Downtown Commute Survey Executive Summary 2013

Central Houston, Inc.
About the 2013 Downtown Commute Survey

About Central Houston, Inc.
Central Houston, Inc. (CHI) is a private, nonprofit corporation supported by memberships of businesses and institutions with an interest in downtown and the central city. CHI’s members are concerned with urban planning, economic development, transportation issues, public safety, governmental affairs, and cultural and entertainment programs.

About the Downtown Commute Survey
CHI is committed to enhancing excellent access to and within downtown Houston for employees, visitors, tourists, and residents. CHI has conducted six surveys of downtown workers – in 1987, 1999, 2002, 2006, 2009, and 2013 – to better understand travel behavior.

Download the report
The 2013 Downtown Commute Survey online: http://downtownhouston.org under Resources

Media contact for questions concerning this report:
Central Houston, Inc.
909 Fannin St., Suite 1650 Houston, TX 77010-1024
info@centralhouston.org (713) 650-1470

Report authors
Robin Holzer, Louis Cutaia, and Emily Braswell Henderson, Central Houston, Inc.

Report editors
Laura Van Ness, Director of Business Development, Central Houston, Inc.
Bob Eury, President, Central Houston, Inc.

Acknowledgements

Thanks to Central Houston, Inc.’s Transportation Committee:

Working group chairs Committee members
Edwin Friedrichs Steve Burkett, Doug Childers, Mark Cover, Dan Gilbane
John Hawkins Laura Hannusch, Dave Johnson, Andrius Kontrimas, Pam Matula
John Huff Peter McStravick, Peter M. Oxman, Stewart Robinson
Christof Spieler Louis Rosenthal II, Anton Sinkewich, Frank Staats, Sandy Weiner

Thanks to the following experts who provided technical guidance:
Linda Cherrington, Transit Mobility Program Manager, Texas A&M Transportation Institute
Alan Clark, MPO Director, Director of Transportation, Houston-Galveston Area Council
Donald R. Glenn, P.E., Vice President, RS&H, Inc.
Ashby Johnson, Deputy Director of Transportation, Houston-Galveston Area Council
Carol A. Lewis, Ph.D., Director, Center for Transportation Training & Research at TSU
Tim Lomax, Ph.D., Senior Research Engineer, Texas A&M Transportation Institute
Kurt Luhrsne, Vice President of Planning, Metropolitan Transit Authority
David E. McMaster, Director of Commuter Services, Metropolitan Transit Authority
Vincent Sanders, Lead Transportation Systems Planner, Metropolitan Transit Authority

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Executive Summary

Centrally located in the City of Houston, the downtown central business district is the largest activity center in the 8-county Houston region. As of 2010, the Houston-Galveston Area Council (H-GAC) estimated that 150,195 people worked downtown in the area bounded by IH-10, IH-45, and US-59. According to the U.S. Census, downtown employers draw workers from across Houston. In fact, the downtown commute shed includes every zip code in the entire 8-county Houston-Galveston region.

Distribution of downtown employees by Census block from 2011 Longitudinal Employer-Household Dynamics (LEHD) data shows that the downtown commute shed spans the metropolitan Houston region.

About the 2013 Downtown Commute Survey

Central Houston, Inc. surveyed downtown employees from March through May of 2013 as part of a continuing effort to understand and improve access to and within downtown for employees. 13,810 employees completed the survey. Their responses provide insights regarding commute behavior that may benefit employers, downtown property owners, transportation planners, and public policy makers.
**Commute mode split**

Survey participants were asked, “How do you usually commute to/from downtown?” Among the 12,701 qualifying respondents who completed this primary mode question:

- **56.8% drive alone** to work each day in a single-occupant vehicle (SOV)
- **32.0% choose public transit**, including park-and-ride commuter bus, local bus, and/or local rail
- **9.3% share rides** in a carpool or vanpool
- **1.5% use active transportation**, walking or bicycling to work

In addition, the overwhelming majority of survey respondents – 97.3% – complete their trip to work on foot.

One third – 33.2% – of respondents walk the rest of the way at street level. If the broader pool of downtown employees behaves similarly to survey respondents, then one third of 150,195 workers would be approximately 50,000 people making 100,000 pedestrian trips a day on downtown streets.

**Downtown achieves the strongest commute mode split in the region**

Downtown Houston continues to achieve the strongest mix of public transit, vanpools, carpools, and other alternative commute modes in the entire Houston region.

According to the latest 3-year estimate from the U.S. Census for the 8-county Metropolitan Statistical Area (Houston-Sugar Land-Baytown MSA), 80% of all workers drove alone to work in 2010-2012. **Downtown’s solo driving share at 56.8%** was 23 percentage points lower than the region’s.

Conversely, across the 8-county MSA, approximately 2.4% of the region’s workers used public transit to commute to work. Downtown Houston’s transit share was more than 13 times higher, with 32% of downtown workers using park-and-ride bus, local bus, and/or rail service for their daily commute.

**Downtown employees continue to report the highest rate of transit use, and the lowest rate of solo driving, in the metropolitan Houston region.**
Also note that most downtown bus riders are choosing transit. Only 3% report they have no other way to get to work. Similar data from METRO’s 2011 onboard survey showed 88% of park-and-ride commuters have access to a vehicle they could use for the same trip, but choose bus service instead.

**Industries that drive the most and least**

Workforce characteristics vary among industries, and consequently, there is variation among industries with respect to the commute choices made by employees. When individuals take advantage of public transit and other modes that reduce demand for parking, both employers and employees benefit.

The following chart depicts the distribution of use of each primary commute mode by industry, sorted by rates of solo driving. These commute mode splits by industry may be used by employers who are located or considering locating in downtown Houston, to estimate the commute mode choices of employees, or to compare their experience to peer employers.

- Survey respondents from the Energy, Transportation, and Housekeeping sectors reported the lowest rates of solo driving (SOV). Downtown employers in these sectors enjoy the lowest demand for employee parking.
- Transportation employees reported the highest rates of carpool/vanpool ride sharing.
- Other Professional Services employees reported the highest rates of walking and bicycling to work, followed by Accounting employees.
- Respondents from the Transportation and Energy industries reported the highest rates of park-and-ride use, at 35% and 34%, respectively.
- Housekeeping, Hospitality, and Nonprofits are the only industries in which respondents reported more use of local bus and/or rail than park-and-ride transit.

**Industry ranking:** Energy, Transportation, and Housekeeping employees report the least solo driving.

![Commute Mode by Industry](chart)

*Please note: approximately 4% of respondents work in the Finance, Insurance, or Real Estate industries, which have been grouped together as “FIRE” for ease of reporting.*
**Commute distance**

Employers located in downtown Houston draw employees from across Houston. With downtown workers coming from every zip code in the 8-county Houston-Galveston region, 2013 respondents reported a **median commute distance of 20-29 miles** one way from home to work:

- Nearly one tenth of survey respondents – 9.8% – live within 5 miles of work.
- More than half – 53.6% – live between 10 and 29 miles away.
- Approximately 6.3% of survey respondents commute 40 miles or more each day.

**Commute distance shapes choice of commute mode.**

Among 2013 survey respondents, commute distance shapes choice of commute mode:

- For respondents who live within 10 miles of downtown, the overwhelming majority – more than 70% – choose to **drive alone** each day.

- METRO serves downtown with a vast array of **local bus** routes, and the most-frequent bus routes serve the central part of Houston. METRO rail provides frequent urban transit along the Main Street corridor, on a light rail line that extended 7 miles at the time the 2013 survey was conducted. 43% of respondents who rely on local bus and/or rail for their daily commute live less than 10 miles from downtown. Three quarters of local bus/rail riders – 74% – commute less than 20 miles.

- METRO, Brazos Transit District (Woodlands Express), and Fort Bend County (Fort Bend Express) operate high-quality commuter bus service from more than 30 **park-and-ride** lots arrayed along the radial highways that connect the region to central Houston. While a handful of commuter lots are 7-10 miles from downtown, the vast majority are 15 or more miles away. As a result, the respondents most likely to choose park-and-ride bus service are those who live farther out.

- Nearly all of the “active transportation” – **walking** and **biking** – commutes are less than 5 miles from home to work. The majority – 63% – of workers who live downtown (within 1 mile of work) walk or bike to work each day.
Focus on transit: success of park-and-ride buses, opportunity for high-frequency locals

In general, transit is most compelling when buses or trains run frequently and all day, every day. As frequencies increase, wait times come down, and riders no longer need a schedule to use transit.

For workers who live 10 or more miles from downtown, buses depart park-and-ride lots as often as every 5 minutes; access HOV lanes, often by direct connector ramps that keep them out of mixed traffic; flow directly into downtown mobility lanes; and disembark riders in front of offices, generally.

In 2013, METRO’s park-and-ride buses carried more people than many cities’ commuter rail systems. Setting aside old transit giants like New York, Chicago, Philadelphia, and San Francisco, the most-successful modern commuter rail system in the U.S. is Los Angeles, which boasted 42,700 boardings per day on 500+ miles of heavy rail. Houston’s commuter bus system averaged 31,670 boardings, or more than the Austin, Dallas, San Diego, and Salt Lake commuter rail systems combined.

Workers who live closer in look to local bus and rail transit. In 2013, METRO operated about a dozen high-frequency bus routes – that run at least every 15 minutes all day – connecting downtown to neighborhoods. The detailed excerpt below from Map 12 – High-Frequency Transit with SOV Commuters Surveyed, shows the distribution of respondents who drive alone relative to METRO’s network of highest-frequency routes. Many of the zip codes with the highest concentrations of solo drivers have access to public transit, but are not served well by existing high-frequency transit routes.

In 2014, METRO will complete a Transit System Reimagining effort to optimize the entire network of bus routes and integrate it with expanding rail service. With more high-frequency routes, more all-day, every day service, and an easier to understand network, the project is poised to dramatically expand access to convenient, high-frequency transit service and thus, significantly increase ridership.

Map: Many areas with the highest concentrations of commuters who drive alone each day have some access to public transit, but are not served well by METRO’s existing high-frequency routes.
**Age**

The respondents with the highest rate of solo driving are the 20-29-year olds. Rates of solo driving fell with increasing age up to age 55-59. Conversely, 20-24-year olds report the lowest rate of park-and-ride bus use. Park-and-ride use rose with age up to 65-69.

**Older employees drive alone at lower rates and more often choose park-and-ride buses.**

There is a significant gap – a 20- to 50-point spread in utilization – between solo driving and park-and-ride use, with many possible explanations:

- **Commute distance** – Older workers are more likely to have long commutes that are served well by park-and-ride transit. Younger workers often live closer to work.

- **Awareness of transit** – Older workers, who have worked downtown longer, may be more aware of park-and-ride transit options and understand how they work.

- **Tolerance of drive time** – Younger workers may be more tolerant of driving commute experiences and less motivated to consider alternative commute options.

- **Responsibility for dependents** – Parents and caregivers sometimes perceive they need the independence driving offers to respond to the needs of children or elders.

**PM mode split with dependents:** Compared to those who commute nonstop, workers who stop to care for children or elders are somewhat more likely to drive alone, but more than 20% use transit and 9-12% share rides in a carpool at rates similar to nonstop trips.
Young “Millennial” workers are making different commute decisions than older “Generation X” and “Baby Boomer” workers

It is possible to group survey respondents by age into higher-level generation buckets:

<table>
<thead>
<tr>
<th>Age Group</th>
<th>Poll Size</th>
<th>Generation X</th>
<th>Baby Boomers</th>
<th>Silent Generation</th>
</tr>
</thead>
<tbody>
<tr>
<td>&lt; 19 yrs</td>
<td>n = 1,476</td>
<td>30 to 34 yrs</td>
<td>50 to 54 yrs</td>
<td>70 to 75 yrs</td>
</tr>
<tr>
<td>20 to 24 yrs</td>
<td>n = 5,581</td>
<td>35 to 39 yrs</td>
<td>55 to 59 yrs</td>
<td>&gt; 75 yrs</td>
</tr>
<tr>
<td>25 to 29 yrs</td>
<td>n = 5,128</td>
<td>40 to 44 yrs</td>
<td>60 to 64 yrs</td>
<td></td>
</tr>
<tr>
<td>30 to 34 yrs</td>
<td>n = 5,128</td>
<td>45 to 49 yrs</td>
<td>65 to 69 yrs</td>
<td></td>
</tr>
</tbody>
</table>

Please note: for the following analysis, the 101 respondents who were 70 or over were grouped with the Baby Boomer group.

Millennial workers are locating closer to work

The chart below, of the distribution of respondent ages by commute distance, shows younger workers are locating closer to downtown employers than older cohorts:

- **“Millennials”** – respondents under age 30 – comprised 12% of the survey sample, and yet, they accounted for 28% of those who commute less than 5 miles and 20% of those who commute 5-9 miles from home to work.
- **“Generation X”** – respondents aged 40-49 and aged 50-59 – accounted for 24% and 30% of the sample respectively, but they comprised 28% and 33% of those who commute 30 miles or more.
- **“Baby Boomers”** – respondents aged 60 and up – comprised 12% of the survey sample and accounted for between 10% and 13% of commutes at each distance.

These findings comport with trends observed across the U.S. Nielsen, a leading consumer insight firm, noted Millennials “prefer to live in dense, diverse urban villages where social interaction is just outside their front doors.” Urban Land Institute reported the Millennial generation is “more likely than older Americans to prefer living in a big city, and shows the strongest preference among the generations for communities with a mix of uses, with shops, offices, and housing together (62%).”

Shortest commutes are disproportionately made by younger workers; longest commutes are reported most from workers aged 50-59.
Is there unmet demand for transit?

One good way to understand which transportation options an employee will consider using is to identify which options they actually use when their preferred mode is unavailable. Out of the 4,745 solo drivers who answered this question:

- nearly one third – 31.9% – choose bus or rail transit, and
- two out of five – 42.7% – share a ride in a carpool on the days they do not drive.

The following table is grouped by primary commute mode, and shows the percentage of respondents who use each backup travel mode.

<table>
<thead>
<tr>
<th>Back-up</th>
<th>Primary</th>
<th>SOV</th>
<th>Carpool/Vanpool</th>
<th>Motorcycle/Scooter</th>
<th>Park &amp; Ride</th>
<th>Local Bus/Rail</th>
<th>Bicycle</th>
<th>Walk</th>
</tr>
</thead>
<tbody>
<tr>
<td>SOV</td>
<td>-</td>
<td>72.3%</td>
<td>63.0%</td>
<td>77.3%</td>
<td>71.6%</td>
<td>47.4%</td>
<td>48.0%</td>
<td></td>
</tr>
<tr>
<td>Carpool/Vanpool</td>
<td>42.7%</td>
<td>-</td>
<td>10.9%</td>
<td>14.5%</td>
<td>16.1%</td>
<td>5.3%</td>
<td>7.8%</td>
<td></td>
</tr>
<tr>
<td>Telecommute</td>
<td>20.2%</td>
<td>2.2%</td>
<td>0.0%</td>
<td>7.3%</td>
<td>5.2%</td>
<td>0.0%</td>
<td>7.8%</td>
<td></td>
</tr>
<tr>
<td>Bus</td>
<td>25.1%</td>
<td>23.4%</td>
<td>26.1%</td>
<td>-</td>
<td>-</td>
<td>36.8%</td>
<td>27.5%</td>
<td></td>
</tr>
<tr>
<td>Rail</td>
<td>6.8%</td>
<td>0.6%</td>
<td>*</td>
<td>-</td>
<td>-</td>
<td>*</td>
<td>*</td>
<td></td>
</tr>
<tr>
<td>Bicycle</td>
<td>1.9%</td>
<td>0.4%</td>
<td>0.0%</td>
<td>0.1%</td>
<td>2.0%</td>
<td>-</td>
<td>8.8%</td>
<td></td>
</tr>
<tr>
<td>Walk</td>
<td>1.8%</td>
<td>0.3%</td>
<td>0.0%</td>
<td>0.2%</td>
<td>4.2%</td>
<td>10.5%</td>
<td>-</td>
<td></td>
</tr>
<tr>
<td>Motorcycle/Scooter</td>
<td>1.6%</td>
<td>0.8%</td>
<td>-</td>
<td>0.6%</td>
<td>0.8%</td>
<td>0.0%</td>
<td>0.0%</td>
<td></td>
</tr>
</tbody>
</table>

n = 4,745 1,116 46 3,177 496 38 102

* For the Motorcycle, Bicycle, and Walk commuter sections of the survey, “Bus/Rail” was listed as a single combined option.

Further, when asked what might motivate changing modes, significant numbers of solo drivers say that they would switch to transit if it were more convenient to home:

- more than 1,600 solo drivers said they would switch to bus transit if there were a park-and-ride or express bus route more convenient to their home, and
- more than 2,000 solo drivers said they would switch to rail transit if there were convenient rail service near home.

What can employers do to encourage transit use?

As discussed further in Section 20 on employer subsidies, workers use transit at higher rates when their employer provides a transit incentive and does not subsidize parking:

- more than 1,800 respondents said increasing parking costs would get them to switch modes,
- more than 800 respondents said a transit incentive from their employer would get them to switch to bus or rail alternatives, and
- more than 400 respondents said that access to a vehicle for work trips would allow them to use transit for their daily commute.
**Employer transportation incentives**

Central Houston asked respondents for each mode, “How much does your employer subsidize your parking / bus or rail trip / vanpool / bicycle parking?”

- 41% of employees who drive alone reported their employer pays 100% of their parking cost. 58% of solo drivers surveyed receive some level of parking subsidy.

- 31% of respondents who choose bus and/or rail transit reported their employer pays 100% of their transit fare cost. 70% of all transit users reported they received some level of transit incentive.

- Less than 3% of respondents who share rides in a carpool or vanpool reported their employer pays 100% of vanpool costs. Less than 10% of workers who share rides receive any level of van/carpool incentive.

- 30% of respondents who bicycle to work reported their employer covers 100% of the cost of bicycle parking.

**Employer incentive schemes shape commute mode splits**

In order to understand the effect that different transportation incentive schemes have on employee commute decisions, one can review the commute mode split among the firms that offer incentives. In 2013, 58 entities had two or more survey respondents who reported that their employer subsidizes their commute. These 58 companies accounted for 11,637 survey respondents, including respondents who did not report taking advantage of subsidies.

Among these 58 entities, the type of transportation incentives an employer offered demonstrably shaped the commute choices of their employees. As shown in the chart below, the firms that only pay for parking incurred the highest rate of solo driving.

The firms that only pay for transit have the highest rates of bus and rail commuting. Note also, these firms that fund transit and do not pay for parking also have the highest share of employees who walk or bicycle to work daily.

**Highest rates of transit use were reported in firms which provide only transit incentives.**
AM peak travel times

The majority of all respondents – 58.8% – report leaving home each day by 7:00 am and 84.8% leave home before 8:00 am.

- However, 60% of park-and-ride bus riders, and 57% of shared carpool/vanpool riders leave home between 5:30 am and 6:59 am, earlier than solo drivers, possibly because they tend to commute longer distances.
- 61% of solo drivers and 57% of local bus/rail transit riders leave home between 6:00 am and 7:59 am, possibly because they tend to travel shorter distances.
- Survey respondents reported a median AM commute duration of 30-39 minutes, with transit and other shared-ride commutes lasting longer, and active walk and bicycle commutes concluding sooner. Active walks and bicycle trips are shortest; park-and-ride bus commutes last longest.
- Just one in five respondents – 20% – make one or more stops on their way to work, which is included in their travel time.

AM departure times: Park-and-ride and carpool/vanpool riders tend to leave home earlier than solo drivers and local bus/rail commuters.
**PM peak travel times**

More than half of all respondents – 64% – report leaving work before 5:30 pm each afternoon. 95% have left downtown by 7:30 pm each night.

- 62% of park-and-ride bus riders, and 56% of shared carpool/vanpool riders, leave work between 4:30 and 5:59 pm, earlier than solo drivers, in part because they tend to commute longer distances.
- 60% of solo drivers, and 56% of local bus/rail transit riders, leave work between 4:30 pm and 6:29 pm.
- Survey respondents reported a median PM commute duration of 40-49 minutes, with longer transit and other shared-ride commutes, and shorter active commutes.
- Significantly more respondents – 30% – make one or more stops on their way home from work in the evening, up from 20% in the morning.

**PM departure times**: As in the morning, park-and-ride and carpool/vanpool commuters tend to leave work earlier than solo drivers and local bus/rail commuters.
Has the downtown commute mode split changed since 2009?

From 2009 to 2013, the downtown commute mode split appeared unchanged for active commutes by walking and bicycling, and also for motorcycles/scooters. However, the predominant travel modes shifted. More downtown workers drove alone, and fewer chose public transit, vanpools, or carpools.

2013 marked an 8-point shift away from transit and shared modes toward driving alone.

Several aspects of the two survey samples may explain some of the apparent shift:

1. more participation by government workers and women, who drive at higher rates, and less participation by retail, hospitality, and healthcare workers, who drive alone at lower rates.

However, some of the shift in commute mode split is real and meaningful. Each survey represents a snapshot of commute behavior at a particular time, and Central Houston’s 2009 survey of downtown commuters reflected a remarkable situation:

2. In 2008, a strong Houston economy and low unemployment drove high levels of roadway congestion and travel delays among solo drivers, and

3. significant roadway congestion coupled with record-high retail gas prices spurred record numbers of commuters to choose park-and-ride transit or vanpooling.

December 2008 brought rising unemployment to Houston, but the region began adding jobs in February 2010, pushing unemployment toward pre-recession levels.

Note: In the chart above, a gray column denotes the period of regional economic recession.
The Texas A&M Transportation Institute (TTI) reported that Houston region delays from roadway congestion peaked in 2008 and then fell dramatically with the recession.

Then, the “Great Recession” hit Houston hard through 2009:

4. A struggling economy and rising unemployment not only eliminated significant numbers of workers who previously chose transit or vanpools, but also,

5. decreased roadway congestion and reduced average travel delays by 9%, making it more attractive for workers to drive alone.

In 2010 and 2011, delays from congestion per commuter grew only slightly, and METRO’s park-and-ride boardings continued to fall, finally plateauing in 2012. Downtown’s 2013 survey results reflect this nadir of park-and-ride usage.

During this same interval, HCTRA opened the Katy Managed Lanes along IH-10, and METRO converted three HOV facilities to HOT lanes. Allowing solo drivers to pay a toll to gain access to HOT/managed lanes affected transit use in several ways:

6. Demand for park-and-ride bus service is directly related to levels of roadway congestion in the corridor. Managed lanes allow some solo drivers to avoid main lane congestion by paying a toll instead of switching to transit or vanpool.

7. Demand for the managed lanes is fairly elastic and is inversely related to toll rates. When congestion in the corridor is high and the toll rate is too low, an abundance of toll-paying solo drivers can exceed the capacity in the managed lanes and cause congestion. Congestion in the managed lanes reduces transit’s advantage by causing delays and reducing travel time reliability.

The 2013 Downtown Commute Survey results are consistent with large numbers of commuters taking advantage of toll access to HOT and managed lanes. Since the survey, both HCTRA and METRO have increased toll rates during peak hours, which improved travel times and reliability, and spurred more people to choose transit.

Outside of work commutes, Texans have been choosing to drive less per capita since 2006, consistent with a similar trend nationwide. Downtown is a well-connected activity center which offers high-quality jobs, diverse residential options, shopping, and entertainment, and is surrounded by vibrant urban neighborhoods. Downtown has much to offer this changing market and is well-positioned for growth going forward.
Downtown Commute Survey 2013:
What’s inside the full report?
1. Who participated in the 2013 Downtown Commute Survey?
2. What travel options are available to downtown workers?
3. What is the downtown commute mode split, and how does it compare to the region?
4. Does distance affect how workers commute?
5. When do workers leave home in the AM peak, and how long does it take to get to work?
6. When do workers leave work in the PM peak, and how long does it take to get home?
7. How does the commute mode split vary by industry?
8. How does occupation affect commute mode decisions?
9. Do long work hours affect how one gets to/from work?
10. How does gender shape commute behavior?
11. Does age affect location and how people commute?
12. Does household income affect location and commute mode?
13. Who drives alone to work downtown and why?
14. Who chooses bus or rail transit service and why?
15. Who shares rides in carpools or vanpools and why?
16. Who rides motorcycles or scooters to work and why?
17. Who actively bicycles or walks to work and why?
18. How do downtown residents get to work?
19. Is there an untapped market of potential transit users?
20. Do employer subsidies affect how employees get to work?
21. Has downtown’s commute mode split changed since 2009?

Downtown Commute Survey 2013: Maps
In addition, Central Houston geocoded survey responses to prepare a series of 12 GIS maps which show survey respondents distributed across the 8-county Houston-Galveston region. These large-format maps are also available online.