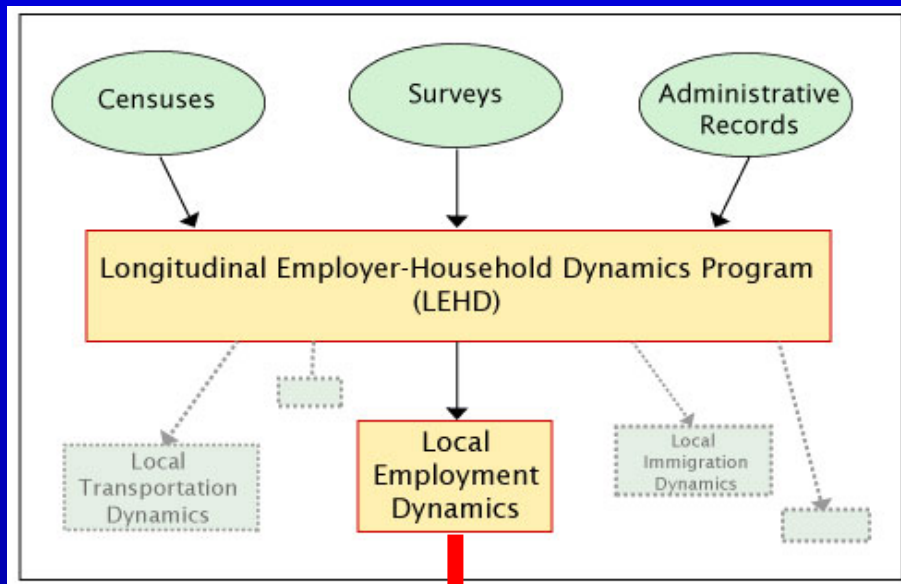


# An Update on The LEHD Program

Jeremy Wu  
California State Data Center  
Census Bureau  
June 29, 2006

# The LEHD Concept – Data Integration



**New data and products**

- Use existing data to link multiple sources
- Create new data and products
- Reduce cost and respondent burden
- Make data available while protecting confidentiality
- Enhance Census Bureau operations

Merge multiple data  
snapshots into  
information movies  
about the U.S.  
society and economy



# Local Employment Dynamics

- ✓ A voluntary partnership between the states and the Census Bureau
- ✓ States supply quarterly worker and business wage records
- ✓ Census Bureau merges the state records with other data to produce new data and products:
  - ✓ a longitudinal national frame of jobs
  - ✓ an associated data infrastructure

# State of LED Partnership

- Regular production 33
- Experimental production 4
- To supply historical files 5
- In clearance to join 1

- 
- State partners 43
  - 8 states yet to join
    - AK, CT, MA, NE, NH, NY, OH, SD

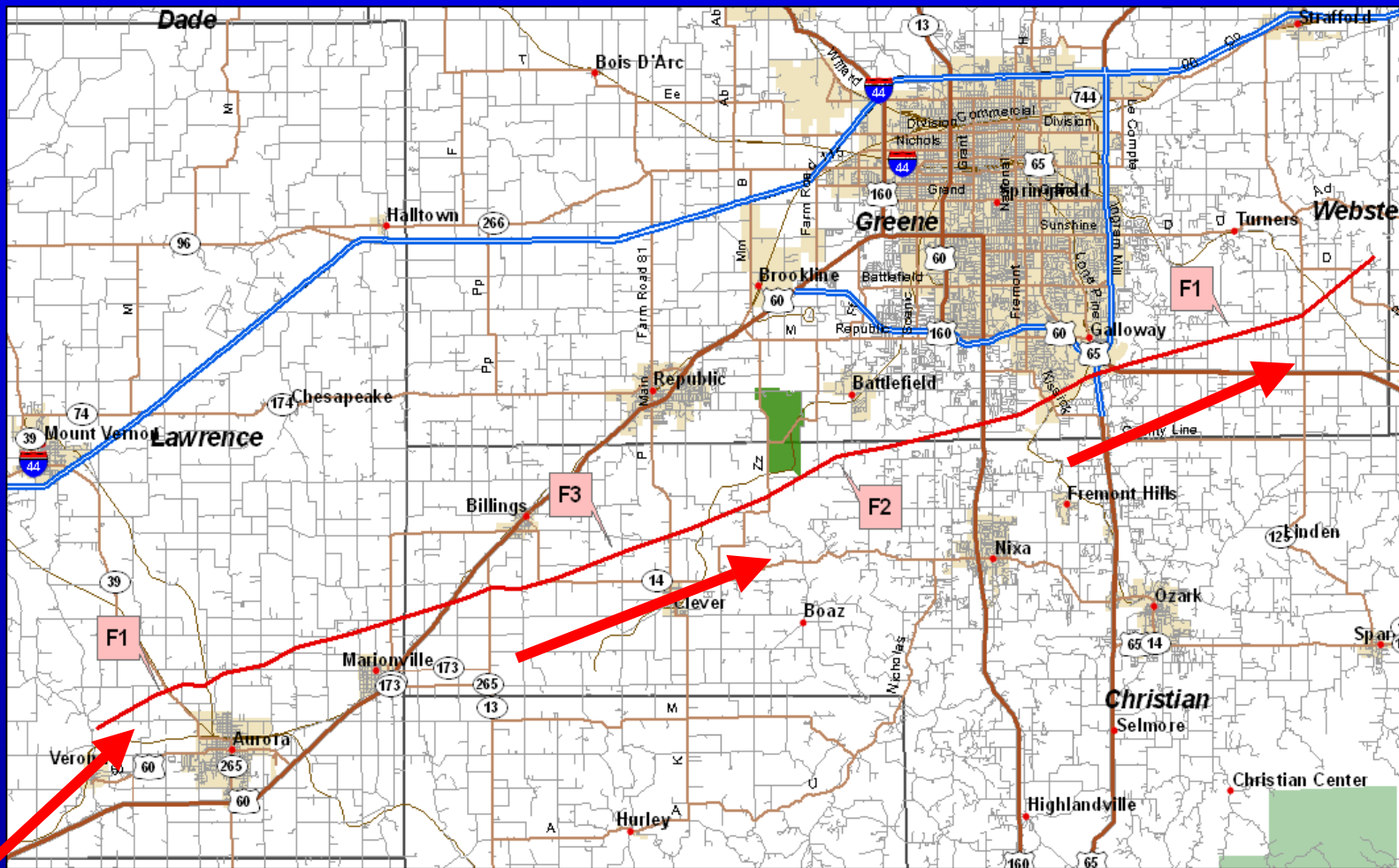
# LED in Action

Recent Employment and Training  
Reporter article on:

- Tornados
- Military base realignment
- Bridges
- Inter-state commuting

# Missouri Tornado Path

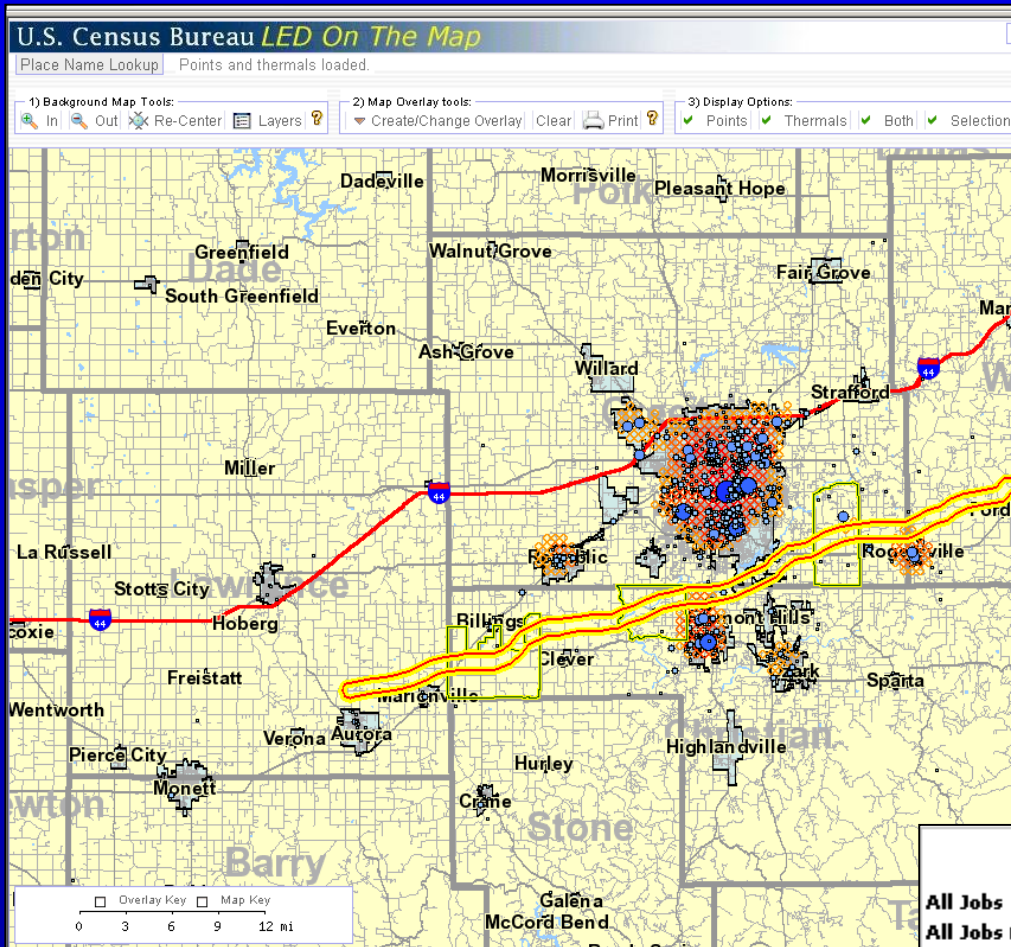
March 12, 2006



F-Scale: F3 between Clever and Nixa  
Width: 1/4 to 1/2 mile

Path Length: ~40 miles  
Time: 10:08 – 11:00 P.M.

# On the Map: Where People Go to Work



Workers by Industry Type (2-digit NAICS)	2003	
	Count	Share
* Agriculture, Forestry, Fishing and Hunting	5	0.3%
* Mining	1	0.1%
* Utilities	3	0.2%
* Construction	134	8.6%
* Manufacturing	195	12.5%
* Wholesale Trade	132	8.5%
* Retail Trade	230	14.8%
* Transportation and Warehousing	79	5.1%
* Information	54	3.5%
* Finance and Insurance	82	5.3%
* Real Estate and Rental and Leasing	25	1.6%
* Professional, Scientific, and Technical Services	70	4.5%
* Management of Companies and Enterprises	35	2.2%
* Administration & Support, Waste Management and Remediation	76	4.9%
* Educational Services	13	0.8%
* Health Care and Social Assistance	202	13%
* Arts, Entertainment, and Recreation	23	1.5%
* Accommodation and Food Services	124	8%
* Other Services (excluding Public Administration)	74	4.8%
* Public Administration	0	0%

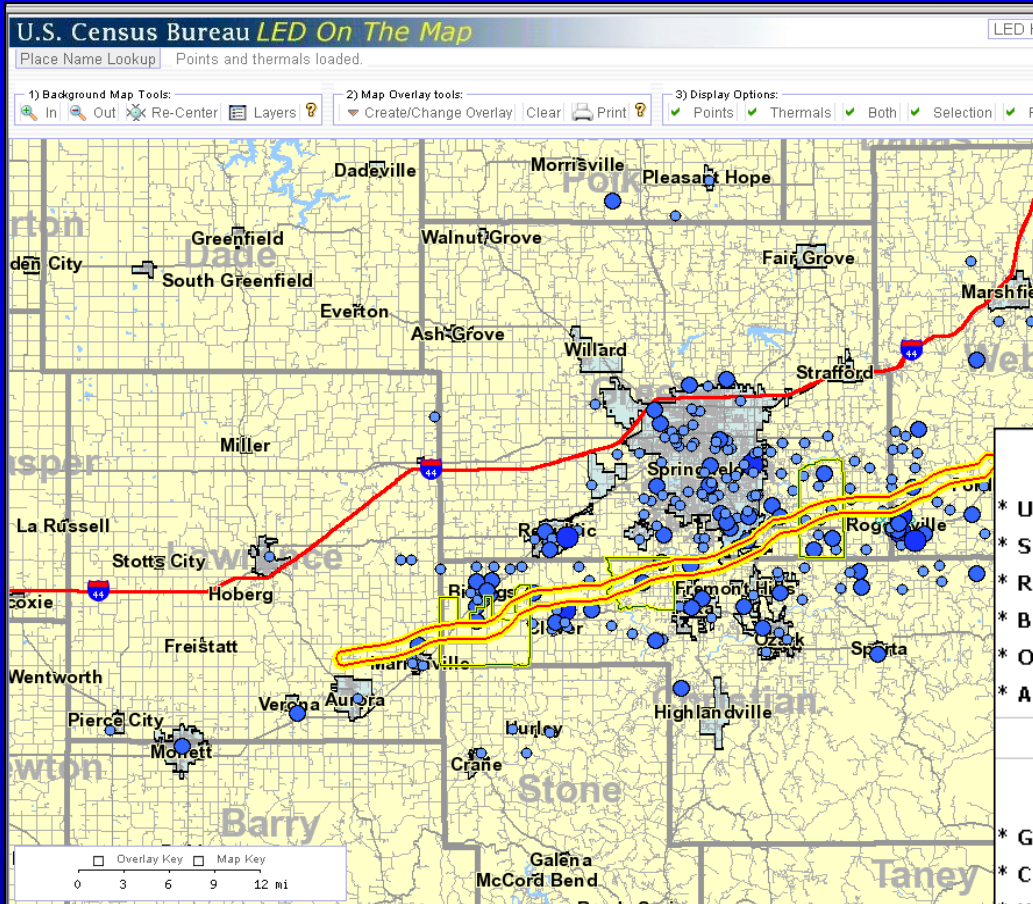
Resident Held Jobs by Category	2003	
	Count	Share
All Jobs	1,943	100.0%
All Jobs (Private Sector Only)	1,644	84.6%
All Primary Jobs (Worker's highest paying job)	1,843	94.9%
All Primary Jobs (Private Sector Only) and Baseline Count of Workers	1,557	80.1%

Workers by Earnings Paid	2003	
	Count	Share
\$1,200 per month or less	452	29%
\$1,201 to \$3,400 per month	674	43.3%
More then \$3,400 per month	431	27.7%

Where do people who live in the path of the tornado *work*?



# On the Map: Where Workers Live



<u>QWI Indicators - Private Sector Jobs</u>		2003:Q2
* Employment (Beginning-of-2nd quarter)		248
* Employment, Stable Jobs		210
* Separations, Stable Jobs		24
* New Hires, Stable Jobs		21
* Firm Job Gain		38
* Firm Job Loss		21
* Employment (reference quarter)		326
* Average Monthly Earnings, Stable Jobs		\$ 2,283
* Average Monthly Earnings Separations from Stable Jobs		\$ 975
* Average Monthly Earnings, New Hires, Stable Jobs		\$ 2,128

<u>Cities/Towns Where Workers Live</u>		2003	
	Count	Share	
* Unincorporated Areas	112	45.2%	
* Springfield, MO	52	21%	
* Republic, MO	14	5.6%	
* Billings, MO	12	4.8%	
* Out-of-State	9	3.6%	
* All Other Locations	49	19.8%	

<u>Counties Where Workers Live</u>		2003	
	Count	Share	
* Greene Co., MO	97	39.1%	
* Christian Co., MO	73	29.4%	
* Webster Co., MO	22	8.9%	
* Lawrence Co., MO	14	5.6%	
* Out-of-State	9	3.6%	
* All Other Locations	33	13.3%	

Where do workers employed at jobs located in the path of the tornado *live*?

# On The Map: Downtown St. Louis

## Proposed Mississippi River Bridge Project

### LED in Action

#### Proposed Mississippi River Bridge Project Analysis

##### Cross Border Commuting



Where do people who work in North St. Louis, MO live?



Where do people who live in Granite City, IL work?



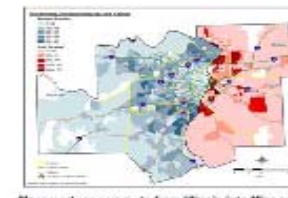
Where do people who work in East St. Louis, IL live?



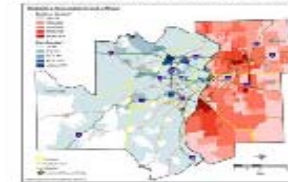
Where do people who live in East St. Louis, IL work?

The purple thermal coloration and blue dots represent where people who work in the study area live. The orange thermal coloration and blue dots represent where those who live in the study area work. The study areas (northern St. Louis City, MO, Granite City, IL and East St. Louis, IL in this case) are highlighted in yellow.

In these illustrations, the importance of the current bridges for residents in the northern neighborhoods of greater St. Louis is highlighted by the identification of commuters crossing from northern St. Louis to Granite City, IL, and from Granite City, IL to downtown St. Louis and numerous locations on the inner and outer beltways.



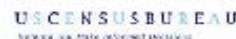
More workers commute from Illinois into Missouri.



##### The Current Situation and the New Mississippi River Bridge

Presently, there is one interstate crossing the Mississippi River in downtown St. Louis; the Poplar St. Bridge. It handles traffic from Interstates 65, 64, and 70. According to transportation planners, the Poplar St. Bridge is severely overburdened. The 2-mile approach from the Illinois side adds to the congestion with the convergence of three interstates. Projections show that severe traffic congestion is likely by the year 2020, without improvements to the transportation network. Rush-hour congestion could double and last up to three hours. The average delay would increase from 10 minutes per vehicle today to 55 minutes per vehicle by the year 2020.

The proposed new bridge would host Interstate 70, one of three primary east-west interstate highways in the country. The cable-stayed bridge would be designed to carry eight lanes of traffic and be located approximately one mile north of the Dr. Martin Luther King Bridge. With LED we can identify geographic concentrations of commuters both where they live and where they work, on either side of the Mississippi, aiding transportation planning within the metropolitan area.

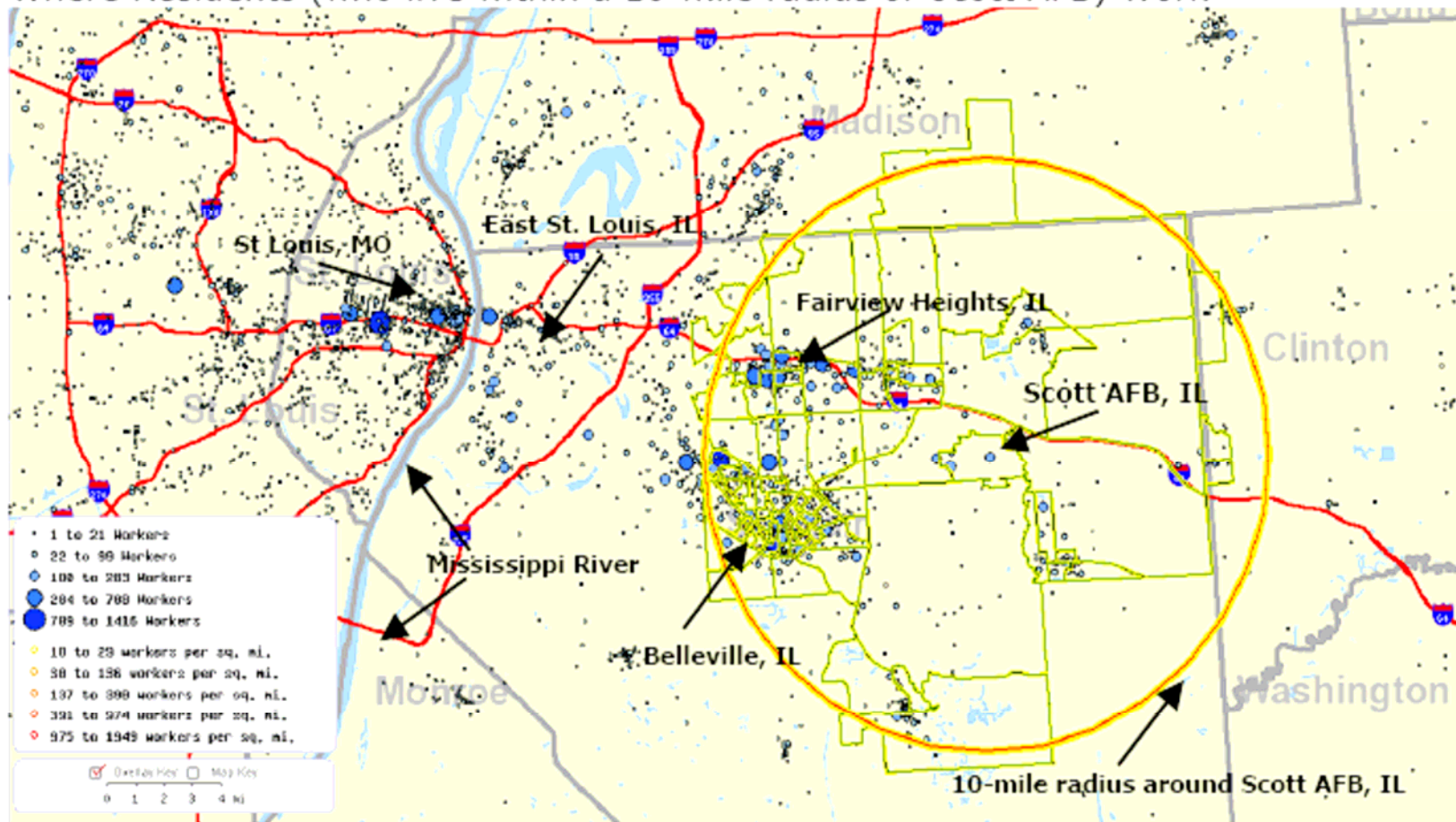


<http://lehdmap.dsd.census.gov>



# On The Map: Recruiting for Scott AFB

Where Residents (who live within a 10-mile radius of Scott AFB) Work







# On The Map

LED's online dynamic mapping tool

- ✓ 15 states online
- ✓ Iowa joining
- ✓ **ETA has good news soon!**

- ✓ Where do workers live?
- ✓ Where do people work?
- ✓ Companion reports on age, earnings, and industry
- ✓ First partially synthetic data product

- ✓ User select areas
- ✓ Block is base unit for display; block group is base unit for report
- ✓ Modular geographic layers such as community colleges and zip codes

# QWI Online – Flagship Product

8 age categories

Entries updated instantaneously

2-, 3-, and 4-digit NAICS code

Year: 2005 | Geographic Grouping: County or [Information by Detailed Industry](#)  
 Quarter: Q1 | County: 001 Atlantic  
 Sex: Male and Female | Industry: All NAICS Sectors  
 AgeGroup: 14-99 | Ownership: All (1-5)

[Download Dataset](#) | [Print Table](#)

QWI Quick Facts	Atlantic (Q1)	Atlantic (Avg: Selected + 3 Prior qtrs)	New Jersey (Q1)	New Jersey (Avg: Selected + 3 Prior qtrs)
Total Employment	128,573	135,672	3,771,977	3,811,829
Net Job Flows	13,897	1,193	122,812	40,651
Job Creation	17,957	10,787	275,516	243,047
New Hires	18,060	21,696	547,343	597,463
Separations	18,930	27,763	575,878	713,171
Turnover	8.3%	11.5%	9.2%	10.3%
Avg Monthly Earnings	\$2,987.00	\$3,069.75	\$4,257.00	\$4,138.50
Avg New Hire Earnings	\$1,748.00	\$2,009.50	\$2,538.00	\$2,693.25

[View Detailed Comparison Reports](#)  
[For more information](#)

# Key Features of Industry Focus

Ranking and multiple indicator selection

## Industry Focus: Selecting Top Industries

List the top  industries ranked by the greatest:

Ranking Indicator (Select One)	Include in report (Select One or More)	
<input checked="" type="radio"/>	<input checked="" type="checkbox"/>	Employment ⓘ
<input type="radio"/>	<input type="checkbox"/>	Growth in Employment ⓘ
<input type="radio"/>	<input type="checkbox"/>	Growth in hiring ⓘ
<input type="radio"/>	<input type="checkbox"/>	Number of new hires ⓘ
<input type="radio"/>	<input type="checkbox"/>	Firm Job Change ⓘ
<input type="radio"/>	<input type="checkbox"/>	Average monthly earnings for all workers ⓘ
<input type="radio"/>	<input type="checkbox"/>	Growth in average monthly earnings for all workers ⓘ
<input type="radio"/>	<input type="checkbox"/>	Average monthly earnings for new hires ⓘ

Age and Sex:

Age

Sex

Geography:

State

Entity:

Statewide

WIA

County

Metro Area

Select Industry Level:  Industry Sector  Industries

Industry Sector:

- 01 Atlantic-Cape May WIB
- 01 Atlantic-Cape May WIB
- 02 Bergen WIB
- 03 Burlington WIB
- 04 Camden WIB
- 05 Cumberland-Salem WIB
- 06 Essex WIB
- 07 Gloucester WIB

State, county, Workforce Investment Areas (WIA), metro areas

View Report

Download CSV

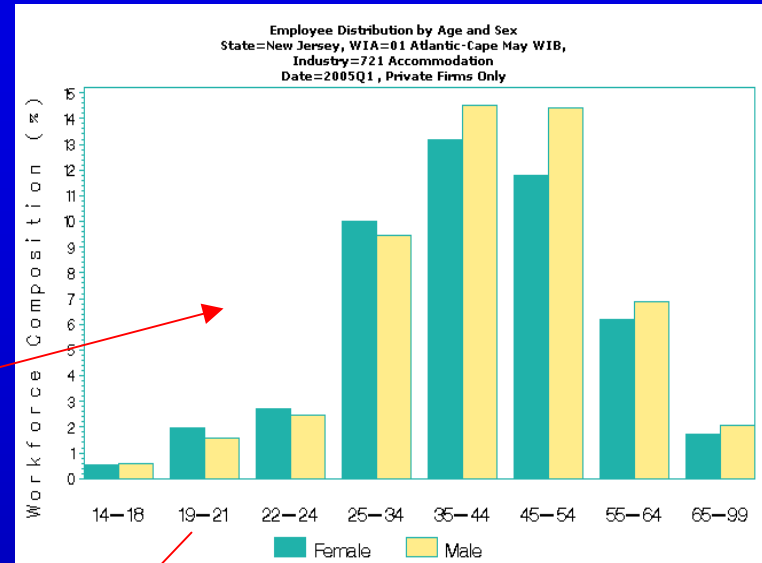
Create PDF

# Industry Focus provides...

Industry Focus: Top Industries Results (click on Industry link to see workforce information)

All 10 eligible industries ranked on the greatest average monthly earnings for new hires  
 State=New Jersey, WIA=01 Atlantic-Cape May WIB, Sex=Female, Age=19-21  
 Private Firms Only

Rank	Industry	New Hire Earnings (\$) (2004Q2,2004Q3, 2004Q4,2005Q1)	Average Quarterly Employment (2004Q2,2004Q3, 2004Q4,2005Q1)	Growth in Employment (%) (2004Q1,2005Q1)
	All NAICS subsectors	\$1,032	4,696	1.5%
1	<a href="#">623 Nursing and Residential Care Facilities</a>	\$1,477	105	14.5%
2	<a href="#">621 Ambulatory Health Care Services</a>	\$1,247	129	8.1%
3	<a href="#">721 Accommodation</a>	\$1,205	948	-11.9%
4	<a href="#">622 Hospitals</a>	\$1,047	127	-0.8%
5	<a href="#">812 Personal and Laundry Services</a>	\$996	92	-20.4%
6	<a href="#">722 Food Services and Drinking Places</a>	\$893	1,098	17.3%
7	<a href="#">445 Food and Beverage Stores</a>	\$835	335	3.7%
8	<a href="#">452 General Merchandise Stores</a>	\$830	181	2.7%
9	<a href="#">448 Clothing and Clothing Accessories Stores</a>	\$818	251	14.6%
10	<a href="#">446 Health and Personal Care Stores</a>	\$708	132	-3.8%



Click on industry to see workforce characteristics

	14-18	19-21	22-24	25-34	35-44	45-54	55-64	65-99
Female	0.54%	1.95%	2.69%	9.99%	13.2%	11.81%	6.19%	1.71%
Male	0.56%	1.55%	2.47%	9.47%	14.5%	14.43%	6.89%	2.06%

...easy, intuitive selection criteria and economic indicators for your geography, workforce, and industry.

# e-Learning Module: Site Tour

*U.S. Census Bureau's  
Local Employment Dynamics (LED)  
Site Tour*

## Overview of The LED Program and LED Analytic Tools



Powered by  
**Dynamic  
Works**  
Institute





# Partners Only Features...

The screenshot shows a web browser interface for the LEHD website. At the top, there are three tabs: 'Return to LEHD Main', 'Partners Only' (which is selected), and 'State Only'. Below the tabs is a navigation bar with links for 'State Info', 'Standard Operating Procedures', and 'Steering Committee'. On the left side, there is a 'Print' icon. On the right side, there is a search box with a 'Search' button. The main content area is titled 'Partners Only Home' and contains a paragraph of text explaining the section's purpose for LED partners, covering state contact and operational information. It also mentions a one-stop option for downloading files and provides an email address for contact: [dsd.local.employment.dynamics@census.gov](mailto:dsd.local.employment.dynamics@census.gov).

✓ **State Info**

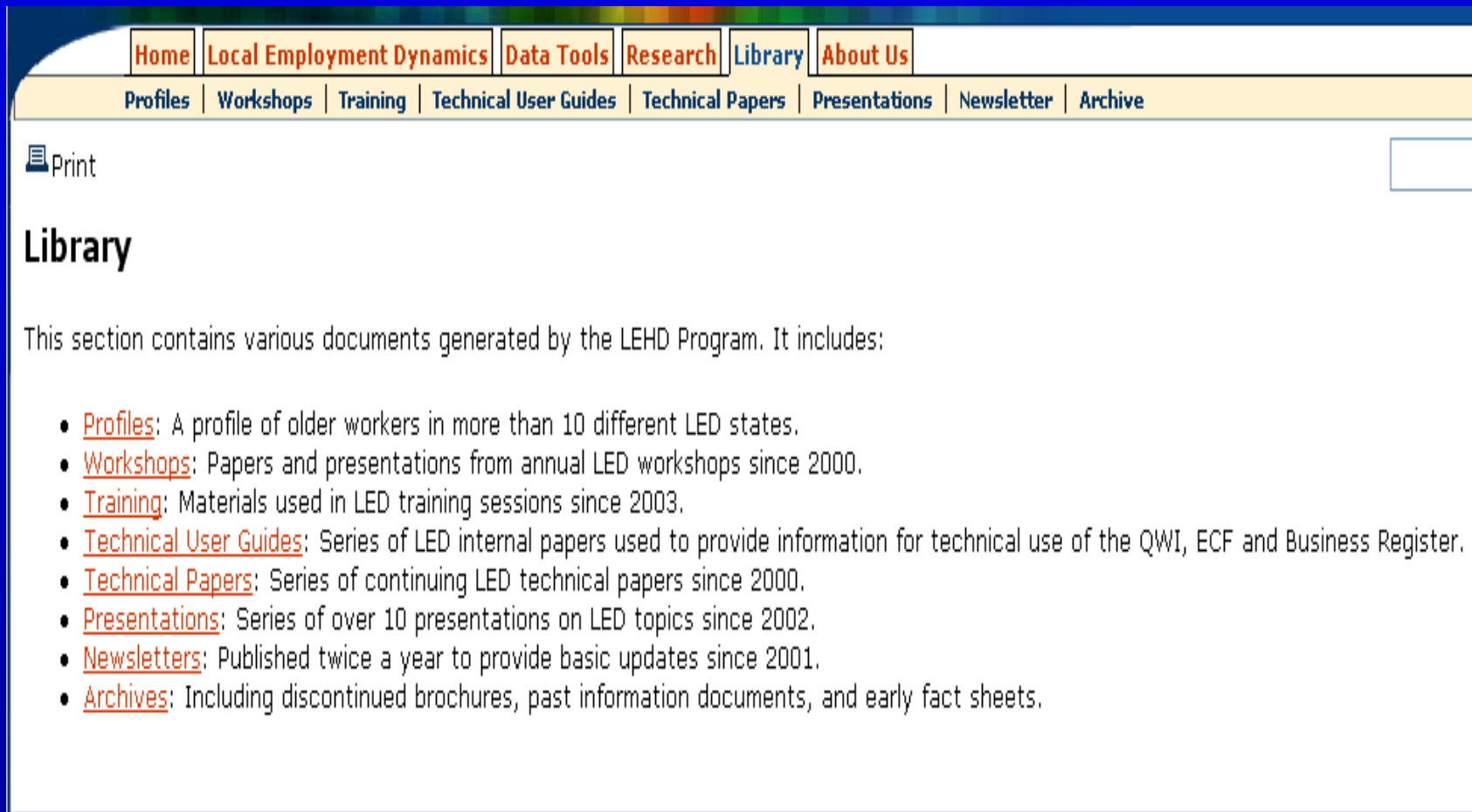
✓ **State Information  
Technology Contact**

✓ **Steering Committee  
Information**

✓ **Standard Operating  
Procedures (SOP)**

✓ **Password-Protected  
Review Area for  
Individual States**

# LEHD Library



The screenshot shows the top navigation bar of the LEHD Library website. The main navigation menu includes: Home, Local Employment Dynamics, Data Tools, Research, Library (highlighted), and About Us. A secondary menu below it includes: Profiles, Workshops, Training, Technical User Guides, Technical Papers, Presentations, Newsletter, and Archive. Below the navigation is a search box and a 'Print' button. The main content area is titled 'Library' and contains a paragraph and a bulleted list of document categories.

Home | Local Employment Dynamics | Data Tools | Research | **Library** | About Us

Profiles | Workshops | Training | Technical User Guides | Technical Papers | Presentations | Newsletter | Archive

Print

## Library

This section contains various documents generated by the LEHD Program. It includes:

- [Profiles](#): A profile of older workers in more than 10 different LED states.
- [Workshops](#): Papers and presentations from annual LED workshops since 2000.
- [Training](#): Materials used in LED training sessions since 2003.
- [Technical User Guides](#): Series of LED internal papers used to provide information for technical use of the QWI, ECF and Business Register.
- [Technical Papers](#): Series of continuing LED technical papers since 2000.
- [Presentations](#): Series of over 10 presentations on LED topics since 2002.
- [Newsletters](#): Published twice a year to provide basic updates since 2001.
- [Archives](#): Including discontinued brochures, past information documents, and early fact sheets.

U.S. Census Bureau  
**Longitudinal Employer-Household Dynamics**

[Home](#) | [Local Employment Dynamics](#) | [Data Tools](#) | [Research](#) | [Library](#) | [About Us](#)

[Site Map](#) | [Feedback](#)

Print

QUICK LINKS	WHAT'S NEW?	Q&A
<ul style="list-style-type: none"><li>▶ <a href="#">QWI Online</a></li><li>▶ <a href="#">Industry Focus</a></li><li>▶ <a href="#">Partners Only</a></li><li>▶ <a href="#">On The Map</a></li><li>▶ <a href="#">Workshop Presentations</a></li><li>▶ <a href="#">e-Learning</a><ul style="list-style-type: none"><li><a href="#">Site Tour</a></li><li><a href="#">Industry Focus Tour</a></li><li><a href="#">QWI Online Tour</a></li><li><a href="#">On the Map Tour</a></li></ul></li></ul>	<ul style="list-style-type: none"><li>▶ 05/31/06: <a href="#">On The Map Version 1.1 Released</a></li><li>▶ 04/26/06: <a href="#">ETA Hosts Webinar on LED</a></li><li>▶ 04/06/06: <a href="#">Final e-Learning Module Now Available: On the Map</a></li><li>▶ 03/29/06: <a href="#">On The Map Version 1.0.1 Released</a></li><li>▶ 03/22/06: <a href="#">Third e-Learning Module Now Available: QWI Online</a></li></ul> <p style="text-align: right;"><a href="#">[more...]</a></p>	<ul style="list-style-type: none"><li>▶ <a href="#">Who Started LEHD?</a></li><li>▶ <a href="#">What is LEHD?</a></li><li>▶ <a href="#">What is LED?</a></li><li>▶ <a href="#">What are the QWI?</a></li></ul> <p style="text-align: right;"><a href="#">[more...]</a></p>
<p><b>Local Employment Dynamics</b> <a href="#">Confidentiality and LED</a>, <a href="#">State Partners</a>, <a href="#">Partnership</a>, <a href="#">Partners Only</a></p> <p><b>Data Tools</b> <a href="#">QWI Online</a>, <a href="#">On the Map</a>, <a href="#">Industry Focus</a>, <a href="#">Cornell Restricted Access Data Center</a>, <a href="#">Case Studies and Examples</a></p> <p><b>Research</b> <a href="#">Research Data Center</a>, <a href="#">Confidentiality Research</a>, <a href="#">Low Wage Work</a>, <a href="#">Human Capital &amp; Productivity</a>, <a href="#">Transportation</a>, <a href="#">Aging &amp; Pension Benefits</a></p>	<p><b>Library</b> <a href="#">Profiles</a>, <a href="#">Workshops</a>, <a href="#">Training</a>, <a href="#">Technical User Guides</a>, <a href="#">Technical Papers</a>, <a href="#">Presentations</a>, <a href="#">Newsletters</a>, <a href="#">Archives</a></p> <p><b>About Us</b> <a href="#">Mission</a>, <a href="#">FAQs</a>, <a href="#">Staff</a>, <a href="#">Contact</a>, <a href="#">Directions</a></p>	<p><b>DID YOU KNOW?</b></p> <p>...that of the industries in <b>New Mexico</b> that employed more than 500 workers <b>65 years and older</b> in 2002, the highest average monthly earnings were from engineering, accounting and research (\$4,157)?</p>

[Home](#) | [Census 2000](#) | [Subjects A to Z](#) | [FAQs](#) | [Search](#) | [Data Tools](#) | [Catalog](#) | [Quality](#) | [Privacy Policy](#) | [Policies](#) | [Contact Us](#)

# LEHD Data Infrastructure

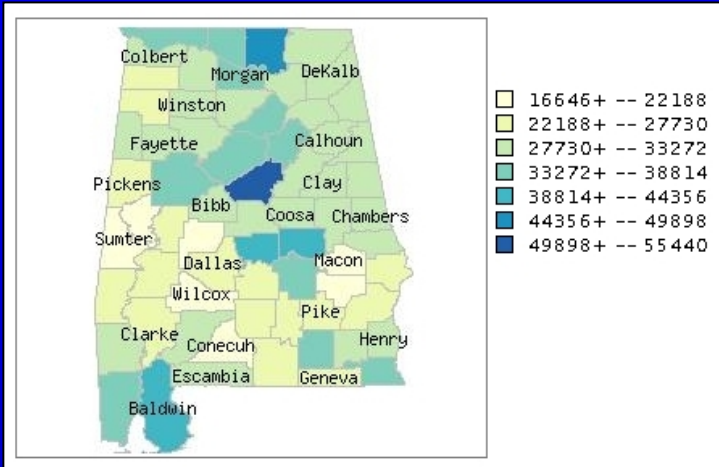
- Workers
  - Characteristics and history
- Employers
  - Characteristics and history
- Jobs
  - Relation between individual worker and employer
- Geographic
  - Residence and workplace geo-codes
- Business Register Bridge
- Other tools and data sources
  - Census 2000 link
  - Summary and Detailed Earnings Records
  - SSA benefit data
  - American Community Survey link

# Hot Reports Features

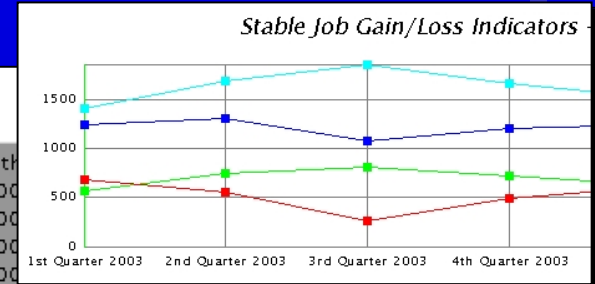
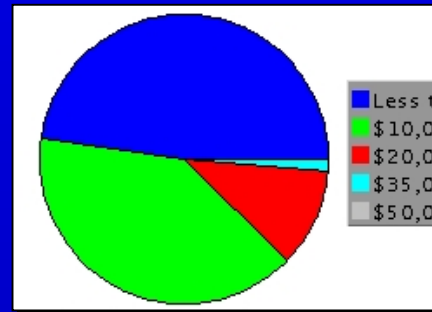
- ✓ Live, interactive web pages
- ✓ Includes tables, maps, graphs, charts, ...
- ✓ Text updated wherever there is a change
- ✓ Covers jobs, transportation, housing, schools, ...
- ✓ Data sources from the Census Bureau – Local Employment Dynamics, American Community Survey, ...
- ✓ User makes selections to generate reports

# Concept of Hot Reports

## MAPS



## GRAPHS



## DYNAMICALLY UPDATED TEXT

Choose your Local Employment Dynamics selections:

Indicator:

Industry Sector:

Age group:  Gender:

Quarter to map:

**LED Map**

Illinois map of counties showing quarterly workforce indicators for the period **2nd Quarter 2004**. The selection shows **Employees stable jobs: Average monthly earnings** for NAICS sector **51 Information**, filtered by an age group **22-44** created within the HotReport and **Male**.  
**NOTE:** Map will not plot if data are not available for the selected quarter or industry.

## TABLES

Indicator	1st Quarter 2003	2nd Quarter 2003
Employment: Counts	18,278	18,598
Employees stable jobs: Average monthly earnings	\$4,462	\$4,496
Hires All stable jobs: Average monthly earnings	\$2,274	\$2,918
Separations stable jobs: Average monthly earnings	\$1,758	\$1,584
Employment stable jobs: Counts	15,902	15,734
Firm Gain stable jobs: Counts	1,238	1,302
Firm Loss stable jobs: Counts	562	746
Firm Change stable jobs: Net Change	678	556
Separations stable jobs: Counts	1,404	1,688
Employment reference quarter: Counts	22,696	23,412

## "WHAT IF?" CALCULATIONS

**What If Analysis Capabilities**

**From Census 2000:**  
 You can choose an inflation rate to generate values for a more current year (based on year 2000 values) to be shown in the last column of the table below.  
 In Autauga County, Alabama the estimated inflated value of owner occupied housing units is \$99,540 and the estimated inflated median gross rent is \$564, based on the specified inflation rate of 5.0 percent.

Enter new inflation rate:

Sort row labels	Autauga County, Alabama	Estimated Inflated Value
Median value	\$94,800	\$99,540
Median gross rent	\$537	\$564

\*\*Data Source: Decennial/Summary File 3/2000/Summary File 3

# What's Next for LEHD?

## QWI

- Add states
- Add federal employment
- Add non-employers
- Link with occupation
- Add WIRED regions and other geographies
- Clustering
- MOU with BLS
- DVD data access
- LED user group?

## On The Map/DataFerrett

- Add states
- Add 2004 data
- Add cross-state patterns
- Add WIRED regions and other geographies
- Virtual Research Data Center for data access
- Add funding stability
- Introduce hot reports and integrated products

# Contact Us

*Program Manager*

[Jeremy.S.Wu@census.gov](mailto:Jeremy.S.Wu@census.gov)

*General Comments/Suggestions*

[dsd.local.employment.dynamics@census.gov](mailto:dsd.local.employment.dynamics@census.gov)

*Website*

<http://lehd.dsd.census.gov>