APPENDIX A

LAND USE ASSUMPTIONS

MEMORANDUM

TO: Transportation Corridors Visioning Steering Committee

FROM: Lynda David, Project Manager

Mark Harrington, Transportation Analyst

DATE: October 6, 2006

SUBJECT: **Draft Forecast of 2050 Population and Employment, Transportation Corridor Visioning Study**

A critical element of the Transportation Corridors Visioning project is a forecast of the population and employment within Clark County in 2050. As the scope of work for the 50-year visioning study was developed, it was agreed that the 2050 forecast would be a projection of the principles, policies and assumptions from the current Comprehensive Growth Management Plan update (GMA). Therefore, the draft 2050 forecast presented below is based on trending to 2050 from the 2024 GMA forecast using GMA policies and assumptions.

Estimating future population growth at such a long-range requires a number of assumptions. The leading assumption is to establish a growth rate that is reasonable given available data and forecasts. Washington's Office of Financial Management (OFM) provides population forecasts for state and local jurisdictions out to the year 2025. The OFM forecast provides high, medium and low estimates by year. The annual growth rate in the OFM forecast for Clark County between 2024 and 2025 is 1.72% for the high forecast and 1.28% for the mid forecast. One long-range population forecast for the 7-county Portland/Vancouver PSMA uses 1.4% as a mid-level growth rate. The table below uses an annual population growth rate of 1.6% to grow the 2024 GMA population out to 2050. The rate was chosen because it is between the high and mid rates at the tail end of OFM's 2025 forecast for the county and is slightly higher than the mid-growth rate used for the broader 7-county, long-range forecast. The assumption is that Clark County will grow at a faster rate than the urban region as a whole.

Draft 2050 Population and Household Forecast

	2004 GMA Base	2024 GMA DEIS	Draft 2050		2004 to 2050 Growth	2024 to 2050 Growth
Population	391,675	584,310	882,835		491,160	298,525
Households	145,604	225,602	360,341		214,737	134,739
Persons/Household	2.69	2.59	2.45			

Household forecasts are based on combining population forecast with a forecast of average household size. The trend in household size has been decreasing due to an aging population, currently driven by the baby boomer generation, and decreasing birth rates. These trends are expected to continue to decrease the average household size in Clark County. OFM estimated

the average Clark County household size in 2005 was 2.64 and would decrease to 2.59 by 2010. Therefore, a rate of 2.45 persons per household could be a reasonable assumption for 2050.

Forecasting employment over such a long time frame requires a host of land use and economic cycle assumptions. However, if we go back to the current GMA update it forecasts 0.7268 new jobs for each new county resident. Assuming a continuation of that trend, an additional 216,990 jobs would be added to the county between 2024 and 2050, given population growth of 298,525 persons.

Draft 2050 Employment Forecast

	2004 GMA Base	2024 GMA DEIS	Draft 2050		2004 to 2050 Growth	2024 to 2050 Growth
Employment	121,074	261,095	478,085		357,011	216,990

The proposed draft population and employment growth forecasts for 2050 result in two and half times as many households in 2050 as were in Clark County at the end of 2004 and nearly four times the number of jobs. This growth can be expected to require the urbanization of land above and beyond any of the currently proposed urban growth areas (UGAs) found in the Draft Environmental Impact Statement for the Comprehensive Growth Management Plan (DEIS). Identifying the geographic location of the household and employment growth beyond the current planning horizon of 2024 will be another crucial element of the Visioning study.

Assuming that the land in the proposed UGAs from Alternative 2 of the DEIS would be built-out with the household and employment forecast for 2024, rural land would need to be converted to urban land for an additional 138,000 households and 217,000 jobs. Using the household and job yields per gross acre found in the DEIS (pg. 20), the amount of rural land needed to convert for 2024 to 2050 growth can be estimated (see table below).

Draft 2050 Land Need for Urban Conversion to Meet Growth Forecast

	2024 to 2050 Growth	Acres Needed	Sq. Miles Needed
Households	134,739	35,537	55.5
Employment	216,990	30,773	48.1
Total		66,310	103.6

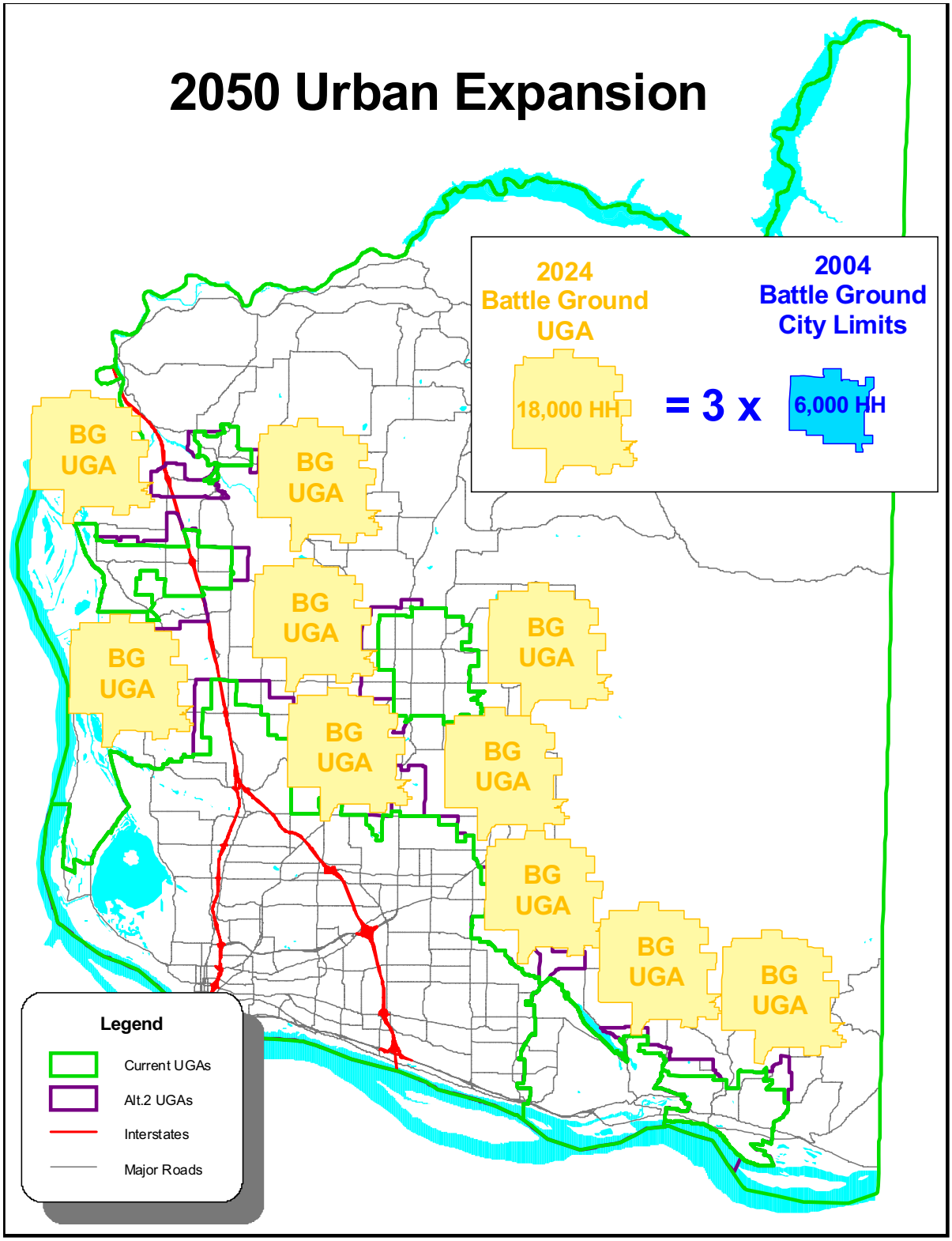
By way of comparison, the UGA lands in Alternative 2 of the DEIS total roughly 100,000 acres, or 156 sq. miles. An additional 66,000 acres is about the size of the Vancouver UGA, or 10 Battle Ground UGAs, as defined in Alternative 2 of the DEIS. The attached map shows 10 Battle Ground UGA outlines placed outside of the proposed 2024 UGAs to provide a sense of

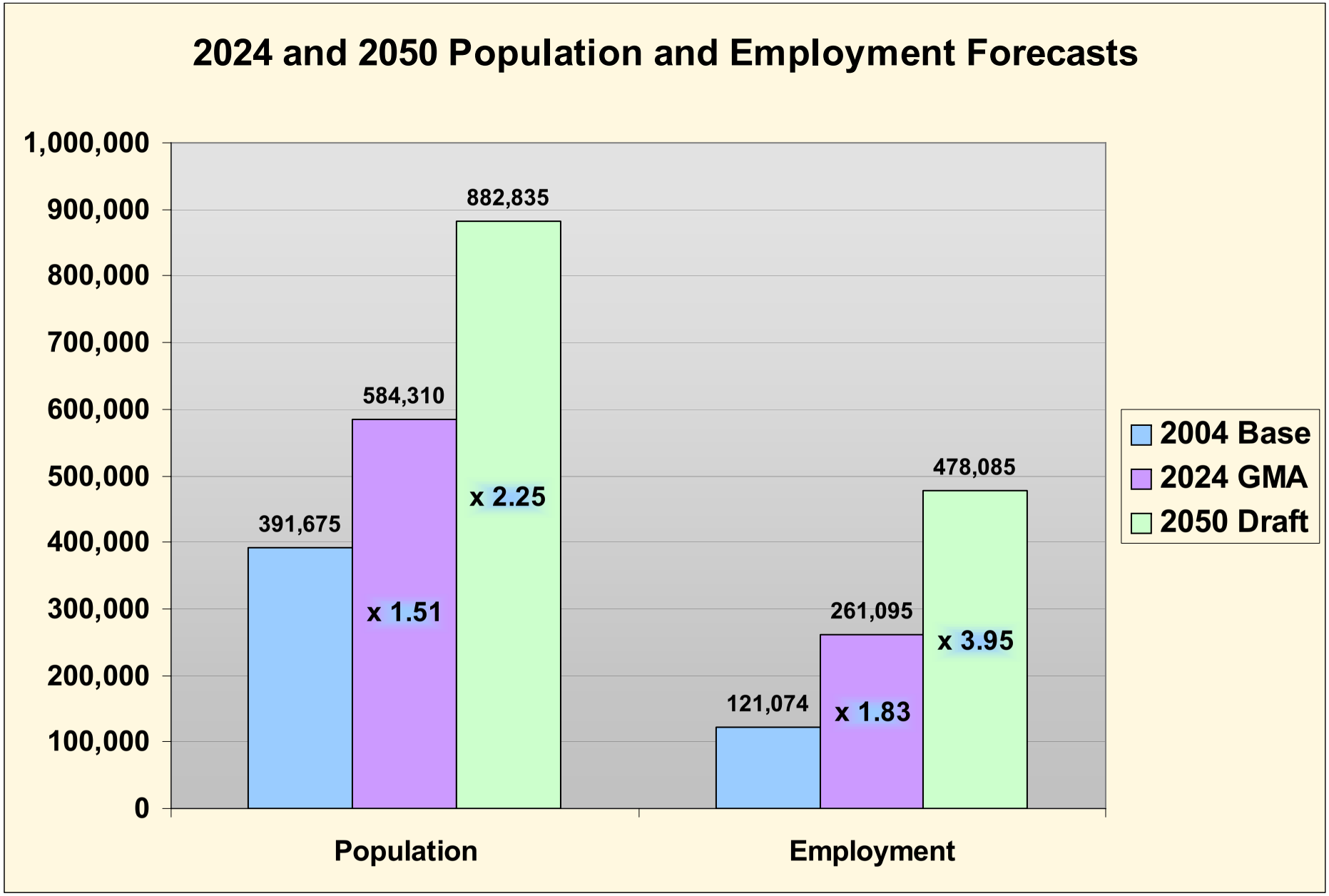
the amount of new urban land required by 2050. It should be noted that the number of households within the 2024 Battle Ground UGA is 18,000, which is three times the number of households within the Battle Ground City limits at the end of 2004. Also attached is a graph of 2024 and 2050 forecasts of population and employment.

The 2050 forecasts of population, households and employment presented in this memo are for discussion by the Transportation Corridor Visioning Steering Committee. They have been developed by incorporating the policies and assumptions of the current 2024 GMA forecasts and represent a starting point for discussion of what land use is to be considered as a basis for this Visioning study.

October 6, 2006 Steering Committee discussion:

Steering Committee members reviewed this Memo and a graph showing low, medium and high forecast population projections, 1960 to 2050. After discussion, the Committee decided it would be preferable to focus the Study on what transportation corridors are needed to serve the County's population when it reaches a million rather than risk getting hung up on the controversial average annual growth rate issue. Current growth projections indicate the County's population could reach a million in about 50 years.


2050 Urban Expansion
2024
Battle Ground
UGA
18,000 HH
= 3 x
2004
Battle Ground
City Limits
6,000 HH
BG
UGA
Legend
Current UGAs
Alt.2 UGAs
Interstates
Major Roads


2024 and 2050 Population and Employment Forecasts
1,000,000
900,000
800,000
700,000
600,000
500,000
400,000
300,000
200,000
100,000
0
391,675
584,310
882,835
x 1.51
x 2.25
121,074
261,095
478,085
x 1.83
x 3.95
Population
Employment
2004 Base
2024 GMA
2050 Draft

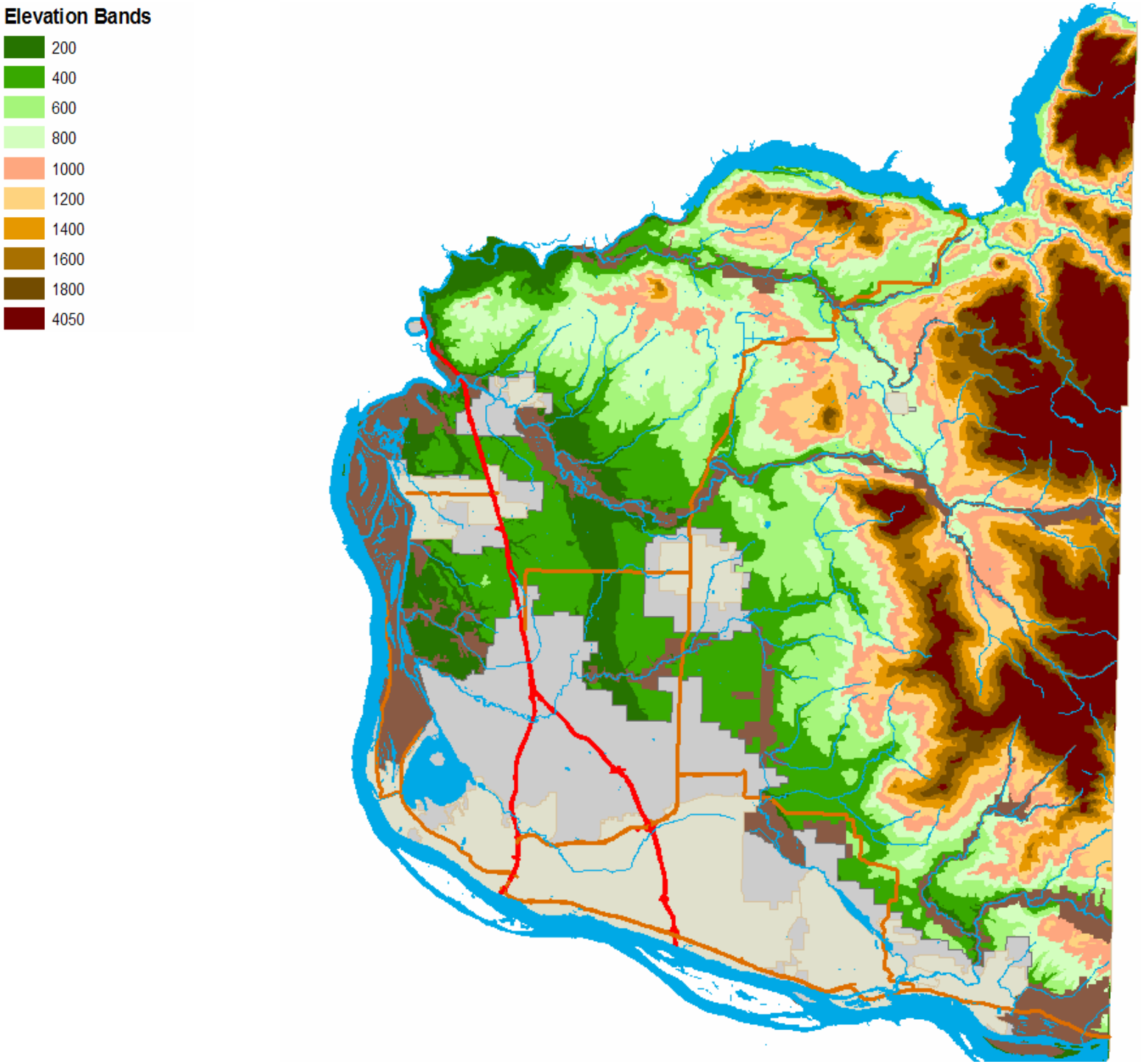
Transportation Corridor Visioning Study

Land Use Analysis Update

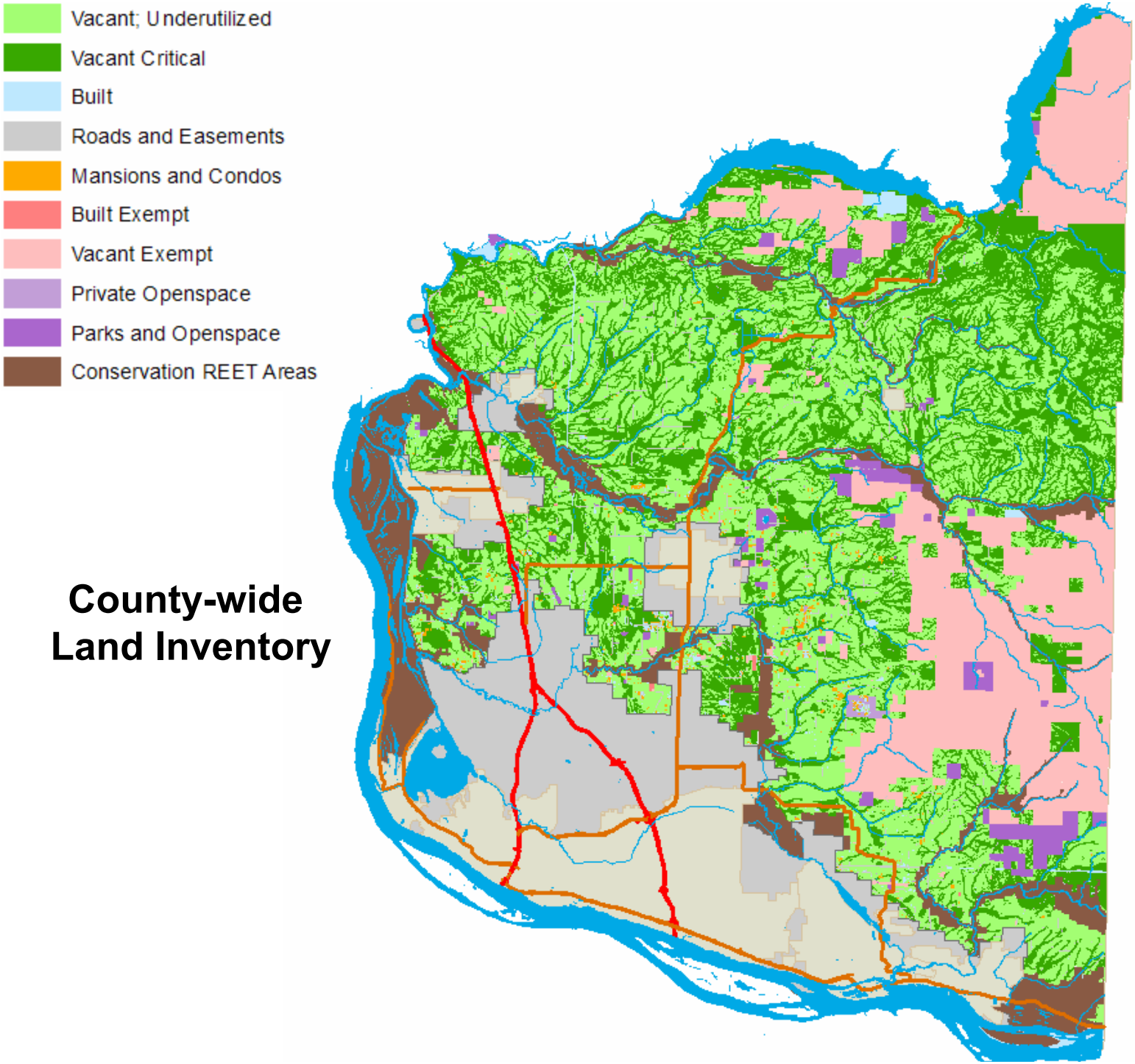
February 2, 2006

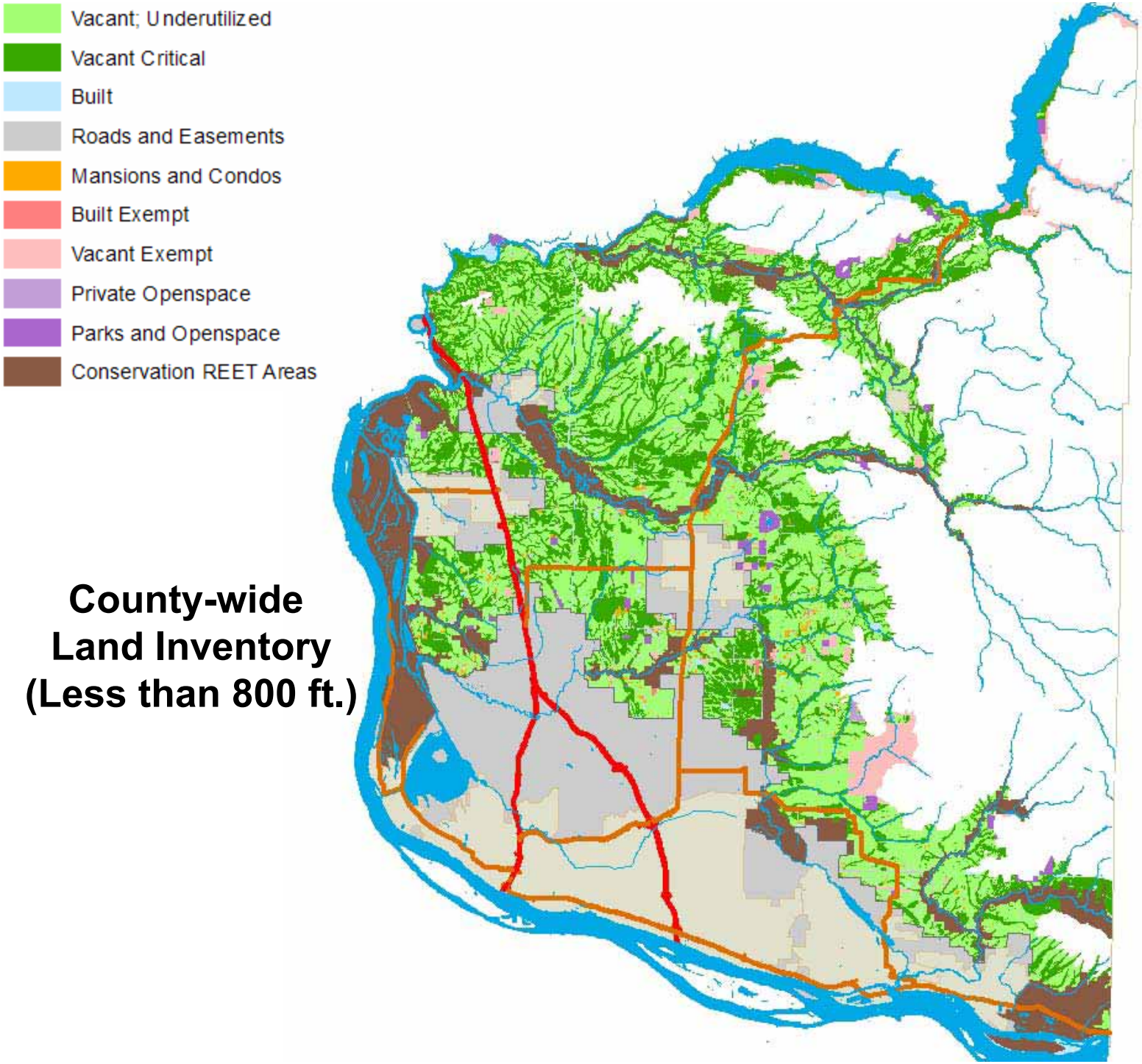
Outline

- Review
- Local Jurisdiction Feedback
- A Possible Future


Elevation Bands
200
400
600
800
1000
1200
1400
1600
1800
4050

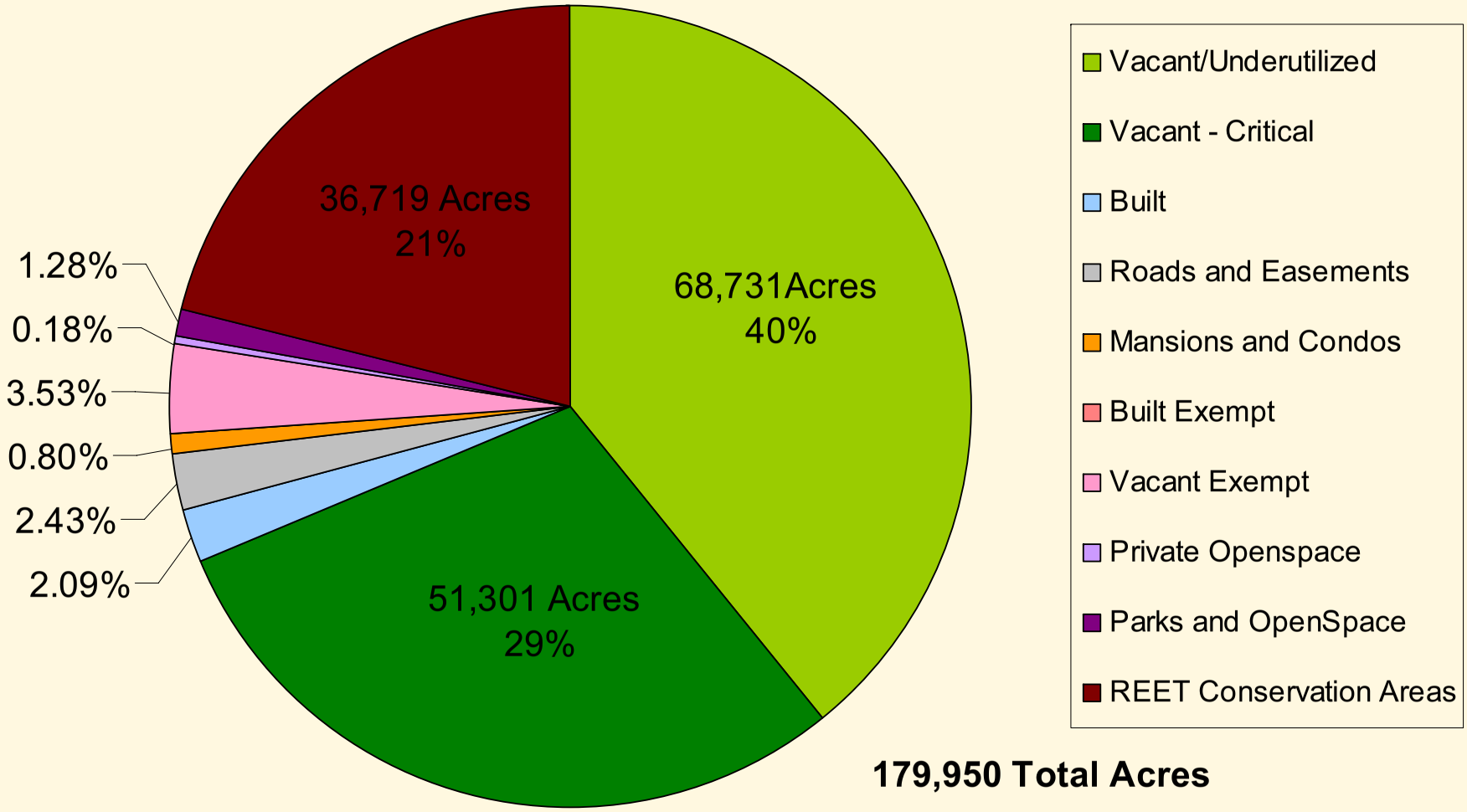
County-wide Land Inventory





County-wide Land Inventory (Less than 800 ft.)

Land Inventory Below 800 ft. Elevation
(Excludes FEIS Alternative UGAs)



179,950 Total Acres

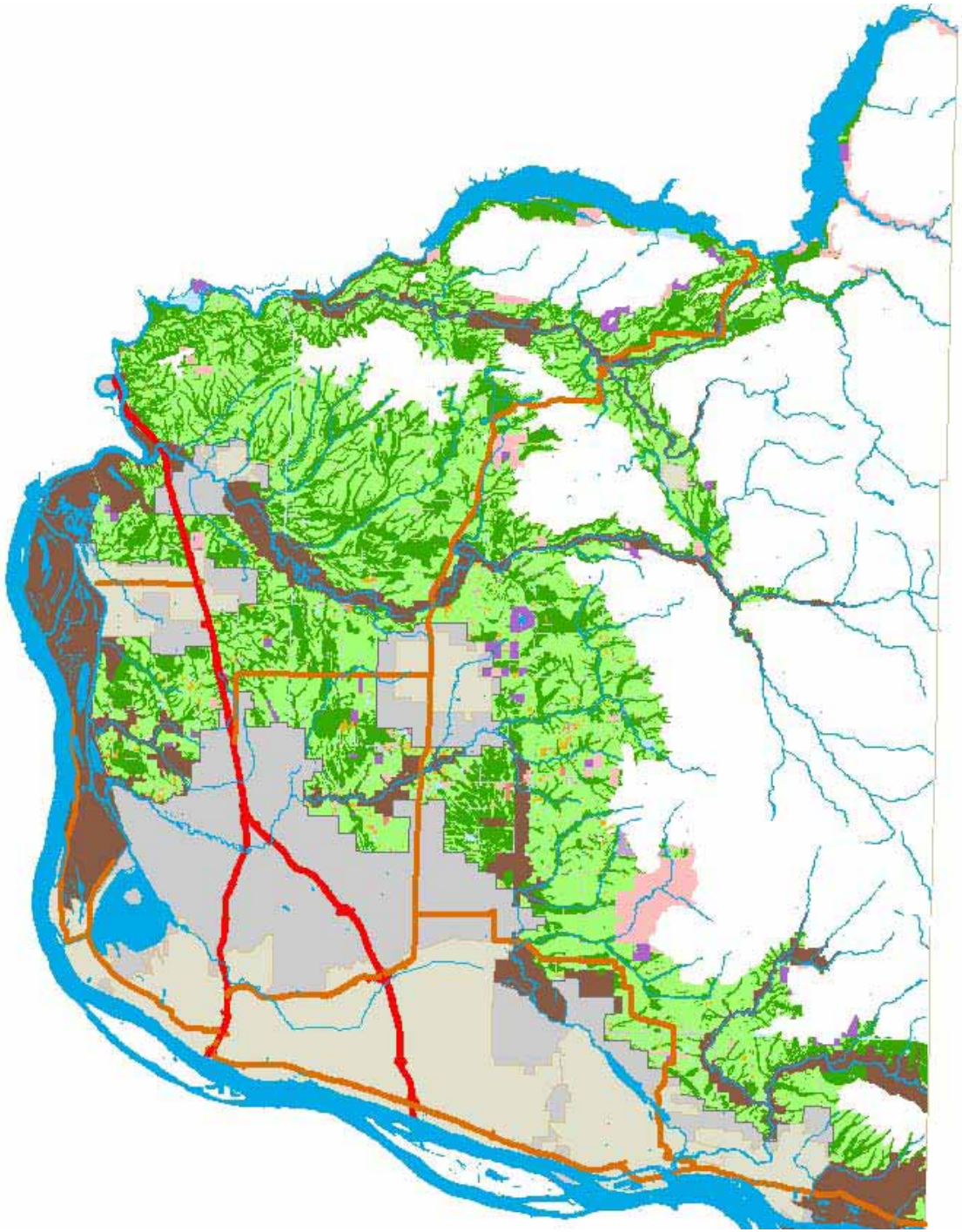
120,032 Gross Buildable Acres

Land Capacity vs. Forecasted Growth

	Gross Acres	Growth Capacity	Growth Forecast	Capacity vs. Forecast Difference
Households	87,795	170,546	186,669	16,123
Employment	32,237	241,316	241,316	0
Total Acres	120,032			

Vacant; Underutilized
Vacant Critical
Built
Roads and Easements
Mansions and Condos
Built Exempt
Vacant Exempt
Private Openspace
Parks and Openspace
Conservation REET Areas

County-wide Land Inventory (Less than 800 ft.)

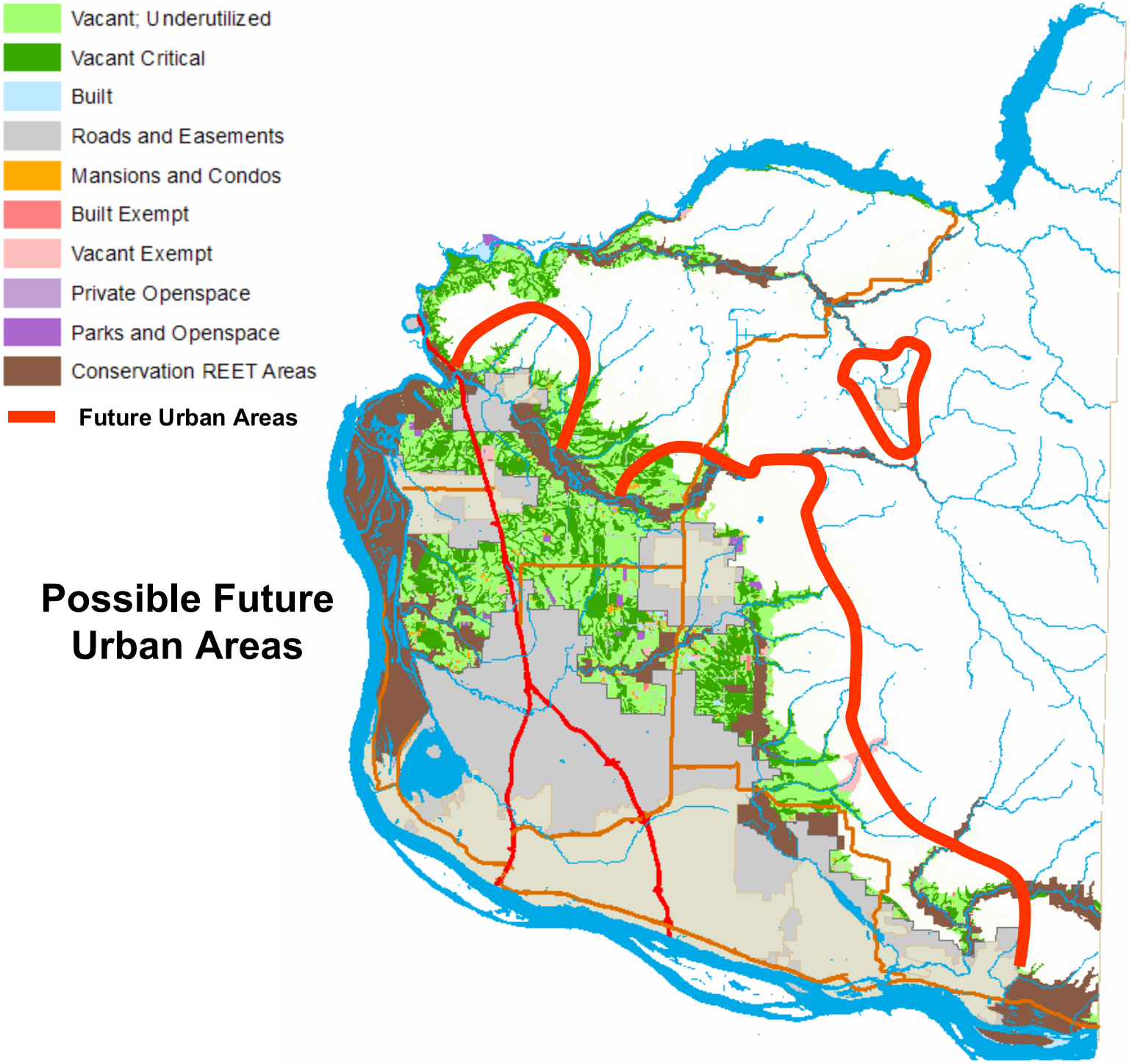


Local Jurisdiction Feedback

- Where would it be hard to develop?
  - Across drainages (e.g., East Fork)
  - Over high ridges and mountains (e.g., Bald Mt.)

- What would future urban development look like?
  - Redevelopment of existing centers at greater densities
  - Infill on “never to convert” land
  - Redevelopment of older (75yrs) structures

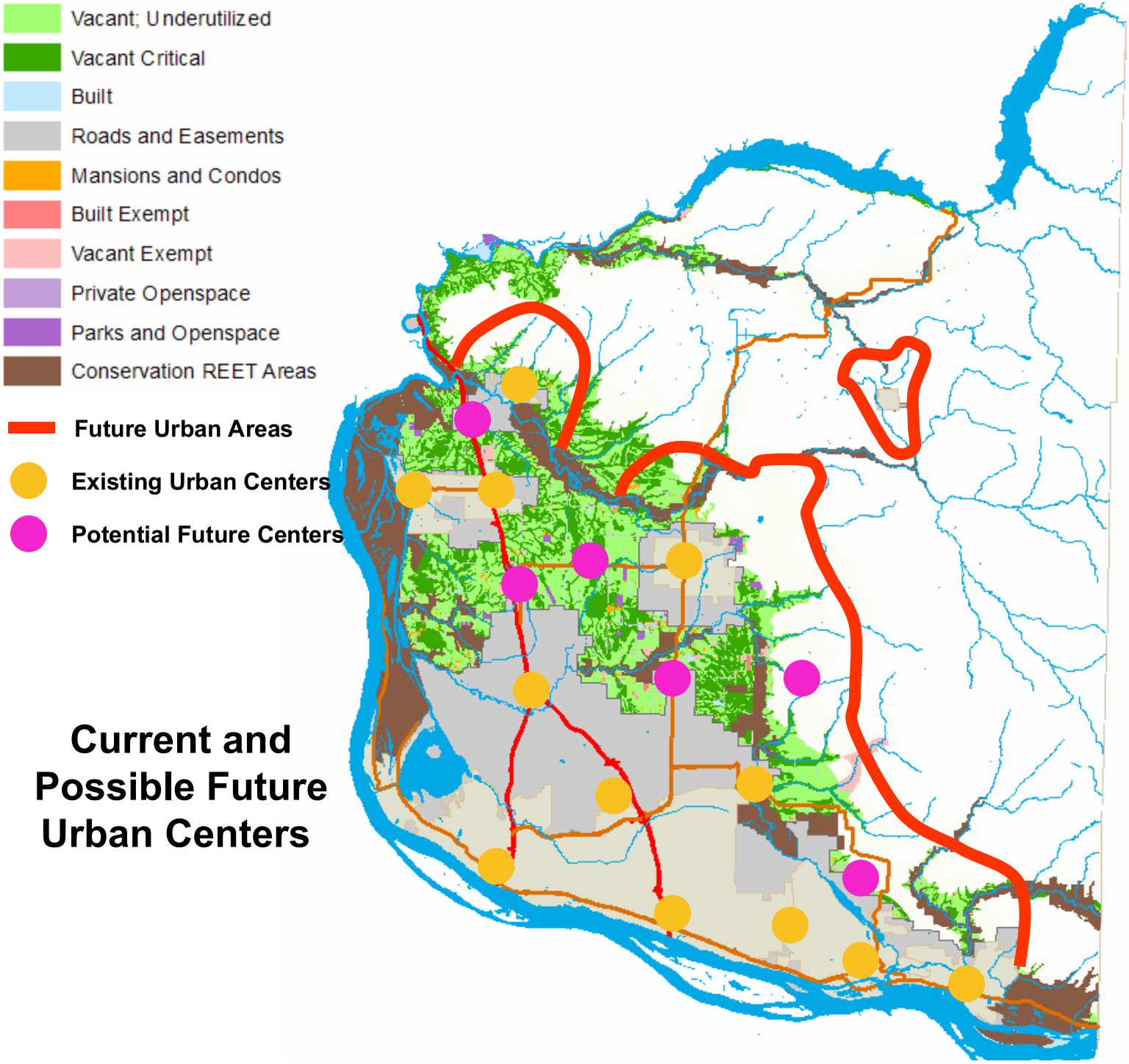
Possible Future Urban Areas



Future Urban Centers

- Existing centers will grow up and out

- New centers may occur where:
  - Cross roads of major transportation facilities
    - New and developing interstate interchanges
    - Along new corridors
  - Small centers or isolated clusters of housing currently exist



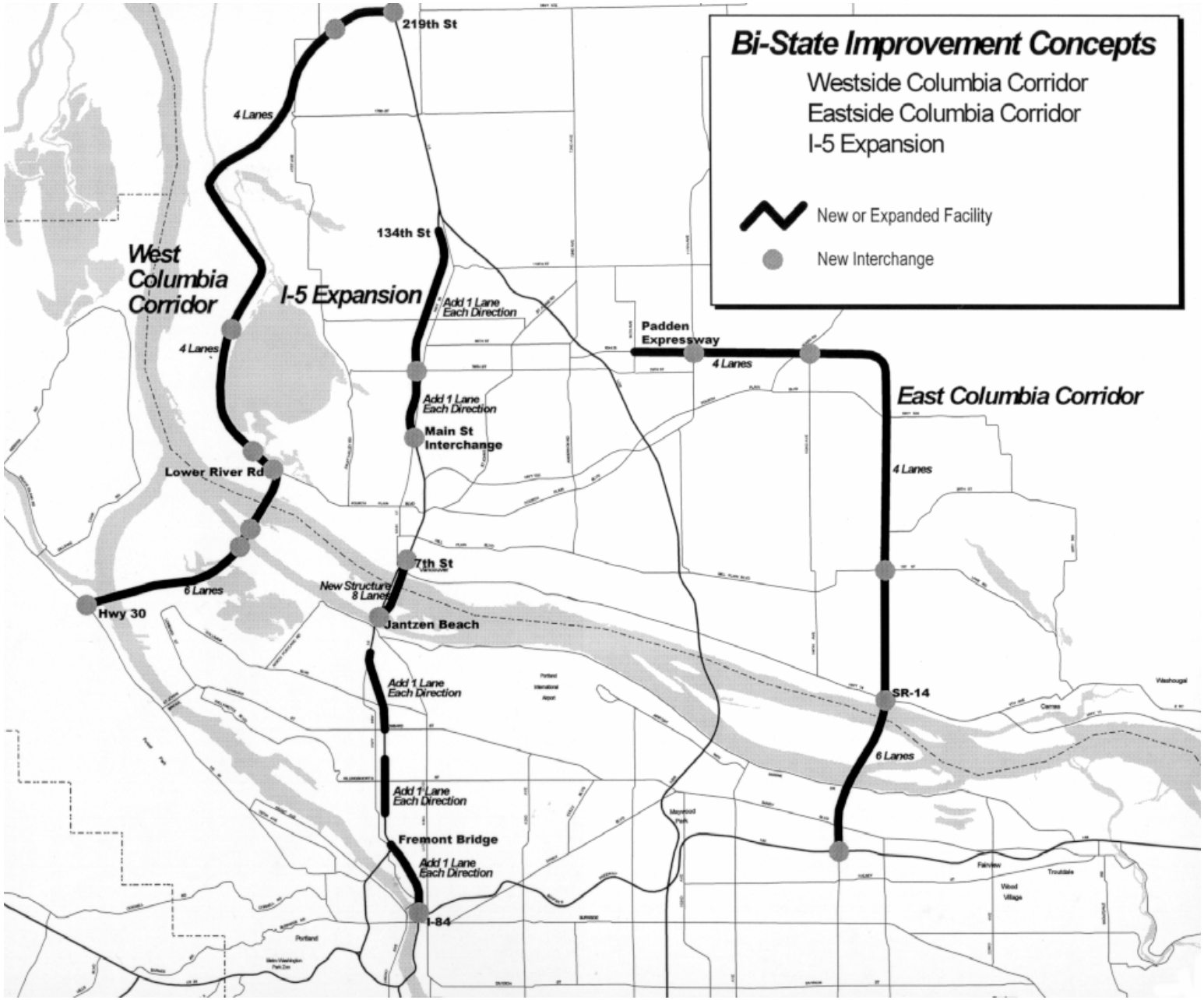
Current and Possible Future Urban Centers

Transportation Corridor Visioning Study

Historical Context

Bi-State Improvement Concepts

May 1996

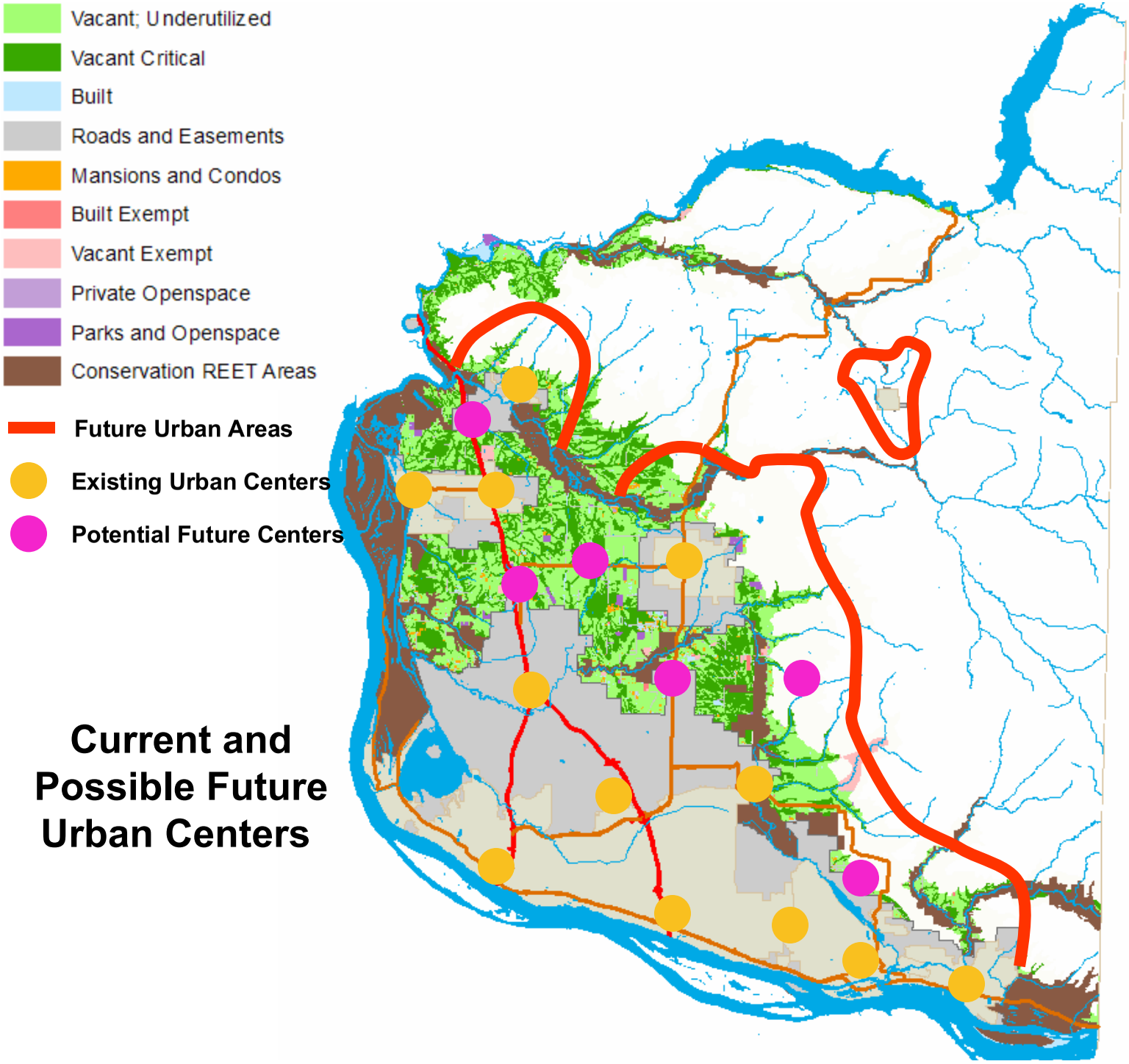

Bi-State Improvement Concepts
Westside Columbia Corridor
Eastside Columbia Corridor
I-5 Expansion
New or Expanded Facility
New Interchange
West Columbia Corridor
I-5 Expansion
East Columbia Corridor
219th St
134th St
Padden Expressway
Main St Interchange
Lower River Rd
7th St
Hwy 30
Jantzen Beach
Fremont Bridge
I-84
SR-14
4 Lanes
6 Lanes
Add 1 Lane Each Direction
New Structure 8 Lanes

Transportation Corridor Visioning Study

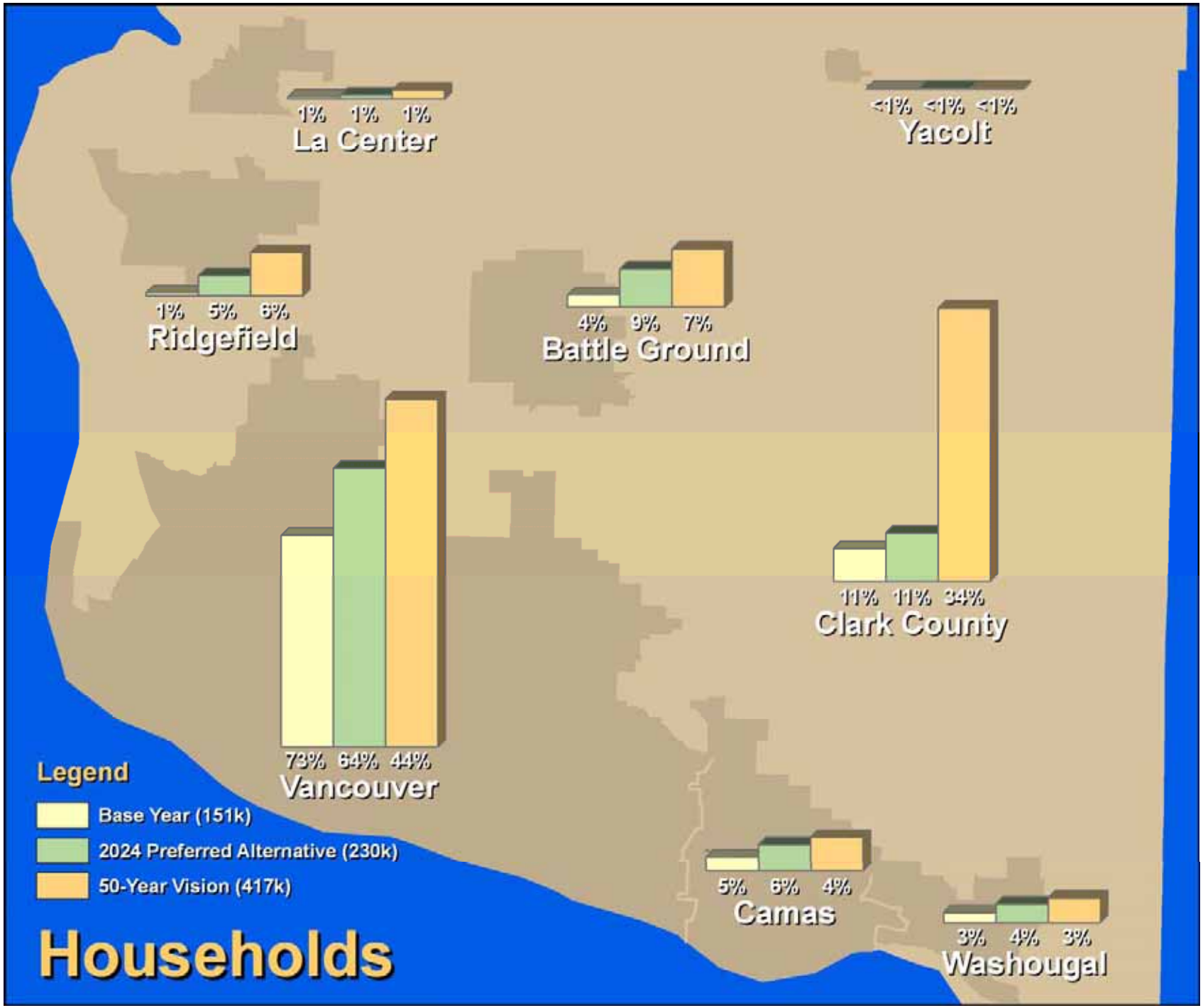
Land Use and Travel Model

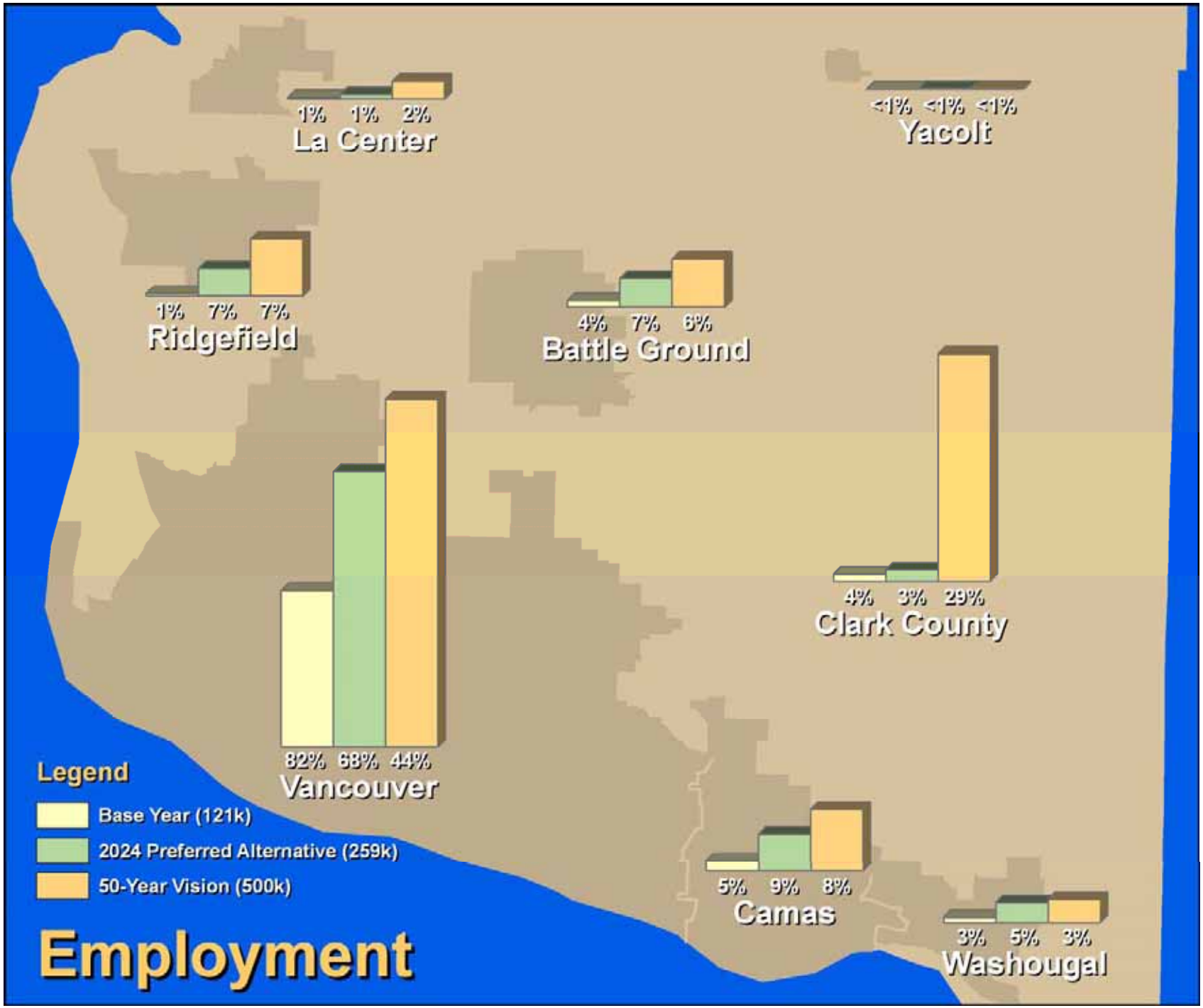
April 6, 2007

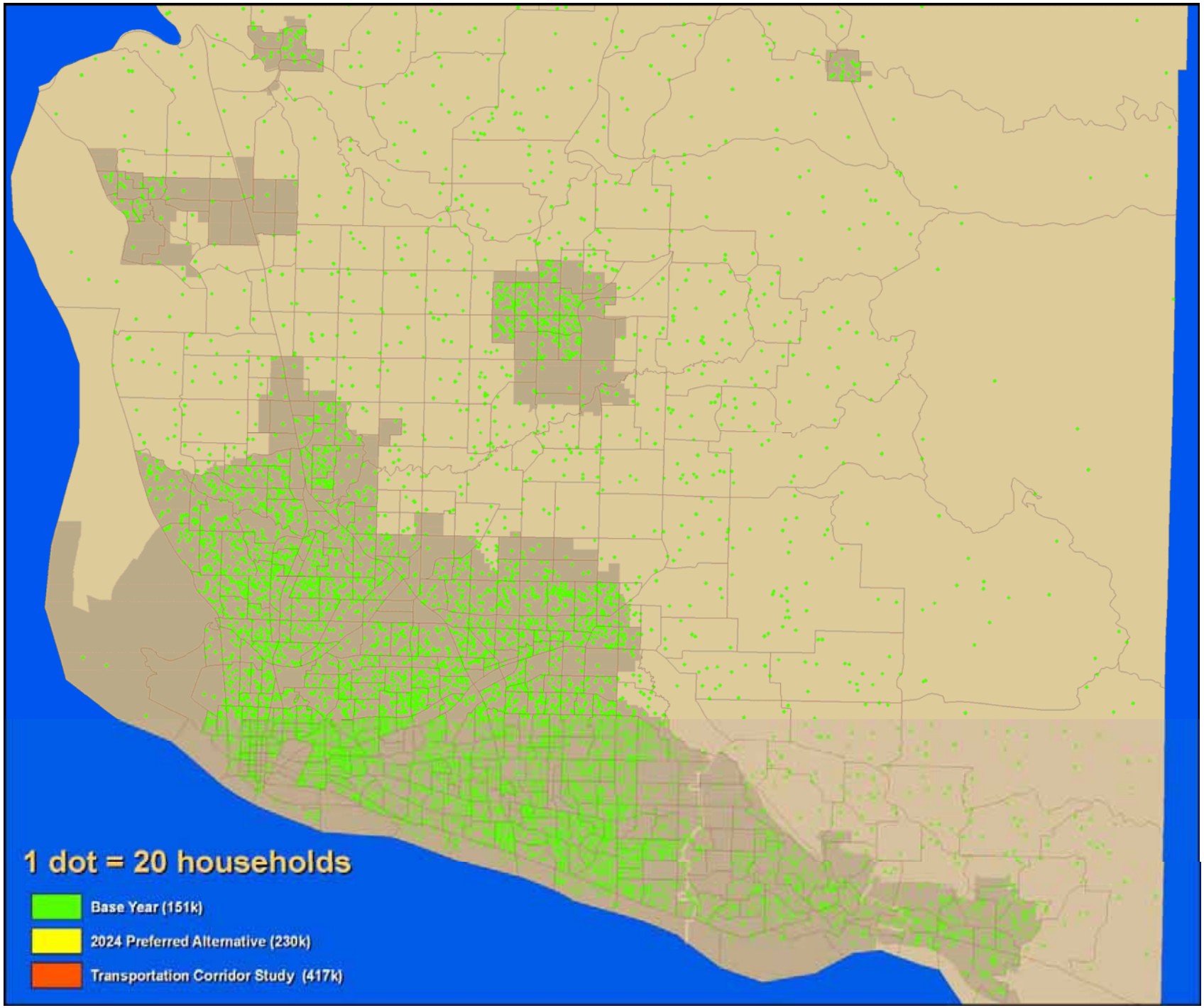
Land Use Update

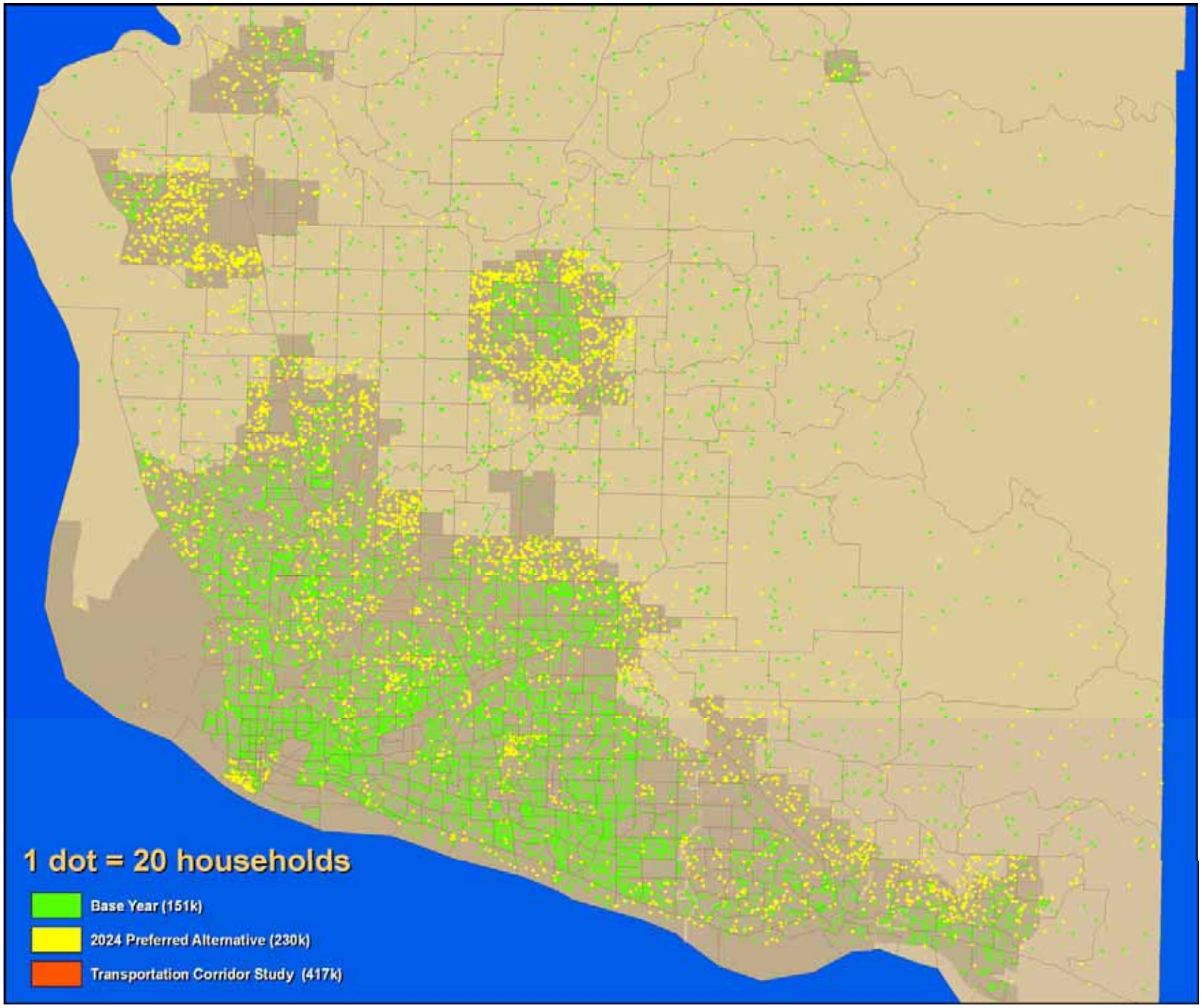


Current and Possible Future Urban Centers


1% 1% 1%
La Center
<1% <1% <1%
Yacolt
1% 5% 6%
Ridgefield
4% 9% 7%
Battle Ground
11% 11% 34%
Clark County
73% 64% 44%
Vancouver
5% 6% 4%
Camas
3% 4% 3%
Washougal
Legend
Base Year (151k)
2024 Preferred Alternative (230k)
50-Year Vision (417k)
Households


1% 1% 2%
La Center
<1% <1% <1%
Yacolt
1% 7% 7%
Ridgefield
4% 7% 6%
Battle Ground
4% 3% 29%
Clark County
82% 68% 44%
Vancouver
5% 9% 8%
Camas
3% 5% 3%
Washougal
Legend
Base Year (121k)
2024 Preferred Alternative (259k)
50-Year Vision (500k)
Employment


1 dot = 20 households
Base Year (151k)
2024 Preferred Alternative (230k)
Transportation Corridor Study (417k)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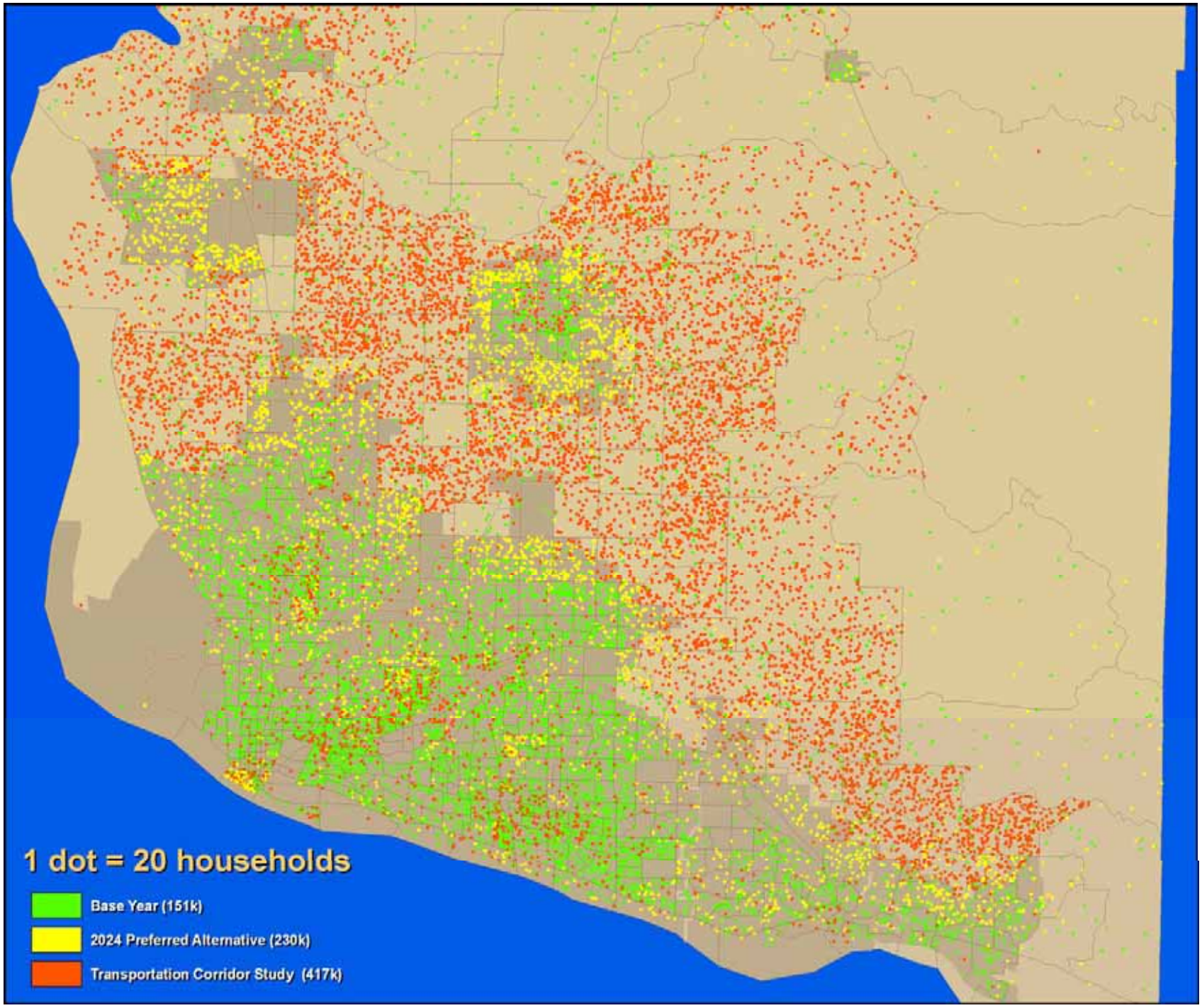
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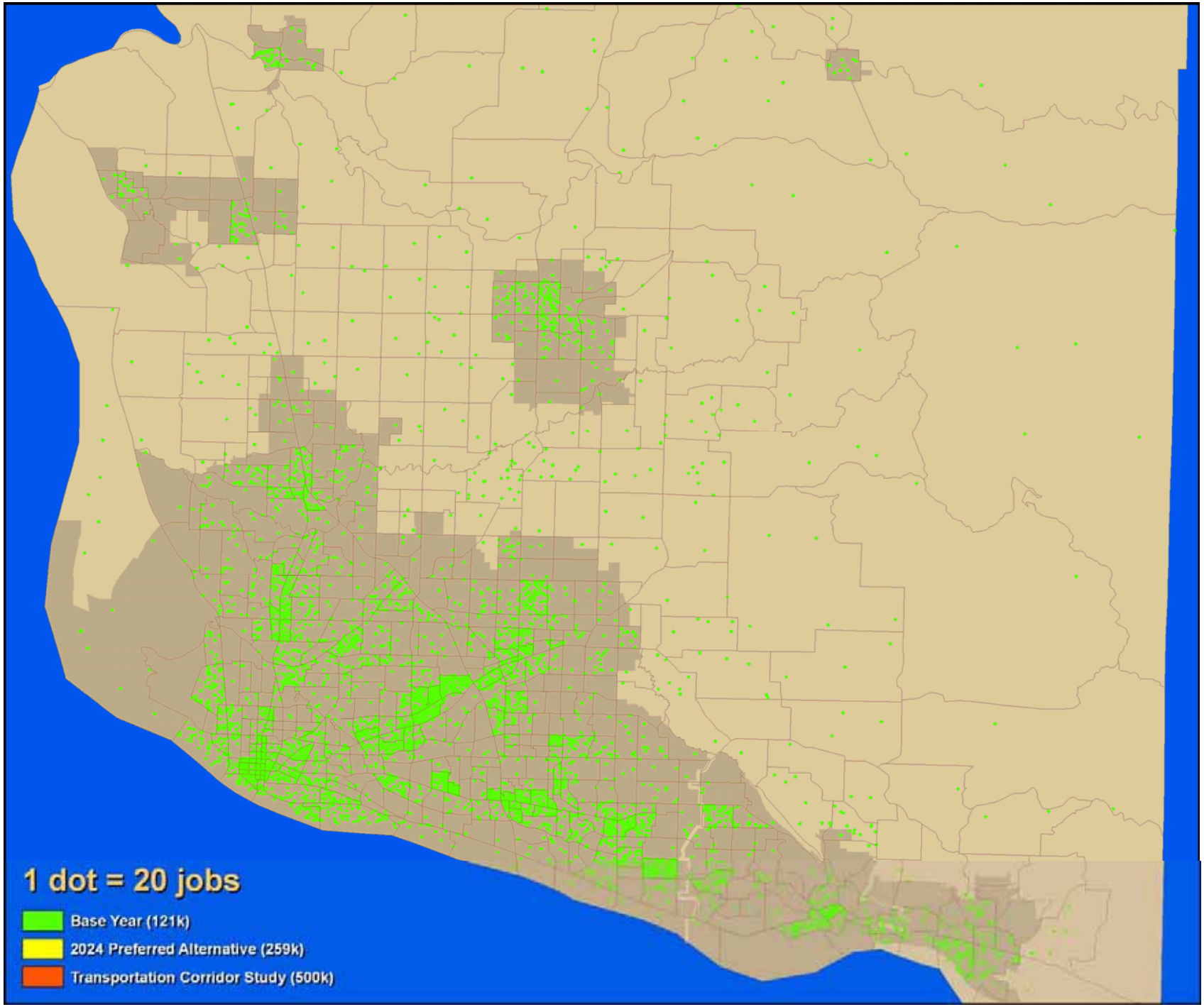
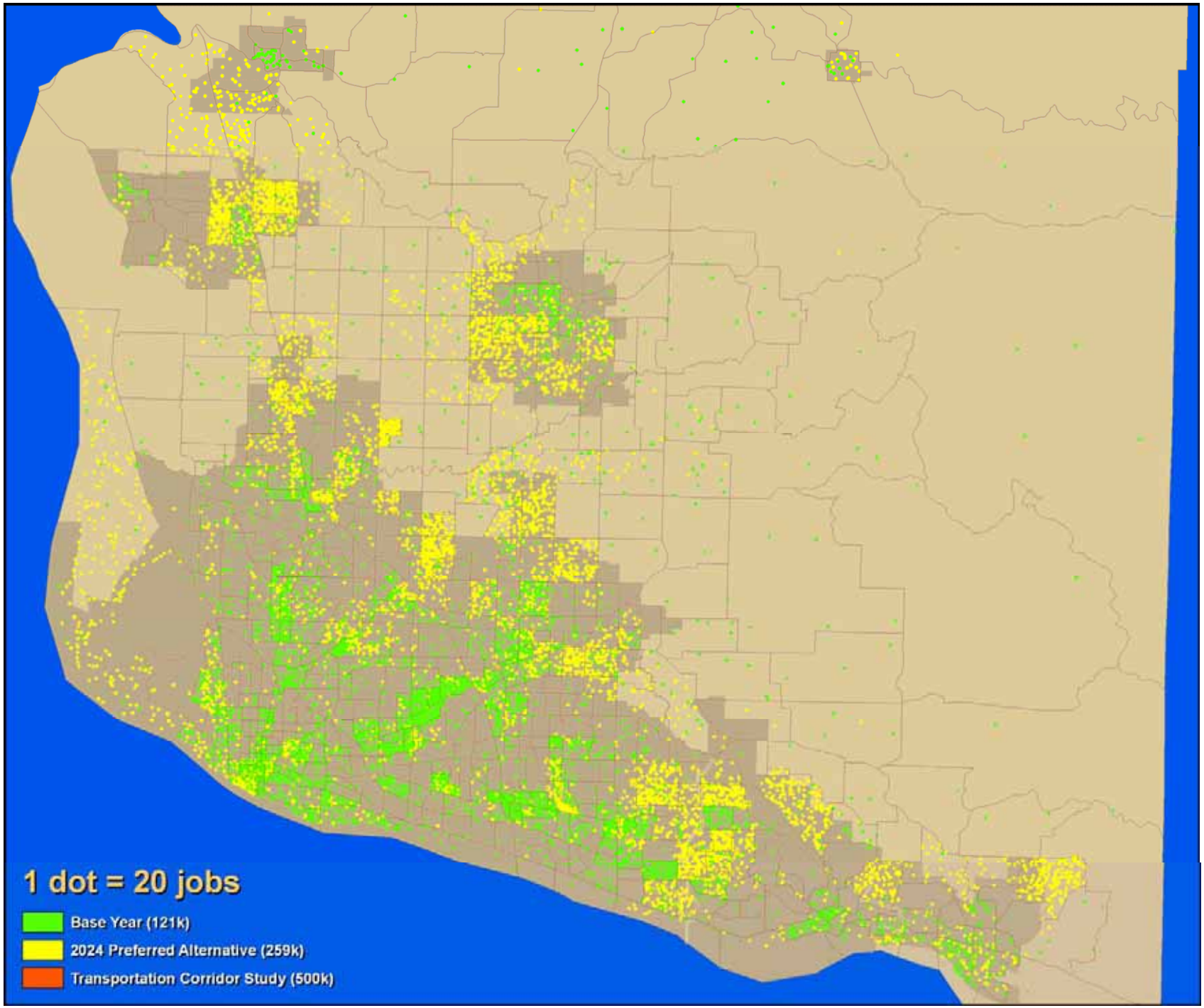

1 dot = 20 jobs
Base Year (121k)
2024 Preferred Alternative (259k)
Transportation Corridor Study (500k)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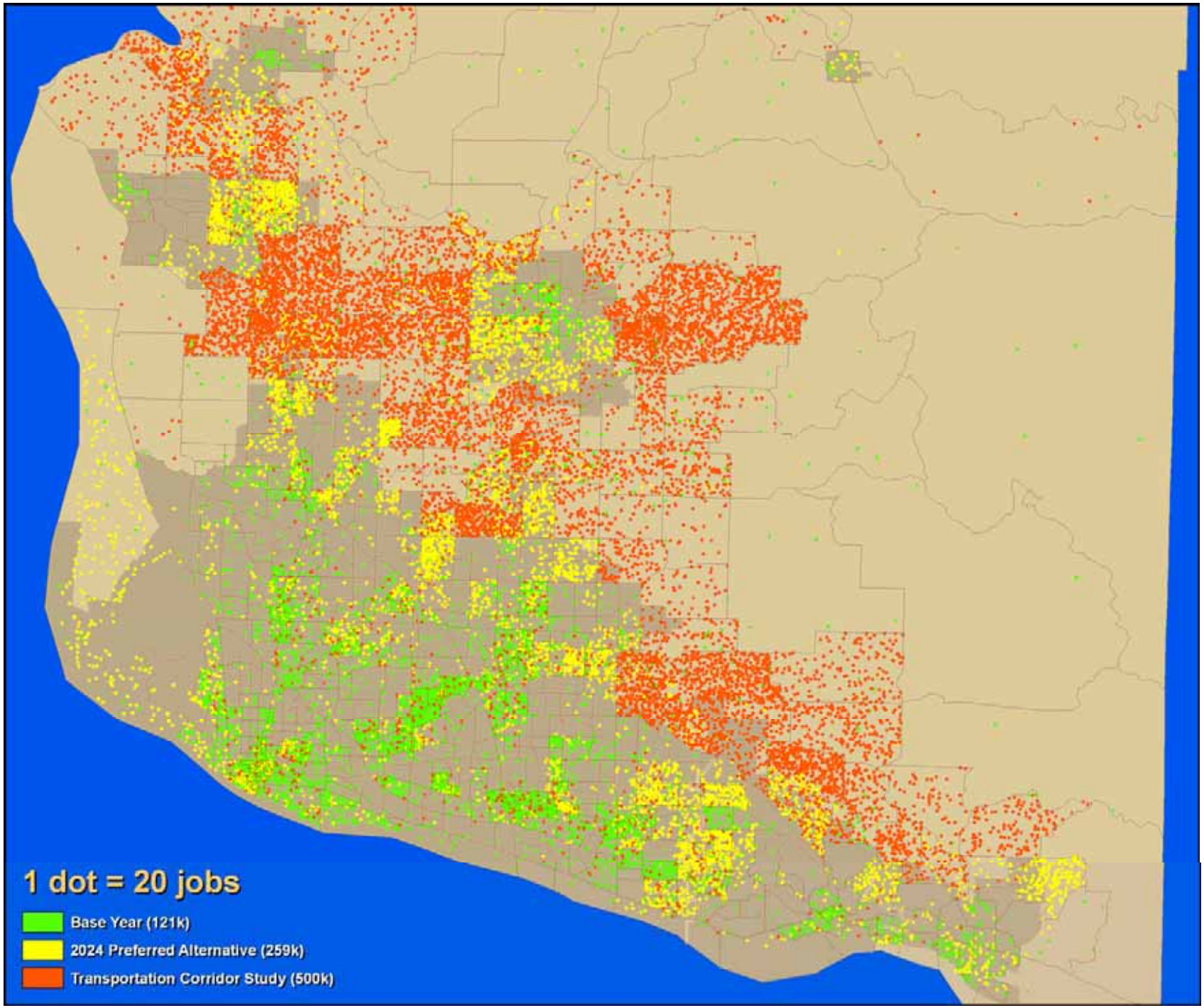
Base Year (121k)
2024 Preferred Alternative (259k)
Transportation Corridor Study (500k)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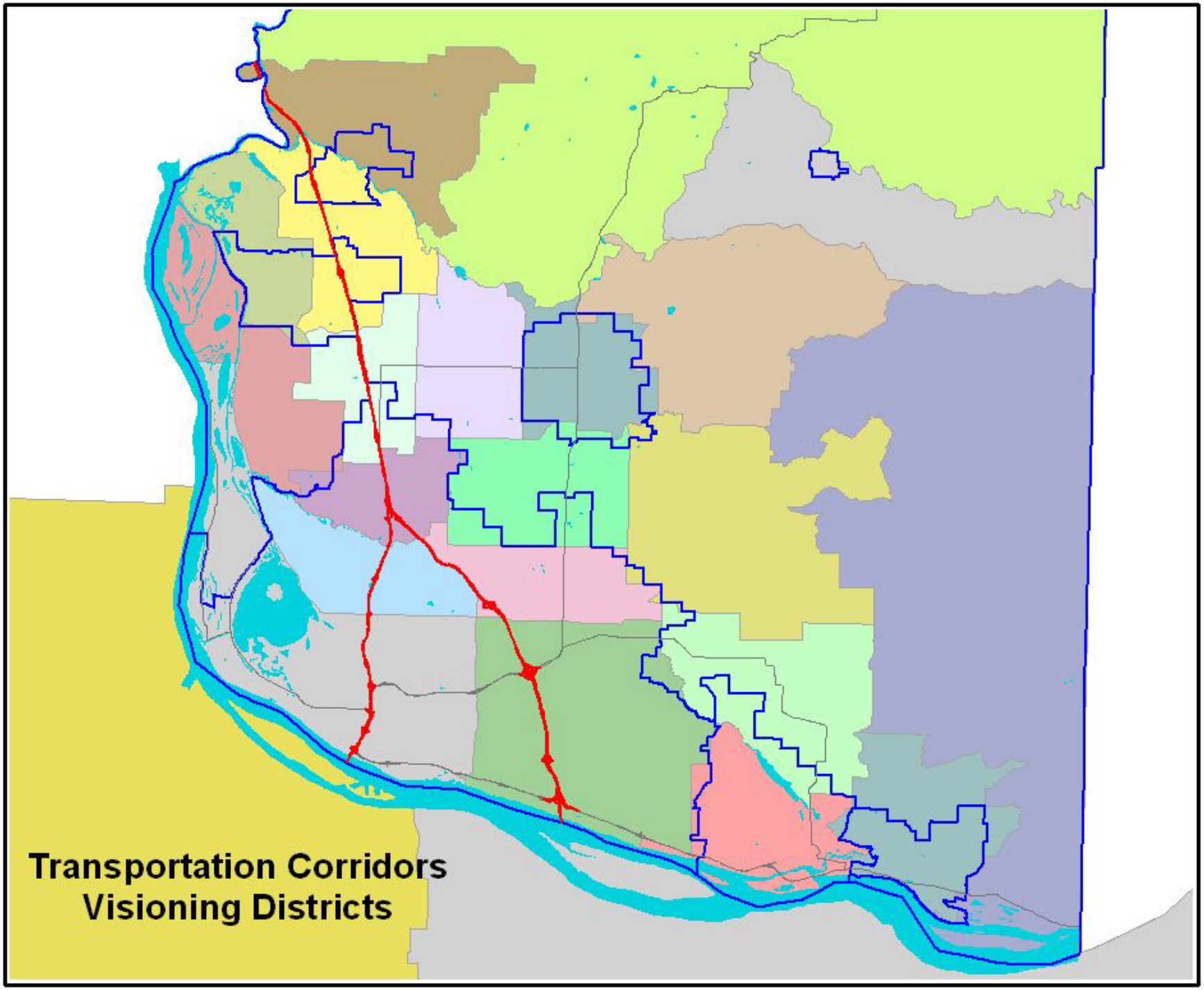
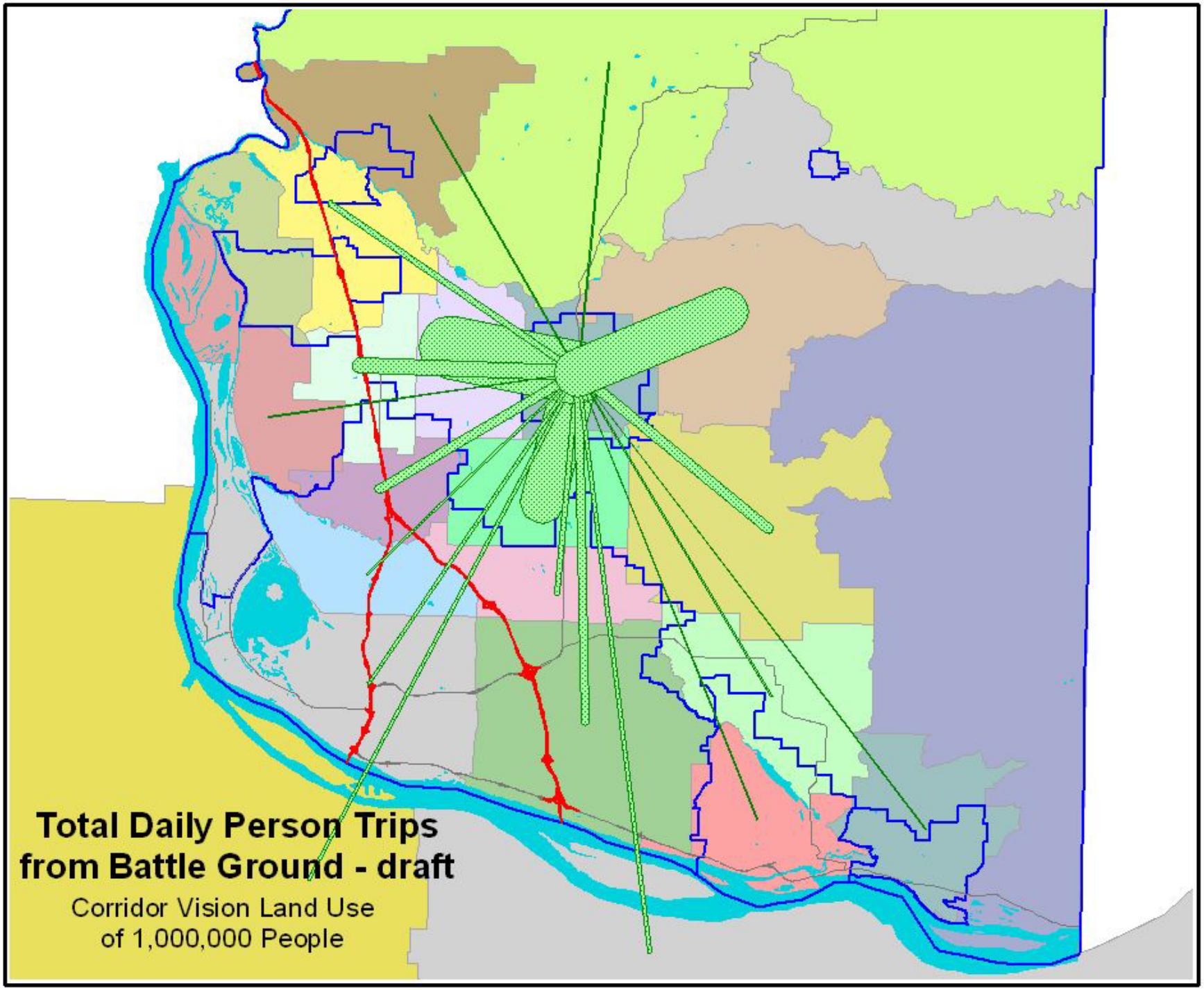
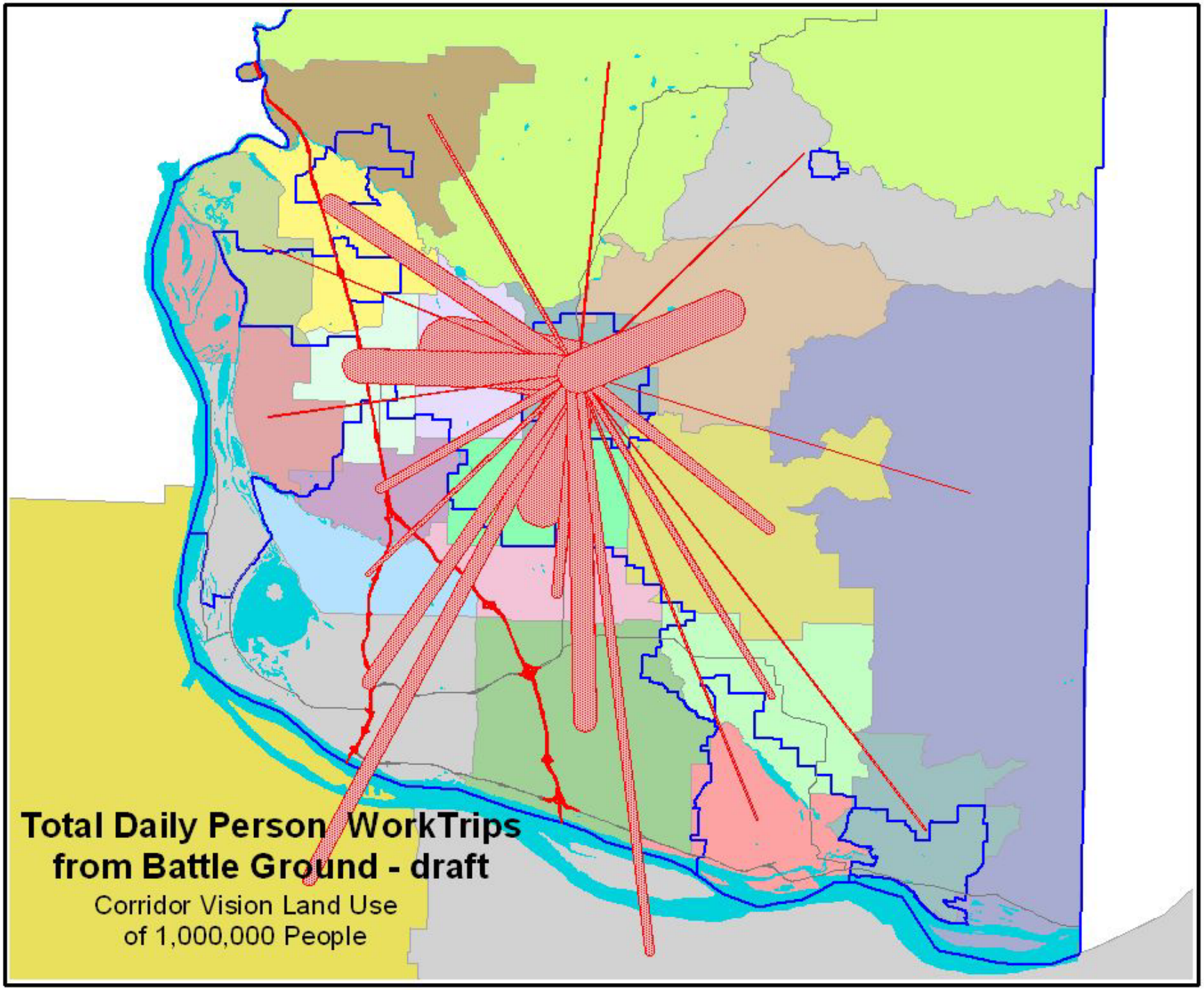
Base Year (121k)
2024 Preferred Alternative (259k)
Transportation Corridor Study (500k)

Travel Model


Transportation Corridors
Visioning Districts


Total Daily Person Trips
from Battle Ground - draft
Corridor Vision Land Use
of 1,000,000 People


Total Daily Person WorkTrips
from Battle Ground - draft
Corridor Vision Land Use
of 1,000,000 People