

# **Assessing the Impact of Natural Disasters on Labor Markets: An OTM Perspective**

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# Overview

- Role of OnTheMap (OTM) in Labor Market Information (LMI)
- Key steps to using OTM for disaster assessment
  1. Gather information
  2. Define the location
  3. Specify study criteria
- Information yield for disaster assessment

# LMI role in disaster assessment

- Traditional LMI limitations
  - Prescribed geographic definitions
  - Confidentiality
- OTM advantages
  - Core LMI data constructed from census blocks
  - Statistically rigorous disclosure proofing

# Key step 1. Gather information

- Type of disaster
- Date, time, duration
- Physical location(s)
- Extent of destruction
- Estimated duration of disruption

# Gather information

type, date/time, duration, location, extent

A National Weather Service bulletin dated 02/06/2008 contained reports on a series of tornados that occurred on 02/05/2008. Here is part of one of the reports:

...THIS TORNADO CONTINUED FROM SOUTHAVEN MISSISSIPPI AND PROCEEDED NORTHEAST TO NEAR THE MEMPHIS INTERNATIONAL AIRPORT. THE TORNADO STRUCK THE DSC WAREHOUSE CAUSING THE 3 FATALITIES...THEN CONTINUED NORTHEAST CAUSING DAMAGE AT THE HICKORY RIDGE MALL AND 6 ADDITIONAL INJURIES BEFORE LIFTING AT 5:45 PM CST. THE TOTAL TORNADO PATH LENGTH WAS 11 MILES AND WIDTH WAS ONE QUARTER MILE.



# Gather information

extent of destruction, duration of disruption

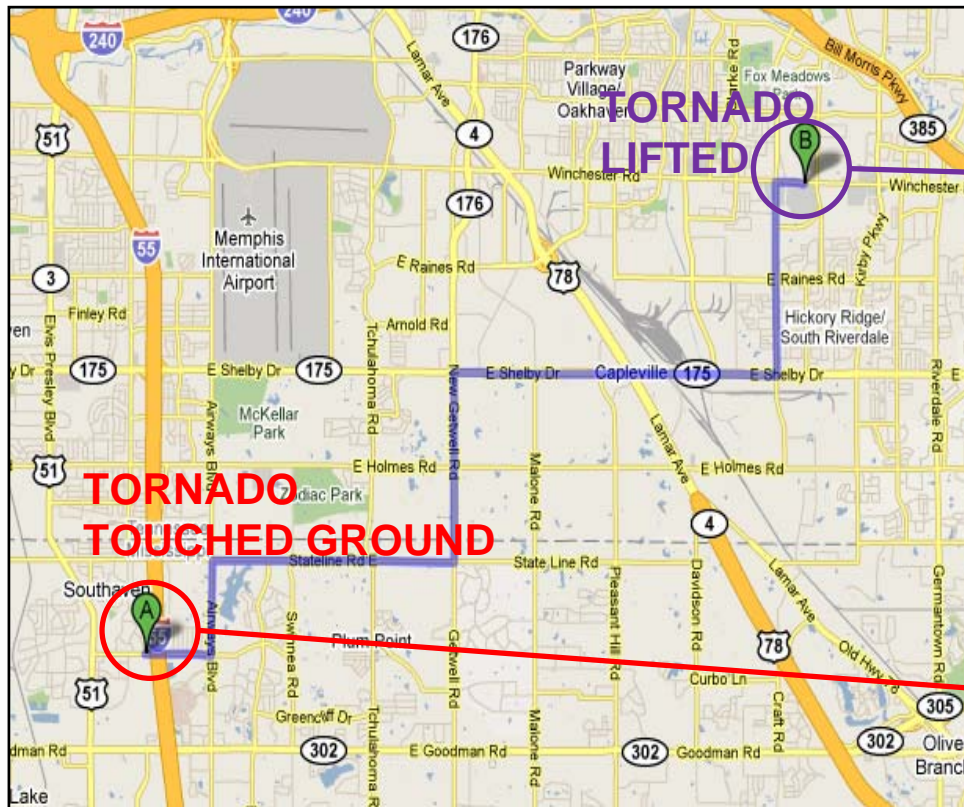
Google provided a link to the Hickory Ridge Mall Web site.  
This is an excerpt:

## **Hickory Ridge Mall Closed Due to Tornado Damage**

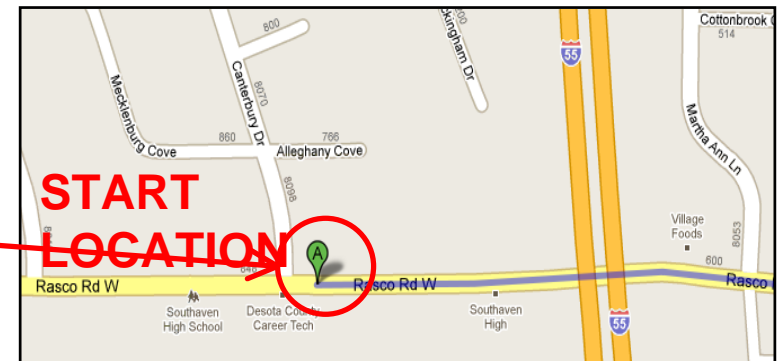
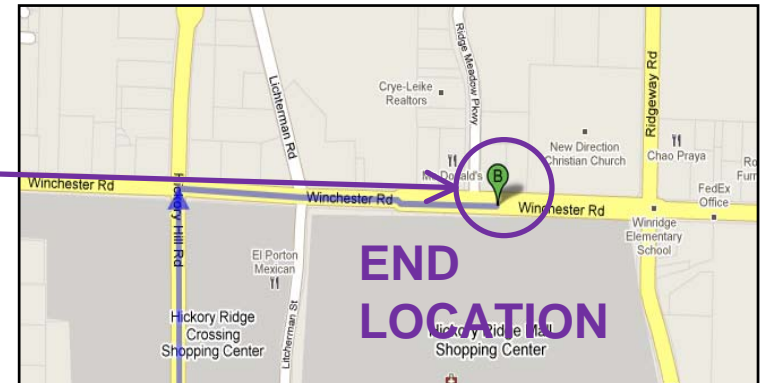
Hickory Ridge Mall is closed due to damages sustained by the February 5, 2008 tornado. We are eager to reopen our doors soon to serve our community. We will continue to update this site on the status of the mall with information as it becomes available.

# Key step 2. Define the location. mapping the disaster area

## DRIVING DIRECTIONS FROM ONE END POINT TO THE OTHER



## ZOOMED-IN VIEWS



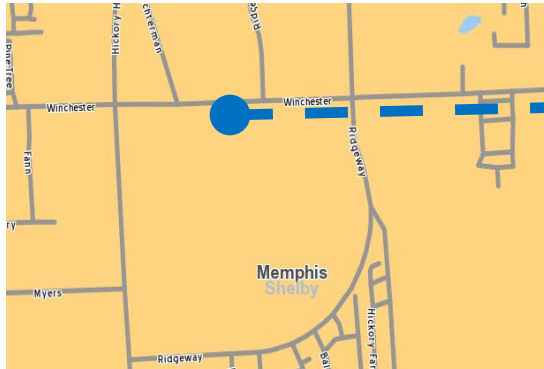






# Define the location

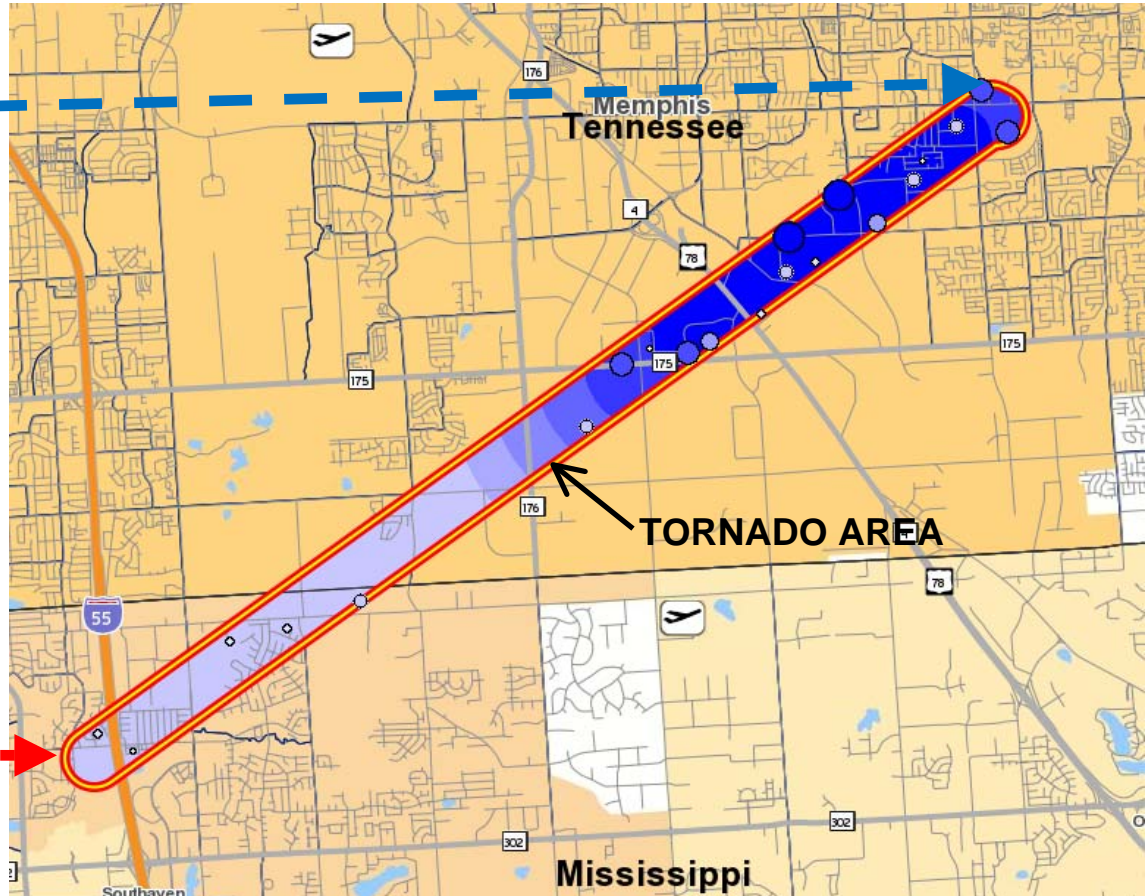
## OTM study area selection



**OTM VIEW OF  
END LOCATION**



**OTM VIEW OF  
START LOCATION**



**ZOOMED-OUT OTM VIEW OF STUDY AREA.**

# Key step 3. Specify study criteria

## job types

- **All jobs.** Private and public sector **jobs**. If a worker has multiple jobs, each is counted.
- **Primary jobs.** Private and public sector workers' highest paying jobs. Count of **workers**.
- **All private jobs.** Private sector jobs. If a worker has multiple private sector **jobs**, each is counted.
- **Private primary jobs.** Private sector workers' highest paying jobs. Count of **workers**.



# Specify study criteria

## other criteria

- Workplace or home/residential area
- Year(s) (always Q2)
- Type of analysis (profile or shed)
- Labor market segments (only for profile reports)
  - Age, earnings, industries—or all demographic segments
- Selection tools
  - Layers, point, line, freehand, ring, donut, plume
- Map precision
  - Census block groups or census tracts



# Information yield

## OTM labor market segments

- Ownership

Private and public sector workers, or private sector only

- Age range

Age 30 or younger, age 31-54, age 55 and older

- Monthly earnings range

\$1,200 or less, \$1,201 to \$3,400, more than \$3,400

- Industry sector

2-digit NAICS

goods producing, trade/transp/utilities, all other services

# Profile report

## area workers and area residents

	Workers Employed 2008Q2		Employed Residents 2008Q2	
	Count	Share	Count	Share
<b>Total Private Primary Jobs</b>	<b>11,861</b>	<b>100.0%</b>	<b>2,204</b>	<b>100.0%</b>
<b><u>Jobs by Worker Age</u></b>				
Age 30 or younger	3,334	28.1%	668	30.3%
Age 31 to 54	6,769	57.1%	1,191	54.0%
Age 55 or older	1,758	14.8%	345	15.7%
<b><u>Jobs by Earnings Paid</u></b>				
\$1,250 per month or less	3,078	26.0%	546	24.8%
\$1,251 to \$3,333 per month	4,884	41.2%	1,082	49.1%
More than \$3,333 per month	3,899	32.9%	576	26.1%
<b><u>Jobs by Industry Type (2-digit NAICS)</u></b>				
Construction	144	1.2%	109	4.9%
Manufacturing	2,148	18.1%	234	10.6%
Wholesale Trade	2,021	17.0%	198	9.0%
Retail Trade	1,304	11.0%	325	14.7%
Transportation and Warehousing	2,303	19.4%	280	12.7%
Professional, Scientific, and Technical Services	165	1.4%	76	3.4%
Admin & Support, Waste Mgmt and Remediation	1,966	16.6%	206	9.3%
Health Care and Social Assistance	600	5.1%	236	10.7%
Accommodation and Food Services	772	6.5%	287	13.0%
All other industries	438	3.7%	253	11.7%

# Profile report

## area workers & residents: industries

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# Profile report

## segments of tornado area: total jobs

	Workers Employed					
	Entire Tornado Area 2008Q2		Hickory Ridge Mall 2008Q2		Tornado Area Except Mall 2008Q2	
	Count	Share	Count	Share	Count	Share
<b>Total Private Primary Jobs</b>	<b>11,861</b>	<b>100.0%</b>	<b>1,415</b>	<b>100.0%</b>	<b>10,446</b>	<b>100.0%</b>
<u><b>Jobs by Worker Age</b></u>						
Age 30 or younger	3,334	28.1%	699	49.4%	2,635	25.2%
Age 31 to 54	6,769	57.1%	507	35.8%	6,262	59.9%
Age 55 or older	1,758	14.8%	209	14.8%	1,549	14.8%
<u><b>Jobs by Earnings Paid</b></u>						
\$1,250 per month or less	3,078	26.0%	770	54.4%	2,308	22.1%
\$1,251 to \$3,333 per month	4,884	41.2%	499	35.3%	4,385	42.0%
More than \$3,333 per month	3,899	32.9%	146	10.3%	3,753	35.9%
<u><b>Jobs by Industry Type (2-digit NAICS)</b></u>						
Construction	144	1.2%	18	1.3%	126	1.2%
Manufacturing	2,148	18.1%	0	0.0%	2,148	20.6%
Wholesale Trade	2,021	17.0%	65	4.6%	1,956	18.7%
Retail Trade	1,304	11.0%	319	22.5%	985	9.4%
Transportation and Warehousing	2,303	19.4%	43	3.0%	2,260	21.6%
Professional, Scientific, and Tech Services	165	1.4%	11	0.8%	154	1.5%
Admin & Support, Waste Mgmt and Remed	1,966	16.6%	184	13.0%	1,782	17.1%
Health Care and Social Assistance	600	5.1%	29	2.0%	571	5.5%
Accommodation and Food Services	772	6.5%	607	42.9%	165	1.6%
All other industries	438	3.7%	139	9.8%	299	2.9%

# Profile report

## segments of tornado area: age ranges

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## segments of tornado area : earnings ranges

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<b>\$1,251 to \$3,333 per month</b>	<b>4,884</b>	<b>41.2%</b>	<b>499</b>	<b>35.3%</b>	<b>4,385</b>	<b>42.0%</b>
<b>More than \$3,333 per month</b>	<b>3,899</b>	<b>32.9%</b>	<b>146</b>	<b>10.3%</b>	<b>3,753</b>	<b>35.9%</b>
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# Labor & commute shed reports

## cities & towns

	<u>LABOR SHED</u>		<u>COMMUTE SHED</u>	
	Where Workers Live		Where Employed Residents Work	
	2008Q2		2008Q2	
	Count	Share	Count	Share
<b>Total Private Primary Jobs</b>	11,856	100.0%	2,195	100.0%
<b><u>Workers</u></b>				
<b>Memphis city, TN</b>	<b>6,060</b>	<b>51.1%</b>	<b>1,204</b>	<b>54.9%</b>
<b>Southaven city, MS</b>	<b>399</b>	<b>3.4%</b>	<b>258</b>	<b>11.8%</b>
Collierville town, TN	364	3.1%	40	1.8%
Olive Branch city, MS	328	2.8%	87	4.0%
Bartlett city, TN	322	2.7%	25	1.1%
Nashville-Davidson metro govt (balance), TN	316	2.7%	62	2.8%
Horn Lake city, MS	221	1.9%	51	2.3%
Germantown city, TN	195	1.6%	28	1.3%
<b>West Memphis city, AR</b>	<b>112</b>	<b>0.9%</b>	<b>0</b>	<b>0.0%</b>
Hernando city, MS	99	0.8%	28	1.3%
All Other Locations	3,440	29.0%	412	18.8%

# Labor shed map

## workers' residence locations

