Incorporating Sustainability Factors Into The Urban Mobility Report
A Draft Concept Paper

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Traffic congestion and travel mobility have been recognized by the public as livability and quality of life concerns for decades. In good economic times, traffic congestion was ranked as one of the top five problems in many metro regions. Transportation funding increases over the last decade have often been tied to a specific set of projects designed to reduce or slow the growth of congestion.

So why do some transportation professionals suggest that congestion is unimportant? One limitation is the problem of using only roadway or private vehicle travel statistics. It has also been noted that traffic congestion solutions that are not in the form of road capacity additions or operational improvements may not be fully captured with traditional travel time and congestion statistics. This paper presents some measure enhancements that can be accomplished with generally available data and may persuade some "congestion deniers" to adopt congestion metrics as one important element of the performance management process.

Overview of Concept

The 2009 Urban Mobility Report (*1*)[1] included two accommodations for multimodal travel.

- A first-generation enhanced travel time index measure that included consideration of the benefits of public transportation.
- A delay per commuter value that was essentially private vehicle delay divided by all travelers beginning a trip during the peak period regardless of mode.

The idea offered in this paper extends these concepts to an Urban Mobility Report that is more directly focused on sustainability issues and presents measures that are an evolution of those currently used. Upon availability of the 2009 National Household Travel Survey the data used as examples in this memo will be updated and used in the next Urban Mobility Report.

Key Elements of the Proposed Concept

While the ideas are easier to convey with results at the regional or urban area level, a few easily understood factors form the framework of the approach.

- The "uncongested condition" would be defined as travel speed below that achieved in low volume conditions for that mode/facility type or relative to the schedule that travelers would use to make their trip mode, route and departure time decisions.

[1] (*1*) Indicates number of reference.

- Travel delay would be defined as the difference between the uncongested condition and the actual conditions.
- The following modes would be included using quantities of person-miles and person-hours, with estimates of the number of persons per vehicle.
    - Private auto
    - Public transit – subdivided by transit mode
    - Walk
    - Bike
    - Work at home
- The following programs could also be included if the data are available.
    - Carpooling – include the effect of this by increasing the average persons per vehicle value
    - Flextime – include the effect by adjusting the hourly volume patterns (i.e., move peak hour volumes to non-peak hours)
- The basic performance measures used in the Urban Mobility Report would continue with the modal/travel option enhancements. The communication messaging would be modified to alert readers to the travel components in each measure. The objective is to show that easily understood and communicated data concepts (free-flow, delay, travel time, reliability) can be applied to a broad range of transportation and land use options.

Previous Research

Several conceptual investigations of performance measures and indicators have identified deficiencies in the methods used to collect, aggregate and report sustainable transportation measures. Many data items are collected, but their geographic scale or definitional inconsistencies are seen as deficiencies in creating a set of sustainable transportation measures. (*2, 3, 4, 5, 6, 7*)

What seems clear, however, is that travel speeds, volume of people and freight moved and system performance are important aspects for each mode. The amount of travel within each mode is a suitable factor for combining the performance statistics of several modes, such that higher volume travel modes receive more weight in an areawide measure. The difficulty has been in creating a measurement technique that does not unduly penalize slow travel modes such as walking or biking. The concept of "equivalent expectations" has been used in previous Urban Mobility Reports to combine measures of roadway and public transportation travel. The "equivalent" in this case refers to developing a comparison between free-flow travel on roadways and a similar condition for other modes. One would not, for example, expect a pedestrian to travel at 60 mph, but that is a logical free-flow speed for a freeway. If "similar expectations" can be specified, incorporating some initial measures in the Urban Mobility Report should be possible.

Other work in the pooled-fund mobility performance measure research study has examined the issue of appropriate free-flow speeds. (*8*) The free-flow speed issue will not be addressed in this report, but is easily accommodated in the sustainability measures. The basic conclusion of the previous work is that "acceptable congestion" levels vary among regions as well as within regions. Tolerable or even desirable congestion in metropolitan regions with more than 1 million people may be "unbearable" in regions with fewer than 200,000 people. Likewise the congestion in downtown areas is easier to accommodate because trip lengths are generally shorter, there are more travel options and congestion is an expected part of travel in a very dense area. Acceptable congestion in suburbs and rural areas may be less due to longer trip lengths and fewer options. Decisions about the acceptable levels of congestion are a product of an open public discussion and a policy debate; they are not found in traffic engineering textbooks or sustainability research papers.

The next section identifies the calculation steps and simplifying assumptions used in this first version of the sustainable Urban Mobility Report performance measures. While the author does not envision these measures being used as the "centerpiece" of the 2010 Urban Mobility Report, they are ready for extensive review and comment with an eye toward including some aspects in the 2011 Urban Mobility Report.

Key Performance Measure Calculation Elements

All the basic congestion measures use a few key elements. To the extent possible, the approach has always been to use data whenever possible, instead of assumptions or constants.

<u>Free-Flow Travel Speed</u>

Roadways are assigned a speed based on the speed observed in the INRIX National Average Speed database in the overnight period (typically between 10:00 pm and 5:00 am). Congestion from too many vehicles using too little road space is rarely a problem in U.S. urban areas during this time. Roadwork does cause congestion and slower speeds during the overnight period and a higher free-flow speed from a nearby road of the same type will be used in these instances.

The free-flow speed for public transportation travel has been conceptually defined as the scheduled speed. (9*, 10*) In short, a traveler bases their decision to use transit on the printed schedule and/or some idea of the departure time they need to use in order to arrive at their destination in a satisfactory time. If this is true, it seems logical that the "free-flow" condition is equivalent to the scheduled time and the "congested" condition is a travel time longer than scheduled.

<u>Weight By Amount Of Travel</u>

Volume is expressed in person-miles of travel and is used at the road section level or the public transit mode level. This approach is consistent with a focus on the customer experience; heavily traveled roads have more influence than low volume roads in creating corridor system average statistics.

<u>Travel-Time Related Measures</u>

The public, businesses, civic leaders and freight shippers understand and place a value on travel time. The INRIX National Average Speed (NAS) dataset will allow the 2010 UMR to remain at the leading edge of congestion reporting by providing a speed for almost every link of major roadway in the urban areas. Volume information (*11*) will be used to develop corridor or regional summations of travel time and delay statistics.

<u>Average And Reliability Measures</u>

Annual average congestion measures are a relatively typical output of many different analytical techniques from corridor analysis to travel demand modeling. The "average" performance measures can be estimated from a wide range of data types and travel time measures may also be derived from procedures that generate volume-to-capacity ratios, density or levels-of-service.

The number of methods to calculate variations in travel time, however, is few. The day-to-day variation in travel time is used to calculate reliability performance measures. They describe the amount of time that travelers and shippers should allow for an important trip. Reliability measures are particularly useful for identifying the effect of system management strategies designed to clear stalled vehicles, move traffic more efficiently and rapidly remedy operational problems. The main effect of these strategies is to reduce the travel time variation, meaning that average congestion measures may miss the benefits of the programs.

Travel Mode Data

The National Household Travel Survey (NHTS) (*12*) identifies the percentage of trips by mode; these data are used as a base for the bike and walk travel data. The NHTS, unfortunately, is not conducted in every region and was last conducted in 2001. Averages for each population size group were created from the model travel percentages of the surveyed regions. Trends are created by examining NHTS data from previous surveys.

Public transportation data from the National Transit Database (NTD) (*13*) have been used for many Urban Mobility Reports. Passenger-miles for travel by mode are a key data item, with a different set of speed assumptions used for the alternative trip (e.g., private vehicle) for each transit mode. For example, the commuter rail riders are assumed to be drawn from freeways due to the long-distance nature of commuter rail.

Information about urban residents who work at home is obtained from the Census Bureau's Journey to Work dataset. The number of these workers in each region is added to the peak period travelers (using an estimate of the miles that would have been traveled in an average motorized commute trip).

Performance Measure Description

The adaptation of the average performance measures to incorporate non-motorized travel is described in this section. Reliability performance measure adaptations can be performed in a similar manner when data or estimation methods are developed.

Incorporating Other Modes

The same approach used to include public transportation service in the measurement set will be used to incorporate walk, bike and work at home "travel." The National Household Travel Survey (*12*) will be used to estimate the percentage of trips during the peak period. The following average trip lengths will be used to convert the percentage of trips into person-miles of travel.

- Walk – 1 mile
- Bike – 5 miles
- Work at home – 9 miles

Walk and bike trip lengths were derived from the limited national reporting on travel by those modes. The work-at-home trips might ordinarily be weighted with a distance like 25 feet (e.g., the distance from the breakfast table to the "office" room). This very short distance would cause its effect on any of the performance measures to be too small to matter. If we are to assess the mobility effects of work-at-home trips, however, a distance similar to a traditional travel destination seems more appropriate. The average commute trip length of nine miles, therefore, is used in this estimate. The same point might be made about many other types of trips (e.g., a "driver" moves from a home they drive to work from to one they walk to work from, so their trip length should reflect the longer (i.e. former) trip), but for the initial calculation we made the decision to incorporate only a few adjustments.

Travel Delay and Delay Per Traveler

Person-hours of delay is derived using 1) the average hourly speed on a road section (from the INRIX National Average Speed database) and 2) an estimate of the person volume on that road section. The speed is converted into travel rate (in minutes per mile) and multiplied by the hourly person-miles of travel to obtain person-hours of travel. Those same miles are multiplied by the free-flow travel rate to obtain free-flow person-hours of travel. Delay is the difference between the free-flow travel time and the estimated travel time.

Free-flow speeds on roadways are taken from the overnight speeds in the INRIX dataset. Public transportation travel is divided into its modal components and assigned a free-flow speed similar to the roadway alternative as described in the 2009 Urban Mobility Report methodology. (*10*) Exhibit 1 summarizes the modal free-flow speeds used in the example calculations.

The estimate of congestion for other modes is determined by two speeds – free-flow and peak period. When much better monitoring data are available, bike and walk trips may be directly measured and incorporated in the same way auto and truck traffic is monitored. (There are several handheld device applications that use the GPS tracking capabilities to locate and time specific trips, usually marketed for fitness applications). Until then, it seems appropriate to treat bike, walk and work-at-home trips as "congestion-free" trips, even though this may be a generous treatment of the congestion benefits. The speed assigned for work-at-home trips in each urban region is an average of the free-flow speeds for all freeway and arterial trips.

Exhibit 1. Speeds Used for Travel Mode Example Calculations

Mode	Free-flow Speed	Congested Speed
Truck and car travel on freeways and arterials	Speeds from INRIX (10 pm to 5 am)	Peak period speeds
Public Transportation Mode		
Bus	Arterial	95% of travel is uncongested, 5% of travel is moderately congested – approximately 10% travel time penalty
Urban Rail	Arterial	
Commuter Rail	Freeway	
Ferry	Not included	
Bike	15 mph	15 mph
Walk	4 mph	4 mph
Work-at-home	Average of freeways and arterials	Average of freeways and arterials

The result of the travel speed and free-flow speed estimation processes is an estimate of the following values for each mode:

- total travel time
- free-flow travel time
- person-miles of travel
- travel delay

For the purposes of the Urban Mobility Report examples, there is zero delay for bike, walk and work-at-home travel, a modest amount of delay in public transportation modes and the measured amount of delay on freeway and arterials streets. The effect of the "zero delay" decision is to give a lower value of delay per peak-period traveler to regions with higher percentages of non-motorized trips even if roadway delay is similar. Several years ago some of the "other mode" travelers were included in the Urban Mobility Report statistics, resulting in the relatively low congestion estimates for the very large, transit-intensive regions.

Travel Time Index

The Travel Time Index is a ratio of actual peak period travel time to free-flow travel time. A travel time index value of 1.40, for example, indicates that a 20-minute free-flow trip takes 28 minutes in the peak period. Actual travel time in the peak period is the sum of peak period free-flow travel time and peak period travel delay as shown in Equation 1.

$$\text{Travel Time Index} = \frac{\text{Delay Time} + \text{Free−Flow Travel Time}}{\text{Free−Flow Travel Time}} \qquad \text{(Equation 1)}$$

Using the values developed in the delay calculation provides a consistent, easy calculation for the Travel Time Index. Delay time and free-flow travel time for each mode are summed to estimate the Travel Time Index quantities (note: the Travel Time Index values for bike, walk and work-at-home travel are 1.00). If non-motorized trips are included, the Travel Time Index values are lower than previous calculations, especially in regions with a higher percentage of non-motorized trips. The TTI values presented for this "sustainable" analysis will be different from previous reports and an example of these estimates are presented in the following section.

Results for 2003 to 2007 Data

Exhibit 2 illustrates a draft version of the most recent five years of data in the Urban Mobility Report for each of the four population groups. The Travel Time Index is the easiest measure to show the changes caused by the inclusion of other modes, but delay per traveler and all the other measures would be calculated as well. Base TTI values were taken from the 2009 report and the sustainable TTI value is the combined effect of the four modes. The TTI values that would result if only a single mode were included are shown in the four columns to the right side of Exhibit 2. Exhibits 3 and 4 illustrate the values for individual urban areas and the contributions from each mode for 2007.

Based on the data used in this paper, public transportation travel has the greatest effect in the very large cities, but work at home is the largest contributor to lower TTI values in the other three population groups. Most of the TTI value changes in regions below one million population will be in the range of one or two point values.

Conclusions

This paper described a relatively simple procedure for incorporating travel by modes that are not typically included in the Urban Mobility Report. These changes are the beginning of a process to incorporate transportation strategies that may be a larger portion of agency and traveler decisions in future years. The 2010 version of the congestion report will use very detailed travel speed data from INRIX's National Average Speed database to estimate the key performance measures. This dataset includes speeds on major roads for each hour of the day and can be used for private and commercial vehicle congestion estimates. Travel by public transportation, walking and cycling might be accommodated in the final report statistics using a set of reasonable assumptions. A process was also developed to illustrate the mobility contribution from those who work from home. Together these provide a framework for beginning a discussion about measuring mobility across a much broader spectrum than previous reports. The effect of land use decisions that cause people and businesses to re-arrange their travel patterns will also be displayed.

The procedure uses information from the National Household Transportation Survey (NHTS) (*12*) to identify the percentage of peak period trips that are made by modes other than private or commercial vehicles. Public transportation travel, bicycling and walking are incorporated with assumptions about average miles per trip and average speed. The percentage of travel using these modes varies in each area and, to the extent possible, the procedures will incorporate the local conditions. Bike, walk and work-at-home trips are assumed, in this first version, to be uncongested.

Public transportation travel will be graded as congested when it falls behind schedule; at this time, the data for on-time reliability is not standardized, comparable nor wide spread. Until the public transportation industry is able to agree on a performance measure, the Urban Mobility Report will use a constant percentage for all transit operations and all years.

These changes allow the Urban Mobility Report to begin a discussion about the congestion effects of changes toward non-motorized travel, public transportation service or working from home. The data on trip percentages are generally available and the procedure uses a set of documented assumptions to generate the performance measures. The assumptions can be modified or replaced when data are available, in the same way that travel speed estimates from previous reports are being replaced by INRIX's speed data in the 2010 Urban Mobility Report.

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Exhibit 2. Population Group Travel Time Index Averages With Sustainable Transportation Modes

Population Groups	2009 Report TTI	Sustainable TTI	Travel Time Index With Individual Mode Included: Public Transportation	Walk	Bike	Work @ Home
Very Large						
2003	1.351	1.305	1.322	1.349	1.350	1.333
2004	1.365	1.317	1.335	1.363	1.364	1.346
2005	1.380	1.331	1.349	1.378	1.379	1.361
2006	1.380	1.330	1.348	1.378	1.379	1.361
2007	1.371	1.321	1.338	1.369	1.369	1.352
Large						
2003	1.229	1.212	1.224	1.228	1.228	1.218
2004	1.234	1.218	1.230	1.233	1.234	1.223
2005	1.239	1.222	1.234	1.238	1.238	1.228
2006	1.238	1.221	1.233	1.237	1.237	1.227
2007	1.233	1.217	1.229	1.232	1.233	1.222
Medium						
2003	1.135	1.126	1.133	1.134	1.134	1.128
2004	1.137	1.128	1.136	1.137	1.137	1.131
2005	1.139	1.130	1.138	1.139	1.139	1.133
2006	1.141	1.132	1.140	1.141	1.141	1.135
2007	1.140	1.131	1.138	1.139	1.140	1.133
Small						
2003	1.086	1.080	1.085	1.085	1.085	1.082
2004	1.086	1.081	1.085	1.085	1.086	1.082
2005	1.085	1.080	1.084	1.085	1.085	1.081
2006	1.092	1.086	1.091	1.092	1.092	1.088
2007	1.099	1.093	1.098	1.099	1.099	1.094

Exhibit 3. Changes to Travel Time Index Due to Inclusion of Sustainable Mode Data, 2007

Urban Area	2007 TTI Reported in 2009 Report	2007 TTI with Sustainable Factors	Difference
All 90 Average	**1.286**	**1.257**	**0.029**
Very Large Group Average	**1.371**	**1.321**	**0.050**
New York-Newark NY-NJ-CT	1.367	1.257	0.110
Chicago IL-IN	1.425	1.344	0.081
San Francisco-Oakland CA	1.420	1.359	0.062
Washington DC-VA-MD	1.386	1.337	0.049
Los Angeles-Long Beach-Santa Ana CA	1.494	1.453	0.041
Philadelphia PA-NJ-DE-MD	1.277	1.243	0.034
Boston MA-NH-RI	1.264	1.230	0.033
Miami FL	1.370	1.337	0.033
Seattle WA	1.289	1.257	0.032
Atlanta GA	1.349	1.322	0.027
Houston TX	1.331	1.310	0.020
Phoenix AZ	1.296	1.277	0.020
Dallas-Fort Worth-Arlington TX	1.320	1.301	0.019
Detroit MI	1.291	1.274	0.017
Large Group Average	**1.233**	**1.217**	**0.017**
Portland OR-WA	1.287	1.256	0.031
Baltimore MD	1.307	1.277	0.030
San Diego CA	1.367	1.339	0.028
Denver-Aurora CO	1.311	1.285	0.026
Sacramento CA	1.316	1.292	0.024
San Jose CA	1.356	1.332	0.024
Austin TX	1.295	1.271	0.024
Las Vegas NV	1.300	1.276	0.024
Riverside-San Bernardino CA	1.364	1.341	0.023
Tampa-St. Petersburg FL	1.306	1.287	0.019
Orlando FL	1.303	1.285	0.019
New Orleans LA	1.165	1.148	0.017
Minneapolis-St. Paul MN	1.238	1.221	0.017
Charlotte NC-SC	1.246	1.230	0.016
San Antonio TX	1.233	1.218	0.015
Jacksonville FL	1.230	1.217	0.013
Cincinnati OH-KY-IN	1.176	1.164	0.012
Providence RI-MA	1.166	1.154	0.011
Virginia Beach VA	1.178	1.166	0.011
Columbus OH	1.182	1.171	0.010
Indianapolis IN	1.205	1.195	0.010

Milwaukee WI	1.130	1.120	0.010
Raleigh-Durham NC	1.169	1.160	0.009
St. Louis MO-IL	1.134	1.126	0.009
Pittsburgh PA	1.089	1.081	0.008
Cleveland OH	1.083	1.076	0.007
Memphis TN-MS-AR	1.125	1.118	0.007
Buffalo NY	1.072	1.066	0.006
Kansas City MO-KS	1.071	1.068	0.004
Medium Group Average	**1.140**	**1.131**	**0.009**
Honolulu HI	1.243	1.205	0.038
Salt Lake City UT	1.187	1.167	0.021
Lancaster-Palmdale CA	1.100	1.082	0.018
Tucson AZ	1.237	1.221	0.016
Indio-Cathedral City-Palm Springs CA	1.137	1.121	0.015
Sarasota-Bradenton FL	1.189	1.174	0.015
Bridgeport-Stamford CT-NY	1.248	1.234	0.014
Oxnard-Ventura CA	1.241	1.227	0.014
Louisville KY-IN	1.201	1.190	0.011
Omaha NE-IA	1.164	1.153	0.010
Albuquerque NM	1.180	1.170	0.010
Fresno CA	1.134	1.124	0.010
El Paso TX-NM	1.125	1.115	0.009
Allentown-Bethlehem PA-NJ	1.138	1.129	0.009
Colorado Springs CO	1.129	1.120	0.008
Hartford CT	1.121	1.113	0.008
Bakersfield CA	1.092	1.084	0.008
Birmingham AL	1.152	1.145	0.007
Nashville-Davidson TN	1.150	1.143	0.007
New Haven CT	1.110	1.104	0.006
Dayton OH	1.089	1.083	0.006
Albany-Schenectady NY	1.096	1.090	0.006
Toledo OH-MI	1.085	1.079	0.006
Poughkeepsie-Newburgh NY	1.087	1.082	0.005
Grand Rapids MI	1.096	1.091	0.005
Oklahoma City OK	1.115	1.110	0.005
Tulsa OK	1.097	1.093	0.005
Rochester NY	1.064	1.059	0.005
Akron OH	1.066	1.062	0.005
Richmond VA	1.091	1.087	0.005
Springfield MA-CT	1.064	1.060	0.004

Small Group Average	**1.099**	**1.093**	**0.006**
Laredo TX	1.116	1.105	0.011
Cape Coral FL	1.170	1.159	0.011
Charleston-North Charleston SC	1.198	1.187	0.011
Boulder CO	1.093	1.084	0.009
Brownsville TX	1.074	1.065	0.009
Salem OR	1.103	1.095	0.008
Eugene OR	1.076	1.069	0.008
Anchorage AK	1.072	1.065	0.007
Pensacola FL-AL	1.129	1.122	0.007
Knoxville TN	1.116	1.111	0.006
Columbia SC	1.097	1.093	0.004
Spokane WA	1.047	1.043	0.004
Corpus Christi TX	1.050	1.047	0.003
Little Rock AR	1.087	1.084	0.003
Beaumont TX	1.048	1.046	0.002
Wichita KS	1.024	1.023	0.001

Exhibit 4. Contributions To Lower TTI Values From Each Sustainability Factor, 2007

Urban Area	Differences in TTI For Each Sustainability Factor			
	Public Transportation	Walk	Bike	Work at Home
All 90 Average	**0.016**	**0.002**	**0.001**	**0.014**
Very Large Group Average	**0.033**	**0.002**	**0.001**	**0.019**
New York-Newark NY-NJ-CT	0.093	0.003	0.002	0.026
Chicago IL-IN	0.055	0.003	0.002	0.030
San Francisco-Oakland CA	0.043	0.002	0.001	0.020
Washington DC-VA-MD	0.031	0.002	0.001	0.017
Los Angeles-Long Beach-Santa Ana CA	0.019	0.002	0.001	0.021
Philadelphia PA-NJ-DE-MD	0.019	0.002	0.001	0.016
Boston MA-NH-RI	0.021	0.001	0.001	0.013
Miami FL	0.012	0.002	0.001	0.019
Seattle WA	0.018	0.001	0.001	0.013
Atlanta GA	0.010	0.002	0.001	0.015
Houston TX	0.007	0.001	0.001	0.012
Phoenix AZ	0.004	0.001	0.001	0.014
Dallas-Fort Worth-Arlington TX	0.005	0.001	0.001	0.013
Detroit MI	0.003	0.001	0.001	0.012
Large Group Average	**0.005**	**0.001**	**0.001**	**0.011**
Portland OR-WA	0.014	0.002	0.001	0.017
Baltimore MD	0.015	0.001	0.001	0.014
San Diego CA	0.011	0.002	0.001	0.016
Denver-Aurora CO	0.011	0.001	0.001	0.014
Sacramento CA	0.005	0.002	0.001	0.017
San Jose CA	0.006	0.002	0.001	0.016
Austin TX	0.007	0.002	0.001	0.016
Las Vegas NV	0.008	0.002	0.001	0.015
Riverside-San Bernardino CA	0.003	0.002	0.001	0.017
Tampa-St. Petersburg FL	0.003	0.002	0.001	0.015
Orlando FL	0.005	0.001	0.001	0.013
New Orleans LA	0.004	0.001	0.001	0.012
Minneapolis-St. Paul MN	0.006	0.001	0.001	0.010
Charlotte NC-SC	0.004	0.001	0.001	0.011
San Antonio TX	0.004	0.001	0.001	0.010
Jacksonville FL	0.002	0.001	0.001	0.010
Cincinnati OH-KY-IN	0.002	0.001	0.000	0.008
Providence RI-MA	0.002	0.001	0.000	0.008
Virginia Beach VA	0.002	0.001	0.000	0.008
Columbus OH	0.001	0.001	0.000	0.008

Indianapolis IN	0.001	0.001	0.001	0.008
Milwaukee WI	0.002	0.001	0.000	0.007
Raleigh-Durham NC	0.002	0.001	0.000	0.007
St. Louis MO-IL	0.003	0.001	0.000	0.006
Pittsburgh PA	0.003	0.000	0.000	0.005
Cleveland OH	0.002	0.000	0.000	0.004
Memphis TN-MS-AR	0.001	0.000	0.000	0.005
Buffalo NY	0.001	0.001	0.000	0.004
Kansas City MO-KS	0.000	0.000	0.000	0.003
Medium Group Average	**0.002**	**0.001**	**0.000**	**0.007**
Honolulu HI	0.023	0.002	0.001	0.016
Salt Lake City UT	0.010	0.001	0.001	0.010
Lancaster-Palmdale CA	0.003	0.002	0.001	0.015
Tucson AZ	0.003	0.001	0.001	0.011
Indio-Cathedral City-Palm Springs CA	0.002	0.001	0.001	0.012
Sarasota-Bradenton FL	0.001	0.001	0.001	0.012
Bridgeport-Stamford CT-NY	0.001	0.001	0.001	0.012
Oxnard-Ventura CA	0.001	0.001	0.001	0.011
Louisville KY-IN	0.002	0.001	0.001	0.008
Omaha NE-IA	0.001	0.001	0.001	0.008
Albuquerque NM	0.001	0.001	0.000	0.008
Fresno CA	0.001	0.001	0.000	0.007
El Paso TX-NM	0.002	0.001	0.000	0.007
Allentown-Bethlehem PA-NJ	0.001	0.001	0.001	0.007
Colorado Springs CO	0.001	0.001	0.000	0.006
Hartford CT	0.002	0.000	0.000	0.005
Bakersfield CA	0.001	0.001	0.000	0.006
Birmingham AL	0.000	0.001	0.000	0.006
Nashville-Davidson TN	0.001	0.000	0.000	0.005
New Haven CT	0.001	0.000	0.000	0.005
Dayton OH	0.001	0.000	0.000	0.004
Albany-Schenectady NY	0.001	0.000	0.000	0.004
Toledo OH-MI	0.001	0.000	0.000	0.004
Poughkeepsie-Newburgh NY	0.001	0.000	0.000	0.004
Grand Rapids MI	0.001	0.000	0.000	0.004
Oklahoma City OK	0.000	0.000	0.000	0.004
Tulsa OK	0.000	0.000	0.000	0.004
Rochester NY	0.001	0.000	0.000	0.004
Akron OH	0.000	0.000	0.000	0.004
Richmond VA	0.001	0.000	0.000	0.004
Springfield MA-CT	0.001	0.000	0.000	0.003

Small Group Average	**0.001**	**0.000**	**0.000**	**0.004**
Laredo TX	0.002	0.001	0.001	0.008
Cape Coral FL	0.001	0.001	0.001	0.009
Charleston-North Charleston SC	0.001	0.001	0.000	0.009
Boulder CO	0.002	0.001	0.000	0.006
Brownsville TX	0.002	0.001	0.001	0.006
Salem OR	0.002	0.001	0.000	0.006
Eugene OR	0.003	0.000	0.000	0.005
Anchorage AK	0.002	0.001	0.000	0.005
Pensacola FL-AL	0.000	0.001	0.000	0.006
Knoxville TN	0.000	0.000	0.000	0.005
Columbia SC	0.000	0.000	0.000	0.004
Spokane WA	0.001	0.000	0.000	0.002
Corpus Christi TX	0.000	0.000	0.000	0.002
Little Rock AR	0.000	0.000	0.000	0.003
Beaumont TX	0.000	0.000	0.000	0.002
Wichita KS	0.000	0.000	0.000	0.001

Note: 0.000 indicates changes are less than 0.0005.