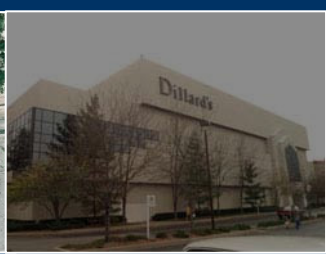
The New I-64 Economic and Regional Mobility Study

Quarterly Report # 1

January – February 2008

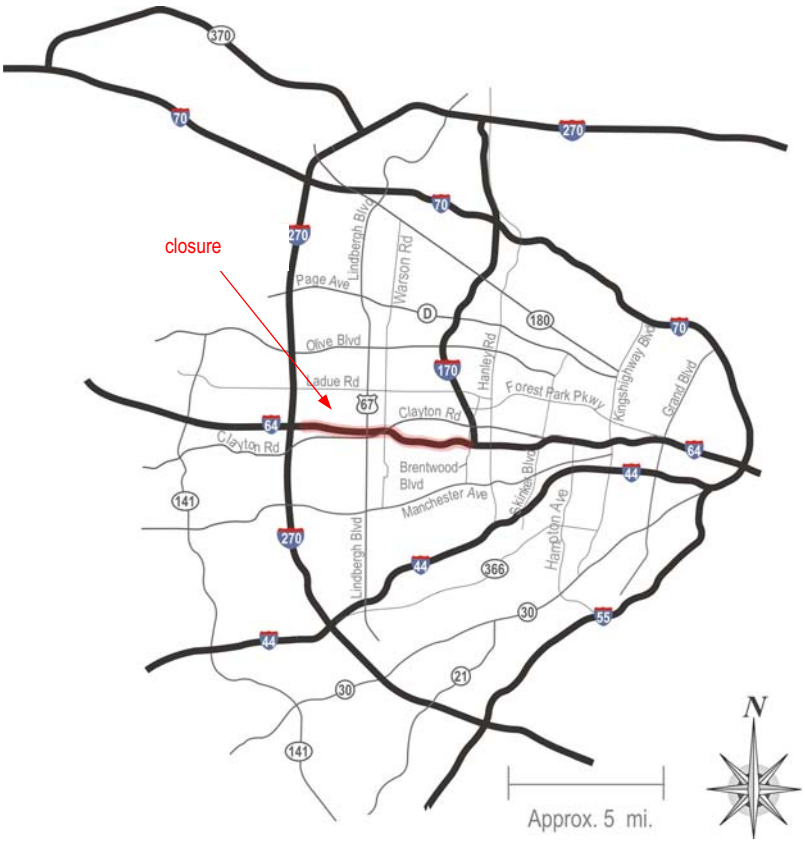
HDR



1. Executive Summary

On January 2, 2008, the section of I-64 from Ballas Road to I-170 (see map) was completely closed for construction. The closure is planned to last through the end of 2008, at which time a section to the east will be closed for construction for the bulk of 2009.

This quarterly report assesses the first two months of the western closure, evaluating the three key areas of **Communications** (how MoDOT and others provide information to the public, and the public's response to the project), **Mobility** (the effects of the closure on travel behavior, choices, and flow), and **Economics** (the effects of the closure on businesses within the corridor as well as the economic health of the region). Two months has not been enough time for the immediate effects of the closure to stabilize, nor for the longer-term effects to materialize, but the research team has been able to obtain some initial findings that will be of interest to MoDOT and the general public. To date, the research team has found:



Communications (pp. 2-9)	Mobility (pp. 10-18)	Economics (pp. 19-23)
Over 1,700 members of the public have given feedback through web surveys, mail surveys, personal interviews, and surveys administered by Motorist Assist. The public is generally **satisfied** with the closure, how information has been communicated, and how they are managing to move around the region. The closure has had varying effects on the public's travel habits, with nearly 3/4 indicating their **travel frequency has changed** for certain trips. A shift to an **earlier morning commute** was cited by many. People's reported **travel times are lengthening** (approximately 1/3 to 1/4 of them by 15 minutes or more), although many trip times are relatively unchanged.	The closure has **re-routed approximately140,000 to 150,000 vehicles per day**; travelers have taken alternative routes, altered their travel schedules, and considered alternate modes. Transit has experienced a **9 percent jump** in comparison to the beginning of last year, but this appears to be a continuation of a longer-term trend in the region. The RideFinders rideshare program experienced a **32 percent jump** in comparison to the beginning of last year, which appears to be an effect of the closure. **Weather**, particularly in February, affected travel times and congestion. As spring approaches, traffic conditions should stabilize and allow a more complete assessment.	A business survey distributed to over 6,000 area business has so far received very positive responses, **with 97% expressing satisfaction** with MoDOT's execution of the project. The research team and the business community have been collaborating on the **best economic measurements** to evaluate the closure's effects. Economic reporting tends to lag behind causal events, so future reports will begin evaluating these measures. Economic **data sources** have been identified and the data collection process has begun.

2. Communications

Communications Highlights

The citizens of the St. Louis region are providing input to this research through online surveys, mailed surveys, handouts by Motorist Assist operators, and personal interviews. Highlights gleaned from these surveys include:

- **Awareness.** From the responses to date, it appears that MoDOT effectively communicated the upcoming closure to the affected population in 2007; pre-closure awareness was reported as very high.
- **Satisfaction.** Respondents are largely satisfied with their ability to travel around the region, and with the level of information that has been communicated by MoDOT and others regarding the closure.
- **Information Sources.** TV News appears to be the best way to reach the majority of the respondents, with radio news, newspapers, and road signs also being effective methods. For those who use the internet, online information sources are almost as effective as TV news. However, a large portion of the general population does not obtain their information via the internet and other methods should continue to be used to reach them.
- **Alternative Routes.** I-44 was the most recommended alternative route. Two nearby parallel arterials, Ladue Road and Clayton Road, received more negative recommendations than positive (with Ladue receiving over 1.6 times as many negatives as positives).
- **Travel Time.** The majority of respondents are indicating that that their travel time for basic trips has increased; although many have indicated no change or even an improvement in travel times.
- **Travel Mode.** Initial responses on how the closure has changed people's mode of travel are somewhat inconclusive. It is clear that the dominant mode of travel by the respondents has been, and continues to be, the automobile.
- **Personal Impact.** The closure is affecting people's trip choices. Survey respondents are indicating changes in basic trip destinations such as shopping and eating out. Overall, almost three quarters of respondents are indicating that their frequency of travel to certain areas has been affected by the closure. Some residents have shifted their work hours, especially the respondents to the Web survey, who indicated a shift to earlier morning commutes.

To date, the responses have been fairly consistent over the various survey methods. This general agreement across surveys is important because it appears to demonstrate that one can generalize from the surveys to the general population (other than issues related to online access, which is by definition skewed in the Web survey responses).

Communication Assessment Objectives and Methods

Major Goals – Communication Assessment

Develop and implement survey instruments

Determine effectiveness of pre-closure notification

Assess communication methods

Measure participant satisfaction for key issues

Estimate changes in behavior

Hear everyone's voice
(obtain generalized sample)

Total Surveys this Period

Web	801
Mail	700
In-person	100
Motorist Assist	
MoDOT	98
County	38
TOTAL	**1,737**

Web Surveys Completed Weekly

Jan 6 - 12	500
Jan 13 - 19	116
Jan 20 - 26	76
Jan 27 - Feb 2	27
Feb 3 - 9	29
Feb 10 - 16	10
Feb 17 - 23	19
Feb 24 - Mar 1	24

Four classes of survey instruments (included in Appendix A) were developed to assess the communication aspects of this project:

(1) A detailed online survey was developed; participants had the option to complete a brief, medium, or detailed survey. Surprisingly, 62.4 percent of the respondents were interested enough in sharing their opinion that they elected to complete the detailed survey. Links to the survey were placed on MoDOT's main website as well as the New I-64 Project site; also, the survey was highly promoted by MoDOT's public relations team.

(2) To help obtain a representative sample, a physical survey was developed and mailed to 10,000 respondents in twenty-eight zip codes near the I-64 project.

(3) In-person surveys were utilized to assess public opinions at two major shopping locations in the immediate area of the closure (the St. Louis Galleria near I-64/I-170, and Schnuck's grocery store at Lindbergh Boulevard and Clayton Road).

(4) Two project satisfaction measures were also added to the Motorist Assist surveys that are distributed to people serviced by Motorist Assist operators.

In order to facilitate better comparisons of changes across survey types and from time to time, the statistics used in the project assessment usually do not include the "not sure" or "no opinion" percentages. This eliminates a major source of random variability and allows a more accurate observation of change over time. In addition, this methodology is consistent with how MoDOT calculates similar Tracker measures.

Communications Results

Use of I-64, Knowledge of the Closure

The survey results indicate that the public was very aware of the closure well before it occurred. 98.1 percent of the on-line respondents were aware of the upcoming closure in 2007, and since 96.6 percent of the online respondents traveled on the affected section of I-64 at least once per week before the closure, it appears that the target population received the needed advance information.

Usage of I-64 before Closure (Web Only)

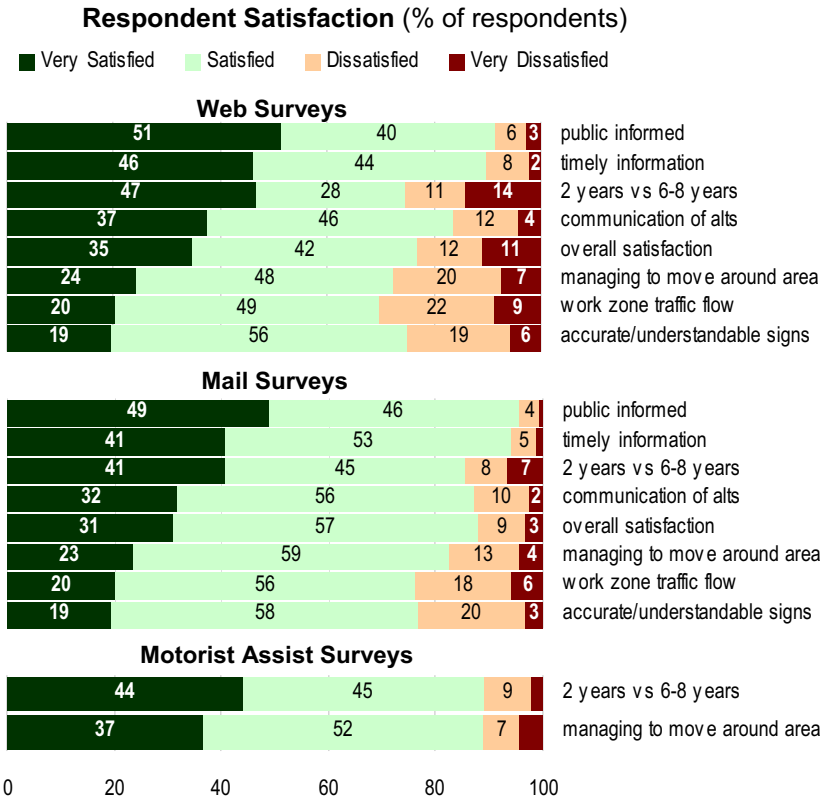
Almost every day	33 %
Very rarely	20 %
Two to three times a week	16 %
Once a week	15 %
Most weekdays	13 %
Never	3 %

Knowledge of Closure (Web Only)

Aware of closure before survey:	98 %
Learned about closure:	
Before Dec '07	94 %
Dec '07	4 %
Jan '08	2 %

Satisfaction

The charts at right summarize survey respondents' opinions in the area of satisfaction. As the graphs indicate, 69 percent or more of the respondents expressed satisfaction in response to each question in each forum, and responses were fairly consistent across the different survey types.



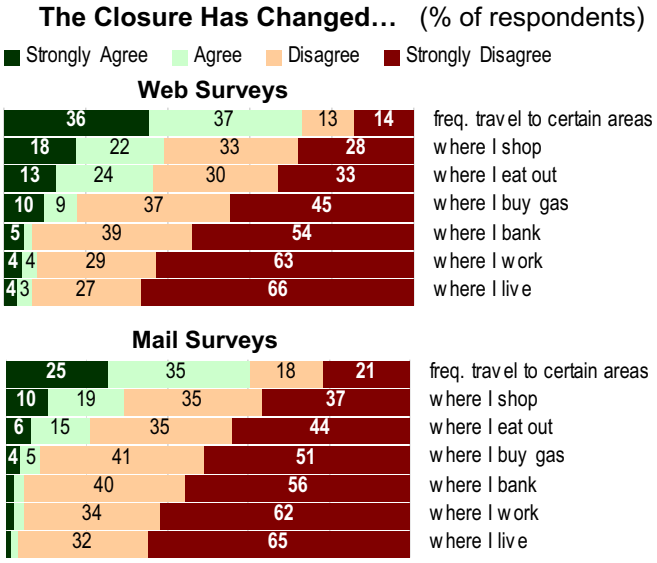
Satisfaction was highest with "how well the public has been kept informed" (91 to 95 percent) and "the timeliness of information" (90 to 94 percent). The least amount of satisfaction was expressed for "how traffic is flowing in work zones" (69 to 76 percent) and "accuracy and understandability of construction zone signs" (75 to 77 percent).

Based on an initial review of the interview surveys that were recently completed at two shopping locations near the closed section of I-64, it appears they are generally in agreement with the above results. For most measures, over 80 percent of the interview respondents were either satisfied or very satisfied. This included opinions regarding both the decision to close I-64 and overall satisfaction with how the I-64 closure has been handled.

Note that written responses to the surveys are still being processed, but one notable item is that respondents have expressed satisfaction regarding the regional collaboration on signal timing that has facilitated arterial flow during construction; the public has also expressed a desire to see these timing improvements continued after the project is complete.

Personal Impact of the Closure

As the graphs at right indicate, respondents much more often modified their frequency of travel to certain areas than the location of their basic trip destinations. The most affected destinations were shopping (29 to 40 percent) and eating out (21 to 37 percent).



Most respondents indicated that they have continued to work the same hours in the same location since the closure. The online respondents, including residents more distant from the closure than the mailed survey, were much more likely to have shifted hours in response to the closure compared to those who completed the mailed survey.

Spatial/Temporal Effect on Job

	Mail	Web
Same hours, same location	87 %	70 %
Shifted hours	8 %	23 %
Different location more often	4 %	5 %
Quit job	1 %	2 %

Typical Period of Commute (or Other Travel) Web only

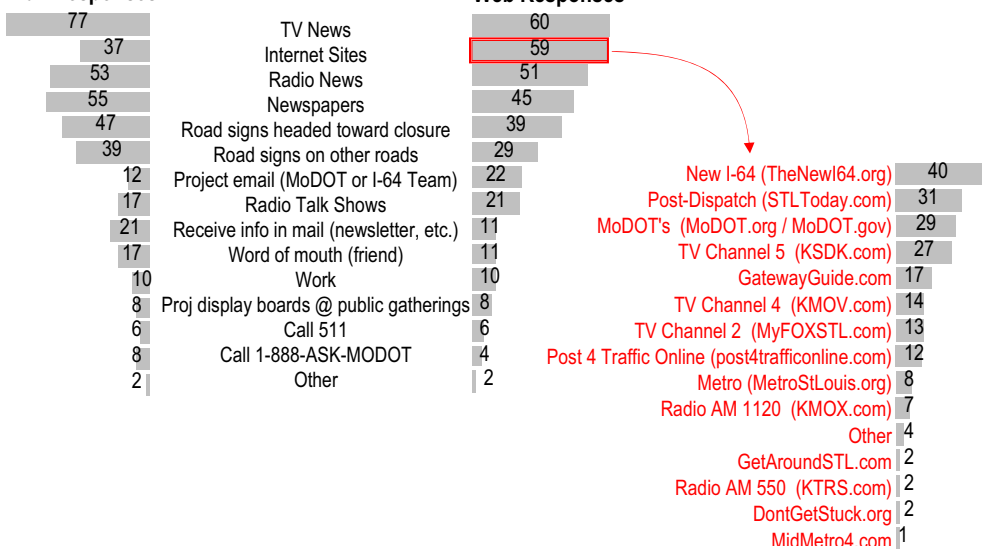
	before	after
before 7 am	20 %	28 %
7 - 9 am	41 %	32 %
9 am - 3 pm	10 %	10 %
3 - 6 pm	37 %	38 %
after 6 pm	12 %	13 %

The web survey revealed a stated shift to earlier morning commute/travel hours, but no significant shift in the evening hours. It should be noted that anecdotal information, and other observations, indicate that this shift was high initially, but has lessened over time as conditions begin to stabilize. The high number of web survey responses in the early weeks of the closure may therefore skew this data; future reports will further examine time trends to explore this effect.

Information Sources and Communication Methods

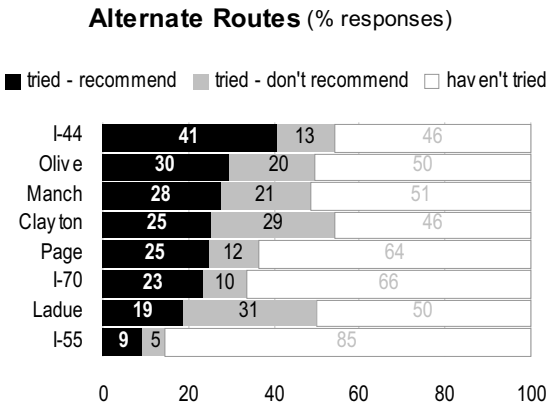
TV News was considered to be the best method for MoDOT to distribute information to the public by the respondents of both the online and physical surveys. As expected, there was much variance in the perceived effectiveness of internet communications between the two survey types. Online respondents, who had to have access to the internet to even complete the survey, thought the internet was the second best way for MoDOT to provide information to them. However, those who returned the physical surveys were not as likely to use the internet to obtain their information (only 37 percent of these respondents thought the internet was a good way for MoDOT to provide them with information). Radio news and newspapers were also considered very good methods of communication, followed by road signs.

Best Way for MoDOT to Distribute Information
(% responses; multiple choices allowed)



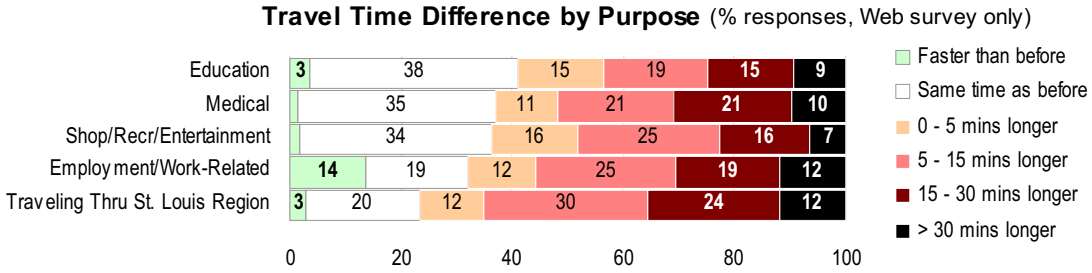
Alternative Routes

Respondents were also asked to provide input about eight alternative routes. I-44 was the most recommended route, with 41 percent of the respondents recommending it. Clayton Road and Ladue Road were the least recommended routes, in the sense that more respondents recommended against their usage than for them.



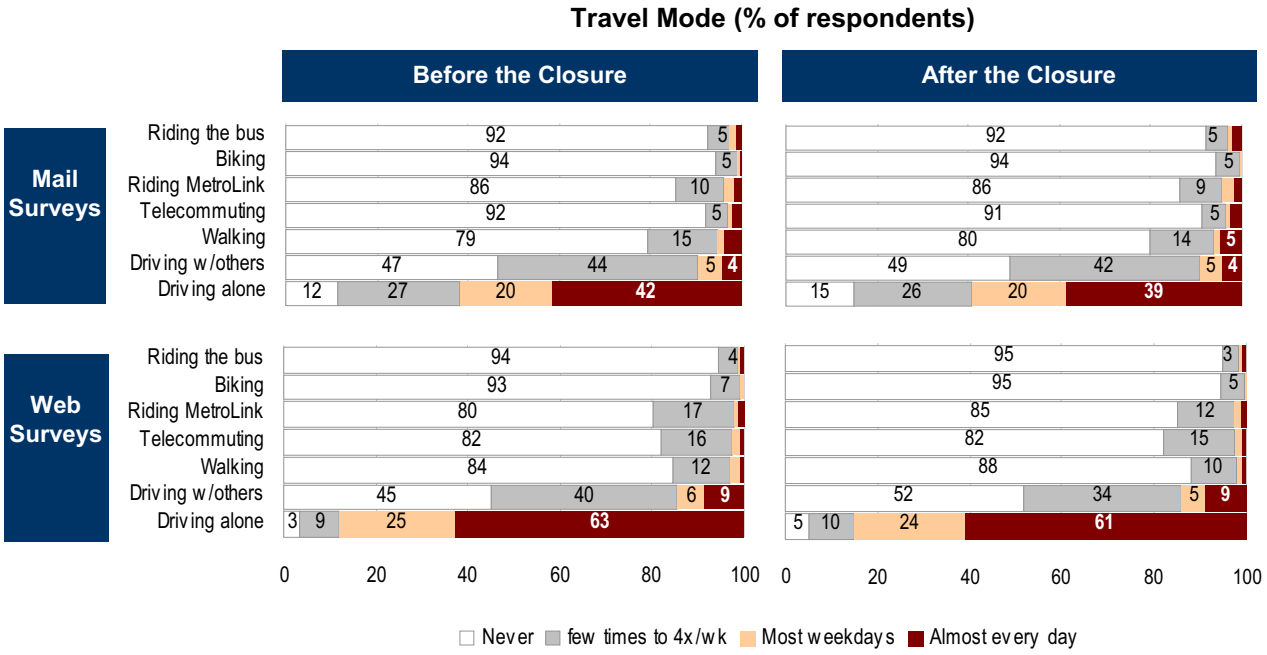
Travel Time

As indicated by the graph below, the majority of Web survey respondents (58 to 78 percent) indicated that various trips had gotten longer since the closure, with a total of 9 to 12 percent responding that their trips had increased by 30 minutes or more. Notably, when asked specifically about work trips, 14 percent of respondents indicated that their work trips were actually faster than before.



Travel Modes

To date, the surveys have revealed only slight changes in reported travel mode since the closure, as illustrated below. Single-occupant driving has apparently slightly decreased by 2 to 3 percent, and carpooling also appears to have decreased. For other modes, the fluctuations are not stark, but there appears to have been some change in each. Further study of these results, in comparison with mobility results, may shed additional light on commute options.



Demographics

The table at right summarizes the responses to demographic questions from the respective surveys. One of the purposes of supplementing the Web survey with a mail survey was to reach populations without internet access, in order to ensure the research considered the input of as many groups as possible – a representative sample. By targeting the mail survey at many of the zip codes near the closure, the research team succeeded in its objective of reaching a more diverse population, especially in reaching more minorities and more females.

Demographics of Survey Respondents

Age	Mail	Web
under 25	5 %	11 %
26 to 40	20 %	35 %
41 to 65	57 %	52 %
Over 65	19 %	3 %

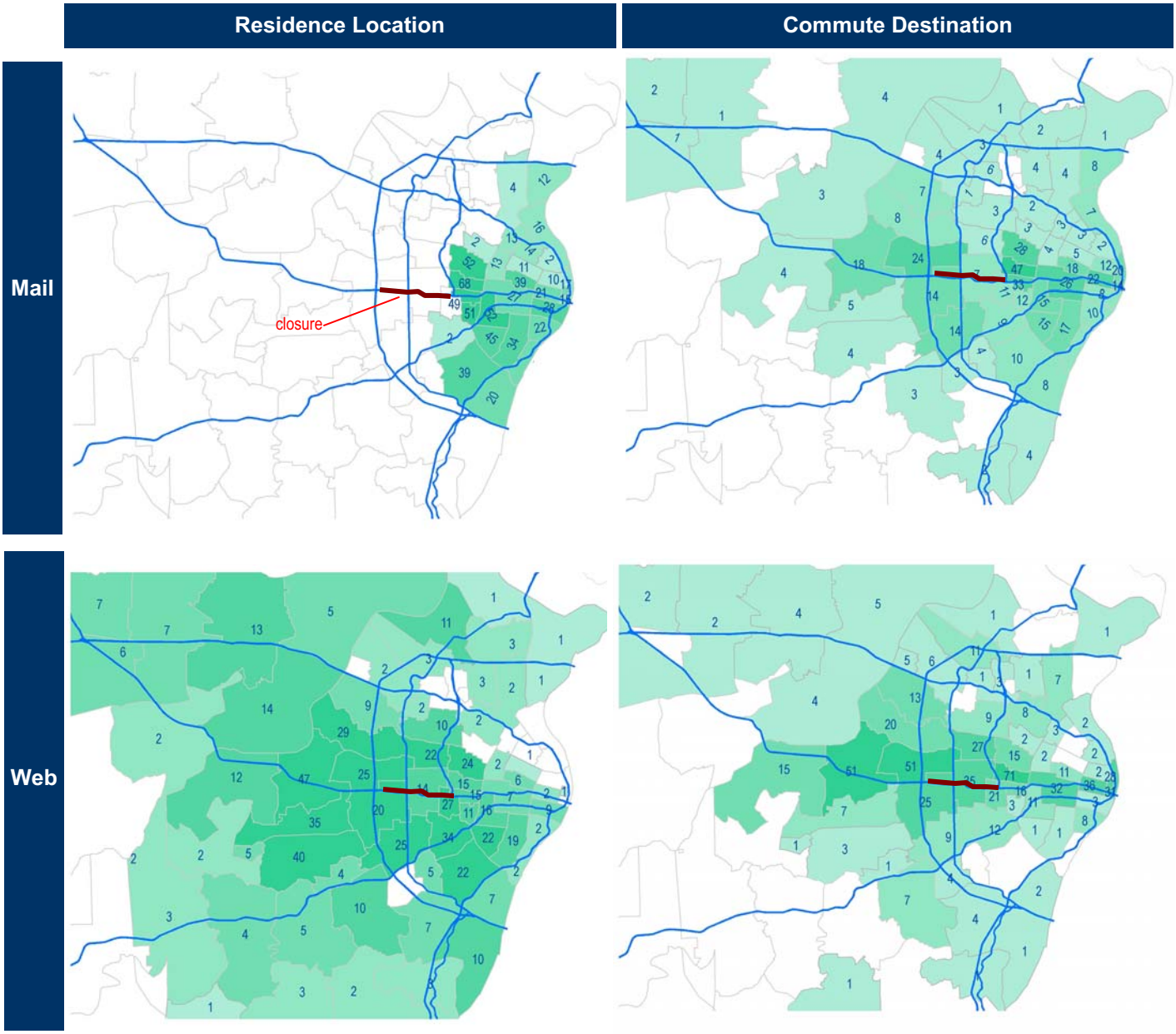
Race	Mail	Web
American Indian	1 %	1 %
Asian	1 %	2 %
Black/African-American	15 %	2 %
Hispanic/Latino	1 %	1 %
White/Caucasian	79 %	92 %
Other	2 %	2 %

Gender	Mail	Web
Male	41 %	54 %
Female	59 %	46 %

Income	Mail	Web
Less than $20,000	-	2 %
$20,000 to $40,000	-	11 %
$40,001 to $60,000	-	17 %
$60,001 to $90,000	-	21 %
$90,001 to $120,000	-	24 %
$120,001 to $150,000	-	9 %
$150,001 to $200,000	-	9 %
More than $200,000	-	7 %

The maps on the following page illustrate the zip codes of survey respondents within Missouri (a small portion of the responses – around 2 percent – were from outside the state). These results are preliminary; future reports will likely aggregate zip codes into larger geographic units with more statistical robustness.

Survey Respondents' Residence, Commute Destination (by zip code)



3. Mobility

Mobility Highlights

The most significant highlight of this quarter, from a process standpoint, was the development of a series of systems to automate the collection, processing, and display of the enormous stream of available data. Key initial findings are listed below:

- Approximately 140,000 to 150,000 daily vehicles used the segment of I-64 between Ballas Road and I-170 before its closure. The assessment of where those vehicles have gone is still underway; it appears that 25,000 have shifted to I-44; traffic on I-55 may have increased by 5,000 vehicles per day. Volume data is still being evaluated for I-70, I-270, and the many parallel facilities that have been impacted by the closure.
- Travel speeds and times are also still under evaluation, but it appears that travel speeds have dropped at least slightly during the peak periods on many key regional facilities, in conjunction with volume increases.
- Transit usage is up by 9 percent over a year ago; however, this trend is not far out of alignment with the growth of the past two years.
- The RideFinders Rideshare program experienced a 32 percent jump in rides compared to January 2007; this increase, plus smaller but noteworthy increases over the past six months appears to have been in response to (and anticipation of) the I-64 closure.

Mobility Assessment Objectives and Methods

Major Goals – Mobility Assessment

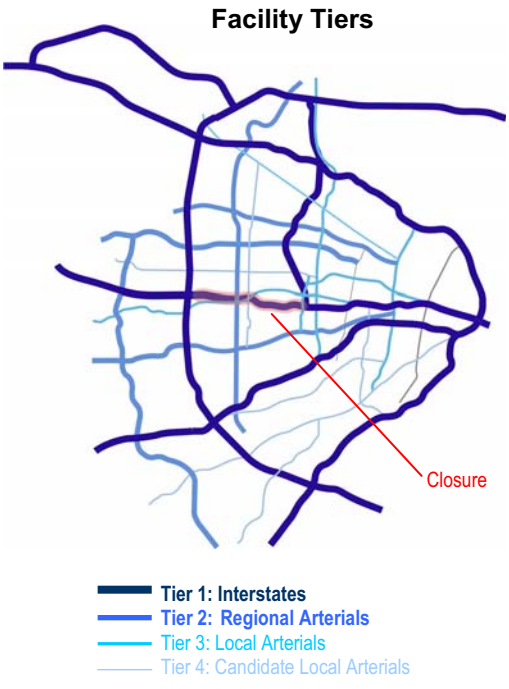
Assess the shifts (temporal, spatial, and modal) in travel demand throughout the region

Assess congestion effects of the closure

Assess closure effects on transit, ride-sharing, and park-and-ride demand.

This assessment uses a variety of tools to measure the region's mobility before, during, and after the closure period. The assessment examines traveler shifts and their effects, using a multitude of data sources of varying resolution. The complexity and sheer size of the data set requires examinations at several levels, and future reports will continue to hone and refine the assessment.

The initial analysis of the region's roadways and highways is focused on facilities in four Tiers, as illustrated at right. Tier 4 facilities are being assessed to see whether they should be included in the Tier 3 grouping, or excluded from further analysis. For each of these facilities, relevant mobility data (traffic volumes, travel times, incidents) are being gathered throughout the duration of the closure to measure its regional impacts.



Mobility data is being obtained through numerous sources:

- MoDOT is providing historical traffic counts through its count program, as well as archived traffic data from the Gateway Guide system. In addition, MoDOT forces have conducted travel-time runs on key segments of Tier 2/3/4 facilities multiple times since the I-64 closure. MoDOT also maintains statistics for its park-and-ride facilities across the state, and is providing monthly count data for its facilities in the region. Finally, MoDOT has produced a series of e-mail updates (initially daily, now weekly) that provide area residents (and the study team) with important mobility information.
- Traffic.com is a commercial Web site that provides, for highways in metropolitan areas across the U.S., real-time traffic congestion, travel-time, and incident data. These data are based primarily on sensors placed throughout the area. Traffic.com archives traffic volume, travel speed, and incident data – in 1-minute intervals – and has an agreement to share this information with MoDOT. The research team developed customized software routines to download, organize, prune, and analyze this data.
- St. Louis County has conducted traffic counts and travel-time studies on regional arterials periodically since the closure.
- Metro collects ridership information on MetroLink, MetroBus, Call-A-Ride, and special services, and is providing statistics aggregated on a monthly basis. In addition, Metro collects parking data at its stations with park-and-ride facilities.
- RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. Rideshare data is provided on a monthly basis.
- The research team is supplementing data collection where necessary, including travel-time runs, traffic counts, and field observations.

Mobility Results

Pre-closure Capacity Improvements

It is important to note that regional mobility began to be affected by The New I-64 project even before the closure. Perhaps most notably, several highway/roadway capacity improvements were implemented by MoDOT and St. Louis County on parallel and complementary facilities, as listed at right.

In addition, Metro improved its transit system capacity in anticipation of the closure by increasing service frequency and adding new routes. The research team has recently received a complete list of these improvements, and they will be incorporated into future reports.

Key Improvements to Regional Highways/Roadways

I-70 Restripe from I-170 to I-270 (add lane in each direction)

I-44 Restripe from I-270 to I-55/I-70 (add lane in each direction)

I-270/I-64 Restripe interchange ramps to improve traffic flow

I-270/I-44 Restripe interchange ramps to improve traffic flow

Clayton Road Restripe from Mason Road to Lindbergh Blvd; upgrade various traffic signals; new traffic signals at Topping Road and Bopp Road

Ladue Road Upgrade various traffic signals; various new left/right-turn lanes; new traffic signals at Graeser Road/Warson Road

Improved Signal Timing along Page Avenue, Olive Boulevard, Manchester Road, Lindbergh Boulevard, Clayton Road, Brentwood Boulevard, Hanley Road, Big Bend Boulevard, Kingshighway Boulevard, Grand Boulevard, and Forest Park Parkway

Traffic Volumes

Prior to the closure, in baseline 2006, I-64 carried approximately 107,000 vehicles per day (vpd) on a typical weekday – this is Annual Average Daily Traffic, or AADT (excluding "outlier" days). In January-February of 2007, one year before the closure, this section of I-64 carried approximately 143,000 vpd on a typical weekday. 100 percent of this traffic was necessarily displaced (temporally and/or spatially) as a result of the closure.

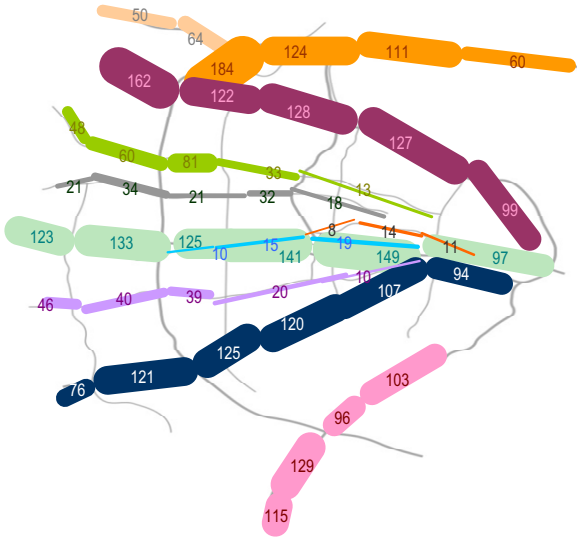
One primary question of interest is, "where did all the traffic go?" Several sources can be used at this stage to answer that question - including before/after volumes (from MoDOT, Traffic.com, and St. Louis County), responses to the various public surveys developed, and selected aggregated data reported by MoDOT in its frequent e-mail briefings. The table at right summarizes the information MoDOT has reported in the briefings, and shows that the most change has occurred during the a.m. peak hour.

MoDOT-Reported Volume Increases
(Compared to Pre-Closure Volumes)

	Jan 14	Jan 21	Feb 4	Feb 11	Feb 18
AM Peak Hour					
Rt 141 @ I-44	10%	4%	5%	5%	0%
Page	10%	15%	15%	15%	15%
Olive @ Fee Fee	-	5%	5%	5%	
Olive e/o Ballas	5%	40%	60%	55%	55%
Manchester	10%	10%	25%	30%	20%
Lindbergh SB	-	270%	200%	200%	200%
Lindbergh NB	-	(-50%)	(-40%)	(-40%)	(-40%)
PM Peak Hour					
Rt 141	5%	(-5%)	5%	0%	(-5%)
Page	10%	15%	15%	15%	20%
Olive @ Fee Fee	-	(-10%)	10%	-	(-10%)
Olive @ Ballas	(-10%)	15%	15%	20%	15%
Manchester	20%	15%	15%	15%	15%
Lindbergh SB/NB @ Manchester	-	(-50%)	(-50%)	(-50%)	(-50%)

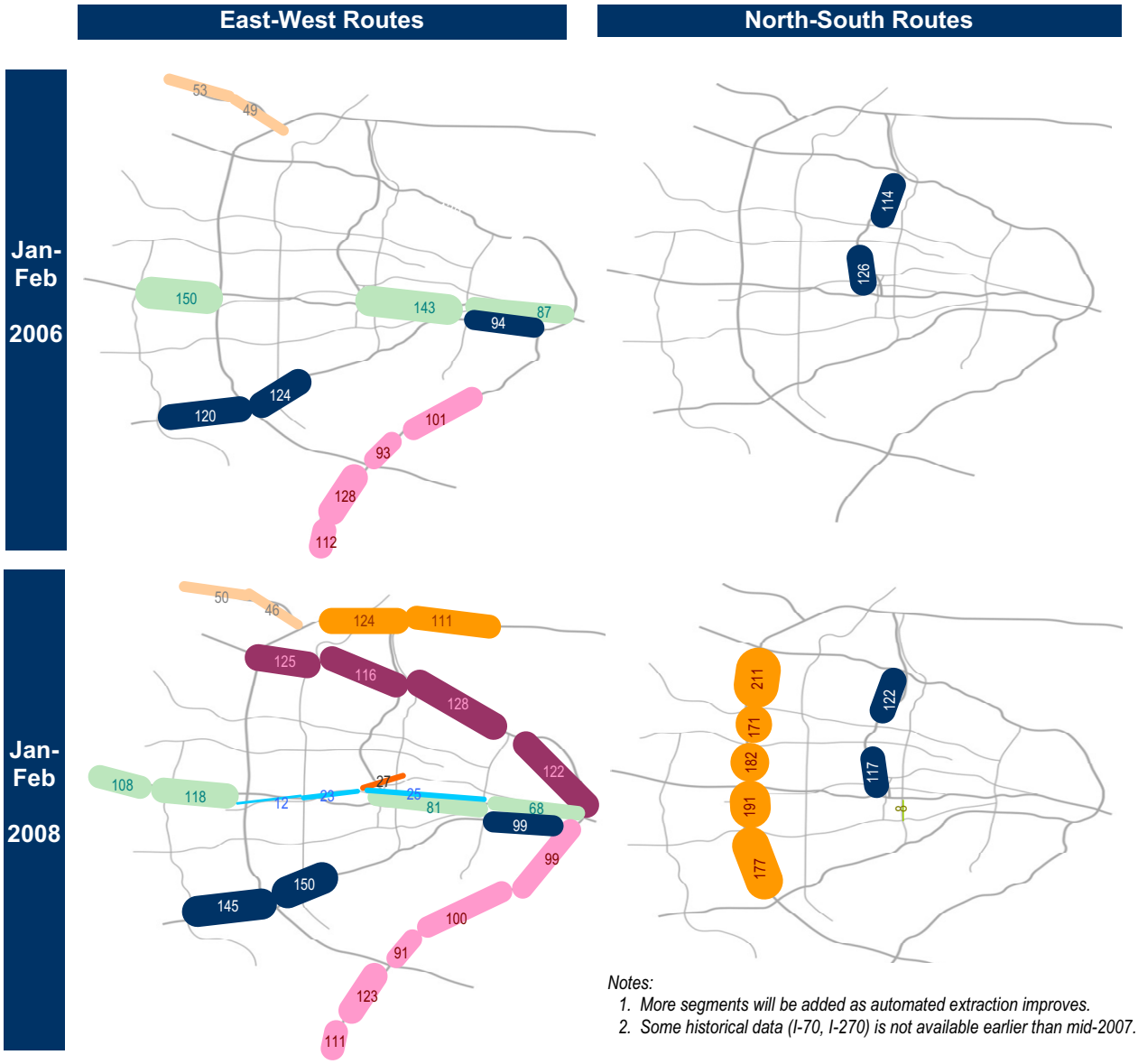
The graph at right, extracted from Traffic.com, MoDOT, and St. Louis County data, shows east-west daily traffic volumes for many of the key study facilities for the baseline year of 2006. Similar data has been extracted for the key north-south facilities (I-270, I-170, Lindbergh Boulevard, etc.) It is important to note that this information averages every non-holiday, non-"outlier" weekday from 2006, and therefore is not a good base against which to compare the effects of the closure in the first two months of 2008.

Baseline Daily Weekday Traffic (000's)
East-West Corridors (2006, full year)



The maps on the next page show a more fair initial comparison for selected segments. They compare weekday January-February 2008 volumes with the January-February 2006 volumes. (Weekend volumes are also being assessed.) Future reports will likely extract further data at more locations, now that an automated process has been established for working with these enormous data sets. However, continuous archived baseline data for some routes, such as I-70 and I-270, is not available for time periods before mid-2007.

Daily Traffic Volume Comparison (000's) on Selected Segments, 2008 vs. 2006 Baseline
(PRELIMINARY)



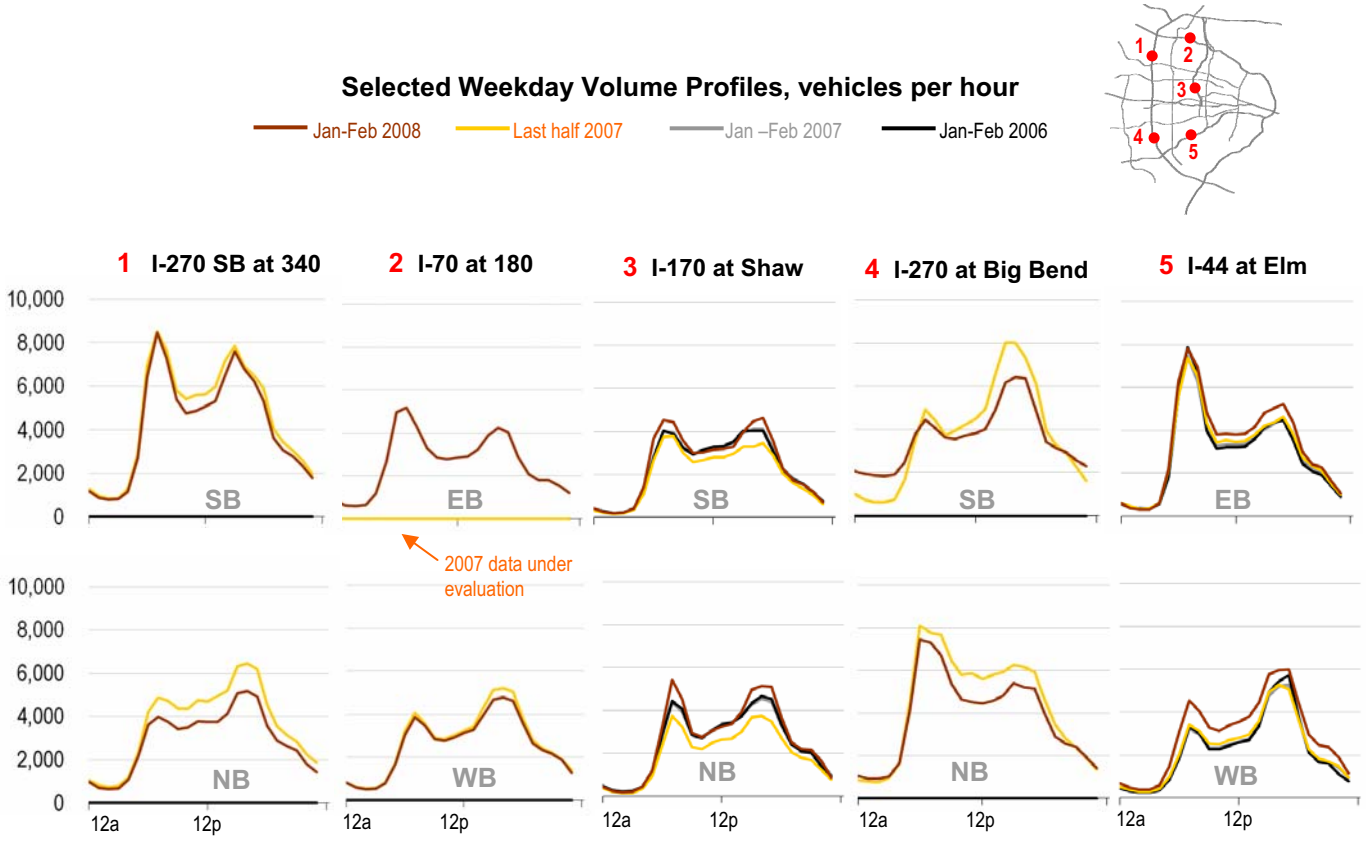
Notes:

1. *More segments will be added as automated extraction improves.*
2. *Some historical data (I-70, I-270) is not available earlier than mid-2007.*

Based on these maps, the following preliminary conclusions can be gleaned:

- Traffic volumes on I-64 immediately west of the closure have decreased by approximately 32,000 vpd; immediately east of the closure, they have decreased by approximately 62,000 vpd.
- Volumes on I-44 east of Kingshighway have increased on the order of 5,000 vpd; near I-270 (on both sides), they have increased by approximately 25,000 vpd.
- Volumes on I-170 north of I-64 have decreased by approximately 9,000 vpd, while volumes further north near I-70 have increased by approximately 8,000 vpd.
- Volumes on I-55 do not appear to have changed substantially, with no increase over 5,000 vpd shown in the current analysis.

The Traffic.com data can be examined at more refined resolutions, from hourly totals all the way down to five-minute volumes. The graphs below give some initial indications of the effects of the closure, but also hint at other ways the data is being examined. Future reports will discuss the effect of the closure on the **duration of the peak period**, informed by hourly and sub-hourly time-increment data. Initially, it can be seen that locations with 2006 data have experienced volume increases between January-February 2006 and January-February 2008, and some peak periods may have lengthened.

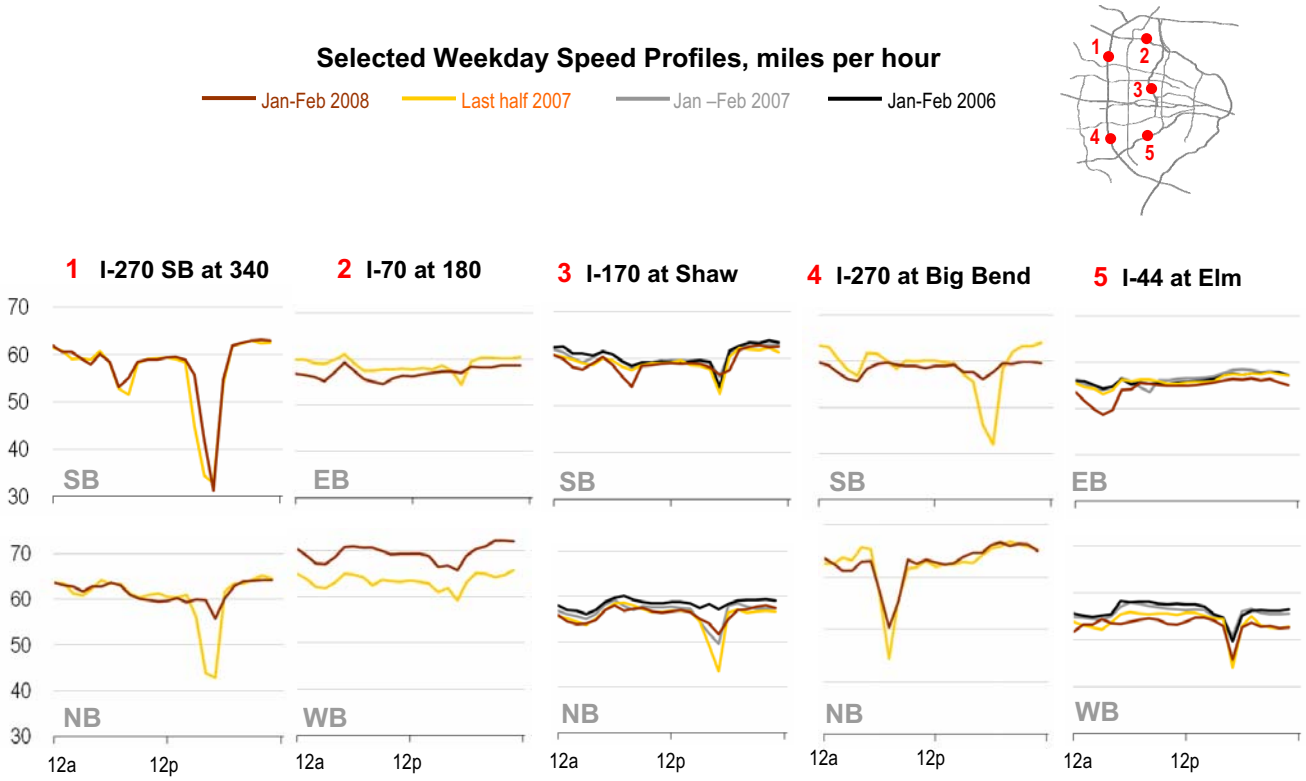


Travel Times

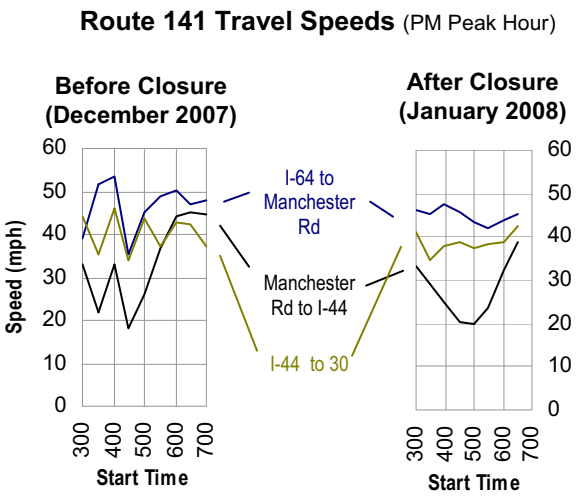
MoDOT has been reporting travel time information in its e-mail updates, largely on key interstate segments. The table at right summarizes these updates for the first quarter. Several segments have shown substantial variability in travel time over this period. Active winter weather has certainly played a major role in these variations, as February especially was notable for an abnormally high amount of snow events. To supplement this reported information, the research team will be using Traffic.com's archived speed data to calculate travel times on freeway segments throughout the region. The graphs below illustrate a sample of the data that can be obtained from this source, and show that, where comparable 2006 baseline data are available, speeds (especially congested speeds) appear to have dropped slightly in several areas comparing January-February 2008 to January-February 2006. As more data become available and conditions stabilize, these averages will become more statistically relevant, allowing more refined conclusions to be drawn.

MoDOT-Reported Travel Times (minutes)

	Jan 21-27	Feb 4-10	Feb 11-17	Feb 18-25
AM Peak Hour				
I-270 WB @ Chain of Rocks	9-11	10 -12	9 - 12	9 - 15
I-270 NB from I-55 to I-44	6	6 - 26	6 - 7	6 -18
I-270 NB from I-44 to I-64	7-8	7 - 10	7 - 10	7 - 10
I-255 @ Jefferson Barracks	4	4	4	4
I-170 EB/WB from I-70 to I-64	-	-	7 - 8	7 - 8
I-70 EB from I-270 to I-170	4	4	4 - 7	4
I-70 EB from I-270 to downtown	11-15	11 - 17	11 - 20	11 - 40
I-44 EB from I-270 to downtown	14-16	14 - 16	14 - 15	14 - 15
PM Peak Hour				
I-270 EB @ Chain of Rocks	12-20	12 - 28	9 - 34	12 - 21
I-270 SB from I-70 to I-64	15 - 47	15 - 57	15 - 68	8 - 27
I-270 SB from I-64 to I-44	-	-	-	7 - 22
I-255 @ Jefferson Barracks	4	4	4	4
I-170 SB from I-70 to I-64	-	-	7 - 8	7 - 8
I-170 NB from I-64 to I-70	-	-	7-16	7 - 8
I-70 WB from downtown to I-170	11-15	11 - 29	11 - 22	11 - 14
I-70 WB from I-170 to I-270	4	4 - 6	4 - 8	4
I-44 WB from I-270 to downtown	14-15	14 - 16	14 - 20	14



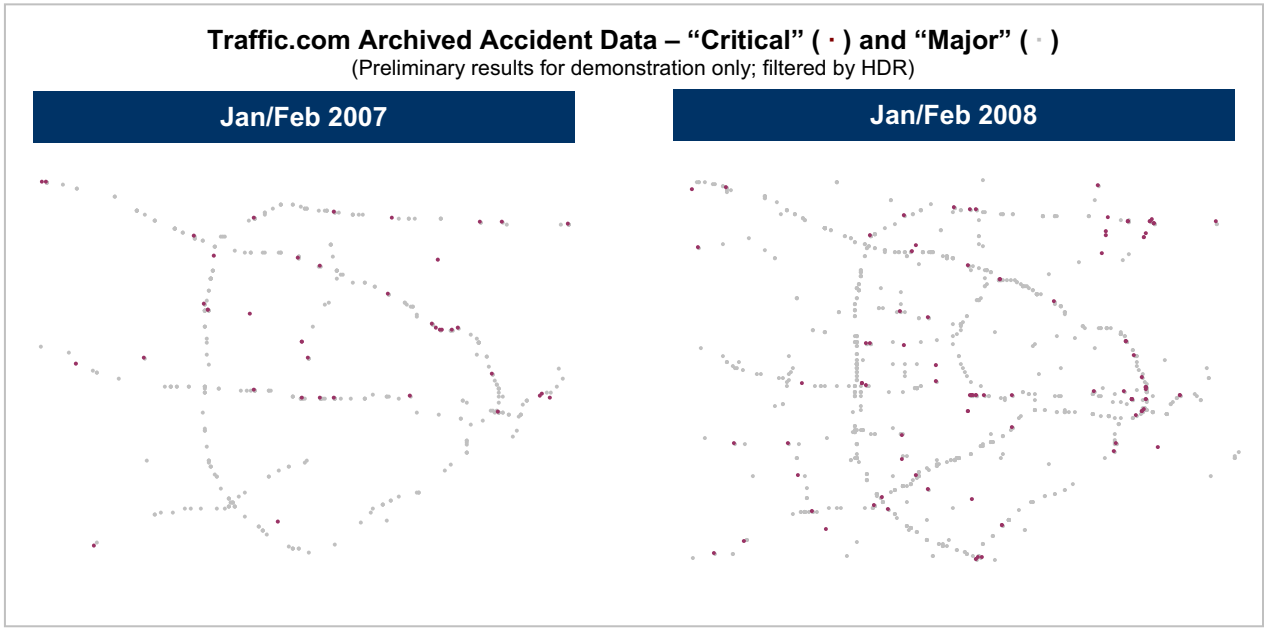
In the initial weeks of the closure, MoDOT has conducted travel-time runs on many of the local arterials (Tier 2, 3 and 4). This data set is complex, and is still under evaluation. However, the graphs at right are provided to indicate selected results. The graphs illustrate "before-and-after" travel speeds on three segments of Route 141. The southernmost segment appears to have the least change in speed, while the two northern segments may have experienced some overall speed decreases. The research team will be analyzing the data for each facility to aid in the assessment of the closure's effects on travel speeds.



Incidents/Weather

As MoDOT's February I-64 briefing stated, "weather played a significant factor in traffic during February with snow events on February 5, 6, 11, 12, 18, 21 and 22." January also had a number of snow events. The research team will be identifying weather days and at least high-level correlations with travel conditions.

The maps below compare Traffic.com's archived "critical" and "major" accident data for January/February 2008 to January/February 2007 (stored by latitude/longitude). The methodology for extracting these data still needs refinement – Traffic.com often reports a single incident multiple times, and there are other potential duplications that need to be examined. The intent of the figure is primarily to illustrate the data available, because the data itself needs further investigation. If, as the figure seems to indicate, the number of accidents increased this year in comparison to last year, it is doubtful that the closure has played a major role; a far more likely contributor is the high number of weather events. Traffic.com reporting practices may also have changed; this data will continue to be refined.



Park-and-Ride

The table below summarizes one year's worth of quarterly parking counts at MoDOT's Park-and-Ride lots in St. Louis County and neighboring counties. As the table indicates, only the aggregated Jefferson County lots have experienced a net increase in parked vehicles in February 2008 compared to February 2007. Future reports will continue to examine these trends, and will also include data from the numerous Metro transit park-and-ride lots throughout the St. Louis metropolitan area.

MoDOT Park-and-Ride Volumes

County	Lots	Total spaces	Vehicles Parked in Lot					Change
			Feb07	May07	Aug07	Nov07	Feb08	Feb 07-08
Franklin	6	413	295	205	189	175	168	- 43 %
Jefferson	11	962	321	337	379	386	367	+ 14 %
St. Charles	12	1110	427	403	283	315	301	- 30 %
St. Louis	6	792	519	540	582	451	493	- 5 %
Total	**35**	**3277**	**1562**	**1485**	**1433**	**1327**	**1329**	- 15 %

Transit

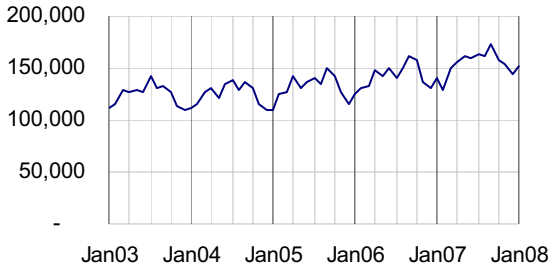
At the time of this report, Metro statistics are only available through January 2008. The table and graphs at right summarize some key statistics regarding Metro usage. Ridership on the total Metro system in January 2008 (the first month of the I-64 closure) was over 9 percent higher than ridership in January 2007. However, as the graphs indicate, Metro ridership has been steadily increasing since at least mid-2005, and the increase seen in comparing January 2008/2007 data does not appear to substantially deviate from this trend.

Statistics from the coming quarter will shed additional light on any closure-related transit trends. Future quarterly reports will examine more specifics regarding individual routes affected by the closure.

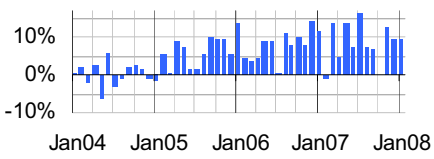
Key Transit Statistics

	Jan '08 ridership	Increase over Jan '07
MetroBus (fixed route)	2,723,970	9.1%
MetroLink (passenger rail)	1,944,205	9.4%
Call-a-Ride (paratransit)	60,167	8.4%
Total Metro system (includes services not listed)	4,733,423	9.3%

Total Metro system – equivalent daily riders per month



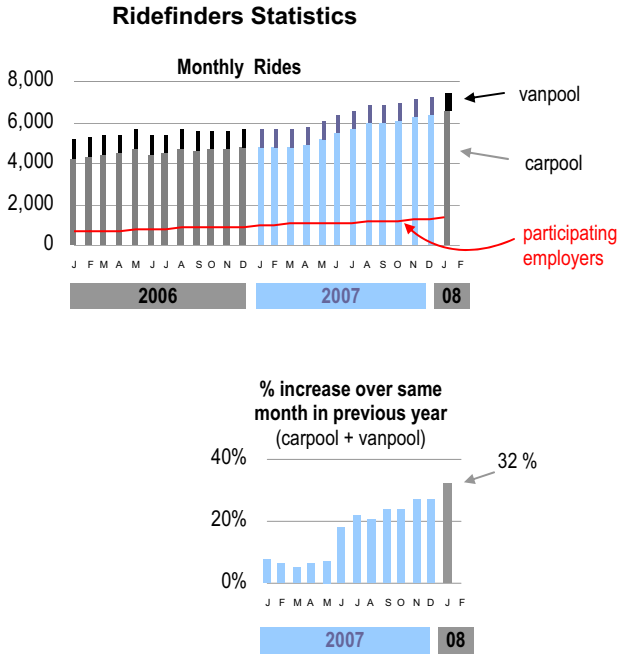
Month's increase over previous year



Rideshare

RideFinders, sponsored by Madison County Transit, is the St. Louis regional rideshare program. The graph at right shows historical ridership for RideFinders, and indicates a general upward trend since the second half of 2007. The lower portion of the figure further illustrates this jump in ridership by indicating, for each month, the percentage increase over the previous year. As the graph indicates, January 2008 had the highest one-year increase (32 percent) for the time period tracked.

The research team is working with RideFinders to obtain more details to help correlate rideshare activities with I-64 closure statistics.



4. Economics

Economics Highlights

The main highlight for this quarter was the development and distribution of the first business survey. The Survey was finalized and available online as of February 18th. It was distributed to over 6,000 local business sites by multiple local and regional economic development organizations; to date, 101 responses have been received. The business survey will remain active until March 13th with a second business survey planned for later in 2008. Additionally, the published economic data collection and research has identified ten major economic and demographic metrics, and catalogued the available sources. These metrics will be used to create a consistent set of economic and fiscal indicators of corridor and regional economic conditions before, during and after I-64 reconstruction. Given the time lag in available economic data indicators, this quarterly report does not include economic results for the first few months of the I-64 closure, but future reports will.

Economic Analysis Objectives and Methods

Major Goals – Economic Analysis

Measure economic conditions before and throughout the completion of I-64

Determine the effectiveness of the reconstruction and traffic management strategies

Identify the strategies that are the most appropriate for near-term and long-term economic vitality

Actively tracking the economic conditions over time will permit a greater ability to communicate with local businesses and commuters throughout the reconstruction project. The level of detail the research team is pursuing will allow verification of how the closures are impacting both groups and measure these effects to inform future transportation construction projects that involve lane closures. This economic evaluation and the information obtained will help to develop strategies that sustain the regional economy as the I-64 project concludes. Finally, these findings will help to shape national transportation policy regarding reconstruction strategies – namely, whether full closures for shorter periods are economically viable.

For this first quarter, the research team began the collection and analysis of economic data in order to create a baseline of economic conditions, and developed and distributed the first business survey of initial I-64 closure conditions. The survey will help track business indicators such as retail spending patterns, visitation, and business growth or retraction.

The major elements for the three key components of this economic assessment include:

Business Survey:

- Develop a survey instrument for both general and focused survey approaches.
- Obtain feedback; revise and finalize the survey to ensure the relevant economic indicators are included.
- Distribute the survey and follow up with partners to ensure that the survey is completed by a reasonable number of firms.
- Collect, process, interpret and present survey results.

Published Data:

- Develop an inventory of data sources, variables, frequency (monthly, quarterly, annual), and time lag.
- Meet with economic data experts at MoDOT, Department of Economic Development (DED) Missouri Economic Research & Information Center (MERIC), and other state and local agencies to discuss data availability.
- Develop a recommended set of metrics and data sources to use throughout the I-64 evaluation study.
- Develop reporting and presentation methods (tables, graphs, maps) to best track economic data indicators over time and compare to pre-construction conditions.

Benefits and costs of I-64 reconstruction and mitigation strategies:

- Estimation of highway user costs stemming from the mobility findings. Highway user costs include travel time, cost, accidents, and emissions due to changes in vehicle hours of travel (VHT), vehicle miles of travel (VMT), and variability of travel time.
- Develop methodologies to measure the effectiveness of mitigation strategies to manage traffic flow conditions during the course of the project such as estimating the difference between "predicted" highway user costs of I-64 without mitigation strategies compared to "actual" highway user costs.
- Assessment of changes in the distribution of economic activity related (directly or indirectly) to I-64 reconstruction.
- Evaluation of MoDOT's efforts to alleviate potential impacts on local businesses through programs like Project Get Around and Mid-Metro 4. These programs encourage businesses within the affected areas to reach out to new and existing customers while providing information, including directions and promotional offers. The participation and effectiveness of these programs will be monitored periodically through the current and subsequent business surveys.

Economic Results

The following lists the current activities to date:

- Presented to MoDOT Connections Committee regarding the approach for the economic assessment, the draft business survey, and data collection plan.
- Inventoried published economic, demographic and fiscal data sources.
- Collected available published economic and demographic data.
- Met with MERIC for special zip-code-level industry employment, wage and establishment data tabulations, and have agreed upon a data-sharing agreement.
- Created the Business Survey and posted the Survey on-line.
- Worked with local and regional economic development/business organizations to distribute survey.
- Began identifying specific firms and organizations for focused, in-depth longitudinal surveys and interviews.

The next two sub-sections describe the key results of this quarter in more detail.

Business Survey

The Online Business Survey was reviewed by MoDOT, the Connections Committee, RCGA, Heartland Market Research, and others before being finalized and activated on Monday February 18th. The three distinct focus areas of the first business survey were commuting, transportation/shipping costs, and

visitation. The survey's questions were directed at the conditions just prior to the closure and the changes following the initial closure of the Western portion of I-64. Arrangements were made with local organizations to facilitate a greater number of responses. The survey was distributed to over 6,000 member business establishments via e-mail and newsletters with reminder notices urging members to participate in the online business survey. The contributing organizations are: St. Louis Regional Chamber & Growth Association (RCGA), Regional Business Council (RBC), Downtown St. Louis Partnership, Civic Progress, the St. Louis County Economic Council (SLCEC), and assorted local chambers of commerce.

Business Survey – Selected Preliminary Results
(as of 2/28/08)

Total Distributed	6,000+
Total Responses	101
Respondent location *(based on zip code, reported by 75%)*	
City of St. Louis	50%
St. Louis County	33%
Immediate I-64 region	17%
Satisfaction w/ MoDOT execution of project	
Very satisfied	60%
Satisfied	37%
Dissatisfied	3%
Very dissatisfied	0%

The table at right summarizes some key initial statistics related to the business survey. As the table indicates 97 percent of respondents with an opinion were either satisfied or very satisfied thus far with the closure of the western portion of I-64. The current closing date for this first business survey is Thursday March 13th, 2008. A copy of the current on-line survey can be found in Appendix C.

Business Survey Next Steps:
Hard copies of the Business Survey will soon be distributed to the Forest Park Chamber so that smaller businesses will have an opportunity to participate in the survey and their responses will be entered into the survey database. Full survey response results will be assessed after March 14 and presented in upcoming progress reports. To the extent possible, the results will be compared to published economic and fiscal data indicators.

Economic and Fiscal Data Analysis

The purpose of the published data collection is to track economic indicators over the course of the I-64 Reconstruction Project and establish an economic baseline of current conditions in a manner consistent with the previous MERIC April 2006 Pre-Construction Analysis[1]. The starting point for data collection was to review the data sources from the 2006 Pre-Construction analysis, and catalogue other Federal, State, County, City, and private-sector data resources. The core economic and demographic concepts selected are: employment, labor force, population, real estate trends for commercial and retail, taxable sales, and other related metrics. The main selection criteria for each data series was the frequency of publication, time lag, availability, and level of detail. The industrial and geographic detail were considered crucial as businesses will respond differently to changes in the road network based on their proximity to I-64 and the industry reliance on transportation. Based on a thorough inventory analysis of available data resources and feedback from MoDOT and MERIC, the data indicators shown in the table below have been selected to measure economic conditions before, during and after I-64 reconstruction:

Summary of Proposed Economic Statistics

Statistic	Source	Reported Interval	Reporting Lag	Geographical Unit	Level Of Detail
Employment, Wages, Establishments	MERIC	quarterly, monthly	3 mos	Zip Code, County, City	2-digit NAICS
Unemployment Rate	MERIC LAUS	monthly	3 mos	County, City	Aggregate
Population	Census	annual	2006 data	County, MSA, Census Tract	Aggregate
Taxable Sales	MoDOR	quarterly	3 mos	Zip Code, City, County	Zip Code, SIC code
Property Assessment & Tax Paid	St. Louis County MoDOR	annual	3 mos	County	Res, Non-Res, & parcel
Property Value	Assessor's office (City of StL)	odd yrs	2 yrs	City	Res & Commercial
Building Permit Volume	NAHB	annual	1 yr	MSA	Single family, multifamily
Household Information	FFIEC	annual	3 yrs+	Census Tract	Median inc, Owner Occp,
Real Estate: Comm'l and Retail	TWR	quarterly	3 - 6 mos	Corridor, Zip Code	Industrial, Office, Comm'l

[1] *"Interstate 64 Business Climate Report Pre-Construction Analysis"*

To gauge the impacts from I-64 reconstruction, comparisons will be made based on: a) time series trends (before, during, after); b) county-level economic trends; and c) metropolitan area and U.S.-level macroeconomic conditions. Wherever possible, the data is collected at the zip code level and aggregated to create the following regions: the impacted sections of the I-64 corridor, St. Louis County, and St. Louis City. Detailed descriptions of each series are discussed below:

Employment, Wage, and Establishment Statistics
The "Quarterly Census of Employment and Wages" (QCEW) dataset is compiled by MERIC covering employment, wages, and the number of establishments by industry. It is publicly available at the county level. Specific to this evaluation study and the need to track sub-county corridor-level conditions, the research team has reached agreement with MERIC to create custom tabulations of the QCEW at the zip-code level for the two-digit NAICS industries. The standard QCEW has few data suppressions at both the City and County level. The most recent release for both St. Louis County and St. Louis City is the Second Quarter of 2007.

Unemployment Rate, Labor Force
MERIC's Local Area Unemployment Statistics (LAUS) covers labor force and subsequent unemployment rates for each county, city, and MSA within the state. These estimates are derived from historical data, the CES program, and the Unemployment Insurance System (UI). The data is reported monthly for all geographical areas including the U.S. as a whole. The last reported month was November 2007. The LAUS dataset is preferred to National data sources, as MERIC reports this information directly to the Bureau of Labor Statistics (BLS) for their unemployment estimates.

Population
The population estimates program by the U.S. Census Bureau publishes demographic data for the nation, state, cities, and towns. Estimates for the total population are available for both the City and County up to 2006; these estimates were released in March 2007. The reference date for all census estimates is always July 1st. Census population data and estimates are the most commonly cited and available demographic data for the US. With each new July 1st release, the Census Bureau revises previous historical estimates. The population data to date has been collected.

Taxable Sales
Missouri Department of Revenue (MoDOR) reports Quarterly Taxable Sales by zip code (currently available up to and including the third quarter of 2007) and is a particularly good data source to track consumer/retail spending and overall economic activity at a detailed geographic level. The Taxable Sales by City dataset also separates taxable sales for each individual industry via the Standard Industrial Codes (SIC). Since 1997, most have adopted the North American Industrial Classification System (NAICS) classifications for reporting business related economic data, which will present a minor challenge as MoDOR's data is still tabulated using the older SIC classifications. Comparing the taxable sales data by zip code with the geographic detail will allow us to see the direct sales impacts on the I-64 Corridor.

Real Estate: Property Assessment, and Taxes
The "I-64 Business Climate Report: Pre-Construction Analysis" used a custom tabulation provided by the Torto Wheaton Research Group (TWR). TWR data included annual estimates for industrial building gross rental asking, availability, net absorption, and stock for St. Louis City, St. Louis County, and the I-64 Corridor. The TWR data is a fee-based service and HDR is determining the number of custom data updates that will be required. Alternative and supplemental data sources start with the City of St. Louis Assessor's office, which assesses city property every other year. At the national level, the National Association of Homebuilders (NAHB) reports the volume of building permits for single and multi family units. Additionally, the City and County Department of Revenue (DOR) respond to specialized data

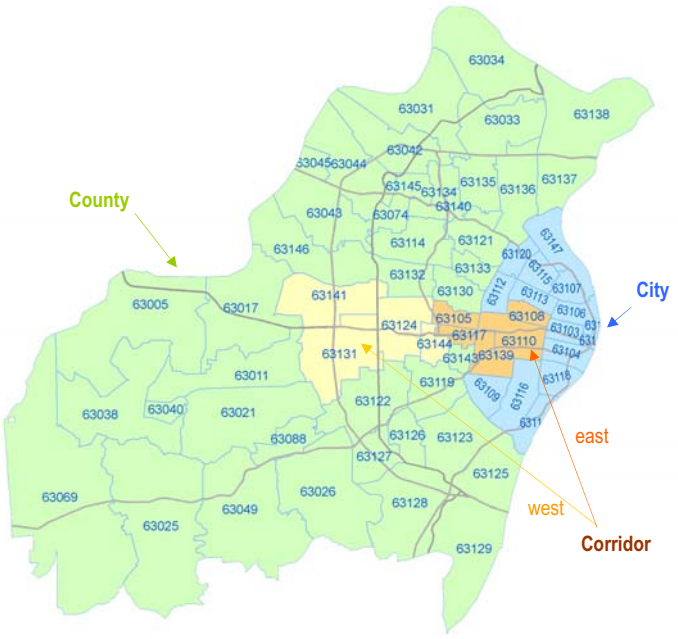
requests. Lastly, the St. Louis County Department of Revenue and Assessor's office reports and collects property assessments by each individual parcel.

Household information:
Timely data to track housing sales and prices at the county and sub-county level is not readily available. The following data sources could be used but all present limitations:

- The Federal Financial Institutions Examination Council (FFIEC) collects and reports general information on median family income and population by census tract for each MSA. The data for 2007 is estimated from 2003 data and is reported once every three years; thus, the major disadvantage of this dataset is the reporting lag and the lag period for the underlying data that drives these estimates.
- The Census Bureau's American Community Survey (ACS) has similar demographic and household data estimates for 2006, but at the county and city level. The ACS data can supplement intermittent releases of the FFIEC.
- The National Association of Realtors provides more frequent data on median home prices, but at the metropolitan statistical area level (for St. Louis that means multiple counties in Missouri and Illinois) and are thus not particularly useful for this evaluation.

Geographic Area:
Once the index of available data sources was created, the geographic study area was defined. Based on the available data, the research team determined that the analysis will be from the "bottom up" using detailed zip-code-level data to create the I-64 corridor. The map at right illustrates the zip code definitions for each region, including those composing the I-64 Corridor.

Zip Code Definitions for Study Regions



Economic and Fiscal Data Analysis, Next Steps:
Starting this summer, MERIC will provide the zip code level economic data and thus the baseline will be constructed from the point where MERIC's Pre-Construction analysis left off (the first quarter of 2005), continuing forward throughout the reconstruction period. The economic indicators will be standardized to create periodic quarterly updates tracking conditions from pre-construction through completion.

Conclusion

The Business survey was successful in soliciting responses from the local community and interim results verify that a majority of businesses are satisfied with MoDOT's initial performance during the I-64 closure. In addition, the sources of published economic data have been determined for collection throughout the project along with the necessary agreements with MERIC to produce a custom data set at the zip code level for the economic analysis. Future reports will include a detailed analysis of the first business survey and preliminary analysis of the published economic data.

5. I-64 Traffic Response

I-64 Traffic Response Highlights

Major Goals – I-64 Traffic Response Assessment

Assess benefit/cost of the current I-64 Traffic Response deployment (arterials)

Assess value of continuing future arterial highway service patrol efforts

Develop white paper that provides a sustainable approach to consideration of future arterial highway service patrols

The main highlight for this quarter was the development and distribution of the I-64 Traffic Response survey instrument (see Appendix A) that is provided during each assist performed. This survey instrument will provide information from motorists receiving these services, including information on location, response/wait time, services provided, the professionalism with which services were provided, and the user opinion on the value of the services. Additional questions on the I-64 project were also included to help gauge users' opinions on the I-64 project and to connect these services with the I-64 project. The survey form identifies the sponsors, and provides information on the regional traveler information systems (511 and Gateway Guide). Thirty-eight (38) completed surveys were received during the first two months.

I-64 Traffic Response Objectives and Methods

This assessment will utilize information collected from transportation users, I-64 Traffic Response/ Motorist Assist staff, previous research/study efforts, and the mobility assessment component to establish the benefit/cost of the program. This information will then be used to forecast future value of continuing regional arterial highway service patrol efforts. The assessment will explore the following potential expanded arterial highway service patrol alternatives:

- Expanded services only during major or roadway closure construction activities
- Continuous services along major regional arterial corridors
- Limited-response services along major arterial corridors by expanding the region's Motorist Assist Program and the utilization of the region's integrated management and operation system

A white paper will be developed by June 2009 that will outline a sustainable approach regarding when regional arterial highway patrol services should be considered. This deliverable will provide the region the time necessary to fund and implement desired recommendations.

I-64 Traffic Response Results

MoDOT performs service patrol activities where operators travel busy highways and provide assistance at incident sites for stranded motorists and crashes. By quickly helping to resolve problems, this program increases the safety and mobility of all motorists in the area. MoDOT 's Motorist Assist program concentrates on the interstates, and I-64 Traffic Response sponsored by St. Louis County covers major arterial roads such as Manchester Road and Olive Boulevard. Starting on January 2, 2008 – the day of the closure – these programs' operators began distributing surveys to those they assisted to obtain feedback about operator performance, and as another method to learn how the closure is impacting motorists. Responses indicate that motorists are very satisfied with operator performance, and their closure responses were similar to those obtained in the web and mail studies. Specifically, 89 percent were satisfied with the decision to close parts of I-64 for two years instead of taking six to eight years to otherwise finish reconstruction. Likewise, 89 percent of the respondents were also satisfied with how well they were managing to move around the St. Louis area since the closure. The distribution and receipt of surveys will continue throughout the study period with monthly and quarterly updates being made.