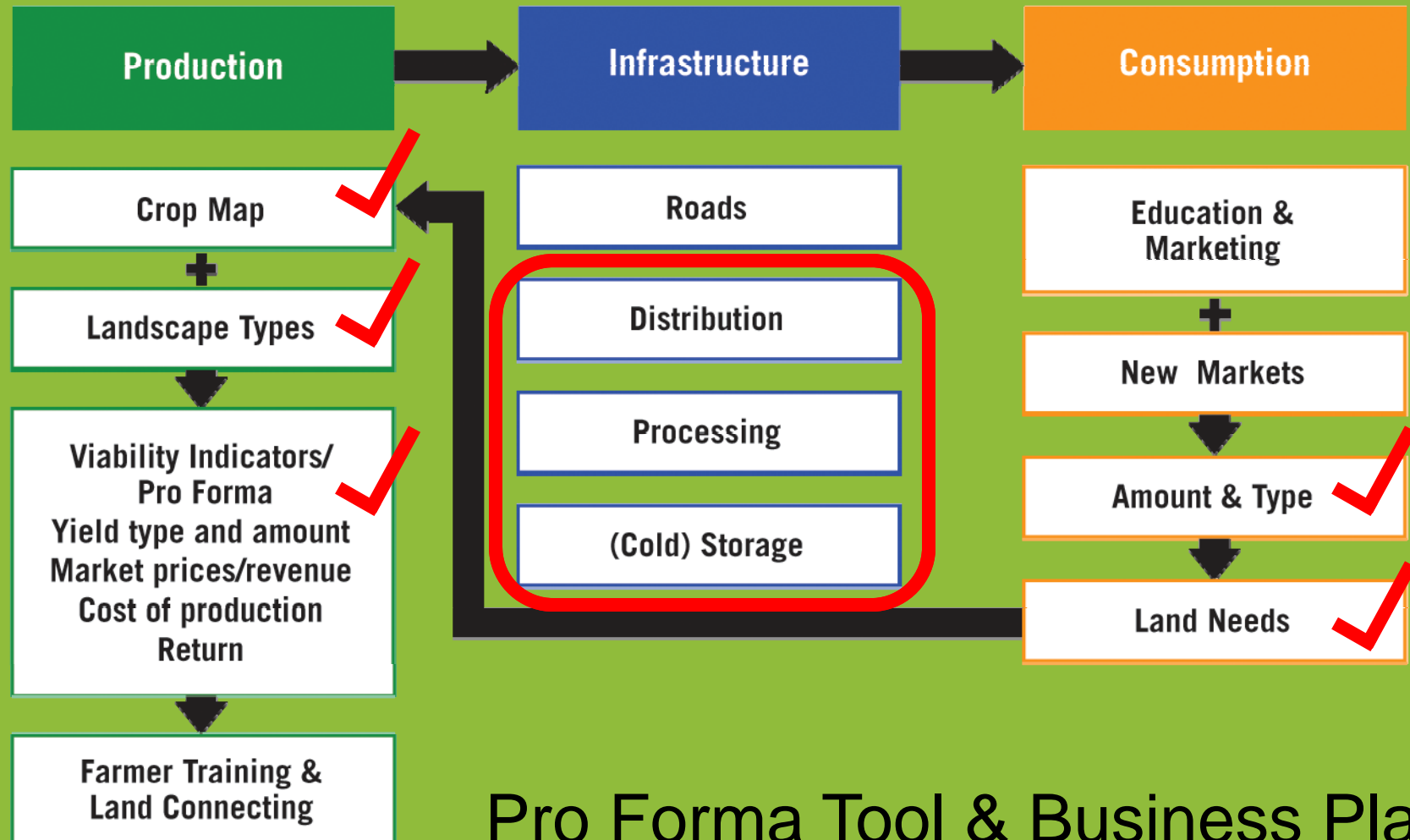
# Production and Consumption



# Regional Food Systems



# Food System Analysis





# Farmland Needs for Regional Consumption

Acres needed\* (excluding meat and dairy production)



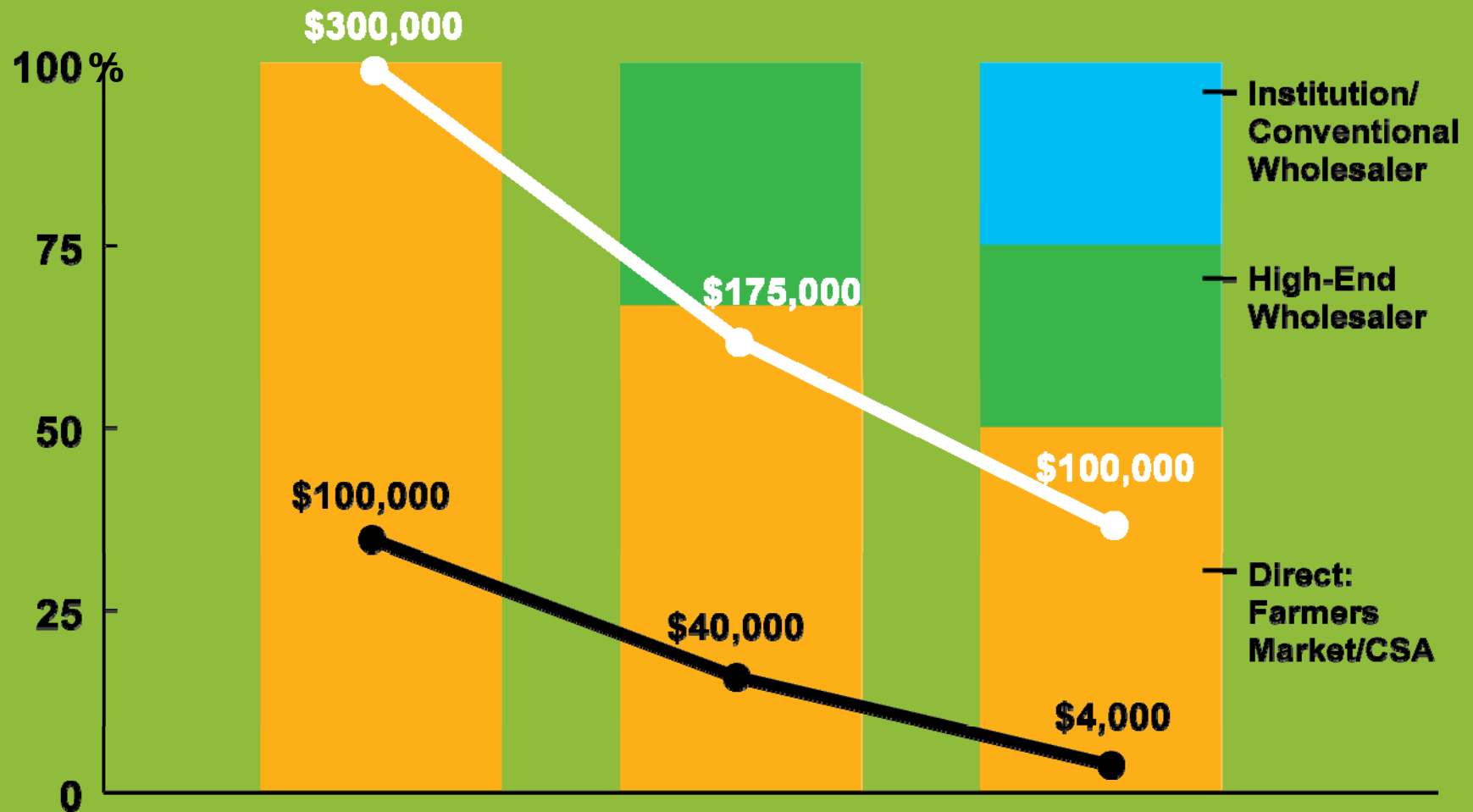
\*Based on the USDA recommended diet

# Markets and Revenue

## Farm Net Revenue

— 20 Acre

— 60 Acre





LOCAL  
DISTRIBUTION



LOCAL  
PROCESSING

- Larger volume for larger customers
- Use existing distributors?
- Food banks?

- Diversify products
- Serve customers that need food processed
- Use existing processing?

**→ Pro Forma & Feasibility Analysis**

**→ Marketing and labeling as “local”**



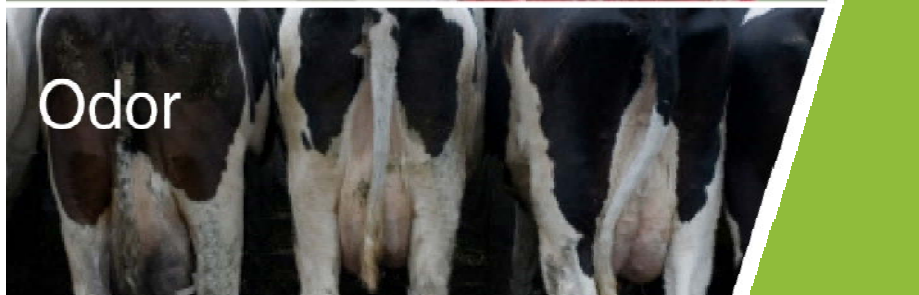
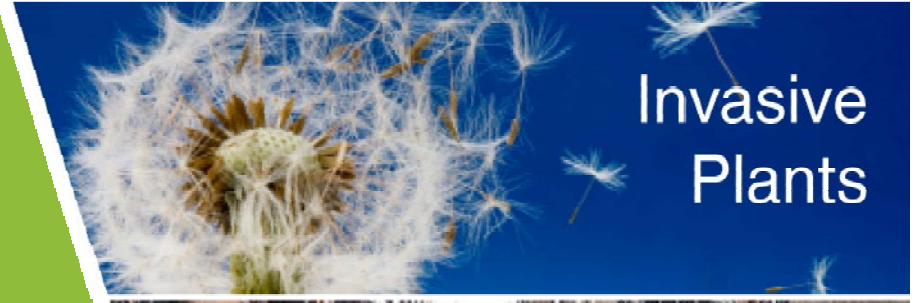
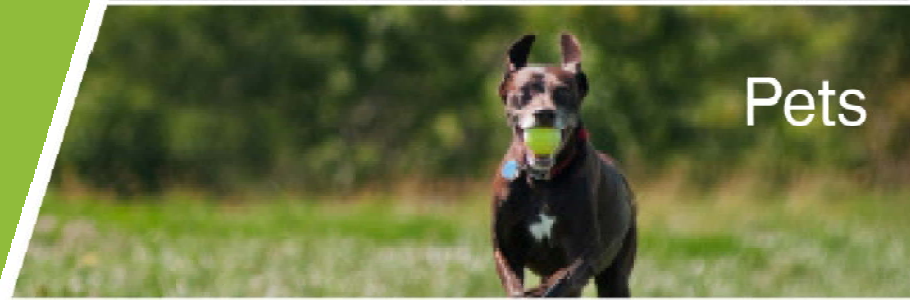
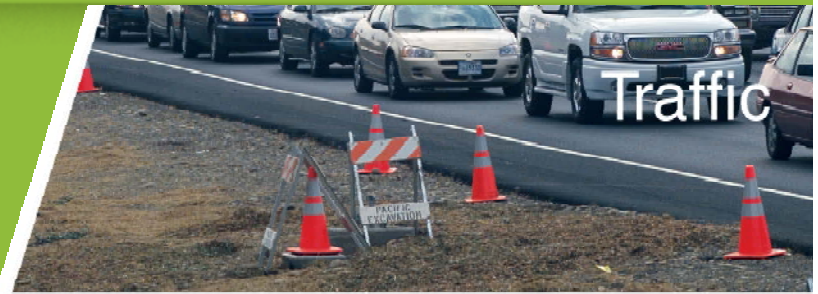
# Land Use



# Reducing Conflict

## Rural

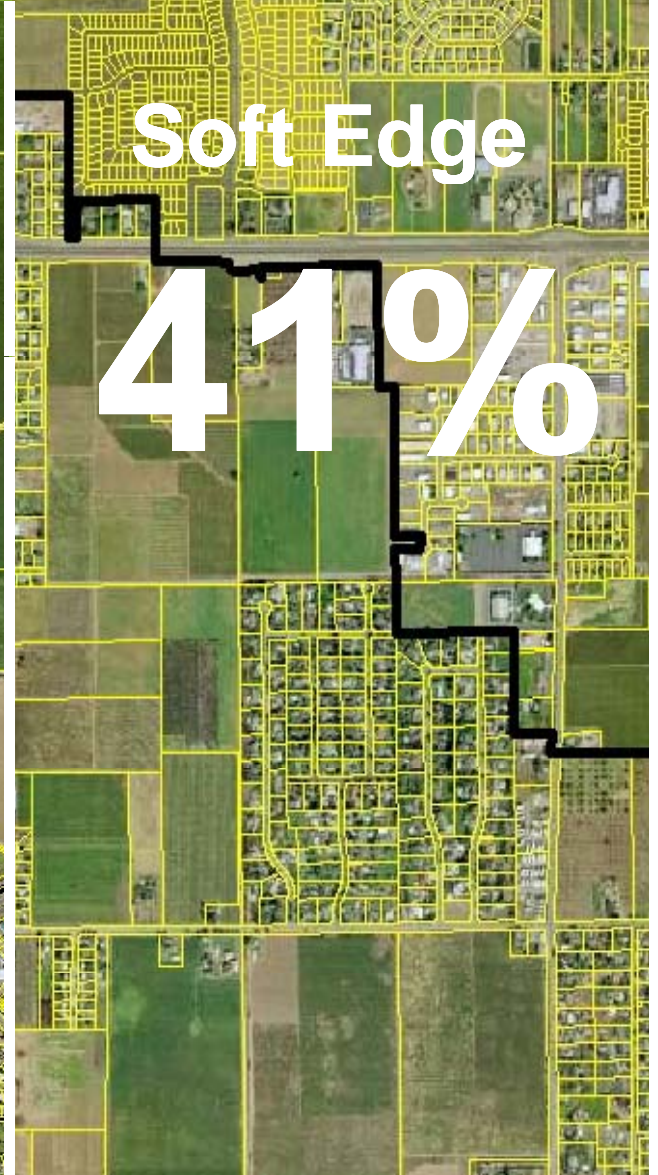
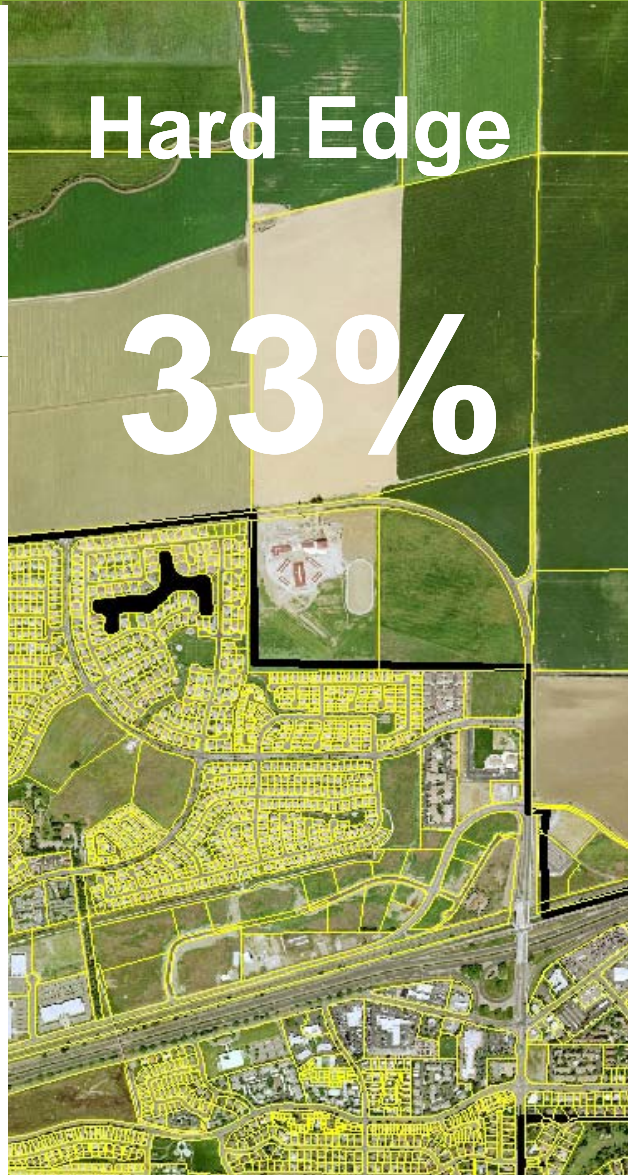
## Urban





# Rural-Urban Interface:

Percent likelihood of following:





# Innovations at the Edge and Beyond

## Infill & Redevelopment



## Rural-Urban Edge



- 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.

# Environmental Services

- Habitat
- Groundwater recharge
- Water Resources
- Carbon Sequestration
- Flood control
- Air Quality:
  - Urban land **70X** more GHG than ag land
- *Working Landscapes!*

# Rural Communities Fiscal Model





# Fiscal Impacts Model

**Purpose:** Help small rural communities make growth decisions that are fiscally sustainable

## **Challenges:**

- Growth of any kind sometimes looks like economic progress
- Needed infrastructure investments to fix existing problems sometimes contribute to this problem

**Example:** Better balanced land uses more fiscally viable than housing subdivision

# Model Design

- Address imbalance between infrastructure and service costs and revenue
- Estimates infrastructure and service needs and costs from various land use plans
- Estimates revenues from same plan
- Identifies gaps and determines additional revenue needed
- Can be used for rural or urban areas

# Model Inputs

- Land use information  
(acres and type of development)
- Development parameters  
(e.g., street pattern, amount of infill)
- Systems specifications  
(e.g., water system demand and capacity)



Code	Residential	Acres	% of Land	H Si
LU_Res1	Rural Residential	0.0	0.0%	2.8
LU_Res2	Very Low Density Residential	4.0	7.8%	2.8
LU_Res3	Low Density Residential	19.0	37.3%	2.5
LU_Res4	Medium Density Residential	10.0	19.6%	2.2
LU_Res5	Medium-High Density Residential	0.0	0.0%	2.1
LU_Res6	High Density Residential	0.0	0.0%	1.7
Total		33.0	64.7%	

Code	Mixed Use	Acres	% of Land	H Si
LU_Mix1	Mixed Use Residential Focus	0.0	0.0%	1.5
LU_Mix2	Mixed Use Employment Focus	0.0	0.0%	1.5
Total		0.0	0.0%	

	Acres	% of	H
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	High	Median	Low
Interior GPCD	70	55	50
Toilets, Kitchen Sinks etc.	21	18	15
Residential Interior Demand	<b>17,808,350</b>	<b>13,992,275</b>	<b>12,720,250</b>
Residential Sewer	<b>14,246,680</b>	<b>11,193,820</b>	<b>10,176,200</b>

### Non-Residential Potable Water Demand Rates

Total Non Residential FTE 594

Land Use	FTE	Interior GPFTE (gallons / FT	
		High	Median
Moderate Intensity Office	126	3,219,300	2,529,450
Community/Neighborhood Commercial / Office	108	2,759,400	2,168,100
Light Industrial Office	149	3,806,950	2,991,175
Community / Neighborhood Retail	21	536,550	421,575
Regional Retail	102	2,606,100	2,047,650
Light Industry	0	0	0
Heavy Industry	0	0	0
Warehouse / Storage	0	0	0
Recreation Center	0	0	0
Public /Quasi Public	0	0	0
Restaurant Dining	0	0	0



County	Community	Water Supply			Water Treatment		
		Source	Existing	Designed	Source	Existing	Desi
UNITS		-	MGD	MGD	-	MGD	M
El Dorado	Cameron Park	11			11	32	3
El Dorado	Camino	11			11	32	3
El Dorado	Cool	1			1	4.6	5
El Dorado	Diamond Springs/El Dorado	11			11	32	3
El Dorado	Fairplay	13			13		
Yolo	Dunnigan	5			5		
Yolo	Elkhorn	7			7		
Yolo	Knights Landing	4	1	4.3	4		
Yolo	Madison	6	0.28	0.93	6		
Yolo	Winters	2	10.1	19.4	2		

Assumption: For Water Supply, unlimited amount of G.W. supply will be available.

Assumption: For Water Treatment, Water Storage and Sewer Treatment, empty cells mean no public/commu

#### Sources:

1. Georgetown Divide Public Utility District Capital Facility Charge Study
2. Yolo County Draft Winters Municipal Services Review Infrastructure Needs and Deficiencies. RMC Water an
3. County of Yolo 2030 Countywide General Plan - Public Facilities and Services Element
4. Knights Landing Community Services District. Final MSR/SOI Municipal Services Review, 2006
5. Yolo County Integrated Regional Water Management Plan

# Model Outputs

- Infrastructure needs and costs (total & per unit; public & private)
- Service costs
- Payback period
- Revenue sources
- Cost-revenue gap



### MUNICIPAL INFRASTRUCTURE SUMMARY

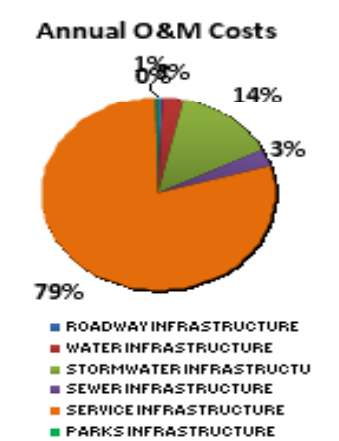
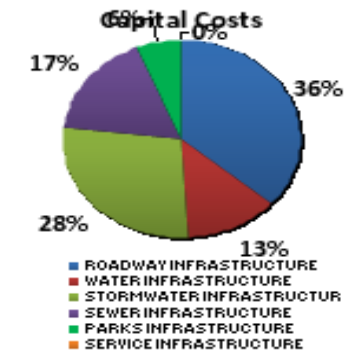
Select Standards Scenario: **Median**  
 Select Cost Scenario:  
 Select Capacity Scenario:

**Public Sector Cost Implication**

Capital Cost	Cost / ERU	Annual O&M	O&M / ERU
\$811,830	\$2,206	\$115,498	\$314

Component	Quantities		Capital Construction Costs		Annual O&M Costs		Check to Include Capital Cost or O&M
	Total (ft)	Ft/ERU	Total	Per ERU	Total	Per ERU	
<b>ROADWAY INFRASTRUCTURE</b>							
Local Streets	3,164	24.3	\$4,925,203	\$13,384	\$2,564	\$7	<input type="checkbox"/>
Major Streets	3,513	3.6	\$2,233,453	\$6,063	\$1,223	\$3	<input type="checkbox"/>
Street Upgrades	0	0.0	\$0	\$0	\$0	\$0	<input checked="" type="checkbox"/>
<b>Total Streets &amp; Roadway</b>	<b>12,683</b>	<b>34.5</b>	<b>\$7,158,667</b>	<b>\$19,453</b>	<b>\$3,787</b>	<b>\$10</b>	
<b>WATER INFRASTRUCTURE</b>							
Laterals	23,615	64.2	\$435,322	\$1,348	\$966	\$2.6	<input type="checkbox"/>
Distribution + Main	13,183	35.8	\$1,634,550	\$4,605	\$3,864	\$10.5	<input type="checkbox"/>
<b>Total Water Distribution</b>	<b>36,798</b>	<b>100.0</b>	<b>\$2,190,471</b>	<b>\$5,952</b>	<b>\$4,830</b>	<b>\$13.1</b>	
<b>Supply, Treatment, Storage</b>	-	-	<b>\$315,000</b>	<b>\$856</b>	<b>\$3,660</b>	<b>\$26.3</b>	<input checked="" type="checkbox"/>
<b>Total Water</b>	<b>0</b>	<b>0.0</b>	<b>\$2,505,471</b>	<b>\$6,808</b>	<b>\$14,490</b>	<b>\$39.4</b>	
<b>STORMWATER INFRASTRUCTURE</b>							
Laterals	23,615	64.2	\$1,586,350	\$4,312	\$18,832	\$51.3	<input type="checkbox"/>
Collection	12,683	34.5	\$3,835,272	\$10,422	\$57,073	\$155.1	<input type="checkbox"/>
Detention	-	-	\$62,196	\$163	\$5,000	\$13.6	<input type="checkbox"/>
<b>Total Stormwater Infrastru</b>	<b>36,298</b>	<b>98.6</b>	<b>\$5,484,417</b>	<b>\$14,903</b>	<b>\$80,965</b>	<b>\$220.0</b>	
<b>SEWER INFRASTRUCTURE</b>							
Laterals	23,615	64.2	\$1,322,458	\$3,534	\$773	\$2.1	<input type="checkbox"/>
Trunk + Collection	13,183	-	\$1,802,525	\$4,838	\$3,091	\$8.4	<input type="checkbox"/>
Treatment	-	-	\$136,830	\$355	\$11,532	\$31.5	<input checked="" type="checkbox"/>
<b>Total Sewer</b>	<b>36,798</b>	<b>100.0</b>	<b>\$3,321,813</b>	<b>\$9,027</b>	<b>\$15,456</b>	<b>\$42.0</b>	
<b>PARKS INFRASTRUCTURE</b>							
Sports Facility	0	0.000	\$0	\$0	\$0	\$0.0	<input type="checkbox"/>
City Park	3	0.008	\$300,000	\$2,446	\$600	\$1.6	<input type="checkbox"/>
Pocket Parks/Tot Lots	1	0.003	\$300,000	\$315	\$200	\$0.5	<input checked="" type="checkbox"/>
<b>Total Service</b>	<b>4</b>	<b>0.011</b>	<b>\$1,200,000</b>	<b>\$3,261</b>	<b>\$800</b>	<b>\$2.2</b>	
<b>SERVICE INFRASTRUCTURE</b>							
Police Officer(s)	1	-	-	-	\$30,000	\$244.6	<input type="checkbox"/>
Fire Fighter(s)	1	-	-	-	\$35,000	\$258.2	<input type="checkbox"/>
Other (health, education, etc.)	-	-	-	-	\$267,080	\$725.8	<input type="checkbox"/>
<b>Total Service</b>	<b>2</b>	<b>-</b>	<b>\$0</b>	<b>\$0</b>	<b>\$452,080</b>	<b>\$1,542</b>	

<b>Total Infrastructure Cost</b>	<b>\$19,670,369</b>	<b>\$53,452</b>	<b>\$567,578</b>	<b>\$1,542</b>
<b>On Site (Developer) Cost</b>	<b>\$17,958,540</b>	<b>\$48,800</b>		
<b>Public Sector Costs</b>	<b>\$811,830</b>	<b>\$2,206</b>	<b>\$115,498</b>	<b>\$314</b>





**Simple Payback Analysis**

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

---

Actual Simple Payback:	<b>27.7</b> yrs
Desired Simple Payback (yrs)	20
Gap per ERU (desired payba	<b>\$110</b> per year

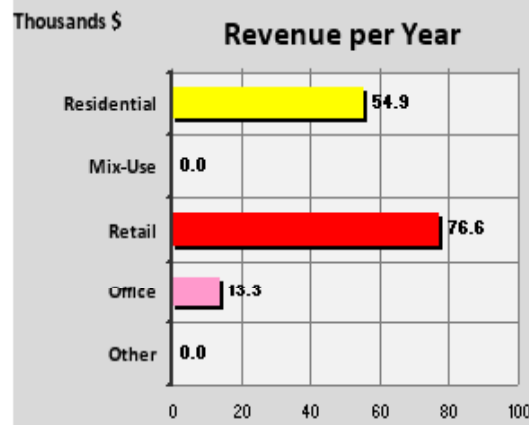
**Bond Analysis**

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

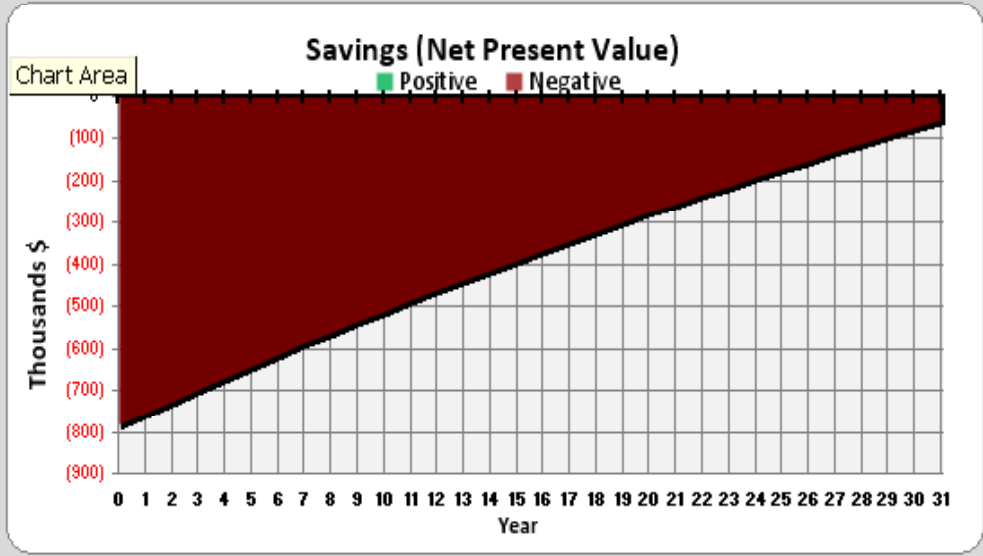
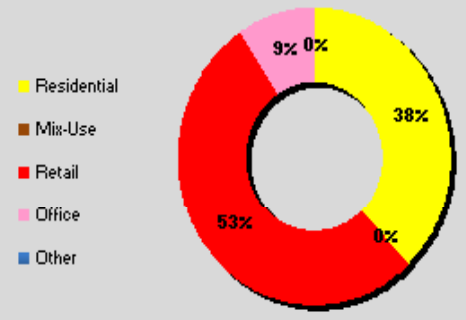
**Life Cycle Cost Analysis**

Discount Rate	5.0%
Analysis Time Period (yrs)	20
Maintenance Escalation rate	0.0%

**Net Present Value (NPV) savings (20 yrs) - \$277,203**



**Positive Revenue Sources**



**SACOG**  
IMPACS2 .0

**Step 1**  
Introduction **Define Scenario Program**

**Step 2**  
Calibrate Infrastructure Assumptions & Inputs  
Demand Capacity Cost Revenue

**Step 3**  
View Outputs & Reports Data & References

1. Specify Scenario Details **2. Enter Land Use Information** 3. Enter Development Parameters Import from Places3

Input Mode: **Enter Area**

Import Defaults from Prototype



Code	Residential	Acres	% of Land	HH Size	Net Density (DU/ac)	Avg Lot Size	Avg Bldg Footprint	# Floor	Avg DU/Bld	FAR	Set back	DU	Residents	FTE	GFA	ERU
LU_Res1	Rural Residential	0.0	0.0%	2.8	1	1	3,049	1	1	0.07	120	0	0	0	0	0
LU_Res2	Very Low Density Residential	4.0	7.8%	2.8	4	0.25	2,831	1	1	0.26	60	16	45	0	45,296	16
LU_Res3	Low Density Residential	16.0	31.4%	2.5	8	0.125	2,505	1	1	0.46	50	128	320	0	320,640	128
LU_Res4	Medium Density Residential	10.0	19.6%	2.25	12.1	0.083	1,012	2	1	0.56	40	121	272	0	244,904	121
LU_Res5	Medium-High Density Residential	0.0	0.0%	2.1	24.9	0.5	7,514	2	13	0.69	30	0	0	0	0	0
LU_Res6	High Density Residential	0.0	0.0%	1.75	43.5	2	19,602	4	87	0.9	20	0	0	0	0	0
<b>Total</b>		<b>30.0</b>	<b>58.8%</b>									<b>265</b>	<b>637</b>	<b>0</b>	<b>610,840</b>	<b>265</b>

Code	Mixed Use	Acres	% of Land	HH Size	FAR	Avg Lot	Avg Bldg Footprint	# Floor	Avg DU/Bld	sf/F TE	Set Back	DU	Residents	FTE	GFA	ERU
LU_Mix1	Mixed Use Residential Focus	3.0	5.9%	1.5	1.36	1.5	22,216	4	56	576	20	111	167	38	177,725	182
LU_Mix2	Mixed Use Employment Focus	0.0	0.0%	1.5	1.08	1.5	17,642	4	52	350	20	0	0	50	0	0
<b>Total</b>		<b>3.0</b>	<b>5.9%</b>									<b>111</b>	<b>167</b>	<b>88</b>	<b>177,725</b>	<b>182</b>

Code	Non-Residential	Acres	% of Land	HH Size	FAR	Avg Lot	Avg Bldg Footprint	# Floor	Avg DU/Bld	sf/F TE	Set Back	DU	Employees	FTE	GFA	ERU
LU_NRes1	Moderate Intensity Office	1.0	2.0%	0	1.02	0.25	5,554	2	0	350	100	0	126	126	44,431	17
LU_NRes2	Community/Neighborhood Commercial / Office	3.0	5.9%	0	0.29	0.25	1,053	3	0	350	100	0	108	108	37,897	15
LU_NRes3	Light Industrial Office	4.0	7.8%	0	0.3	0.5	3,267	2	0	350	50	0	149	149	52,272	20
LU_NRes4	Community / Neighborhood Retail	1.0	2.0%	0	0.28	0.5	6,098	1	0	576	100	0	21	21	12,197	4
LU_NRes5	Regional Retail	4.0	7.8%	0	0.34	5	74,052	1	0	576	100	0	102	102	59,242	23
LU_NRes6	Light Industry	0.0	0.0%	0	0.33	2	28,750	1	0	400	100	0	0	0	0	0
LU_NRes7	Heavy Industry	0.0	0.0%	0	0.23	2	20,038	1	0	2500	100	0	0	0	0	0
LU_NRes8	Warehouse /Storage	0.0	0.0%	0	0.33	2	28,750	1	0	20000	100	0	0	0	0	0
LU_NRes9	Recreation Center	0.0	0.0%	0	0.3	3	39,204	1	0	2175	100	0	0	0	0	0
LU_NRes10	Public/Quasi Public	0.0	0.0%	0	0.3	1.5	6,534	3	0	2175	100	0	0	0	0	0
LU_NRes11	Restaurant Dining	0.0	0.0%	0	0.28	1	12,197	1	0	482.5	50	0	0	0	0	0
LU_NRes12	Hotel	0.0	0.0%	0	0.34	3	11,108	4	0	2200	200	0	0	0	0	0
LU_NRes13	Medical / dental clinic	0.0	0.0%	0	0.98	1	42,689	1	0	350	50	0	0	0	0	0
LU_NRes14	Church	0.0	0.0%	0	0.23	2	20,038	1	0	2175	100	0	0	0	0	0
LU_NRes15	Schools	0.0	0.0%	0	0.3	5	65,340	1	0	1370	200	0	0	0	0	0
<b>Total</b>		<b>13.0</b>	<b>25.5%</b>									<b>0</b>	<b>506</b>	<b>506</b>	<b>206,039</b>	<b>79</b>

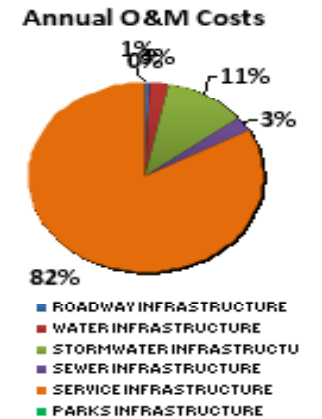
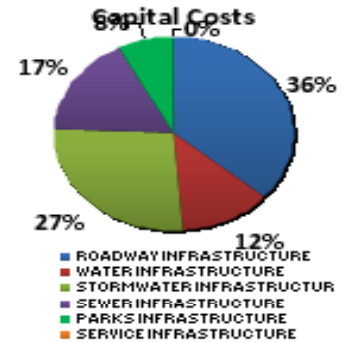
**MUNICIPAL INFRASTRUCTURE SUMMARY**

Select Standards Scenario: Median  
 Select Cost Scenario:  
 Select Capacity Scenario:

**Public Sector Cost Implication**

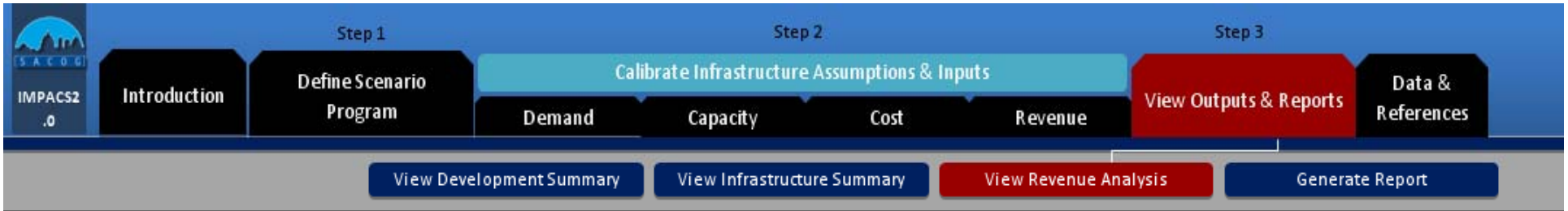
Capital Cost	Cost / ERU	Annual O&M	O&M / ERU
\$867,092	\$1,648	\$121,894	\$232

Component	Quantities		Capital Construction Costs		Annual O&M Costs		Check to Include Capital Cost or
	Total (ft)	Ft/ERU	Total	Per ERU	Total	Per ERU	
<b>ROADWAY INFRASTRUCTURE</b>							
Local Streets	9,344	17.8	\$5,022,004	\$5348	\$2,614	\$5	<input type="checkbox"/>
Major Streets	3,519	6.7	\$2,233,459	\$4,246	\$1,223	\$2	<input type="checkbox"/>
Street Upgrades	0	0.0	\$0	\$0	\$0	\$0	<input checked="" type="checkbox"/>
<b>Total Streets &amp; Roadway</b>	<b>12,863</b>	<b>24.5</b>	<b>\$7,255,463</b>	<b>\$13,794</b>	<b>\$3,837</b>	<b>\$7</b>	
<b>WATER INFRASTRUCTURE</b>							
Laterals	21,915	41.7	\$460,222	\$875	\$1,186	\$2.3	<input type="checkbox"/>
Distribution + Main	13,363	25.4	\$1,718,082	\$3,266	\$4,744	\$9.0	<input type="checkbox"/>
<b>Total Water Distribution</b>	<b>35,278</b>	<b>67.1</b>	<b>\$2,178,304</b>	<b>\$4,141</b>	<b>\$5,930</b>	<b>\$11.3</b>	
<b>Supply, Treatment, Storage</b>	-	-	<b>\$315,000</b>	<b>\$599</b>	<b>\$11,860</b>	<b>\$22.5</b>	<input checked="" type="checkbox"/>
<b>Total Water</b>	<b>0</b>	<b>0.0</b>	<b>\$2,493,304</b>	<b>\$4,740</b>	<b>\$17,790</b>	<b>\$33.8</b>	
<b>STORMWATER INFRASTRU</b>							
Laterals	21,915	41.7	\$1,472,710	\$2,800	\$17,532	\$33.3	<input type="checkbox"/>
Collection	12,863	24.5	\$3,889,733	\$7,395	\$57,883	\$110.0	<input type="checkbox"/>
Detention	-	-	\$59,800	\$114	\$5,000	\$9.5	<input type="checkbox"/>
<b>Total Stormwater Infrastru</b>	<b>34,778</b>	<b>66.1</b>	<b>\$5,422,243</b>	<b>\$10,308</b>	<b>\$80,415</b>	<b>\$152.9</b>	
<b>SEWER INFRASTRUCTURE</b>							
Laterals	21,915	41.7	\$1,227,258	\$2,333	\$349	\$1.8	<input type="checkbox"/>
Trunk + Collection	13,363	-	\$1,827,150	\$3,474	\$3,795	\$7.2	<input type="checkbox"/>
Treatment	-	-	\$252,092	\$479	\$14,232	\$27.1	<input checked="" type="checkbox"/>
<b>Total Sewer</b>	<b>35,278</b>	<b>67.1</b>	<b>\$3,306,500</b>	<b>\$6,286</b>	<b>\$18,976</b>	<b>\$36.1</b>	
<b>PARKS INFRASTRUCTURE</b>							
Sports Facility	0	0.000	\$0	\$0	\$0	\$0.0	<input type="checkbox"/>
City Park	4	0.008	\$1,200,000	\$2,281	\$675	\$1.3	<input type="checkbox"/>
Pocket Parks/Tot Lots	1	0.002	\$300,000	\$570	\$200	\$0.4	<input checked="" type="checkbox"/>
<b>Total Service</b>	<b>5</b>	<b>0.010</b>	<b>\$1,500,000</b>	<b>\$2,852</b>	<b>\$875</b>	<b>\$1.7</b>	
<b>SERVICE INFRASTRUCTURE</b>							
Police Officer(s)	1	-	-	-	\$30,000	\$171.1	<input type="checkbox"/>
Fire Fighter(s)	2	-	-	-	\$190,000	\$361.2	<input type="checkbox"/>
Other (health, education, etc.)	-	-	-	-	\$308,081	\$585.7	<input type="checkbox"/>
<b>Total Service</b>	<b>3</b>	<b>-</b>	<b>\$0</b>	<b>\$0</b>	<b>\$588,081</b>	<b>\$1,118.0</b>	



<b>Total Infrastructure Cost</b>	<b>\$19,977,509</b>	<b>\$37,980</b>	<b>\$709,975</b>	<b>\$1,350</b>
<b>On Site (Developer) Cost</b>	<b>\$17,910,418</b>	<b>\$34,050</b>		
<b>Public Sector Costs</b>	<b>\$867,092</b>	<b>\$1,648</b>	<b>\$121,894</b>	<b>\$232</b>





**Simple Payback Analysis**

Total Public Sector Costs	\$867,092
Public Sector Annual O&M Costs	\$121,894
Annual Revenue (Taxes etc.)	\$168,290
<b>Annual Net Revenue</b>	<b>\$46,396</b>

---

Actual Simple Payback: **18.7** yrs

Desired Simple Payback (yrs):

Gap per ERU (desired payba): **\$0** per year

**Bond Analysis**

Maturity period (yrs):

Coupon Rate:

Annual Coupon Payments: \$43,355

Total Additional Funds: **\$3,042**

Bond Gap per ERU: **\$0**

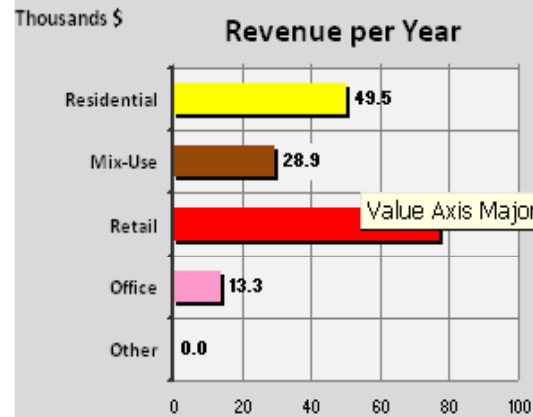
**Life Cycle Cost Analysis**

Discount Rate:

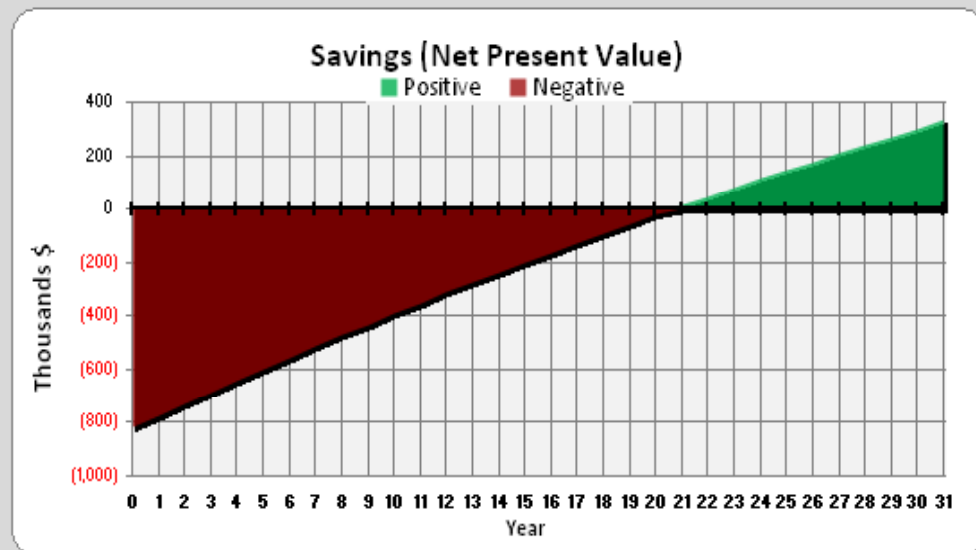
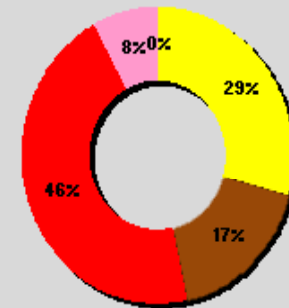
Analysis Time Period (yrs):

Maintenance Escalation rate:

**Net Present Value (NPV) savings (20 yrs): -\$20,139**

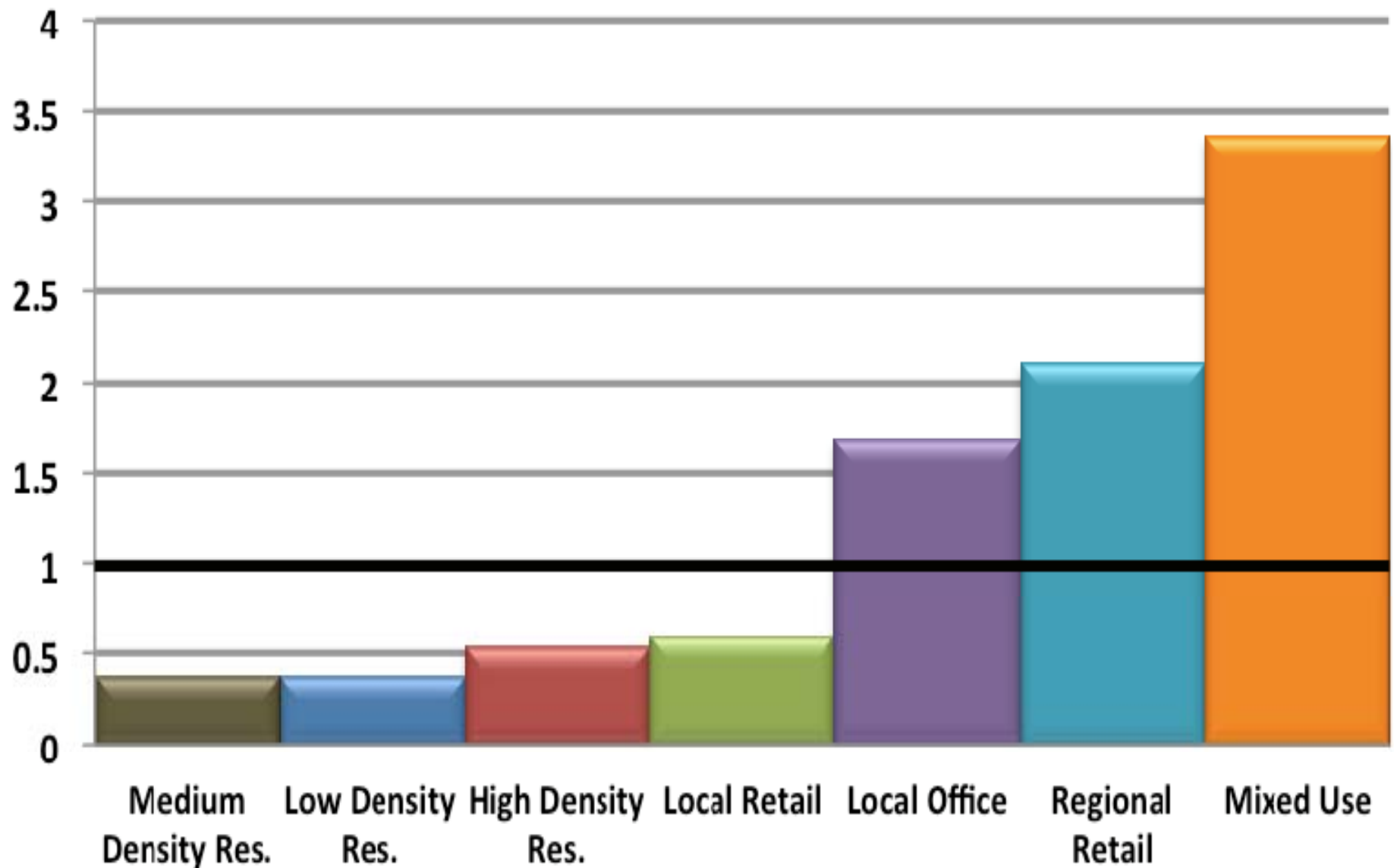


**Positive Revenue Sources**

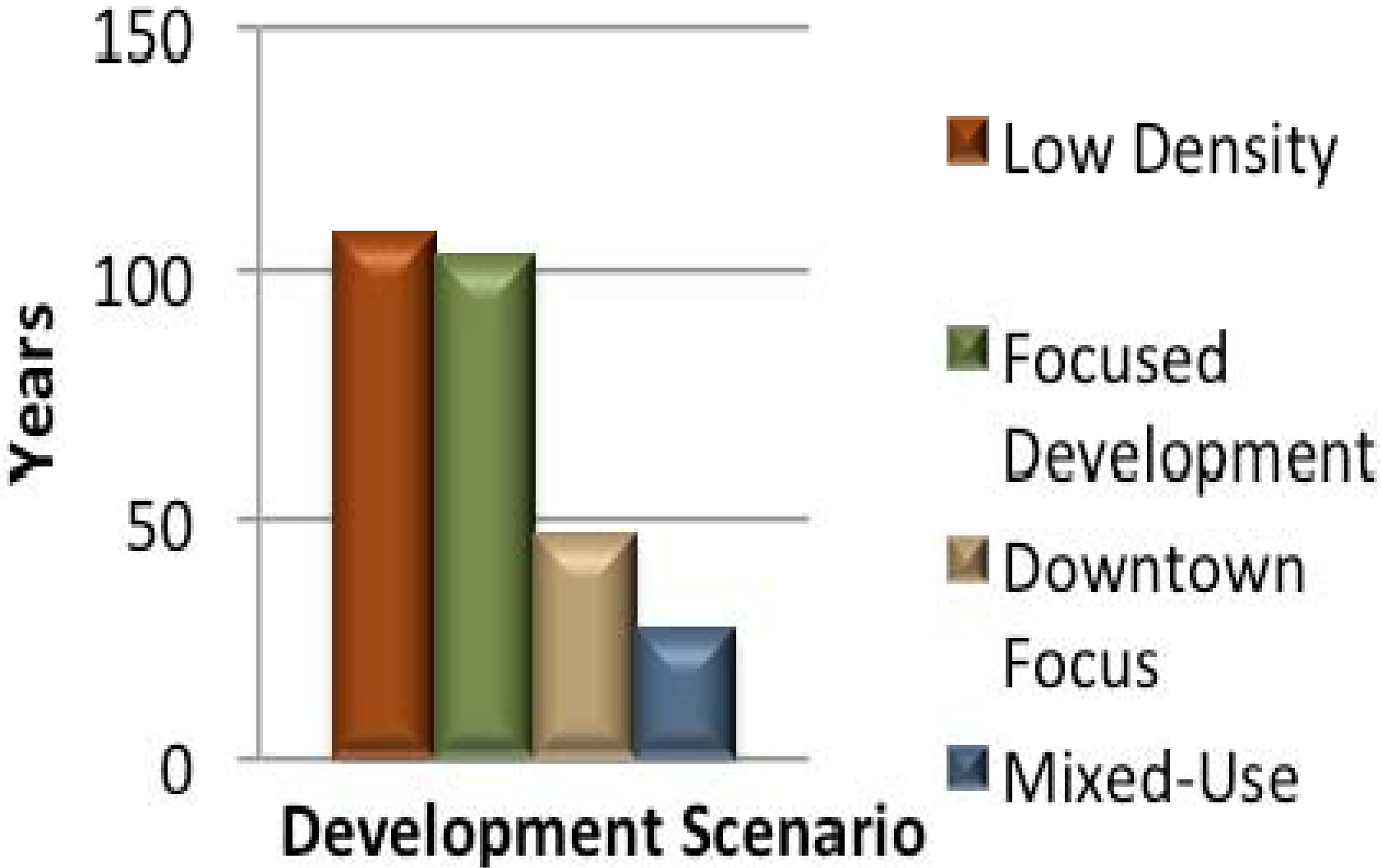




# Ratio of Revenue to Cost, Per-Acre

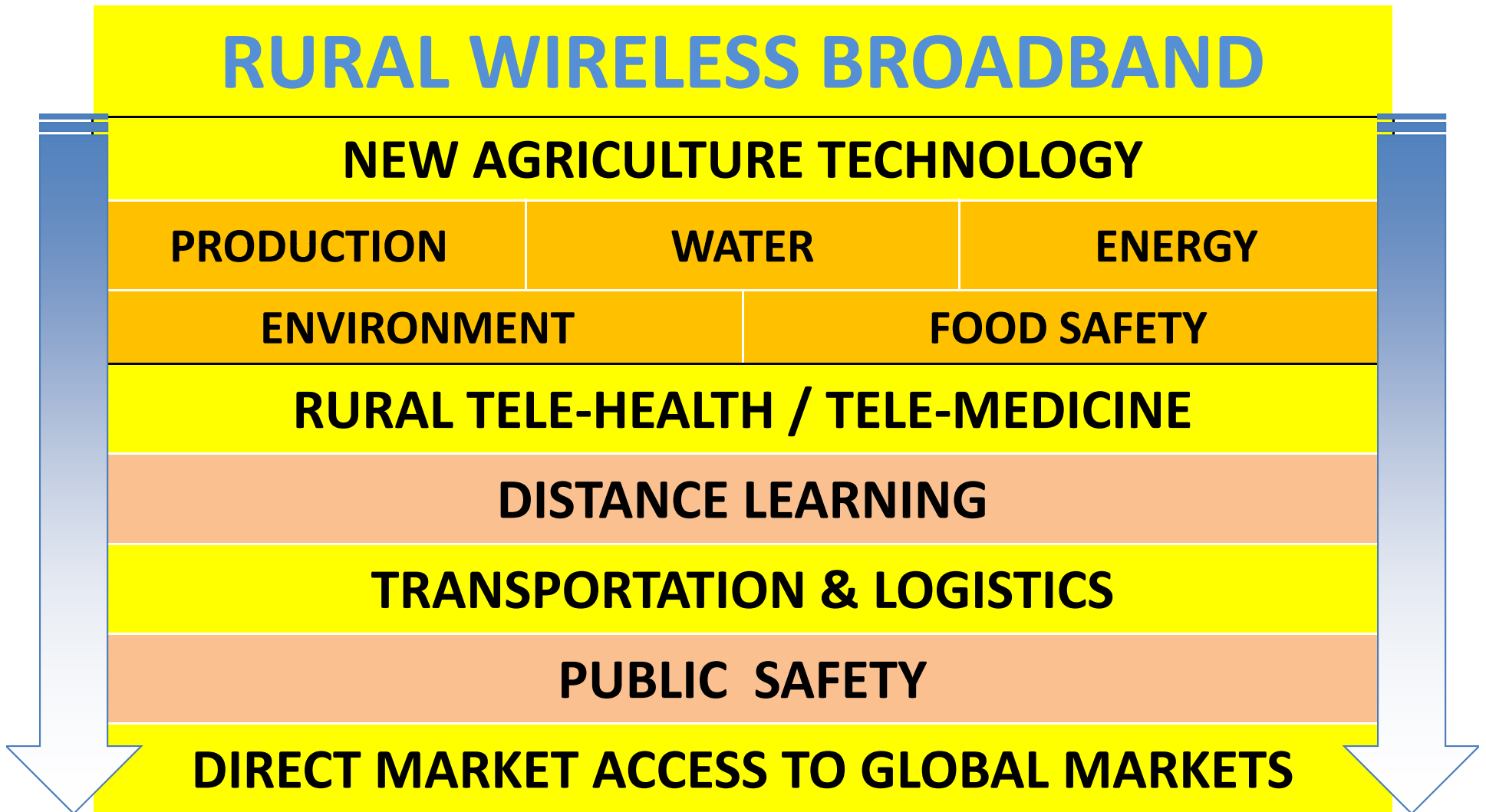


# Payback Period

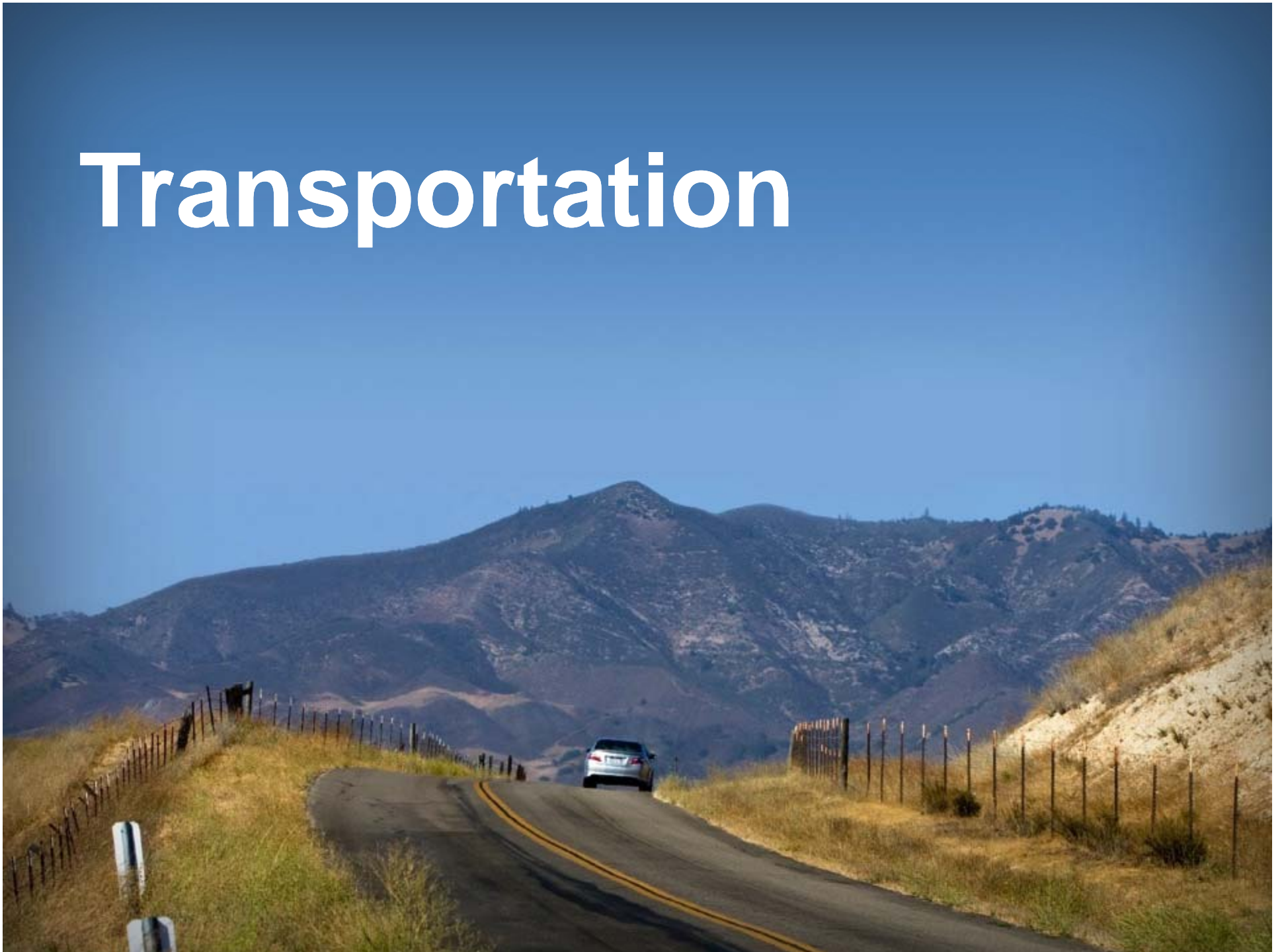


# Infrastructure BROADBAND

**FOUNDATION FOR ECONOMIC  
GROWTH AND OPPORTUNITY**



# Transportation





# Rural Transportation

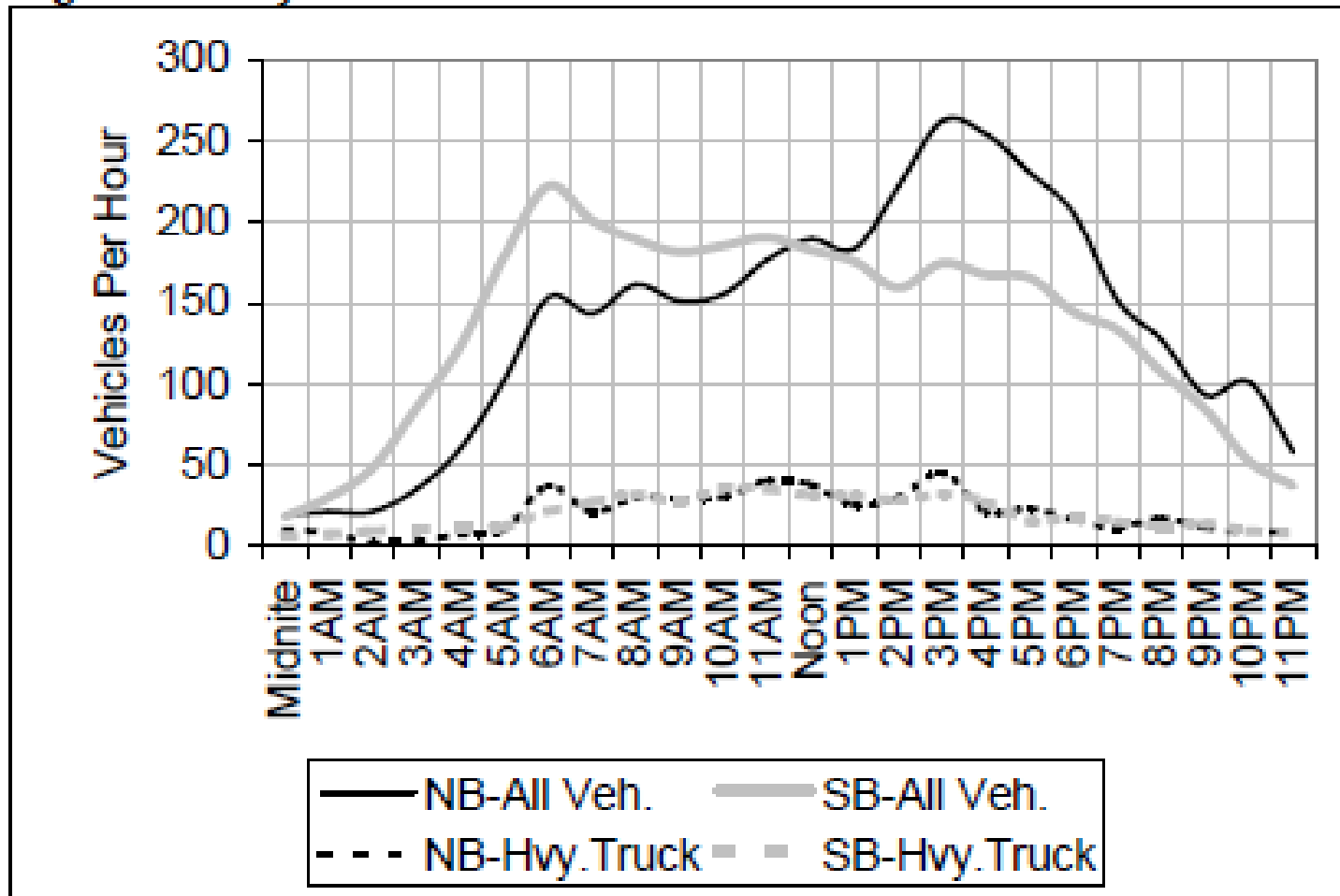
## Challenges

- Urbanizing rural roads
- Conflicts/accidents
- Farm worker transport
- Road standards
- Maintenance
- Rural Mobility



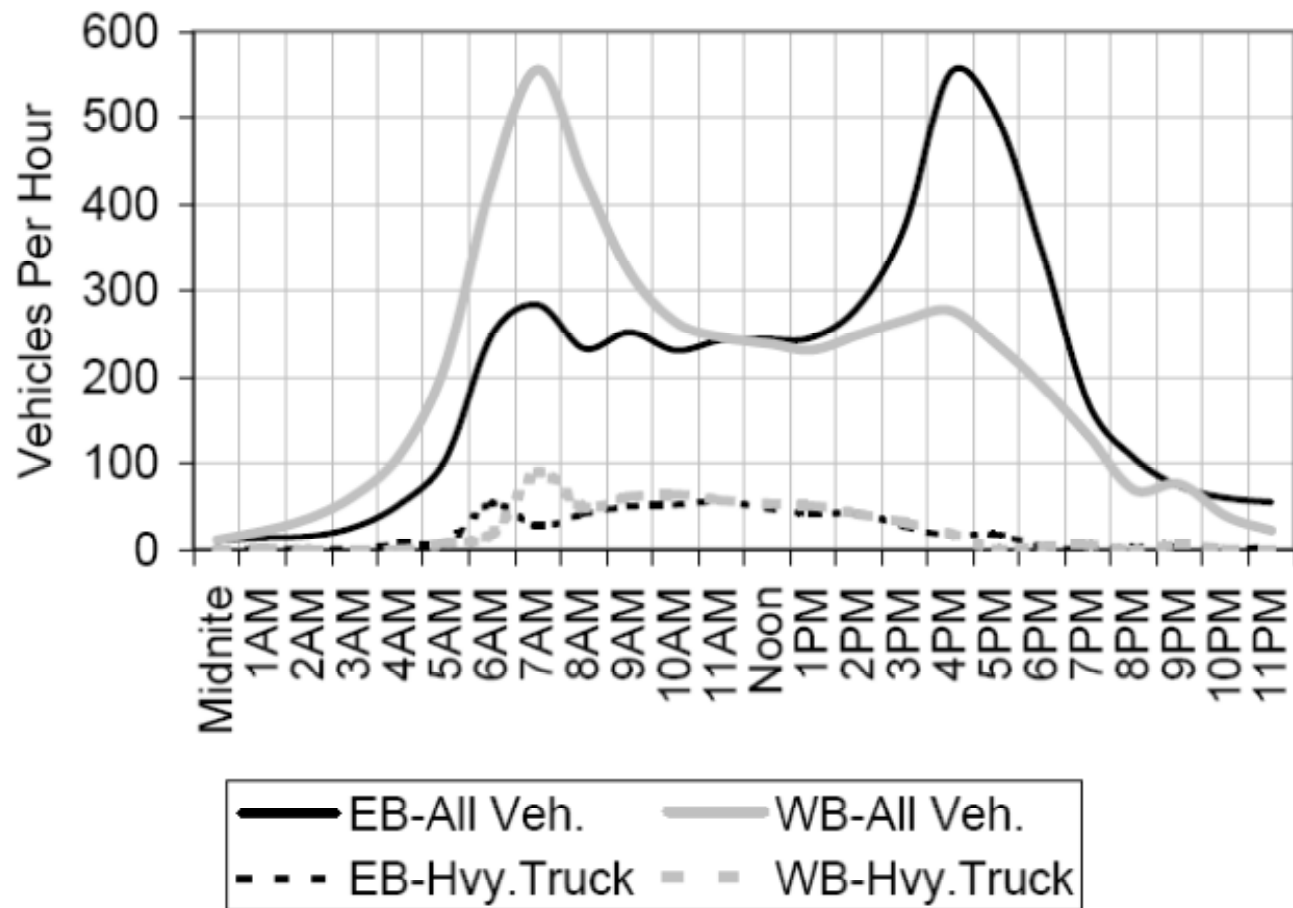
# Rural Traffic Profile

Average Weekday Traffic Distribution



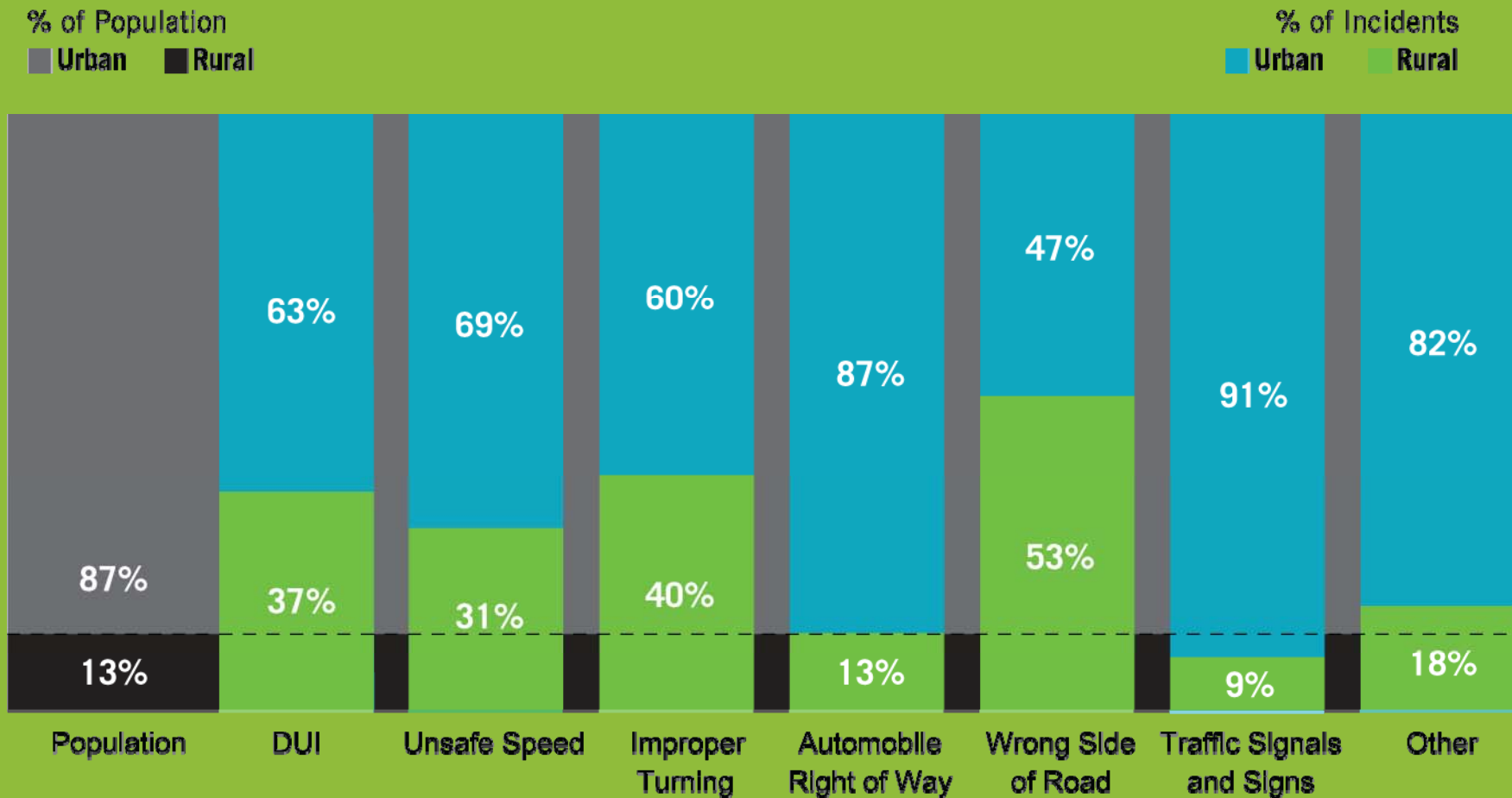
# Urban or Rural?

Average Weekday Traffic Distribution



# Urban Rural/Edge Travel: Existing Conditions

## 44% of fatal collisions vs. 13% of population







# Port of West Sacramento

# Expanded Mobility: Existing Conditions

- Unsafe & unreliable transportation for ag workers
- Agricultural worker transportation program (AWTP)





# Farm to Market Routes



# Agritourism

CARSON RD

1 High Hill Ranch ←

3 Boa Vista Orchards

6 Madrona Vineyards ←

40 Fudge Factory Farm ←

42 Cardanini  
Pumpkin Patch ←



EL DORADO COUNTY  
FARM





# Rural Road Maintenance

	Road Miles	Population	Road Miles/Person	Percent Road Miles	Percent Population
Urban	8,777	1,781,419	0.0049	52%	87%
Rural	8,258	275,824	0.0299	48%	13%
Total	17,035	2,057,243	0.0083		

**Rural communities at a disadvantage in finding funds to maintain roadways**

**→ SACOG Rural Funding Guide**

# Regulations

- Production
- Infrastructure
- Types of regulations
- Cost of regulations
- *Permit Streamlining / Regulatory Relief*



**David Shabazian**

**916.340.6231**

**dshabazian@sacog.org**

**[www.sacog.org/rucs](http://www.sacog.org/rucs)**