

Longitudinal Employer-Household Dynamics (LEHD) Program

A Dynamic Data Source for the 21st Century

Presentation to the
Council of Economic Advisors
Washington, D.C
October 9, 2008

What is LEHD?

- At its core, LEHD is a National Longitudinal Job Frame
 - Based on UI-Wage and other administrative data sources
- Primary Products
 - Public use products: QWI, OnTheMap
 - Rich micro data for research

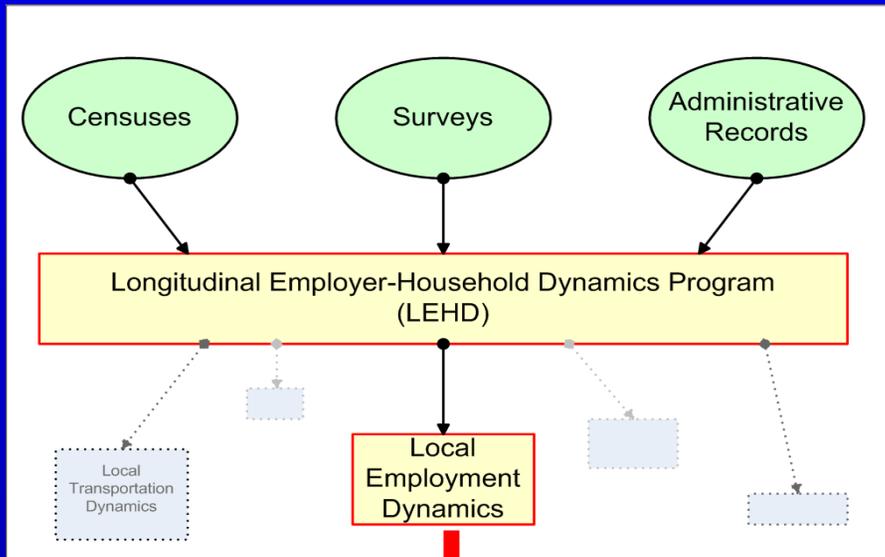
Where does LEHD fit within the Census Bureau's data infrastructure?

- The Census Bureau maintains national frames of housing units and business locations (establishments)
 - Household Frame: Master Address File
 - Decennial Census, ACS, CPS, SIPP, etc
 - Establishment Frame: Business Register
 - Economics Census, Monthly and Annual Surveys, Longitudinal Business Database, County Business Patterns, etc

Goal is Full Integration

- Jobs are the unit of analysis in LEHD
 - Jobs are an employer – employee pair for a given time period
- Integrate with
 - Person and Household Data via “employee” information
 - Establishment and Firm data via “employer” information
- Integration permits:
 - Improved Public Use Products
 - Richer Microdata for Research (via the Research Data Centers)

Overview of LEHD

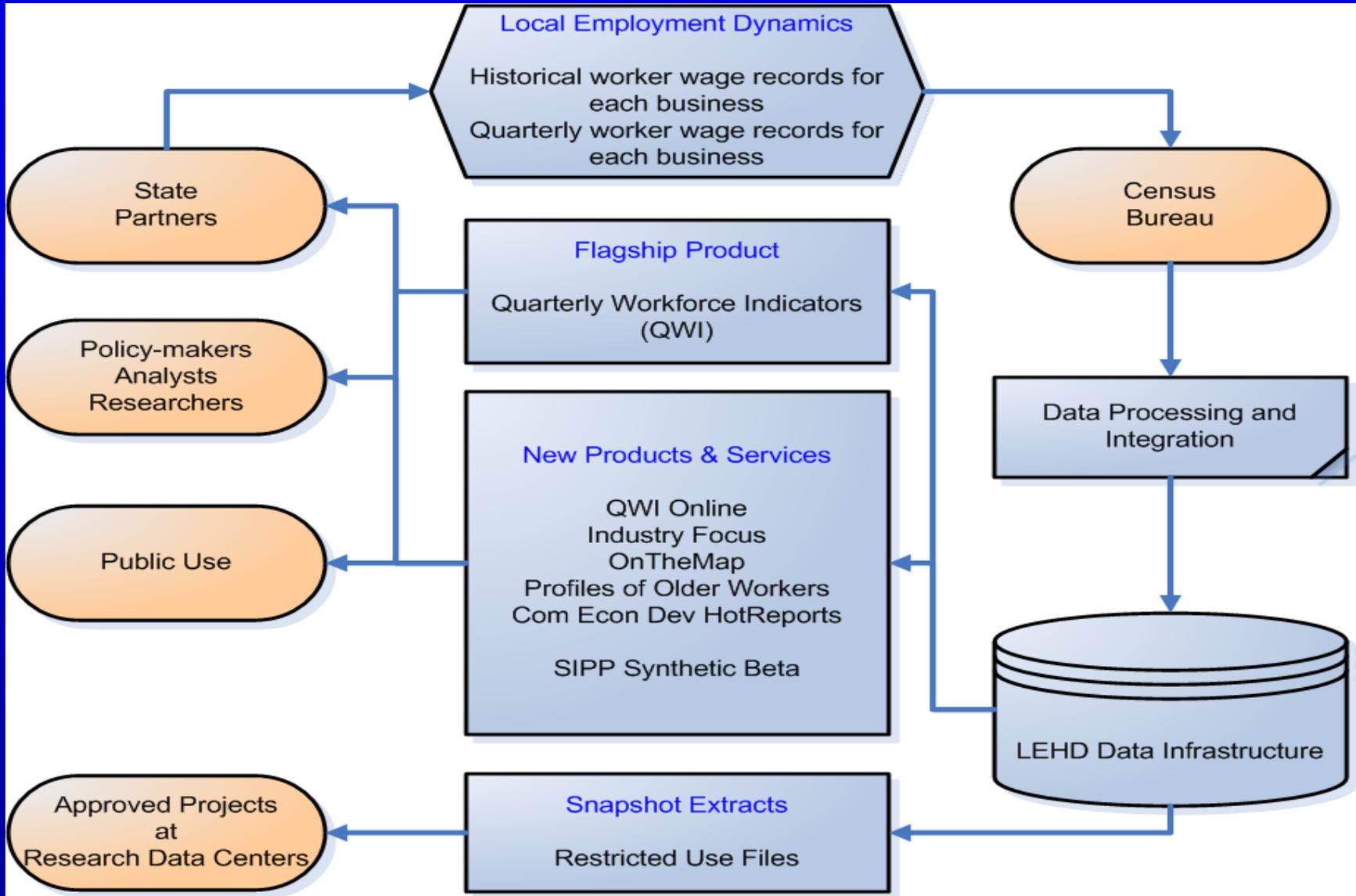


Longitudinal National
Frame of Jobs

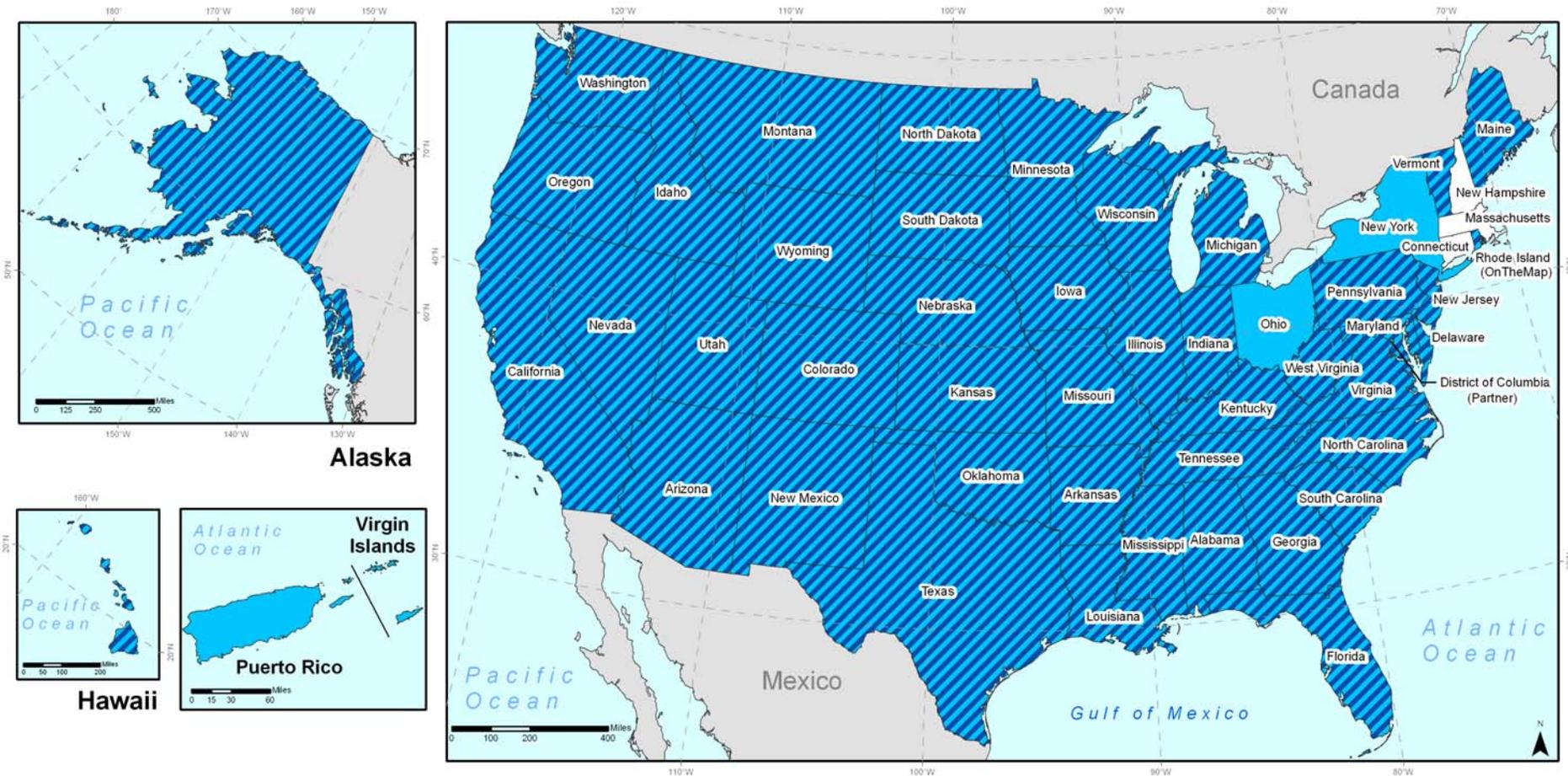
New data and products

- Leverage existing data
- Create new data and products
- Enhance Census Bureau operations
- Make valid detailed data available while protect confidentiality
- Cost-effective
- No respondent burden

The Operational Model



LED Partner States



Local Employment Dynamics
Partner States



Quarterly Workforce Indicators

30 available

8 online

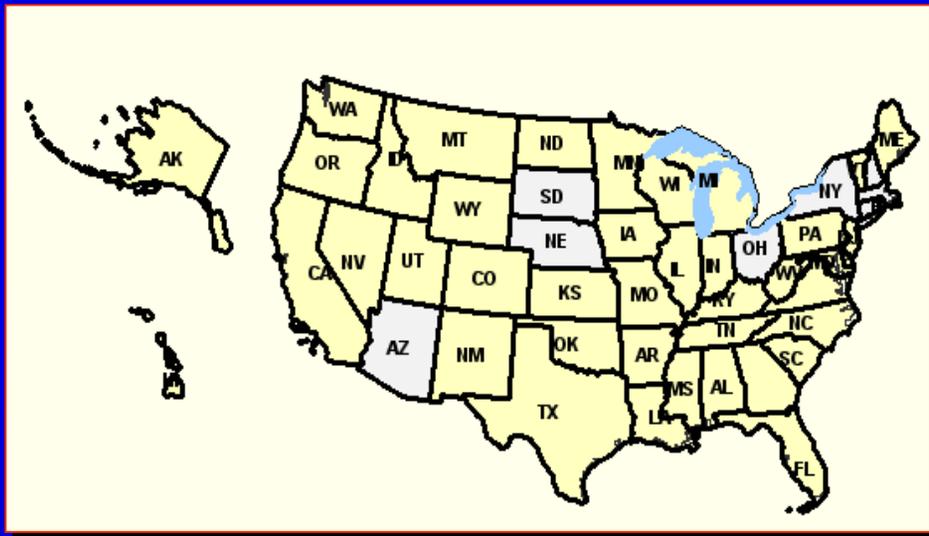
QWI indicators:

- Employment
- Earnings
- New hires
- Separations
- Job Creation and Destruction

Analyzed by

- Geography
- Industry
- Gender
- Age
- Time

QWI Quick Facts	
1	Total Employment
1	Net Job Flows
1	Job Creation
1	New Hires
1	Separations
1	Turnover
1	Avg Monthly Earnings
1	Avg New Hire Earnings



OnTheMap

LED's online dynamic mapping tool

- ✓ Where do workers live?
- ✓ Where do residents work?
- ✓ Reports on age, earnings, and industries
- ✓ Cross-state flows
- ✓ 42 states online
- ✓ 2002-2004 data
- ✓ User-selected areas
- ✓ Base unit is census block
- ✓ Innovative disclosure protection

OTM Disaster Data: Hurricane Hanna

Hurricane Hanna Work Area Profile (NWS Path Prediction Through 8AM Sat.)

Overlay Controls

2006

Points

Thermals

Selection Outline

Selection Fill

Animate

Points: Animate

Thermals:

[Zoom to Selection](#)

Report Output Options:

View Report As:

- [HTML](#)
- [Excel \(XLS\)](#)
- [View Map and Report PDF](#)
- [View Report-only PDF](#)

Analysis Settings

Report Year(s): 2006

Employment Type: Jobs

Labor Market Segment: All Workers

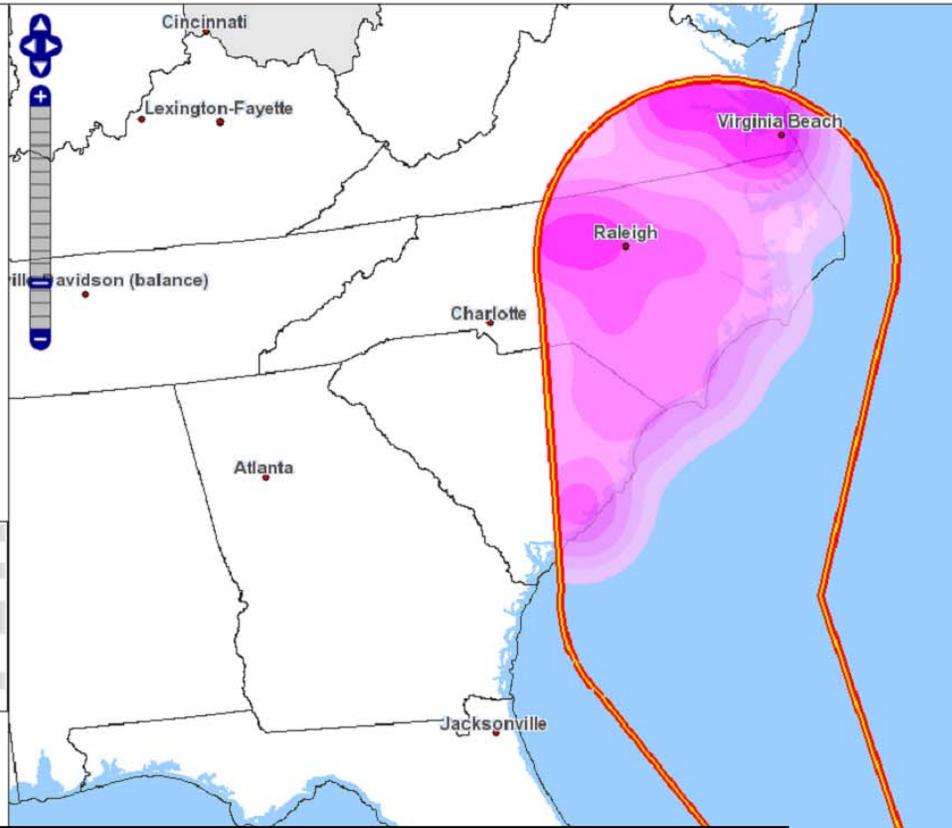
Primary Selection Layer: No layer selected.

Primary Selection Features: Only available for layer selections.

Advanced Area Selection: Ignored.

Map Shows: Counties

Query ID: 12205619229133



		2006	
Total Jobs	Count	Share	
Total Jobs	3,851,764	100.0%	

		2006	
Jobs by Worker Age	Count	Share	
Age 30 or younger	986,540	25.6%	
Age 31 to 54	2,223,878	57.7%	
Age 55 or older	641,341	16.7%	

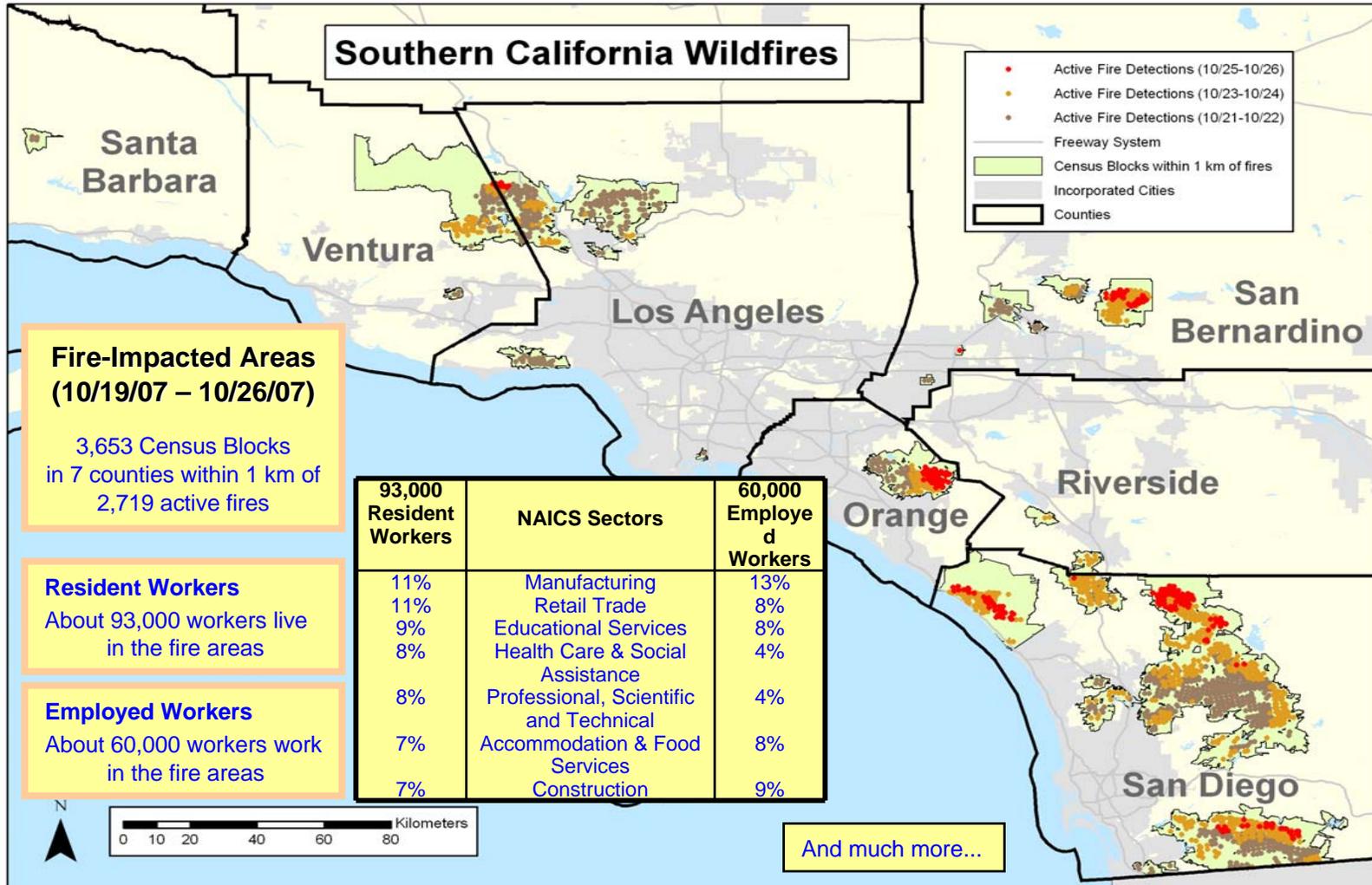
		2006	
Jobs by Earnings Paid	Count	Share	
\$1,200 per month or less	1,151,809	29.9%	
\$1,201 to \$3,400 per month	1,607,250	41.7%	
More than \$3,400 per month	1,092,703	28.4%	

		2006	
Jobs by Industry Type (2-digit NAICS)	Count	Share	
Agriculture, Forestry, Fishing and Hunting	27,209	0.7%	
Mining, Quarrying, and Oil and Gas Extraction	2,960	0.1%	
Utilities	20,313	0.5%	
Construction	250,366	6.5%	
Manufacturing	432,164	11.2%	
Wholesale Trade	156,254	4.1%	
Retail Trade	484,900	12.6%	
Transportation and Warehousing	112,670	2.9%	
Information	79,120	2.1%	
Finance and Insurance	124,910	3.2%	
Real Estate and Rental and Leasing	65,712	1.7%	
Professional, Scientific, and Technical Services	201,509	5.2%	
Management of Companies and Enterprises	66,222	1.7%	
Administration & Support, Waste Management and Remediation	237,477	6.2%	
Educational Services	397,620	10.3%	
Health Care and Social Assistance	461,333	12.0%	
Arts, Entertainment, and Recreation	58,201	1.5%	
Accommodation and Food Services	350,065	9.1%	
Other Services (excluding Public Administration)	118,621	3.1%	
Public Administration	204,132	5.3%	

Work Area Profile Map

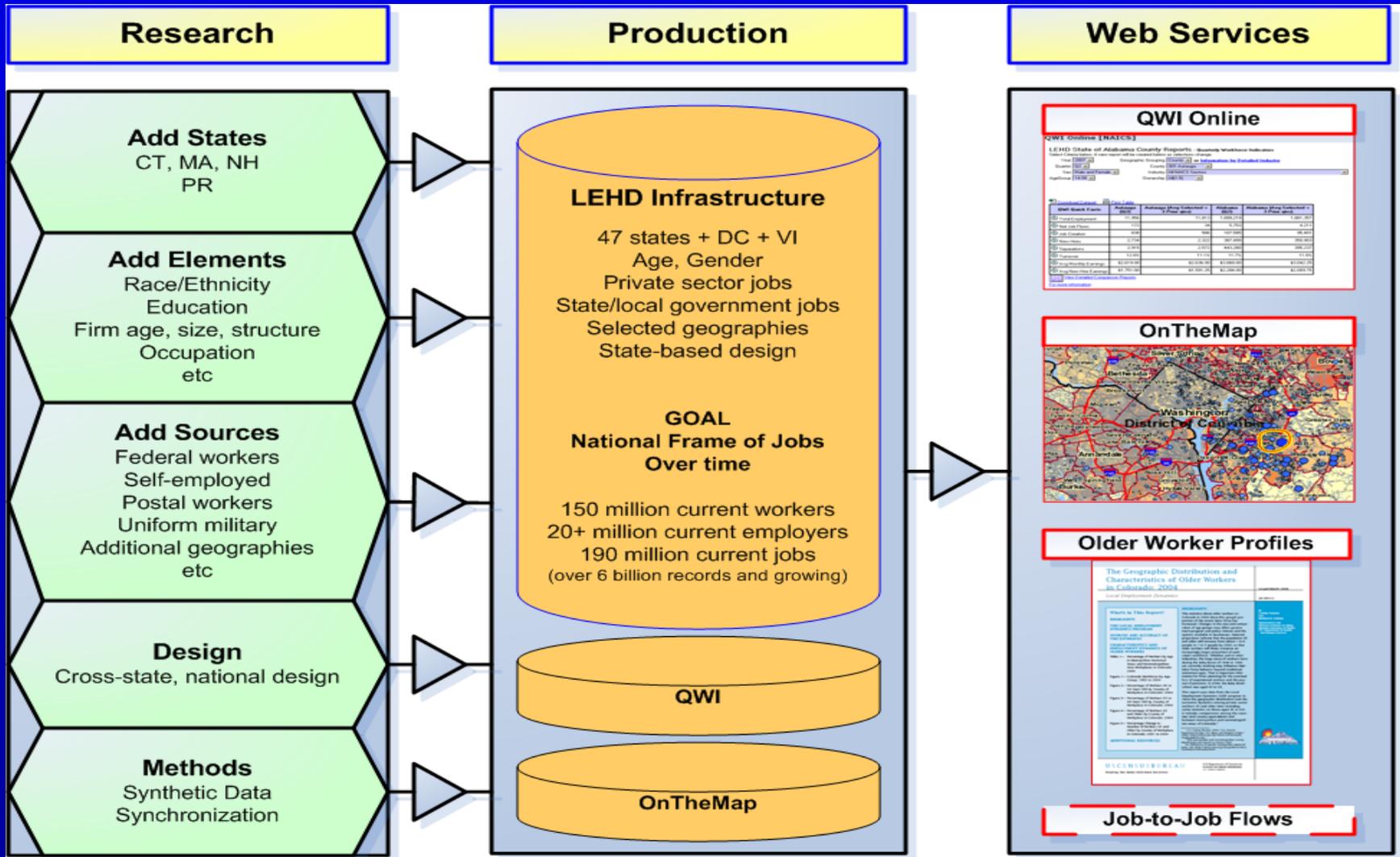
- Shows where workers employed in the selection area work.
- Projected path of Hanna based on NWS data.
- Plume selection from 20 miles to 150 miles.
- Approx. 3.9 million jobs in this selection for 2006.

OTM Disaster Data: California Wildfires



Sources: Local Employment Dynamics, U.S. Census Bureau, 2007. <<http://lehd.did.census.gov>>
USDA Forest Service, Remote Sensing Application Center, 2007. <<http://activefiremaps.fs.fed.us>>

Current Development Plans



Research possibilities with the LEHD Infrastructure

- Recent move of the LEHD program to the Economic Directorate's Center for Economic Studies will substantially enhance research activities using linked employer-employee data
 - The move will help Census better leverage academic researchers at Census Bureau Research Data Centers
- An important component of this will be a better integration of LEHD and Census business data. The latter includes rich information on firm dynamics and performance.
 - New data products and new analytical data

Business Formation and Innovation

- Recent analysis from Center for Economic Studies show business formation critical for job and productivity growth
- New firms are often small, sole proprietors and an important fraction start as micro-enterprises (nonemployer firms)
- Integrating LEHD infrastructure with business microdata data will enable tracking business startups.
 - Where did the entrepreneur come from?
 - What type of firm was entrepreneur working at?
 - Are some business types and locations especially effective incubators of new firms?
- What is the the role of innovators/inventors in business dynamics?
 - Is the mobility of innovators/inventors critical for knowledge diffusion?
 - Databases on innovators/inventors from patents, citations, etc. may be useful here.

Trade and Globalization

- What happens to the workers at establishments closed due trade?
 - LEHD data allow researchers to follow these workers to their subsequent jobs to examine their wage outcomes and the characteristics of the businesses that employ them.
- There is a rich literature using Census business data that characterizes successful exporting businesses
 - LEHD data will allow researchers to better describe the workforce dynamics of these critical businesses
- LEHD data are part of a rich data infrastructure being developed at CES for use at the RDCs.
 - This includes survey and administrative data on establishments and firms, transaction level trade data and the LEHD data.
 - Broader access to BEA survey data would be valuable.

Tracking Employment and Earnings Outcomes for Separators

- Track the employment outcomes for workers who experience a separation:
 - How long does it take to become re-employed?
 - What types of jobs are they hired into (location, industry)?
 - What are the earnings outcomes?
- There is also an interesting flip-side of this question:
 - For workers who have been hired, where did they come from?
 - What locations or industries?
- Today focus on the earnings and employment outcomes of separators

Tracking U.S. Auto Workers

The Quarterly Workforce Indicators (QWI) for Michigan show:

- Auto Workers in the Auto Assembly Industry (NAICS 3361) have about a 7 percent separation rate on a quarterly basis (over the period 2000:1-2006:4)

Here we focus on auto workers who have worked for their employer for at least 4 quarters who experience a separation.

- We pool across states Michigan, Kentucky, Illinois and Wisconsin
 - We have examined patterns for Michigan alone and they are similar

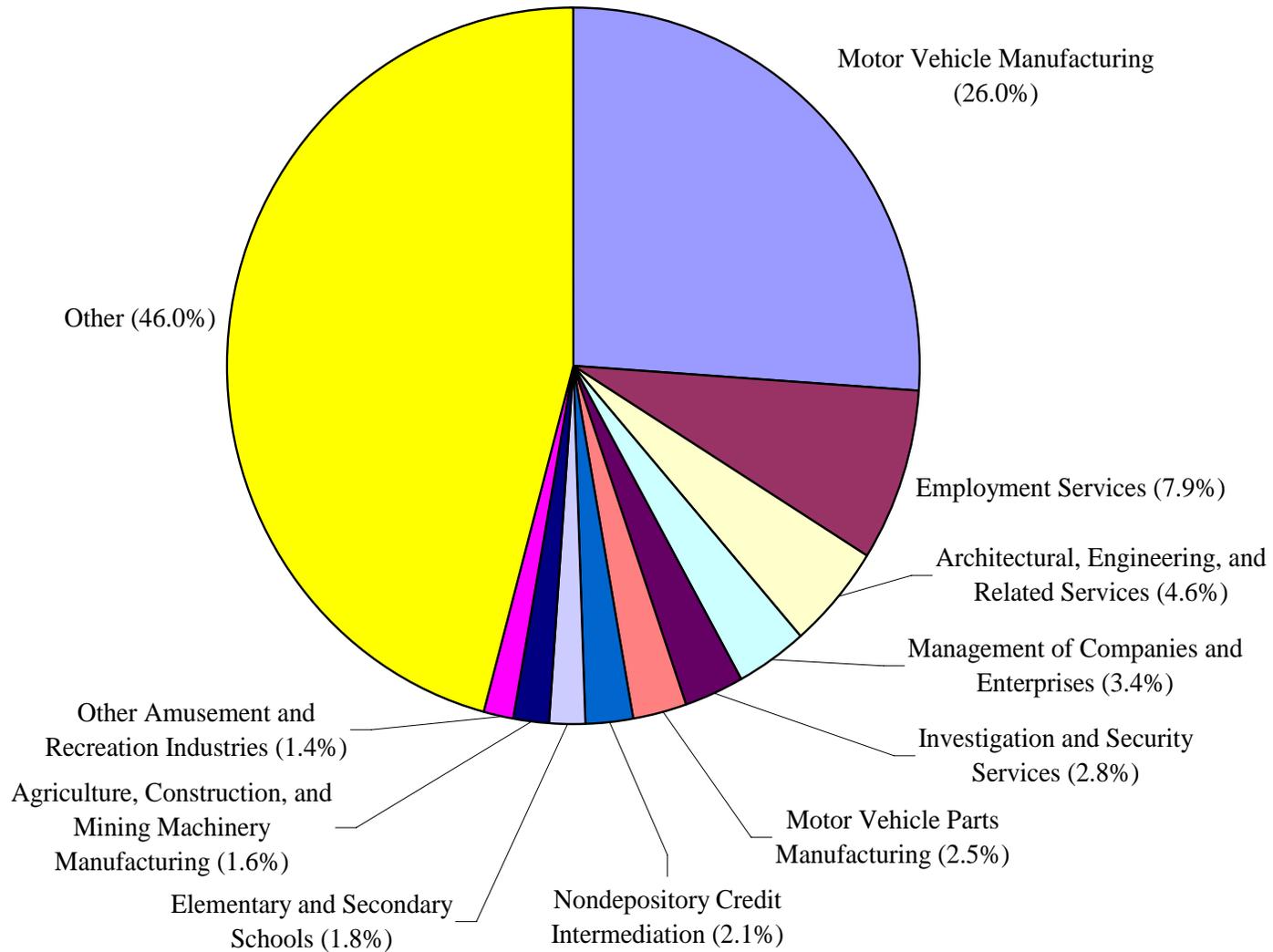
Tracking Employment Outcomes for Separators

About 3.5 percent of workers with at least 4 quarters of tenure experience a separation each quarter

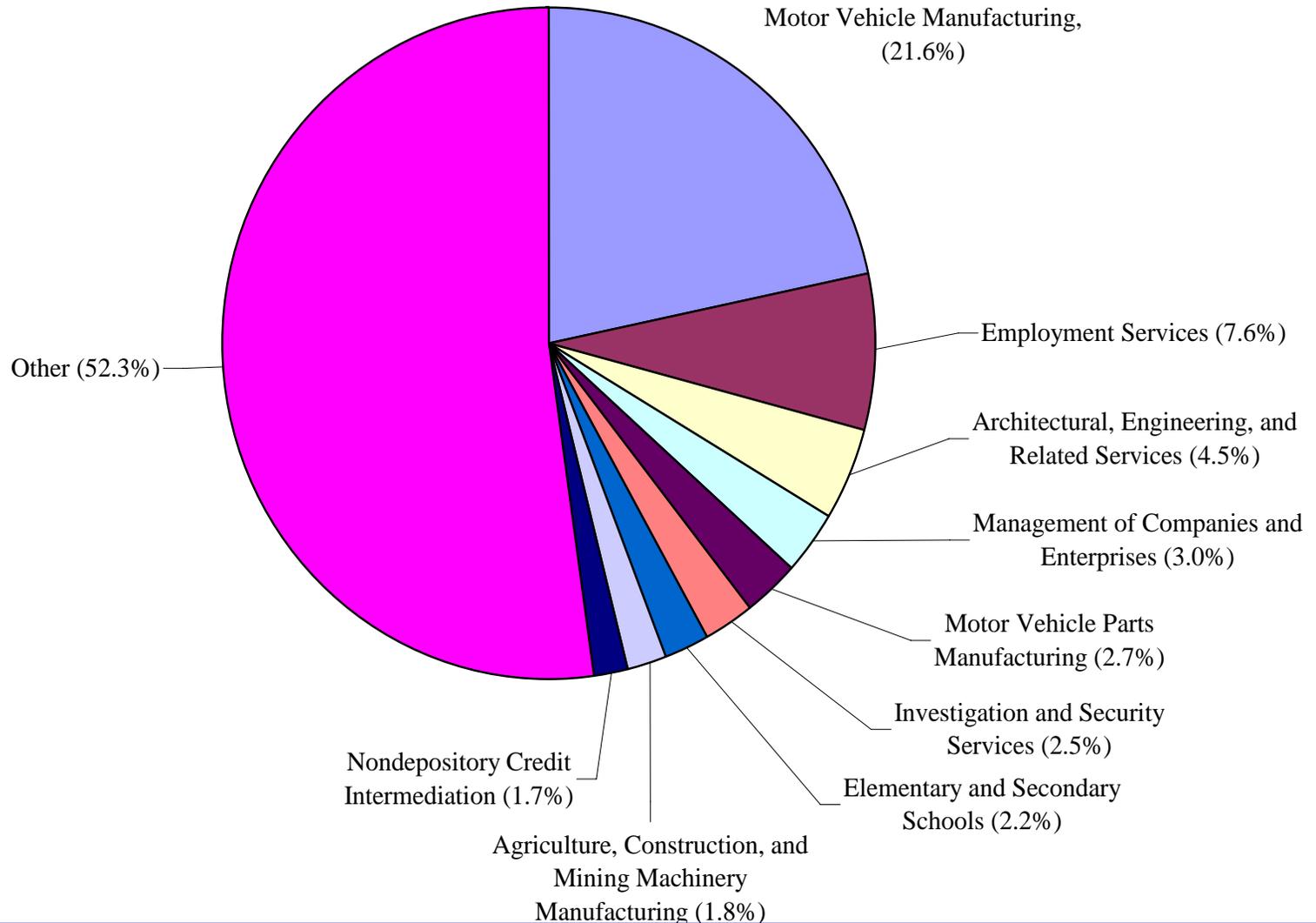
Employment probabilities within the same state:

- After 1-quarter: 14.6 percent
- After 2-quarters: 43.8 percent
- After 4-quarters: 44.1 percent
- The 56 percent not re-employed are either:
 - Unemployed, not in the labor force, or are employed in another state (future: national tracking)
- A substantial fraction re-employed in the same state return to the same employer (62.5 percent after 4-quarters)
- For the remainder of talk, we focus on the separators who change employers.

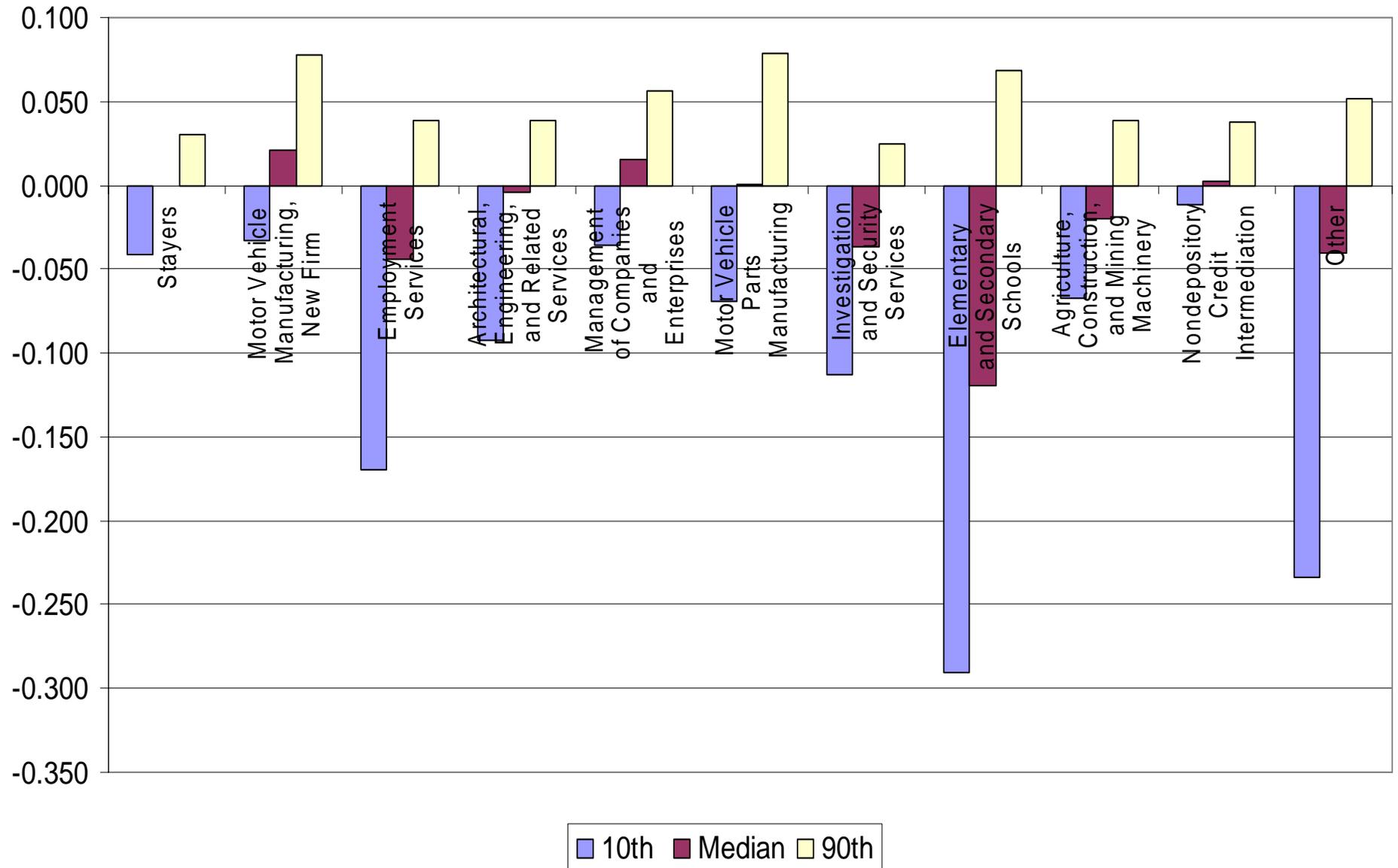
**Top 10 Destination NAICS for Motor Vehicle Manufacturing (NAICS 3361),
One Quarter After Job Loss**



**Top 10 Destination NAICS for Motor Vehicle Manufacturing (NAICS 3361),
Four Quarters After Job Loss**



Distribution of Earnings Changes for Stayers vs. Separators that Changed Firms in Motor Vehicle Manufacturing (NAICS 3361) (4-quarters after separation)



Summary for Auto Workers

Many workers in Auto either return to the same firm or stay in the same industry

Conditional on leaving the industry, a top destination is employment services

Earnings outcomes are not that different for stayers vs. separators at median but lower tail much worse for separators.

To examine patterns for separators, useful to look at both spells of joblessness and also separators from mass layoffs

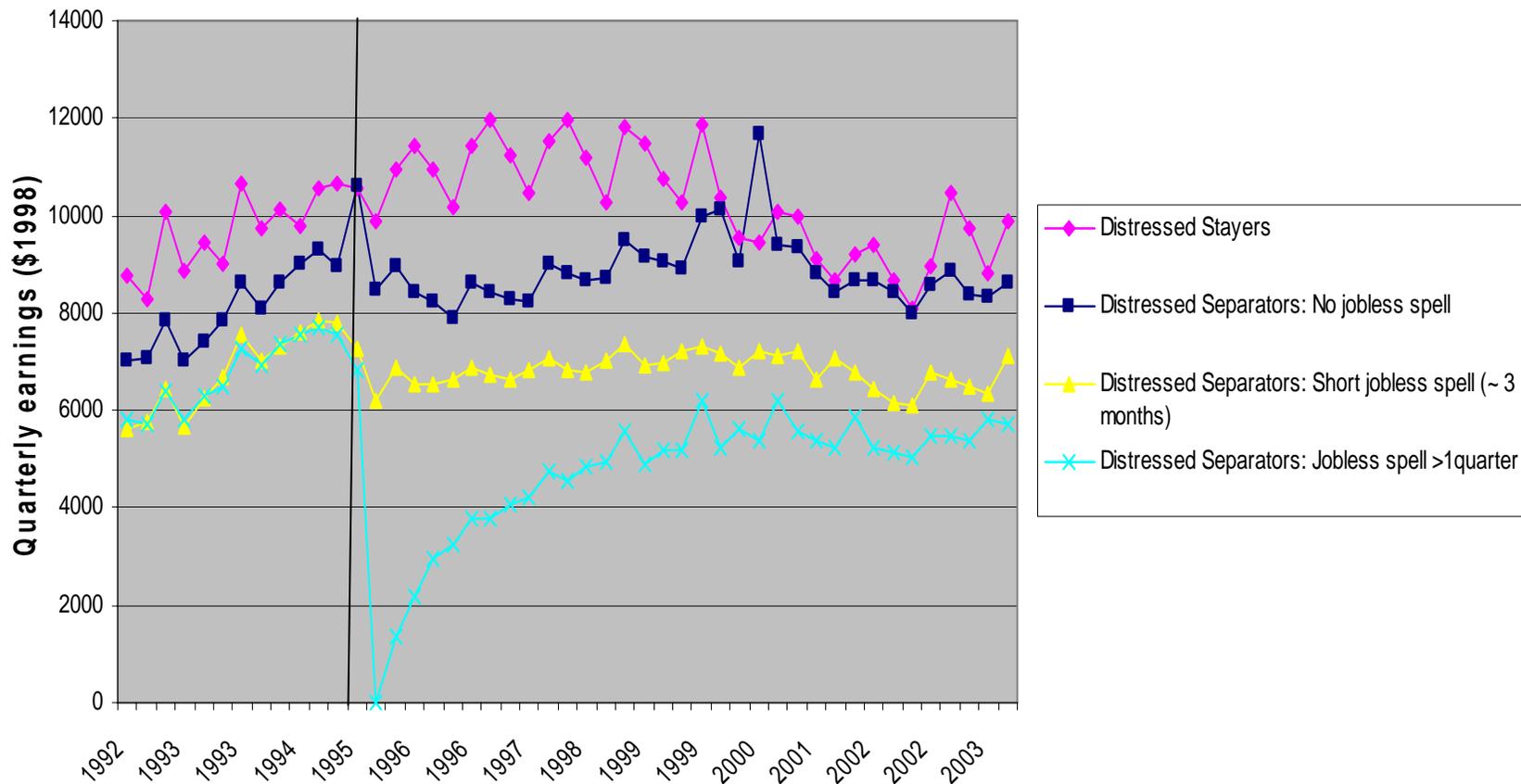
For the latter, in related work we have examined for all workers pooled across more states (see Fallick et. al. (2008))

Results:

Rate at which 1995:2 separators experience a jobless spell after separation

Description of Flow to New Job	All Separators	Distressed Separators
No jobless spell	35.54	39.71
Short jobless spell ~3 months	22.43	28.73
1 full-quarter joblessness ~6 mo.	7.36	6.73
2-3 quarters joblessness	6.36	5.72
4 or more qtrs joblessness	12.66	8.17
No observed new job in state over next 8 years	15.65	9.47

Quarterly Earnings of Distressed Separators in 1995:2: By Length of Jobless Spell.



Distribution of Earnings Growth resulting from Job Change

All Job Separators	10th	25th	50th	75th	90th
EE1: no jobless spell	-33.35	-11.19	8.00	34.94	90.33
EE2: short jobless spell	-46.01	-19.14	4.77	32.34	91.66
EE3: 1 qtr. non-emp.	-39.31	-10.88	0.69	11.59	41.26
EE4: 2-3 qtrs. non-emp.	-62.45	-33.01	-3.59	25.01	97.87
EE5: 4+ qtrs. non-emp.	-72.12	-42.05	-1.31	52.86	195.53
Distressed Separators	10th	25th	50th	75th	90th
EE1: no jobless spell	-31.60	-12.00	3.36	23.25	64.05
EE2: short jobless spell	-39.31	-15.61	4.91	24.93	56.86
EE3: 1 qtr. non-emp.	-48.00	-19.37	0.10	15.28	46.31
EE4: 2-3 qtrs. non-emp.	-63.46	-40.67	-10.47	20.34	79.94
EE5: 4+ qtrs. non-emp.	-74.08	-47.57	-11.08	31.51	121.62
Job Stayers	-29.38	-7.85	1.03	10.70	31.33

Contact Us

Comments/Suggestions

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Local Employment Dynamics

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Join the Listservs

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