

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

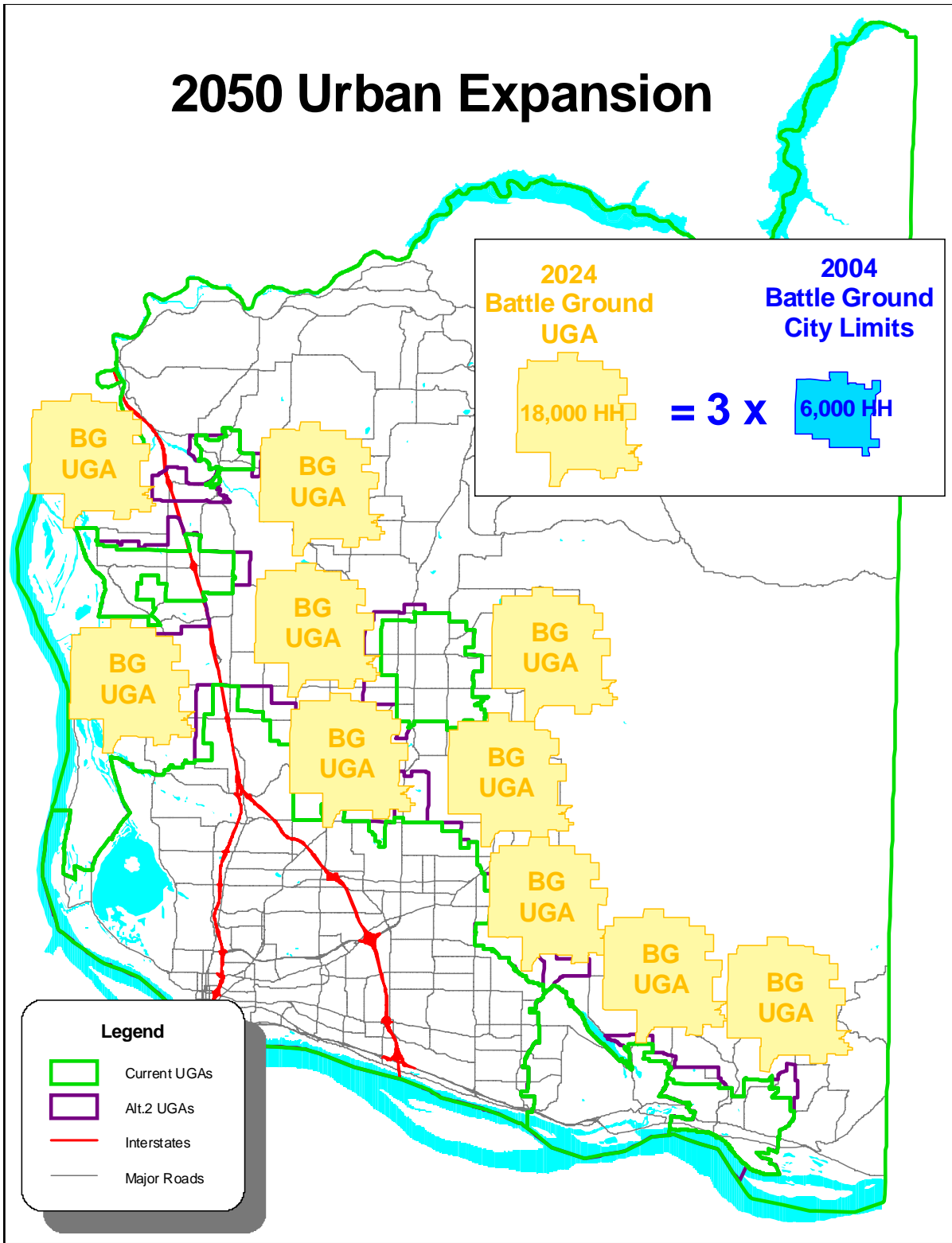
By way of comparison, the UGA lands in Alternative 2 of the DEIS total roughly 100,000 acres, or 156 sq. miles. An additional 66,000 acres is about the size of the Vancouver UGA, or 10 Battle Ground UGAs, as defined in Alternative 2 of the DEIS. The attached map shows 10 Battle Ground UGA outlines placed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

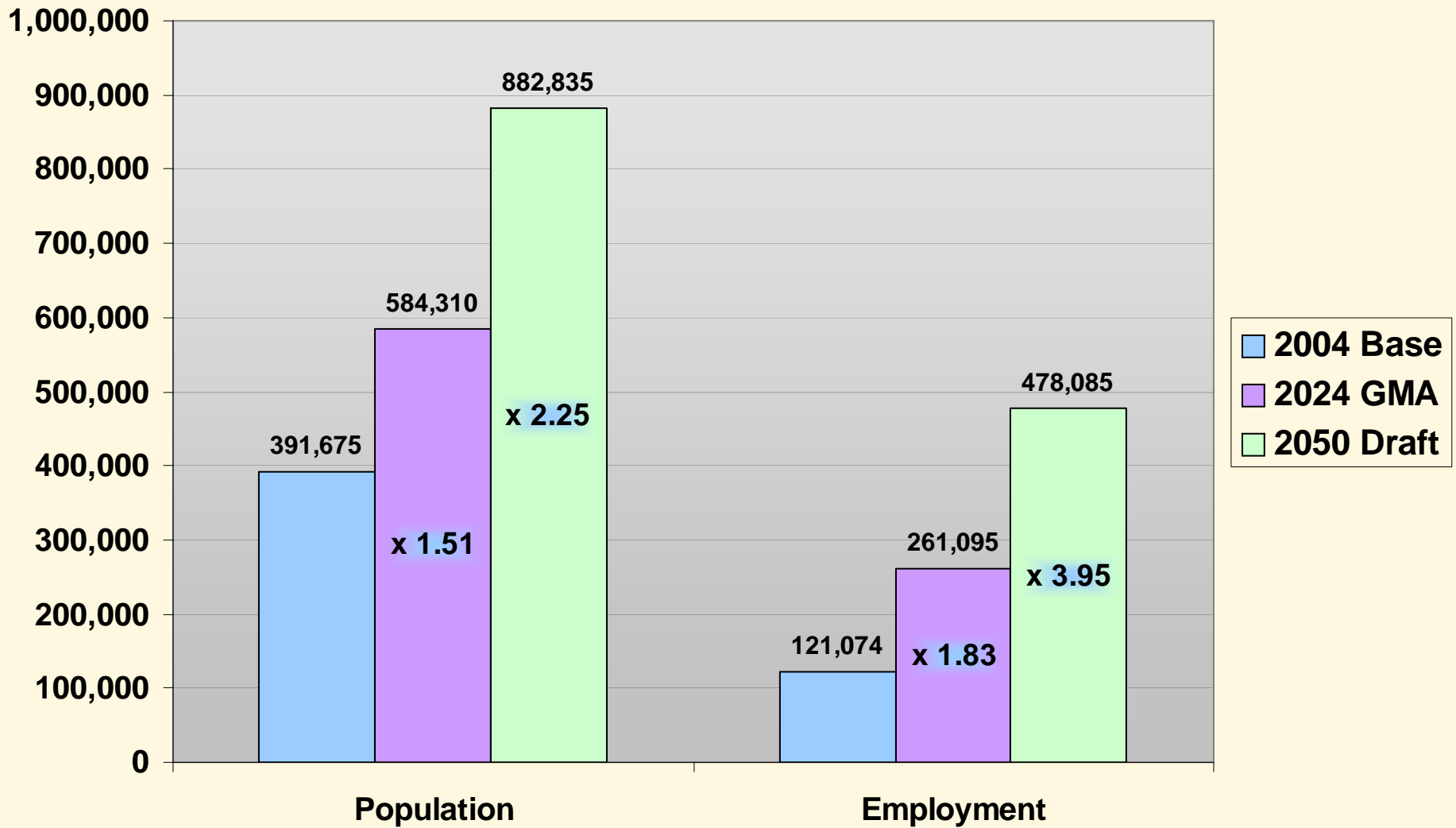
October 6, 2006 Steering Committee discussion:

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 and 2050 Population and Employment Forecasts



Transportation Corridor Visioning Study

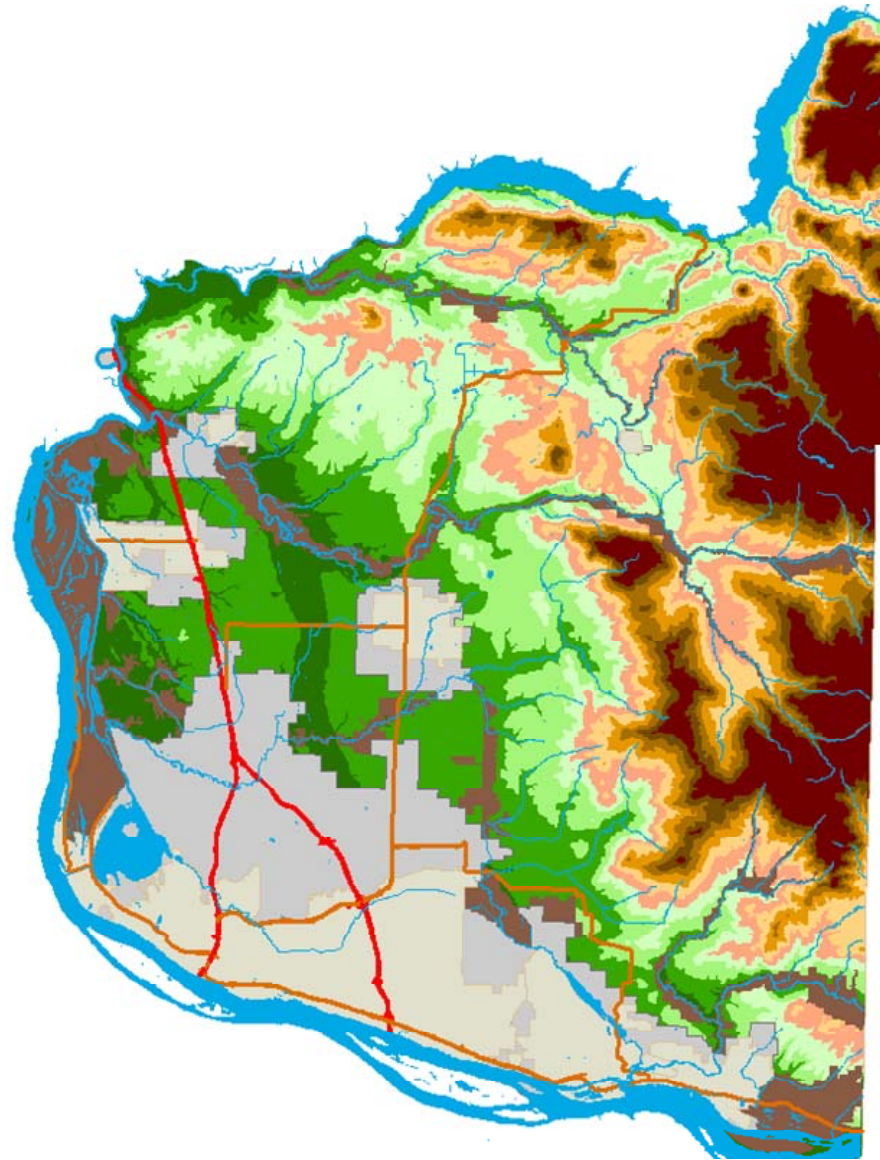
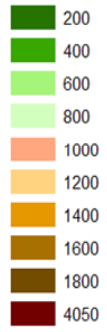
Land Use Analysis Update

February 2, 2006

Outline

- Review
- Local Jurisdiction Feedback
- A Possible Future

Elevation Bands



- 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

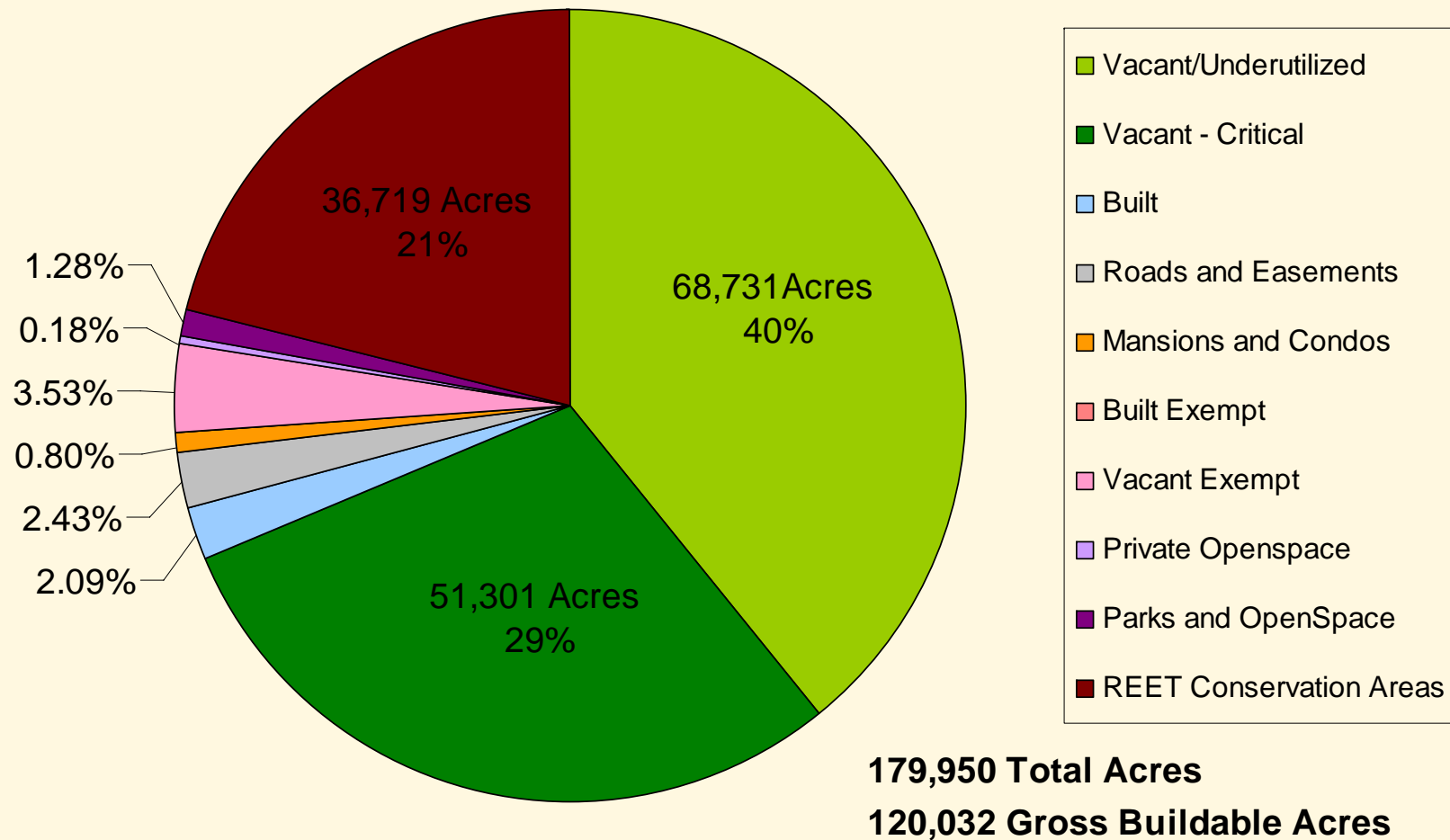


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**County-wide
Land Inventory
(Less than 800 ft.)**



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



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			

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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

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- Future Urban Areas**

Possible Future Urban Areas

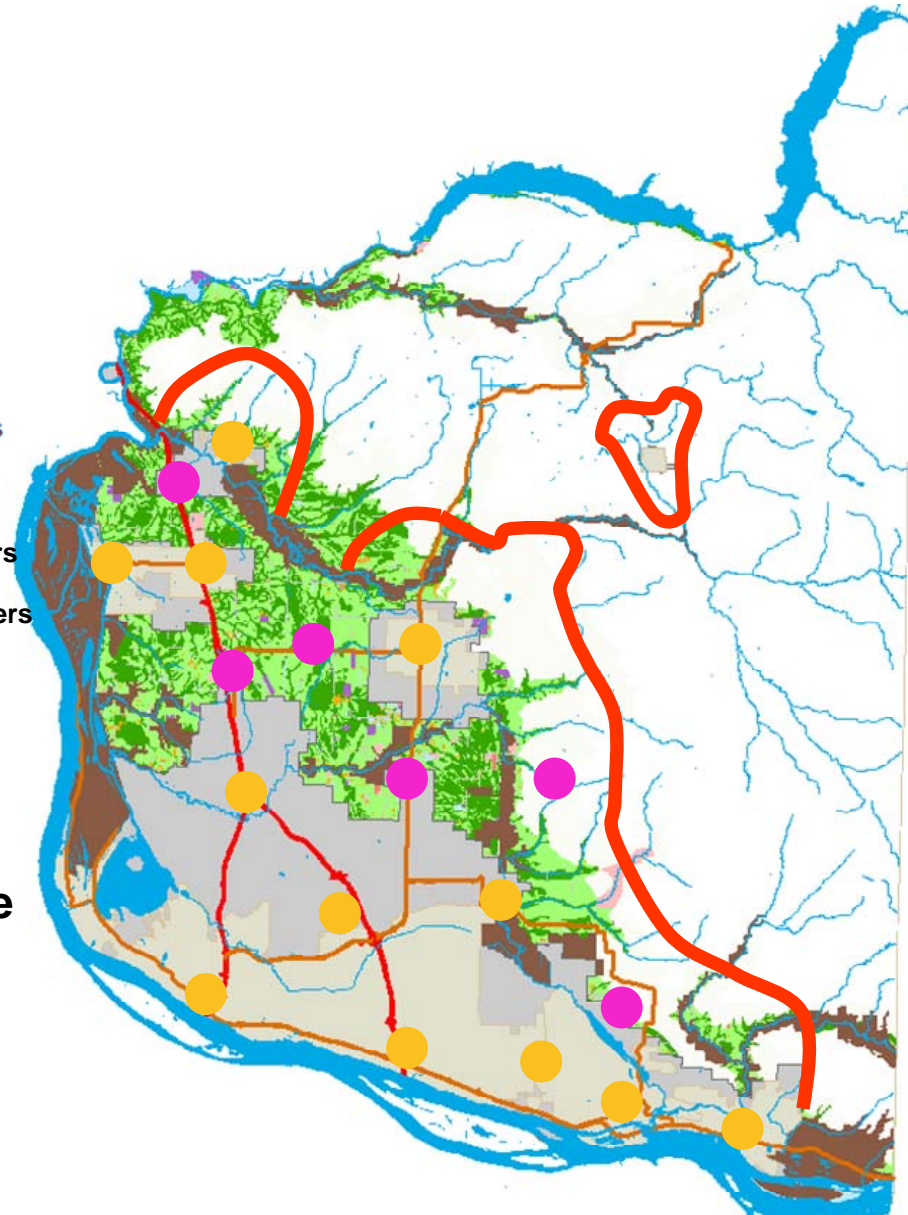


Future Urban Centers

- 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

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- Existing Urban Centers
- Potential Future Centers

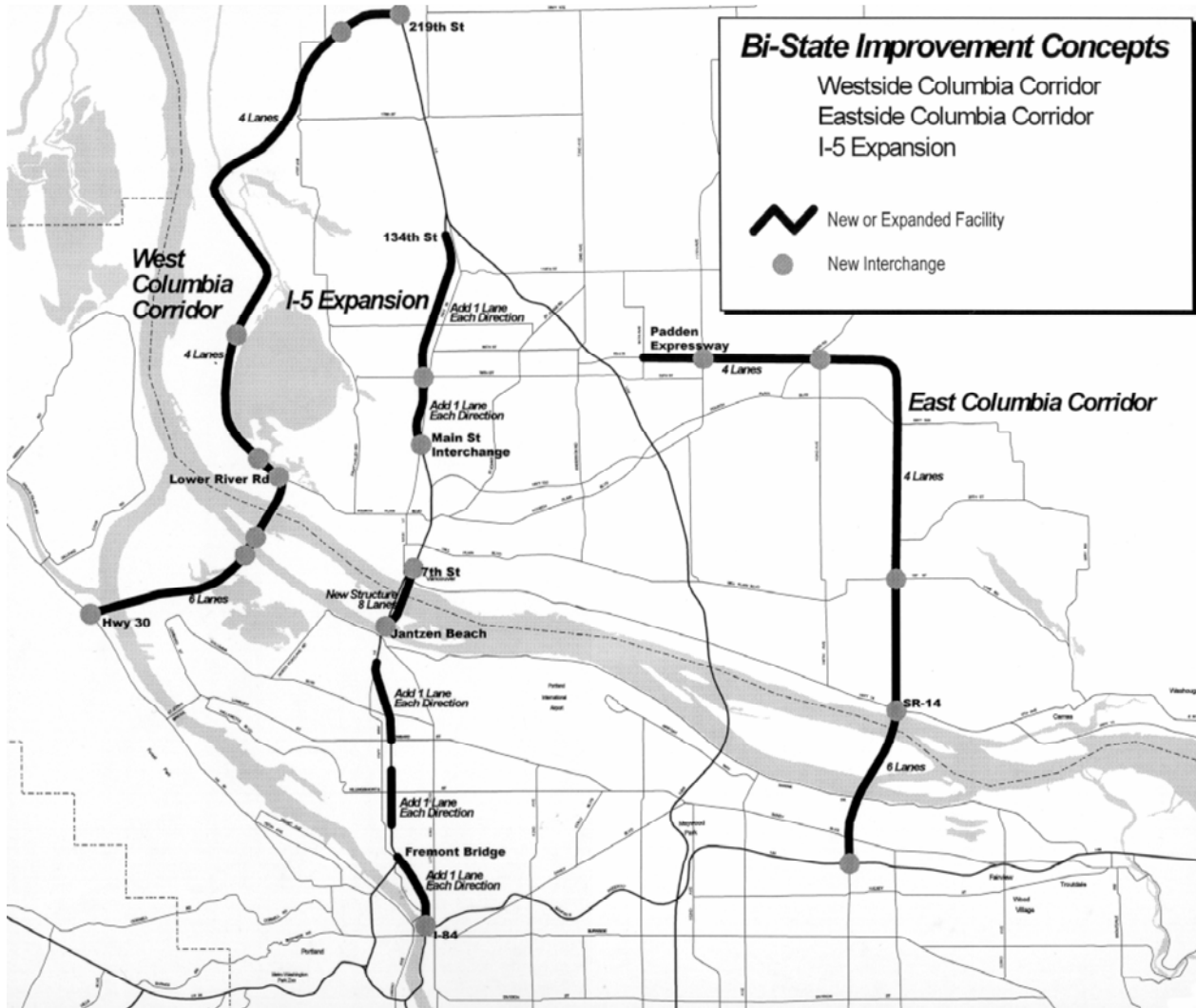
Current and Possible Future Urban Centers



Transportation Corridor Visioning Study

Historical Context

Bi-State Improvement Concepts
May 1996



Transportation Corridor Visioning Study

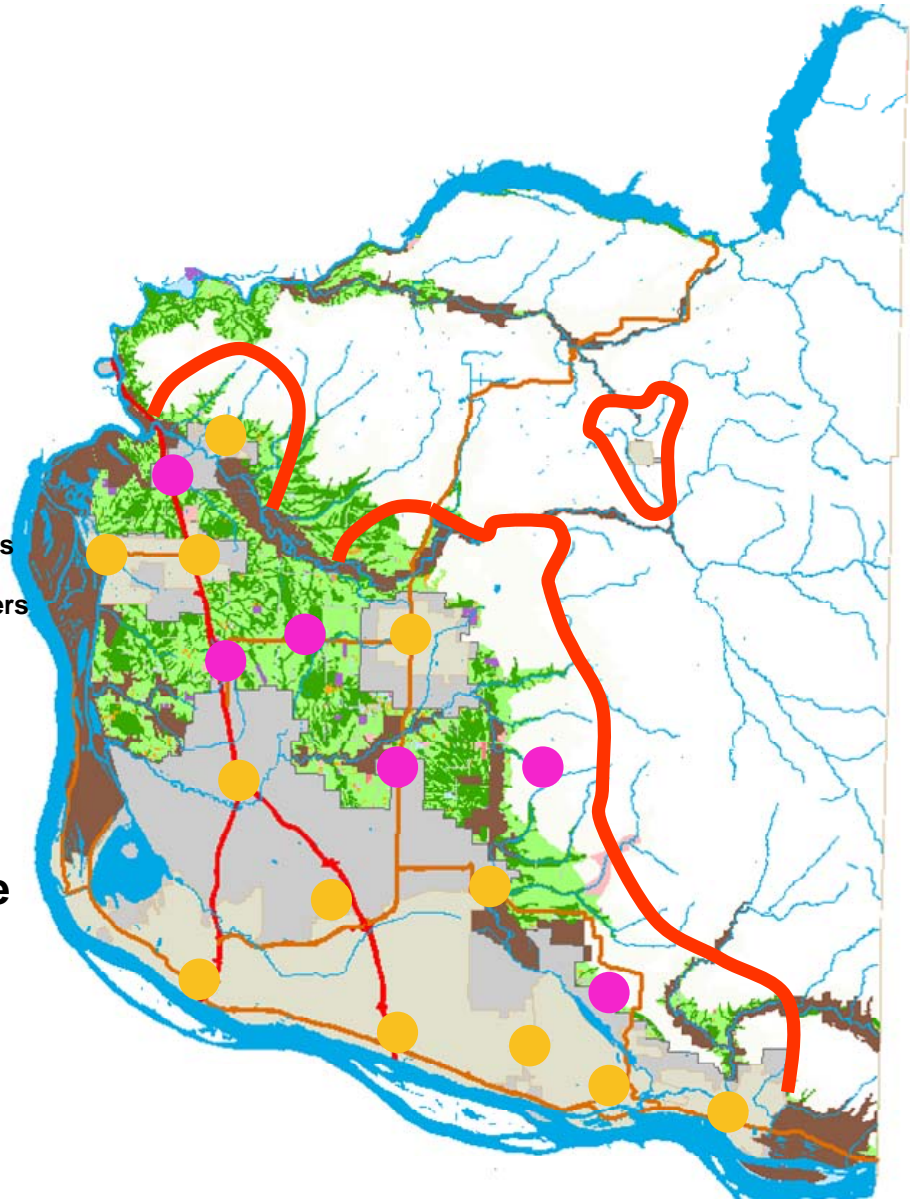
Land Use and Travel Model

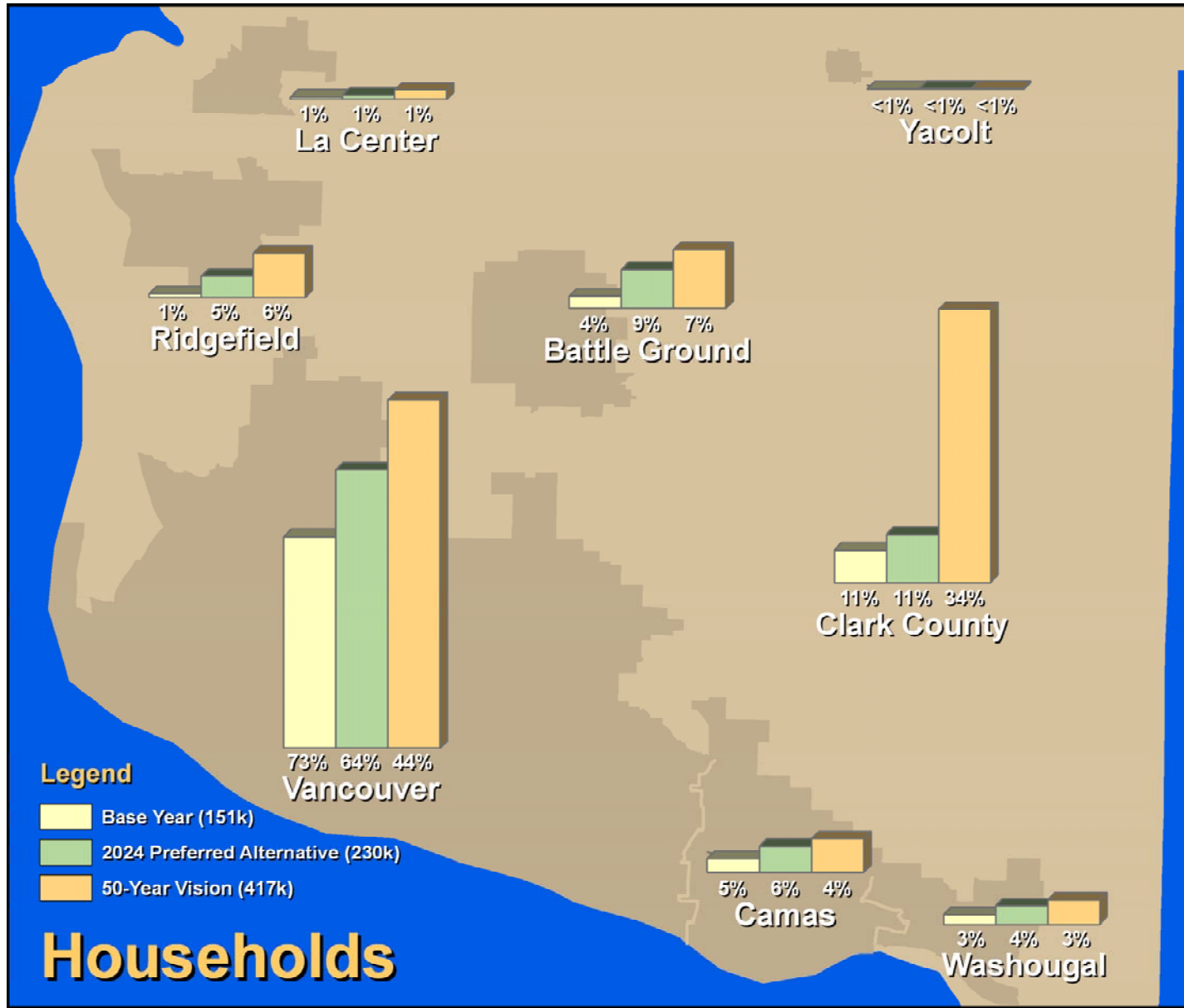
April 6, 2007

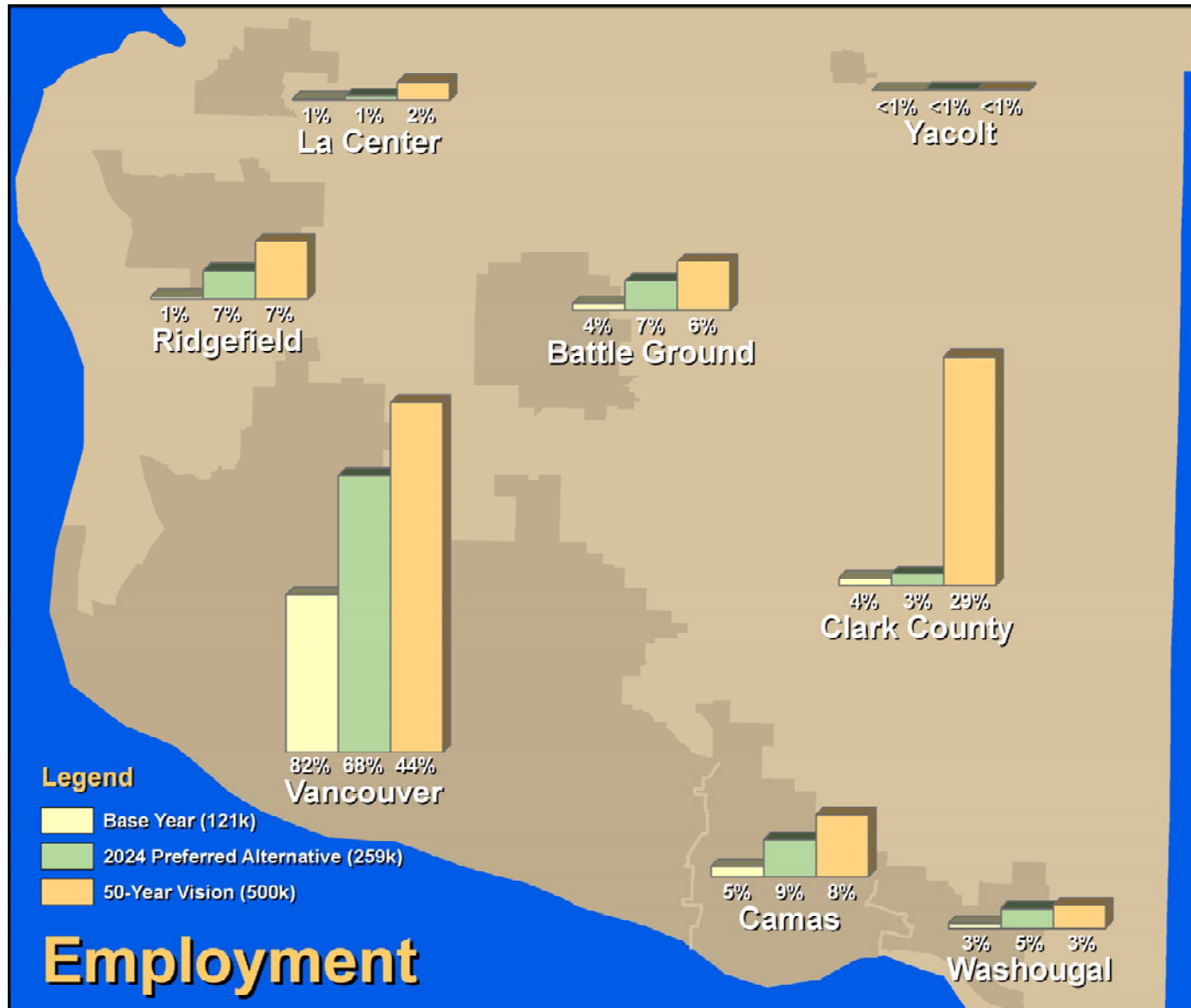
Land Use Update

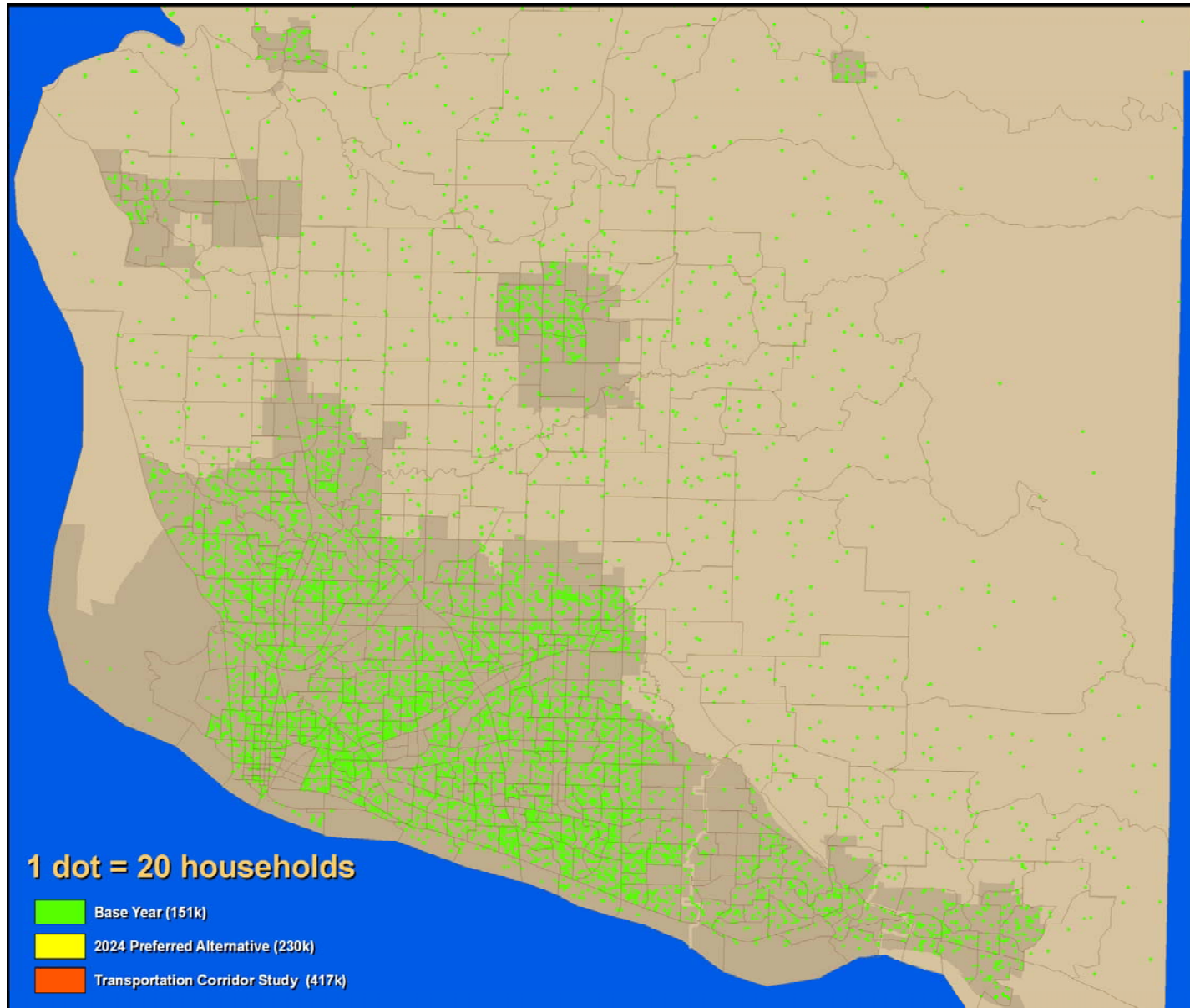
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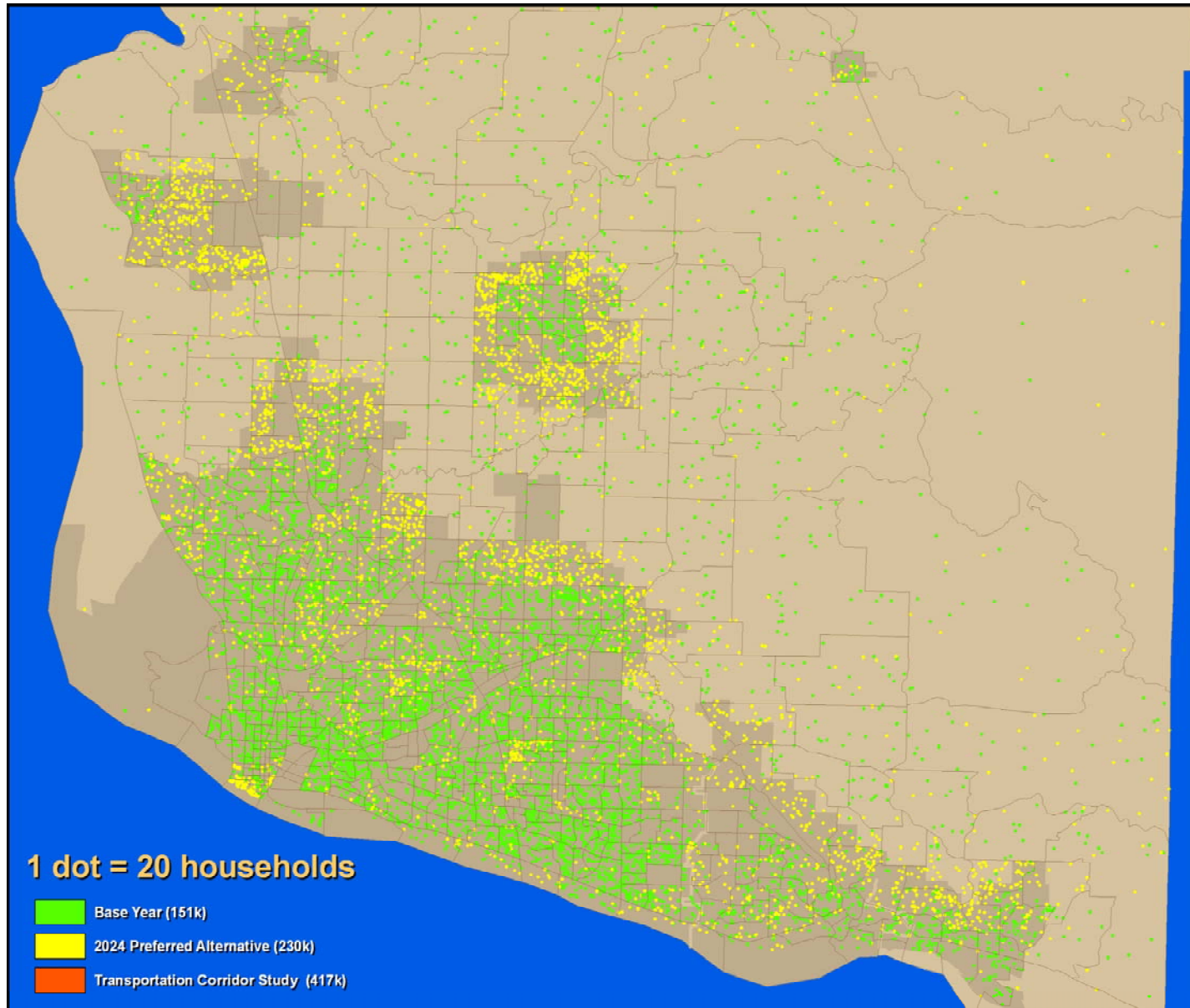
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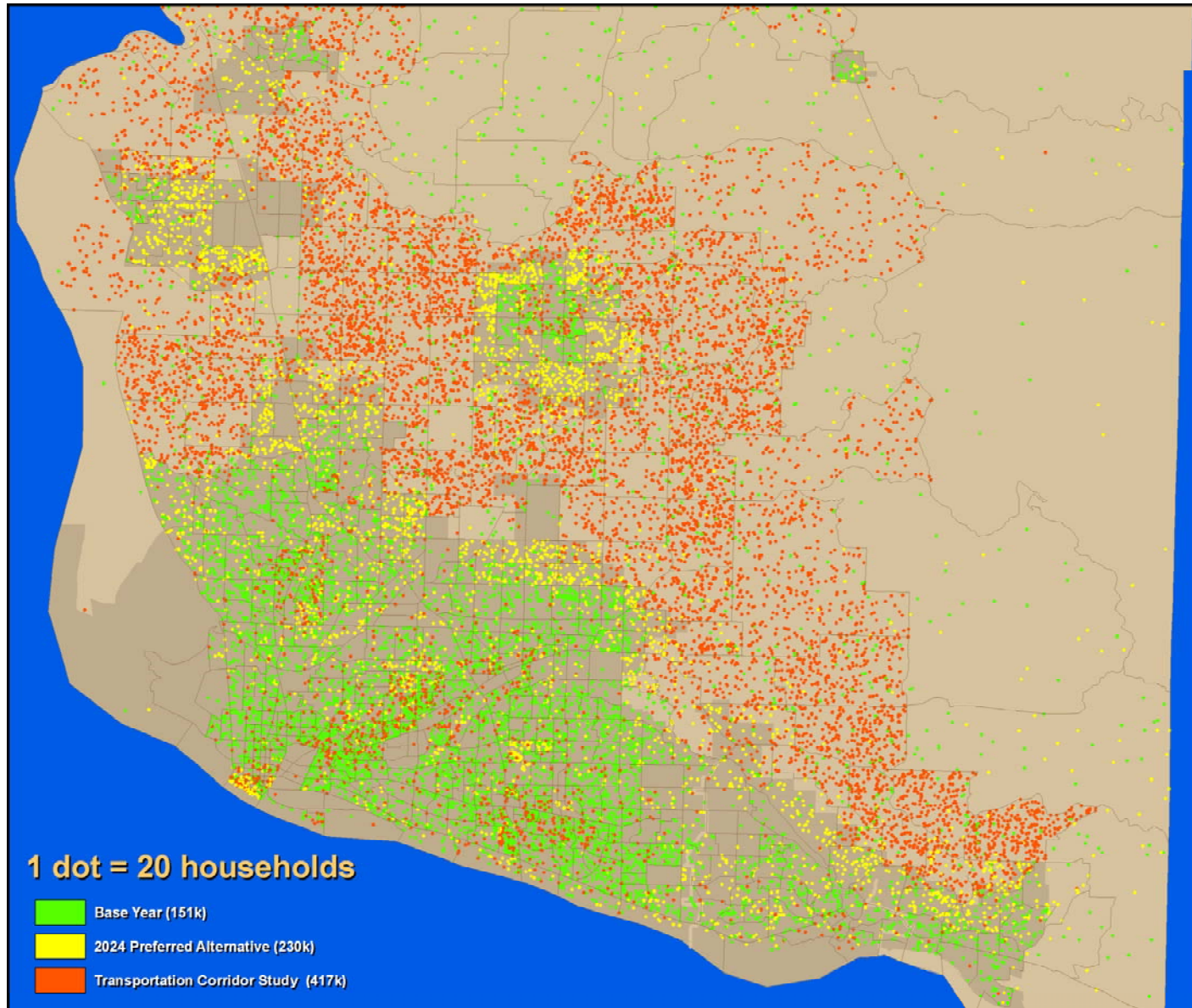


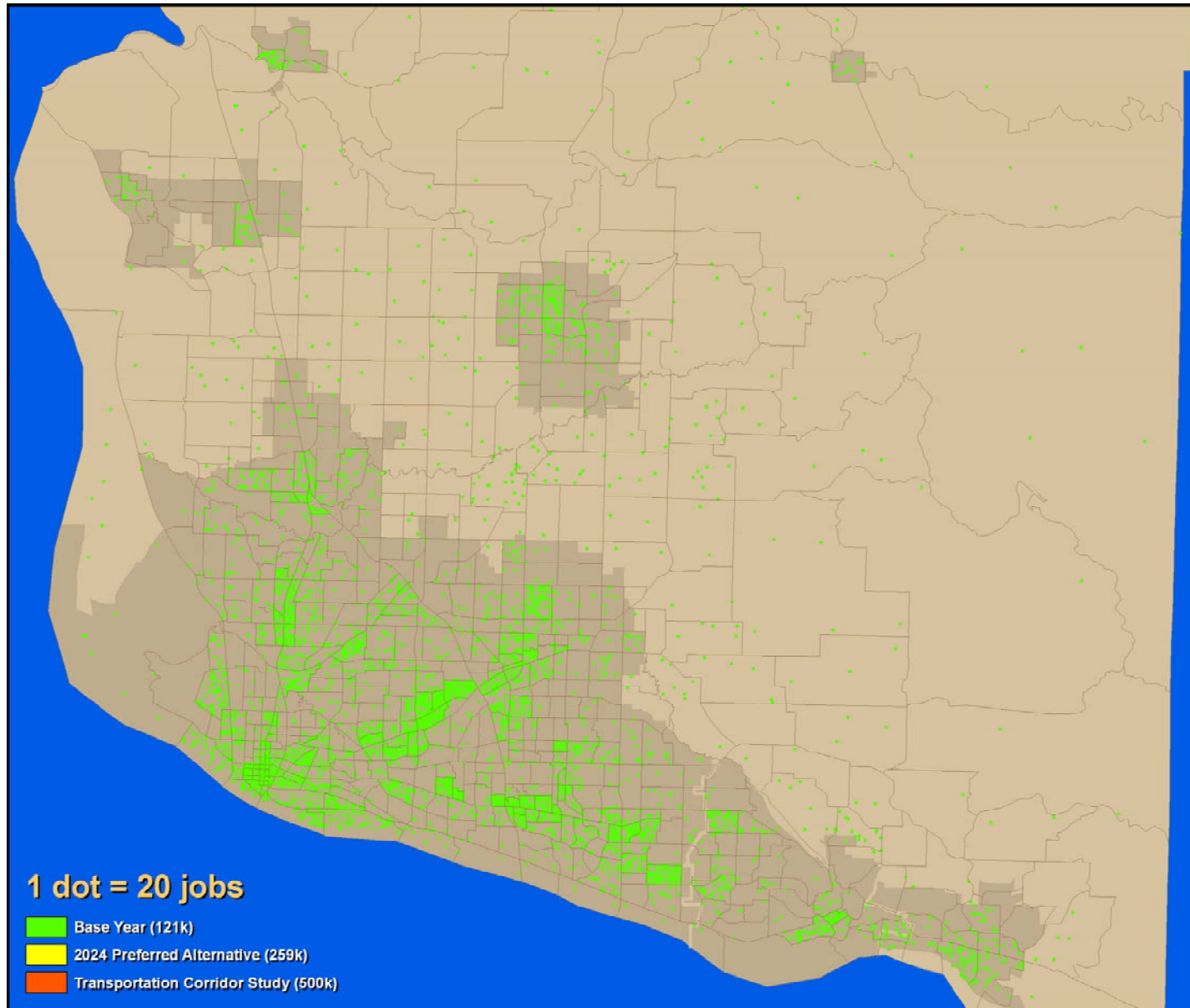


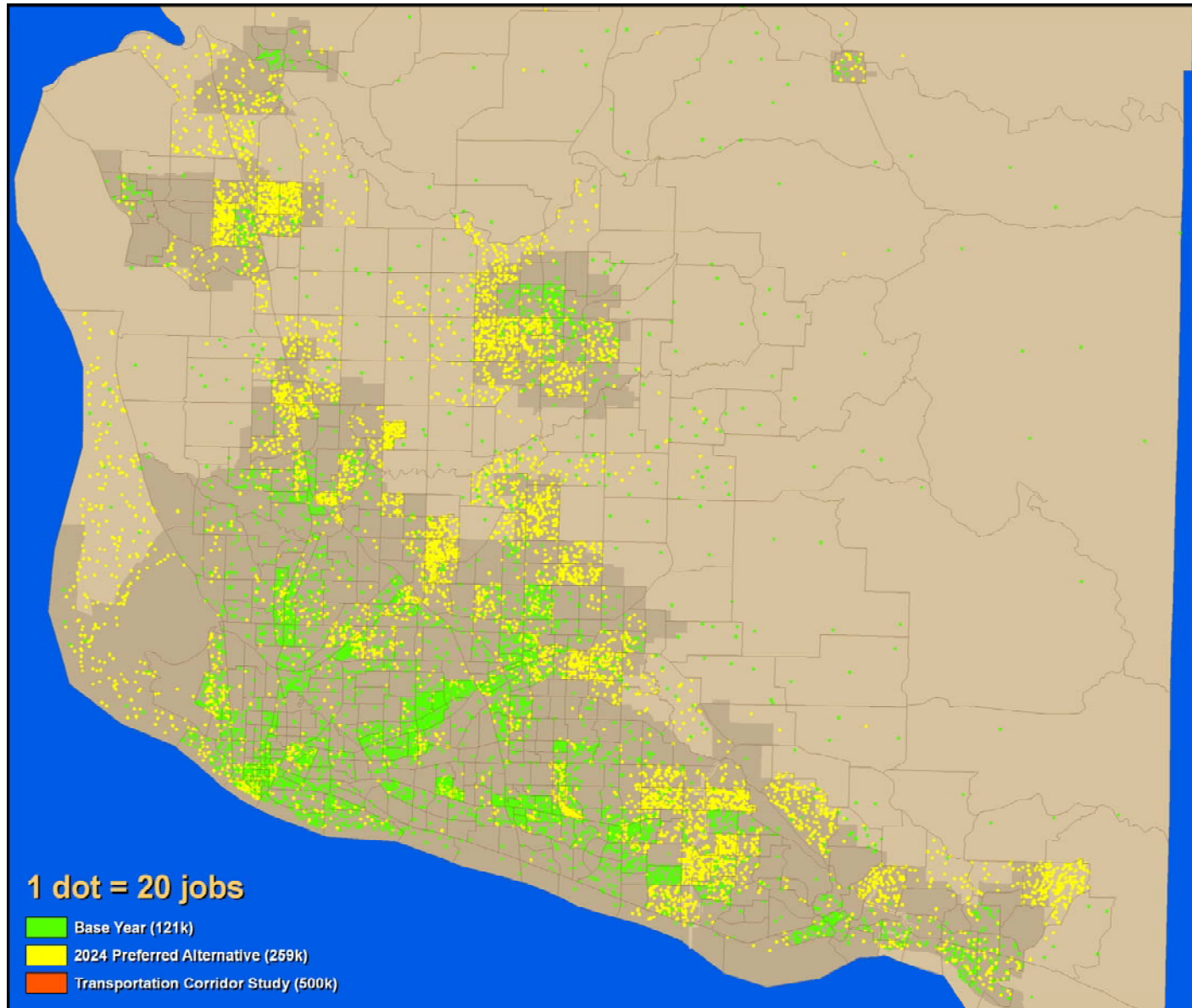


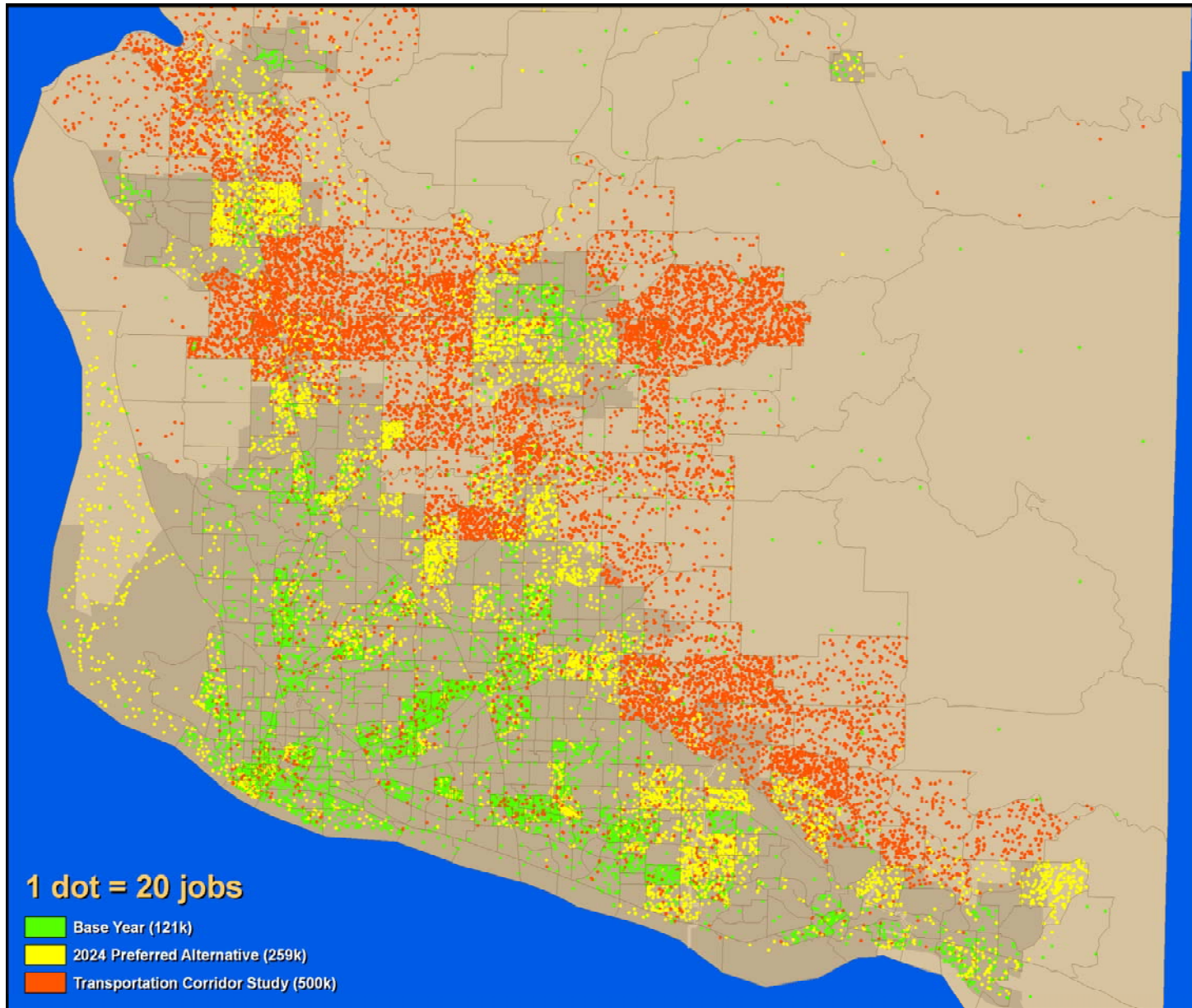












Travel Model

