Final

Golden 1 Center

Year One Travel Monitoring Report

October 2017

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Prepared for:

City of SACRAMENTO

Department of Public Works

SACRAMENTO KINGS

Sacramento Downtown Arena, LLC

EXECUTIVE SUMMARY

This report compares travel conditions during major events at Golden 1 Center against various performance standards established in the *Revised Golden 1 Center Event Transportation Management Plan* (TMP) (September 2016), which was part of the mitigation measures required for the project, as identified in the *ESC Draft EIR* (2013).

Data Collection

The following events were selected for monitoring:

- Professional Bull Riders (PBR) Event on Saturday, January 28, 2017
- Sacramento Kings Game on Wednesday, February 8, 2017
- Bruno Mars Concert on Tuesday, July 18, 2017

These three events provide a representative sample of different attendee types, weather conditions, and overall operations at Golden 1 Center. Although specific attendance totals were not known, each qualified as a major event given attendance was well above 10,000 persons.

An online survey was developed and emailed to all season ticket members and single-game ticket buyers who purchased a ticket for the February 8, 2017 Kings game.

Traffic Data Collection Results

The peak hour of the February 8th Kings game occurred from 6:00 to 7:00 PM, in which 60 percent of 6:00 to 8:00 PM peak period arrival occurred. Vehicle arrivals to the July 18th Bruno Mars Concert were relatively constant between 6:00 and 7:30 PM, with each 15-minute increment ranging from 11.9 to 13.3 percent of the total 2¼-hour count period. During each event's busiest 30 minutes, the Kings Game and Bruno Mars Concert accommodated 31 percent and 30 percent, respectively, of the total two-hour peak period arrival demand. Therefore, while it was believed that the Kings game would have a more 'peaky' arrival than the concert, this turned out not to be the case.

At the point in time in which it was 15 minutes before each event was scheduled to start, 79 percent of all attendees to the Bruno Mars Concert were already inside the building or within the pedestrian plaza, as compared to 65 percent of Kings game attendees. Thus, the Kings game exhibited a slightly more 'late arriving crowd' when compared to the Bruno Mars concert.

Parking was geographically dispersed surrounding Golden 1 Center during the February 8, 2017 Kings game with 30 percent to the east, 29 percent to the south, 25 percent to the north, and 16 percent to the west.

Kings Game Attendee Survey Results

The online survey was completed by 484 season ticket members and 163 single-game buyers. When the number of seats per email address and proportion of season ticket versus single-game seats is considered, the population sampling ratio was 9 percent for season ticket members and 7 percent for single-game buyers.

Table ES-1 displays the arrival travel mode for attendees who purchased tickets for the February 8th Kings game. It is likely that the mode split was affected by weather conditions, which were cold and rainy.

TABLE ES-1
MODE SPLIT FOR SACRAMENTO KINGS GAME ATTENDEES

Arrival Travel Mode	Percentage
Private Vehicle	77%
Light Rail	11%
Transportation Network Company (Uber/Lyft)	9%
Walk	2%
Bus	1%
Bicycle	0%
Taxi	0%
Limo	0%
Paratransit	0%

Notes:
Responses rounded to the nearest 1%.
Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017.

The following key findings were obtained from the survey results:

- The vast majority of attendee trips (88 percent) originated from home. The most commonly cited trip origin ZIP codes were associated with the following neighborhoods: Pocket, La Riviera / Rosemont, Carmichael, East Elk Grove, Rancho Cordova, South Natomas, Florin, Land Park, Downtown Sacramento, and Folsom.
- When asked to rate their overall travel experience to and from Golden 1 Center, 54 percent selected 'very good', 34 percent selected 'good', 10 percent selected 'ok', and 2 percent selected 'bad or very bad'.
- Nearly half of all respondents (46 percent) who arrived by private vehicle indicated using the I-5 off-ramps (either NB or SB) at J Street to access parking near Golden 1 Center.

- As expected, attendees rated pre-event congestion in the vicinity of Golden 1 Center as generally better than post-event congestion. When rating pre-event traffic conditions, 63 percent selected 'little congestion', while only 44 percent made this selection for post-event conditions.
- Of those attendees that used light rail, the majority (56 percent) used the Gold Line from Sunrise/Folsom versus the other two inbound lines. Season ticket members were more likely to ride light rail (14 percent) than single-game buyers (5 percent). Those that took light rail provided high marks in terms of safety, convenience, and overall value of their ride.
- Most Transportation Network Company (TNC) trips (i.e., Uber or Lyft) originated from home, which was a ZIP code within three miles of Golden 1 Center (with exception of the Pocket area). When compared to the overall sample, a greater percentage of attendees who used a TNC indicated that they would visit a restaurant, bar, or retail use before/after the event. The most common reasons cited for using a TNC were their convenience and low cost.
- Parking location showed statistically significant effects on perceived traffic congestion prior to and after events at Golden 1 Center. Much of this correlation can be attributed to positive pre-event perceptions of traffic congestion (i.e., little or no congestion) by attendees who parked north of J Street and east of 7th Street, and negative perceptions of post-event traffic congestion (i.e., moderate or severe congestion) by attendees who parked east of 7th Street between J and L Streets.
- Of those that had attended 11 or more games, 66 percent reported experiencing little congestion prior to the event. In contrast, only 54 percent of those who had attended 10 games or less reported experiencing little congestion. This suggests correlation between frequency of games attended and perceptions of pre-event traffic congestion.

Evaluation of Performance Standards

Table ES-2 summarizes the seven applicable performance standards from page 50 of the TMP. This table discusses the extent to which the project met each standard for the monitored events. As shown, three of the seven applicable standards (vehicle queuing on City Streets, Pedestrian Flows, and Truck Staging) were not fully met. It is noted that the City has taken a number of actions since the first two events were monitored in January and February 2017 including: improved signal timings, better light rail train detection, coordination with DOCO East parking garage operator, and more effective operation of the 7th Street/L Street intersection) to improve traffic conditions. During the pre-event peak hour, the gateway streets to Golden 1 Center carried eight percent more traffic during Bruno Mars concert versus the Kings game, and yet overall congestion was noticeably reduced.

Comparison with *ESC Draft EIR* (2013)

Table 15 of this report compares relevant results (e.g., mode choice, vehicle occupancy, arrival percentages, directionality of trips, use of pedestrian linkages, etc.) from this monitoring study against estimates from the *ESC Draft EIR*. Based on the actual traffic characteristics and volumes observed during the February 8th Kings game, it is apparent that the travel behavior estimates developed for Golden 1 Center in the *ESC Draft EIR* were reasonable (if not slightly conservative) and led to an accurate assessment of the project's transportation impacts and required mitigations.

TABLE ES-2: EVALUATION OF PERFORMANCE STANDARDS

Performance Standard	Evaluation
1. Vehicle Queuing on City Streets (Pre-Event): Traffic on eastbound J Street does not spill back to the J Street/3rd Street/I-5 off-ramps intersection (due to downstream bottlenecks).	**Standard Partially Met** Traffic frequently spilled back into this intersection during the PBR Event and Kings game, though queuing was not observed to affect the I-5 mainline. During the Bruno Mars Concert, queuing was less intense and conditions were similar to weekday morning traffic entering downtown.
2. Pedestrian Flows (Pre-Event): Pedestrians do not spill out of sidewalks onto streets with moving vehicles, or out of crosswalks when crossing the street (except where streets are purposely closed for enhanced pedestrian use).	**Standard Mostly Met** There were no observed occurrences of pedestrians spilling out of sidewalks onto streets with moving vehicles. However, on several occasions, vehicles blocking intersection crosswalks forced pedestrians to walk outside of marked crosswalks. Widening crosswalks or changing intersection signal timings would not solve problem as issue relates to driver behavior.
3. Bicycle Parking (Pre-Event): Signage is clearly visible to direct bicyclists to Golden 1 Center event bicycle parking, which has an adequate supply to accommodate a typical Golden 1 Center event.	**Standard Met** Permanent bicycle wayfinding signage is present throughout the downtown area to direct bicyclists to the Golden 1 Center vicinity. Permanent bicycle parking facilities located near the east and southwest entrances to G1C were sparsely used during all three events.
4. Traffic Control Equipment Set Up (Pre-Event): For weeknight events, the timing of traffic control equipment set up minimizes impacts to the 4:00 PM to 6:00 PM evening peak commute period.	**Standard Met** For evening Kings games, traffic control equipment is dropped at intersections in the early afternoon and set up in the early evening, with minimal effects on commute traffic. Street closures normally go into effect one hour prior to the start of the basketball game.
5. Light Rail Transit Access (Post-Event): The following are recommended: a) 7th Street is closed between J and L Street to vehicular traffic; b) The Gold and Blue line (to CRC) trains are loaded from different stations, and c) The first 'outbound' post-event trains have sufficient capacity to meet demand.	**Standard Met** 7th Street is closed to vehicular traffic between J and L Streets after major events and vehicles exiting the DOCO East garage are directed to Merchant Alley. RT advertises recommended departure stations (online and via static signs at stations as shown in Image 6). RT has increased the frequency and length of trains to meet the demand.

TABLE ES-2: EVALUATION OF PERFORMANCE STANDARDS	
Performance Standard	**Evaluation**
6. Buses (Pre-Event and Post-Event): If required, buses are permitted to travel north via either 3rd Street or 5th Street to reach J Street.	**Standard Met** All motorists are permitted to travel northbound on 3rd Street from L to J Street during Pre-Event and Post-Event conditions. Buses are permitted to travel north on 5th Street between L and J Streets when it is closed during events.
7. Truck Staging (Throughout): Delivery trucks associated with special events are not permitted to park or idle along the project's L Street frontage, disrupt traffic flows, or block driveways.	**Standard Partially Met** Parked or idled delivery trucks were not observed on the project's L Street frontage during any events. However, trucks and concert tour buses were observed to line the east side of 5th Street between L and J Streets prior to and during the Bruno Mars Concert (see Image 7). However, they were not observed to disrupt traffic flows or block access to other driveways.

I. INTRODUCTION

This report compares travel conditions during major events at Golden 1 Center against various performance standards established in the *Revised Golden 1 Center Event Transportation Management Plan* (TMP) (September 2016). This report is organized into the following chapters:

- Chapter II – Traffic and Pedestrian Data Collection
- Chapter III – Detailed Analysis of Traffic and Pedestrian Data
- Chapter IV – Evaluation of Performance Standards
- Chapter V – Golden 1 Center Event Attendee Survey
- Chapter VI – Comparisons with ESC Draft EIR Estimates

Purpose

This report presents a robust data collection effort that addresses the extent to which the project meets each of the seven performance standards contained in the TMP. These performance standards were identified as part of the mitigation measures required for the project, as identified in the *ESC Draft EIR* (EIR) (2013).

This report also provides reviewers with substantial new information regarding travel behavior at Golden 1 Center, including traffic and pedestrian flows, demand for parking, mode choice, and arrival patterns, as well as results of a travel behavior survey of Sacramento Kings basketball game attendees. This data will allow the City and Golden 1 Center Operator to further enhance operations and the patron event experience.

Overview of Monitoring Activities

Pages 51 and 52 of the TMP describe the recommended monitoring of typical events during the first year of operations. A meeting was held on January 10, 2017 that included staff representing City of Sacramento, the Golden 1 Center Operator, Fehr & Peers, and ESA (EIR preparer). That meeting led to a revised approach for first year monitoring, as compared to the monitoring set forth in the TMP. The following monitoring activities were selected:

- *One typical mid-season (i.e., January or February) Kings game*. By waiting until mid-season, this approach enables travel patterns and behavior to "normalize" so that a representative sample is collected. It also allows for the benefits of the initial event monitoring and any associated TMP refinements to take effect.

- *One typical non-basketball major event (defined as having attendance of at least 10,000 persons) during winter months*. This event should occur after the initial event TMP refinements take effect.

- *One major concert event (defined as having attendance of at least 10,000 persons) during summer months.* This event should occur after the initial event TMP refinements take effect, and during warmer weather conditions, which may affect mode choice.

The TMP had called for monitoring of two Kings games and two concerts. However, during the January 10, 2017 meeting, attendees concluded that given the regularity of Kings games and predictability of travel conditions, only a single basketball game would be necessary to understand and quantify travel behavior. Attendees believed that travel characteristics are more likely to vary between concerts and other events, which led to the selection of the other two event types.

During the January 10, 2017 meeting, the following events were selected for monitoring:

- Professional Bull Riders (PBR) Event on Saturday, January 28, 2017
- Sacramento Kings Game on Wednesday, February 8, 2017
- Bruno Mars Concert on Tuesday, July 18, 2017

These three events, which provide a representative sample of operating conditions at Golden 1 Center, are measured against the TMP Performance Standards. Although specific attendance totals were not known, each qualified as a major event given attendance was well above 10,000 persons.

Overview of Kings Game Attendee Surveys

Page 52 of the TMP describes the type of surveying of Golden 1 Center employees and attendees that should be conducted for the Year One Travel Monitoring Report. The monitoring methods and populations of interest were discussed during the January 10, 2017 meeting. Due to concerns about substantial cost and effort associated with in-person surveying of attendees at multiple Kings games, the following alternative strategy was chosen:

- An online survey was developed and emailed to all season ticket members and single-game ticket buyers who purchased a ticket for the February 8, 2017 Kings game.

Although the TMP had also identified surveys of Golden 1 Center employees, there was agreement at the January 10, 2017 meeting that such a survey would be unnecessary, as it would provide little insight into overall Golden 1 Center travel characteristics.

II. TRAFFIC AND PEDESTRIAN DATA COLLECTION

This chapter documents traffic volume, pedestrian flow, and other data collected during each of the three monitoring events in 2017.

Mode Split

Prior to presenting data collected for each travel mode, it is valuable to understand the mode choice characteristics of Golden 1 Center attendees. Table 1 displays the arrival travel mode for attendees who purchased tickets for the February 8th Kings game. While comparable data was not collected for concerts or major non-basketball events, the relative proportions are anticipated to be similar. This data is important because it helps the reader understand why subsequent chapters spend more time analyzing one mode of travel versus another.

TABLE 1
MODE SPLIT FOR SACRAMENTO KINGS GAME ATTENDEES

Arrival Travel Mode	Percentage
Private Vehicle	77%
Light Rail	11%
Transportation Network Company (Uber/Lyft)	9%
Walk	2%
Bus	1%
Bicycle	0%
Taxi	0%
Limo	0%
Paratransit	0%

Notes:
Responses rounded to the nearest 1%.
Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.

Traffic Data Collection

Peak period pre-event traffic counts were collected at the following intersections for all three events. These intersections were selected because they are the primary access points to the site and/or key intersections within the site:

1. J Street/3rd Street
2. J Street/5th Street
3. J Street/7th Street
4. L Street/5th Street
5. L Street/7th Street
6. Capitol Mall/4th Street
7. Capitol Mall/5th Street

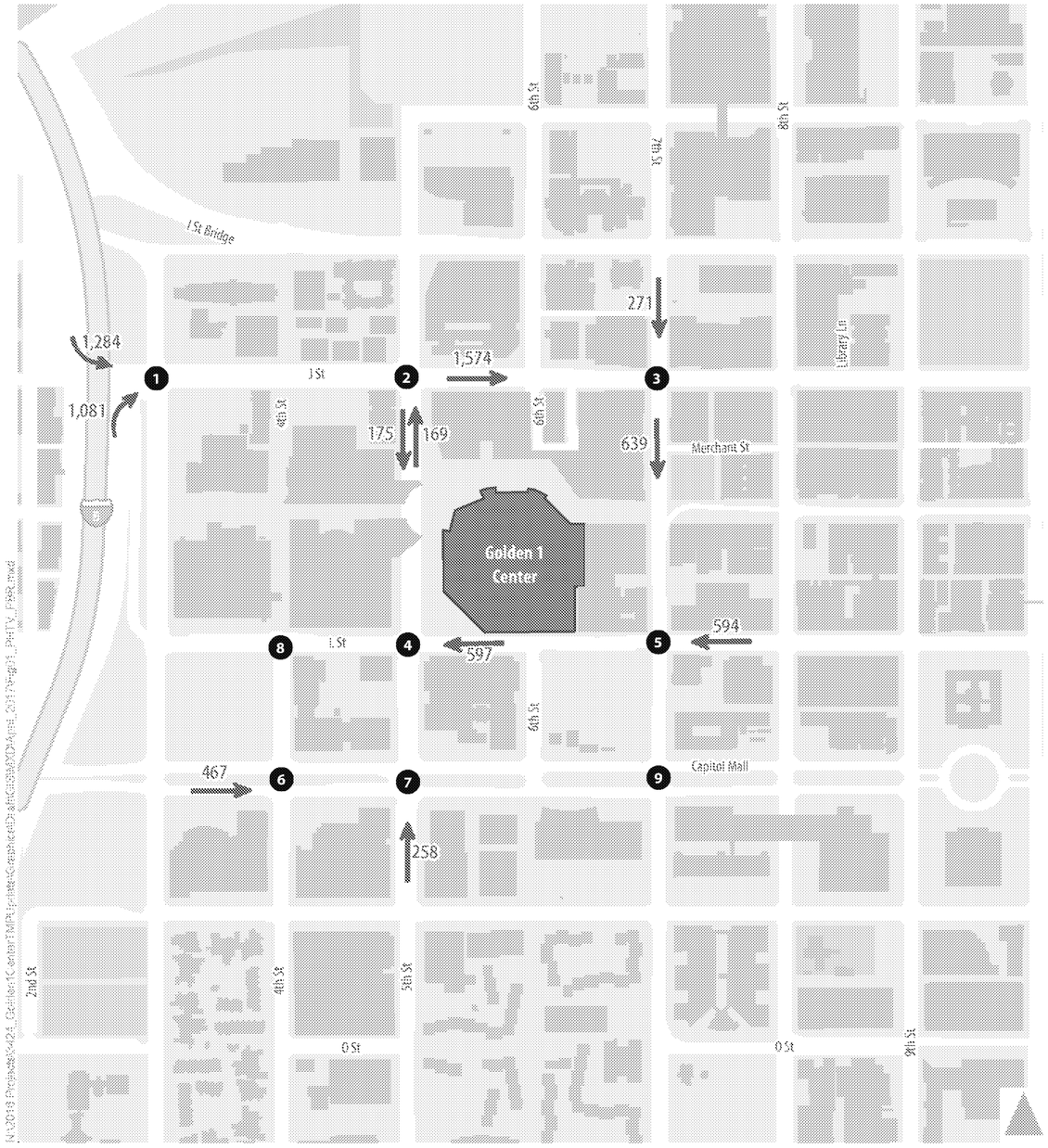
The PBR Event began at 6:45 PM. Therefore, counts were conducted from 5:15 to 7:15 PM. Since the Kings Game started at 7:30 PM, counts were conducted from 6:00 to 8:00 PM. The Bruno Mars concert was scheduled to begin at 8:00 PM. Accordingly, counts were conducted from 6:00 to 8:15 PM.

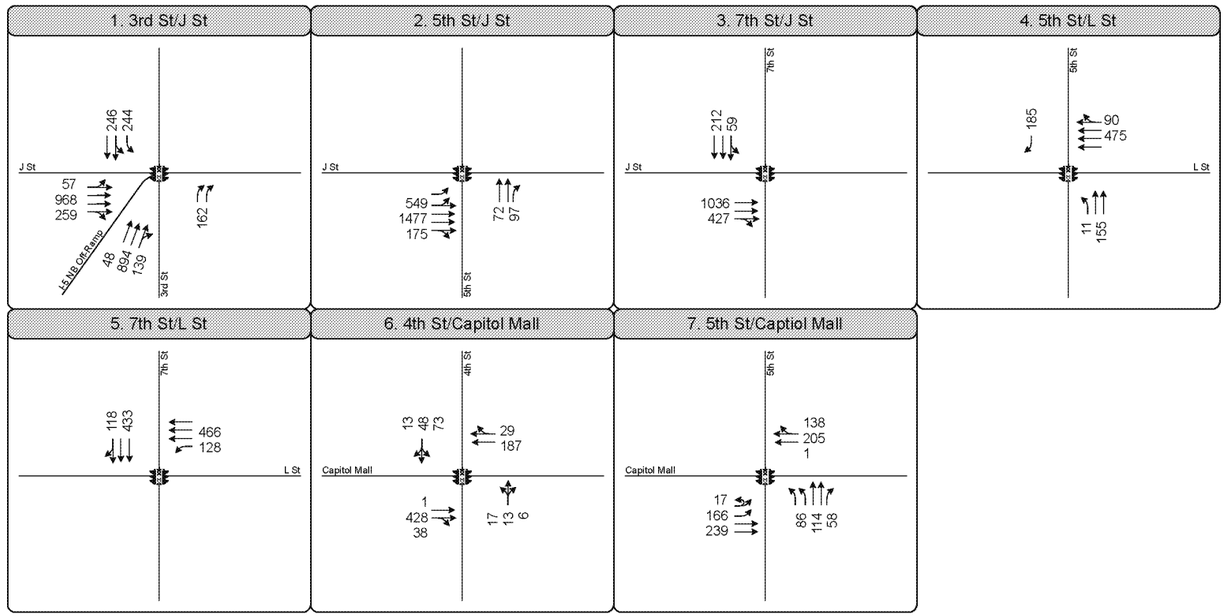
Figure 1 displays peak hour traffic volumes at the study intersections during the PBR Event. Although the majority of intersections had a peak hour of 5:15 to 6:15 PM before roadway closures were implemented at approximately 6:15 PM (as noted on Figure 1), some variation did occur based on intersection location and congestion. The volumes shown on Figure 1 represent the peak hour of travel at each individual intersection.

Figure 2 displays peak hour traffic volumes at the study intersections during the Kings game. Five of the seven study intersections had a peak hour of 6:00 to 7:00 PM, and the other two had a peak hour of 6:15 to 7:15 PM. The volumes shown on Figure 2 represent the peak hour of travel at each individual intersection.

Figure 3 displays peak hour traffic volumes at the study intersections during the Bruno Mars concert. For this event, the L Street/4th Street intersection was also counted (in anticipation of greater usage due to limousine and other drop-off activity). Additionally, the Capitol Mall/7th Street intersection was counted because it is a key component of the overall roadway network when traffic management (including street closures) is in effect. Seven of the nine study intersections had a peak hour of 6:00 to 7:00 PM, and the other two had a peak hour of 6:15 to 7:15 PM before roadway closures were implemented at approximately 7:30 PM. The volumes shown on Figure 3 represent the peak hour of travel at each individual intersection.

Chapter III provides an in-depth evaluation of this data.





1 Study Intersection

Turn Lane

Peak Hour Traffic Volume

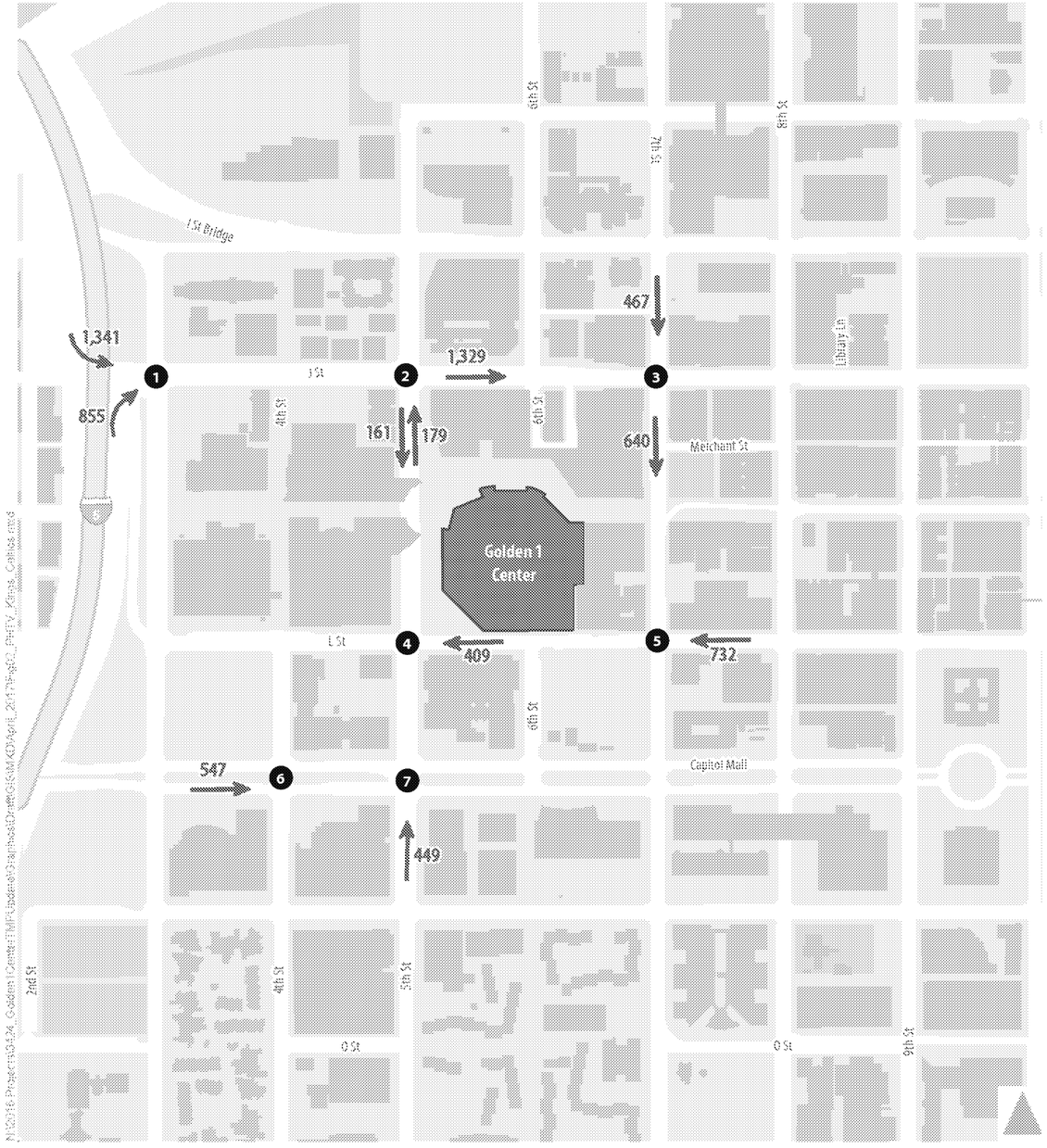
Traffic Signal

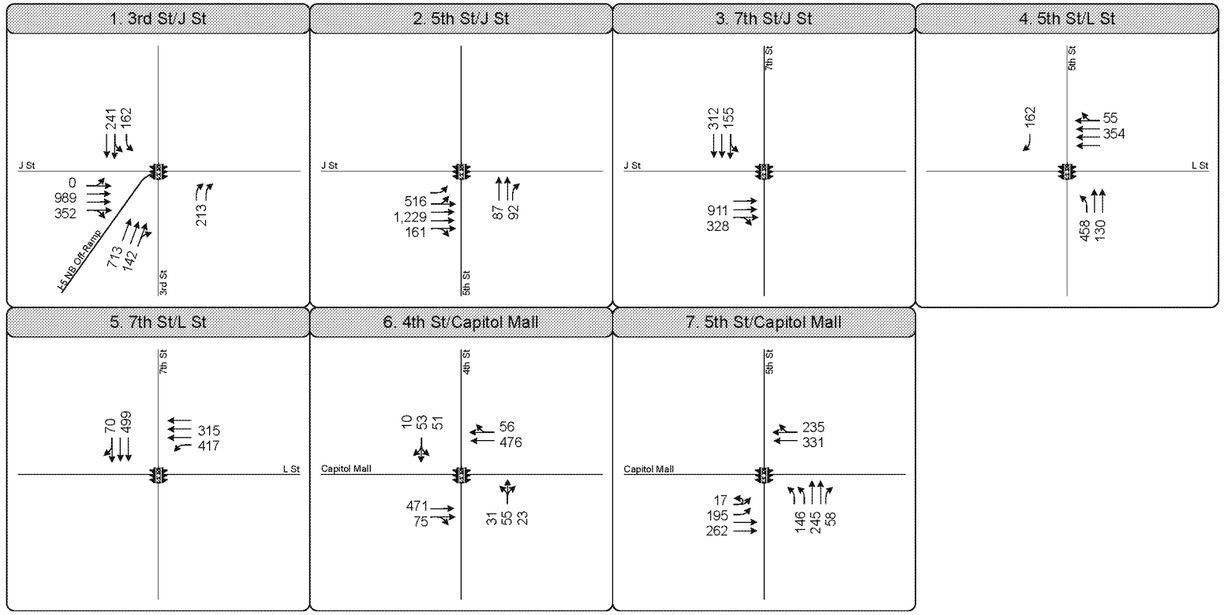
Peak Hour Roadway Segment Volume

NOTES:
1. Traffic volumes shown are peak hour volumes for each individual study intersection.
2. Traffic counts conducted from 5:15 PM to 7:15 PM on Saturday, January 28, 2017
3. Roadway closures were implemented at approximately 6:15 PM.
4. Event began at 6:45 PM.

Figure 1

Pre-Event Peak Hour Traffic Volumes and Lane Configurations -
Professional Bull Riders Event -
Saturday, January 28, 2017





1 Study Intersection

Turn Lane

Peak Hour Traffic Volume

Traffic Signal

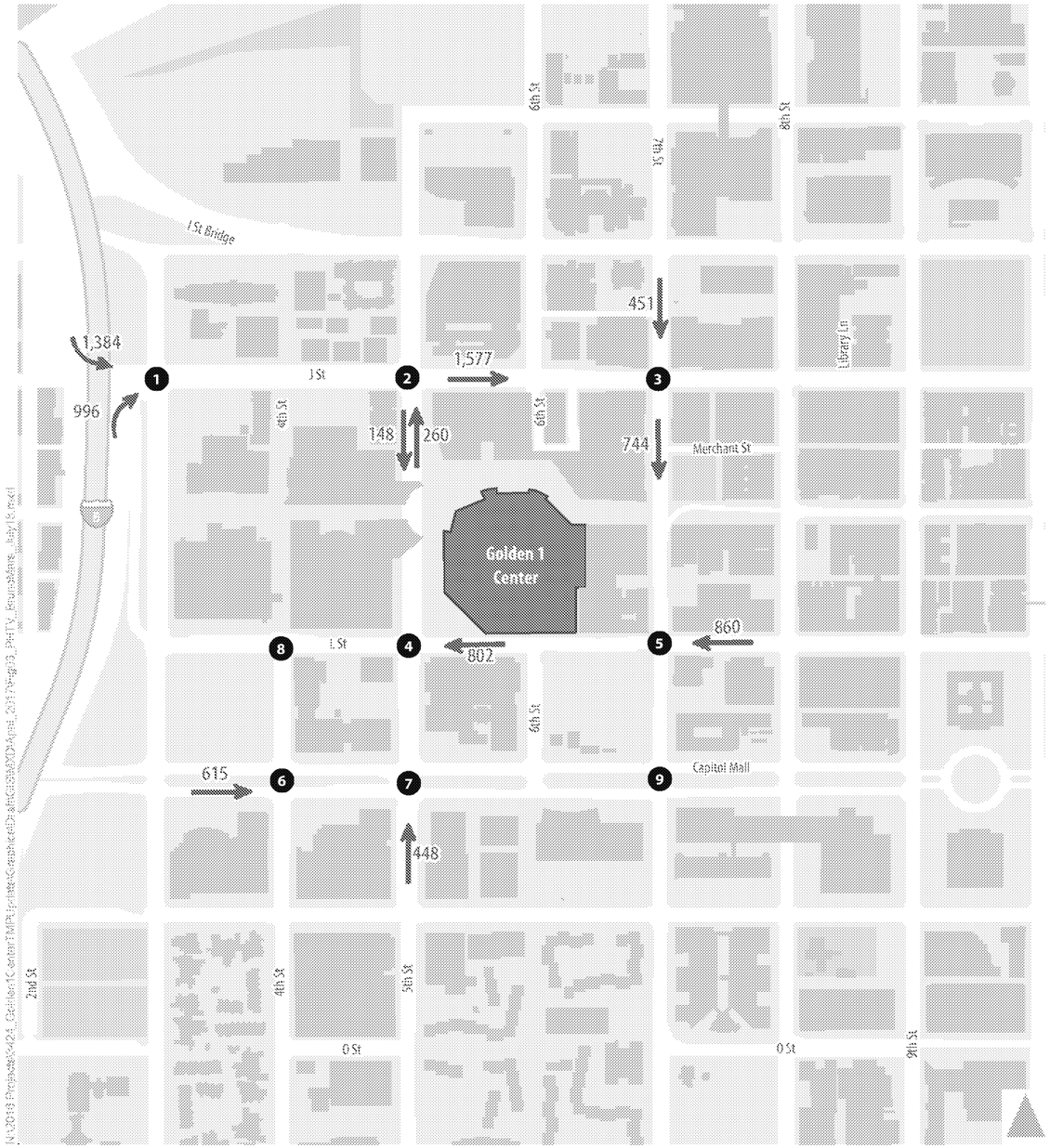
Peak Hour Roadway Segment Volume

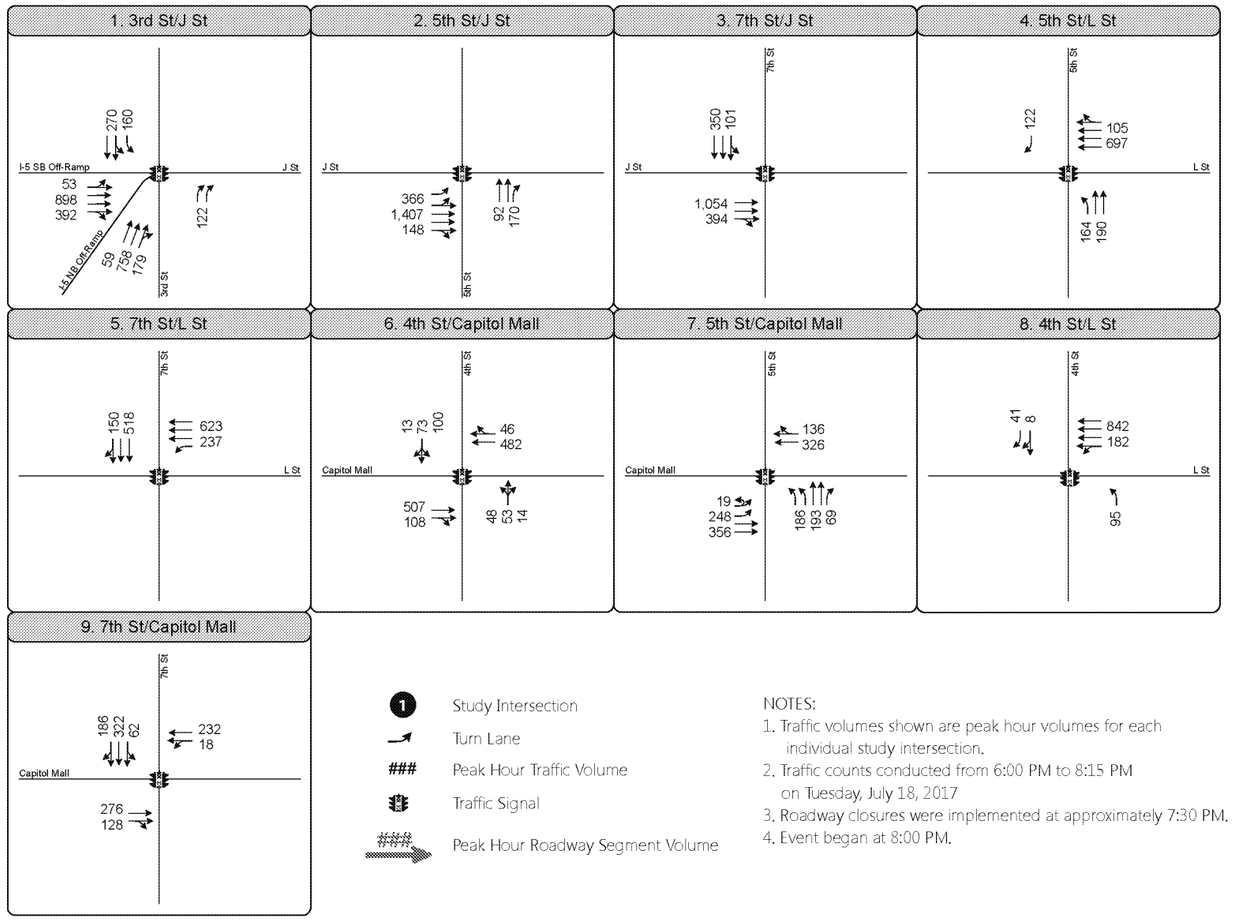
NOTES:

1. Traffic volumes shown are peak hour volumes for each individual study intersection.
2. Traffic counts conducted from 6:00 PM to 8:00 PM on Wednesday, February 8, 2017.
3. Roadway closures were implemented at approximately 6:30 PM.
4. Event began at 7:30 PM.

Figure 2

Pre-Event Peak Hour Traffic Volumes and Lane Configurations - Sacramento Kings Regular Season Home Game - Wednesday, February 8, 2017





1 Study Intersection

Turn Lane

Peak Hour Traffic Volume

Traffic Signal

Peak Hour Roadway Segment Volume

NOTES:
1. Traffic volumes shown are peak hour volumes for each individual study intersection.
2. Traffic counts conducted from 6:00 PM to 8:15 PM on Tuesday, July 18, 2017
3. Roadway closures were implemented at approximately 7:30 PM.
4. Event began at 8:00 PM.

Figure 3

Pre-Event Peak Hour Traffic Volumes and Lane Configurations - Bruno Mars Concert - Tuesday, July 18, 2017

Pedestrian Data Collection

Pre-event peak period pedestrian counts were collected at crosswalks for study intersections 1 through 7 for the first two monitored events, and included two additional intersections for the Bruno Mars Concert (4th Street/L Street and 7th Street/Capitol Mall). Additionally, pedestrian counts were conducted at the following entry/exit points to the Golden 1 Center building and/or pedestrian plaza:

- 5th Street north of L Street (including walkways on either side of 5th Street)
- 5th Street south of J Street
- K Street west of 7th Street
- VIP entry on L Street near 6th Street

Figures 4, 5, and 6 displays pedestrian volumes at study intersection crosswalks and at each Golden 1 Center building and plaza entry during the PBR Event, Kings game, and Bruno Mars Concert, respectively. Whereas traffic volumes are typically shown on an hourly basis (often for subsequent operations analysis), pedestrian flows are expressed as the total volume during each count period.

Chapter III provides an in-depth evaluation of this data.

Bicycle Data Collection

As part of the traffic counts, bicyclists traveling through study intersections were also observed. Due to cold and rainy conditions leading up the February 8th Kings Game, it was not surprising to see relatively few bicyclists. Given the nature of the PBR Event on January 28th and Bruno Mars concert on July 18th, relatively few bicyclists were observed at either event.

Light Rail Data Collection

Light rail trains operated on their normal schedules during each pre-event peak period. During post-event conditions, RT adds additional trains in peak travel directions. The number, size, and directionality of trains varies depending on the event type. Data relating to ridership levels and arrival times were not recorded, as such data does not relate specifically to any of the performance standards.

Bus and Paratransit Data Collection

Paratransit vehicles were observed dropping off passengers along L Street near 6th Street on a number of occasions, both when L Street was open and closed. This area has a designed pull-out and provides direct access to an accessible elevator. Field observations indicated that they did not have any difficulties being waved through the 7th Street/L Street intersection by traffic control officers when L Street was closed.

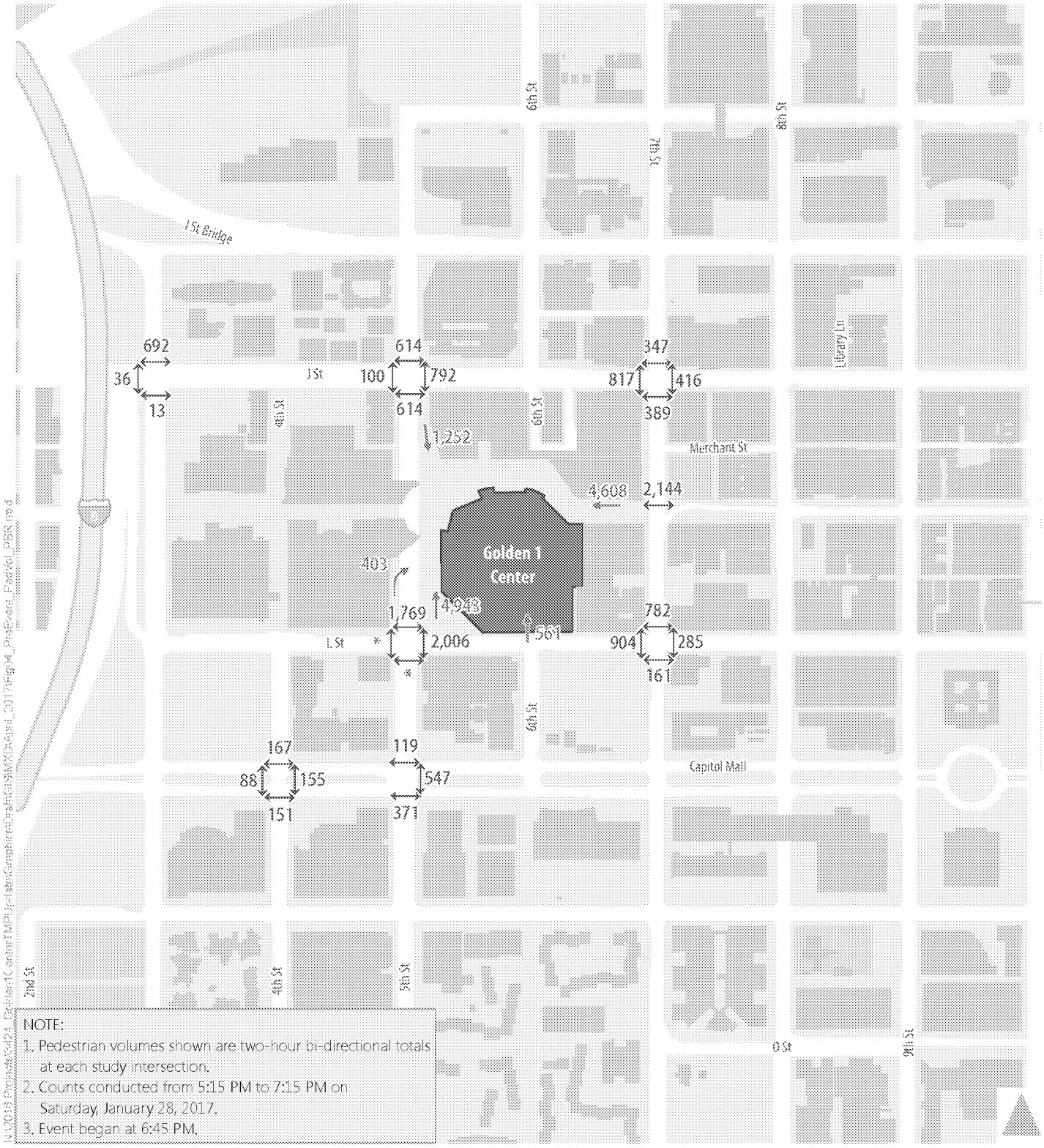


Figure 4

Pre-Event Pedestrian Volumes - Professional Bull Riders Event - Saturday, January 28, 2017

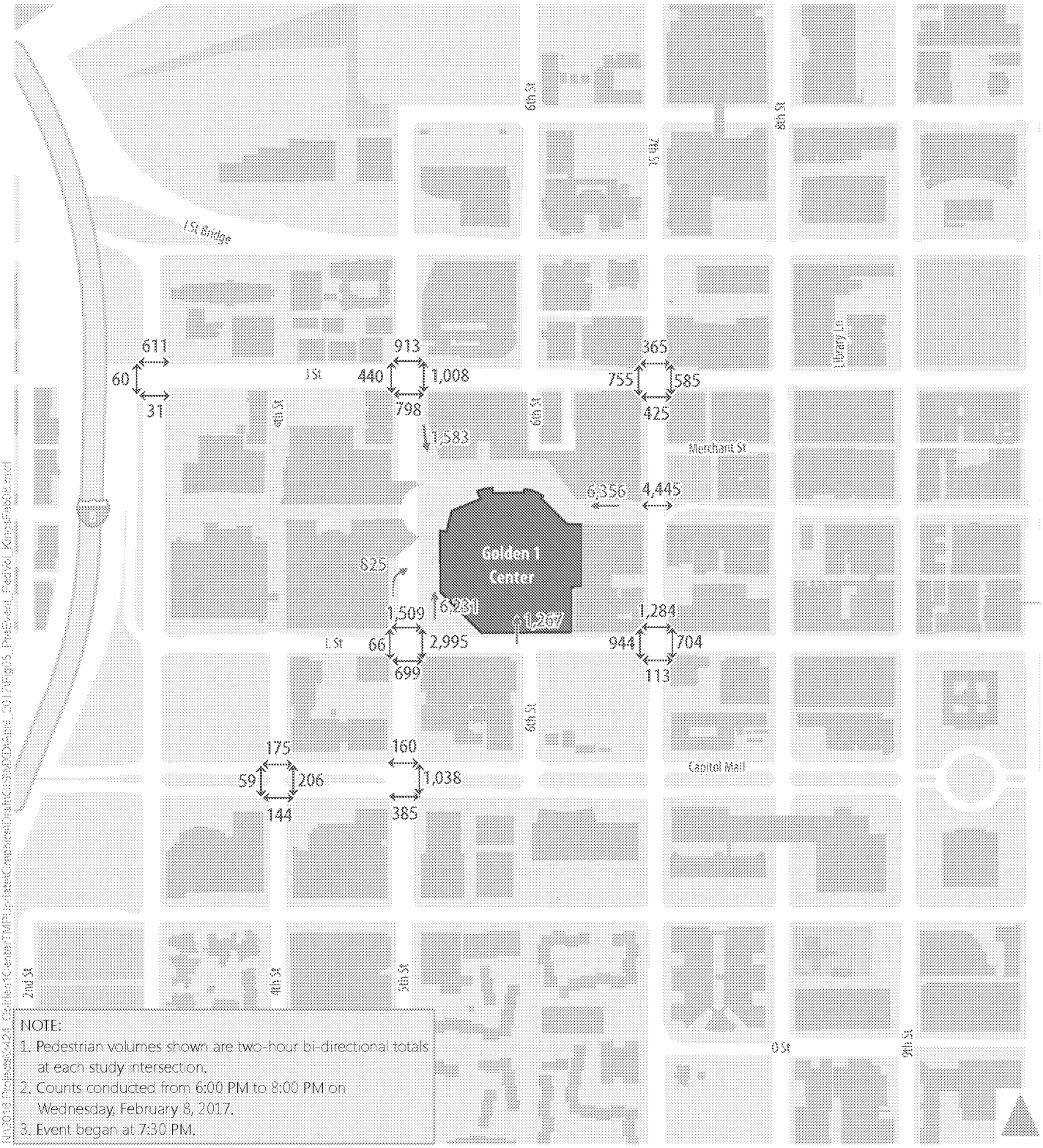
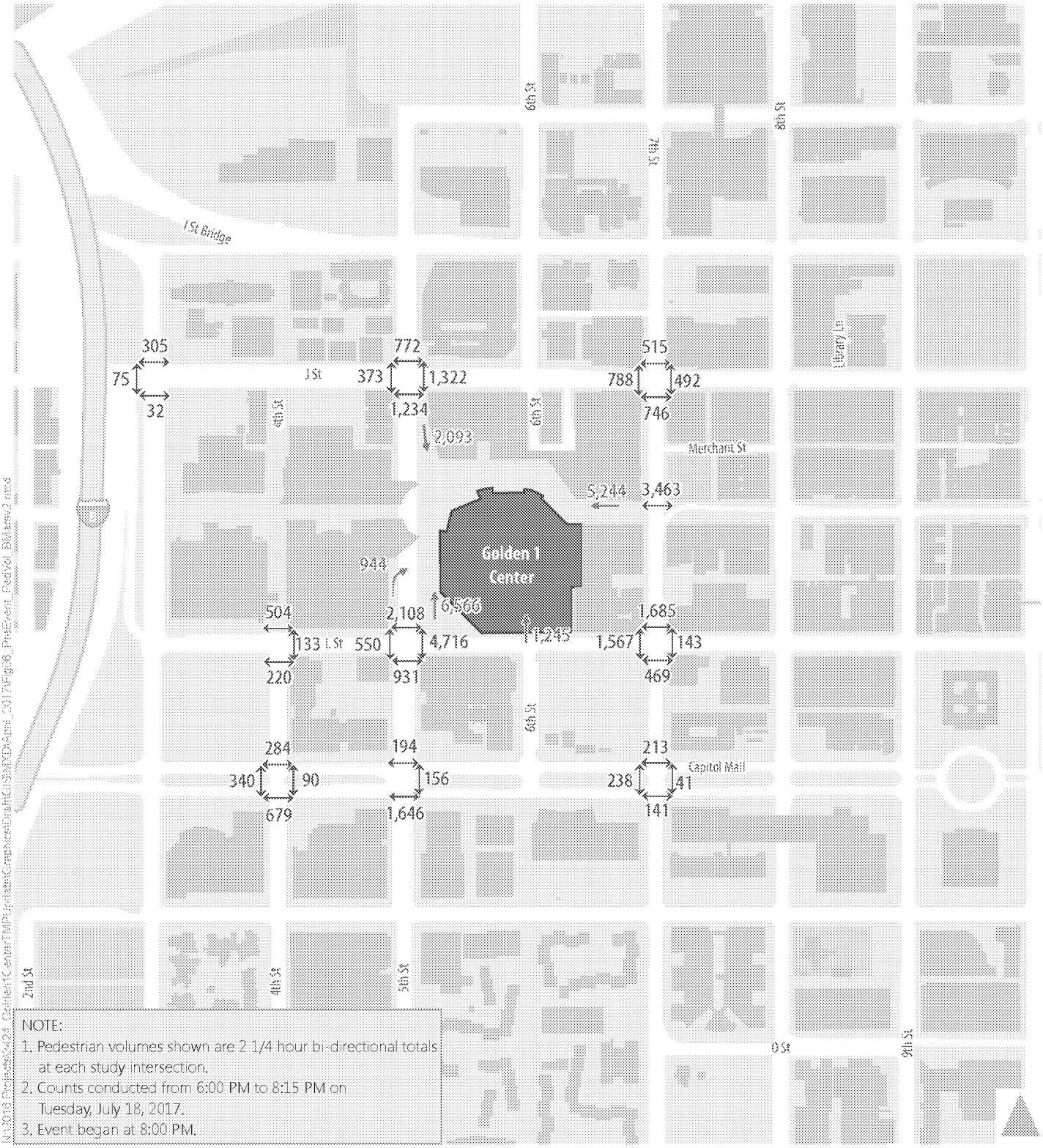


Figure 5

Pre-Event Pedestrian Volumes -
Sacramento Kings Regular Season Home Game -
Wednesday, February 8, 2017



⟷ Crosswalk Pedestrian Volume

⟿ Inbound Pedestrian Volume

Figure 6

Pre-Event Pedestrian Volumes - Bruno Mars Concert on Tuesday, July 18, 2017

TNC Data Collection

Fehr & Peers staff observed TNC drop-off activity prior to the PBR Event and Sacramento Kings game. Staff were situated at several of the primary drop-off locations to measure the number of drop-offs.

In-Person Field Observations

Fehr & Peers staff was present during pre-event conditions at all three monitored events to observe conditions. Five staff were present during the PBR event, eight staff were present during the Kings game, and two staff were present during the Bruno Mars concert. Observations focused on vehicular queuing, congestion 'hot spots', effects of garage driveway operations, timing of street closures, passenger drop-off activity, and passage of buses, paratransit, and other permitted vehicles through closed streets. This data is presented in Chapter III.

III. DETAILED ANALYSIS OF TRAFFIC AND PEDESTRIAN DATA

This chapter provides an in-depth analysis of traffic and pedestrian data collected during each event. The survey of Sacramento Kings game attendees revealed that 86 percent of attendees arrive to the facility by private vehicle. Given this mode split, an in-depth analysis of it is warranted. Since nearly all Golden 1 Center attendees walk to the building from either an adjacent parking garage/lot, light rail station, workplace, or restaurant, pedestrian travel is also studied in detail.

Detailed Analysis of Traffic Data

Chart 1 displays the percentage of arriving vehicular traffic (using the J Street, L Street, 7th Street, 5th Street, and Capitol Mall gateways) in 15-minute increments over the two-hour count window during the February 8th Kings game. It should be noted that the observed volumes also include non-event trips. As shown, the busiest 60-minute period of travel occurs from 6:00 to 7:00 PM. However, the fact that 14.4 percent of all arriving traffic occurs from 7:00 to 7:15 PM (whereas previous 15-minute interval is 14.1 percent) suggests that there is a slight surge in arrivals shortly before the game begins.

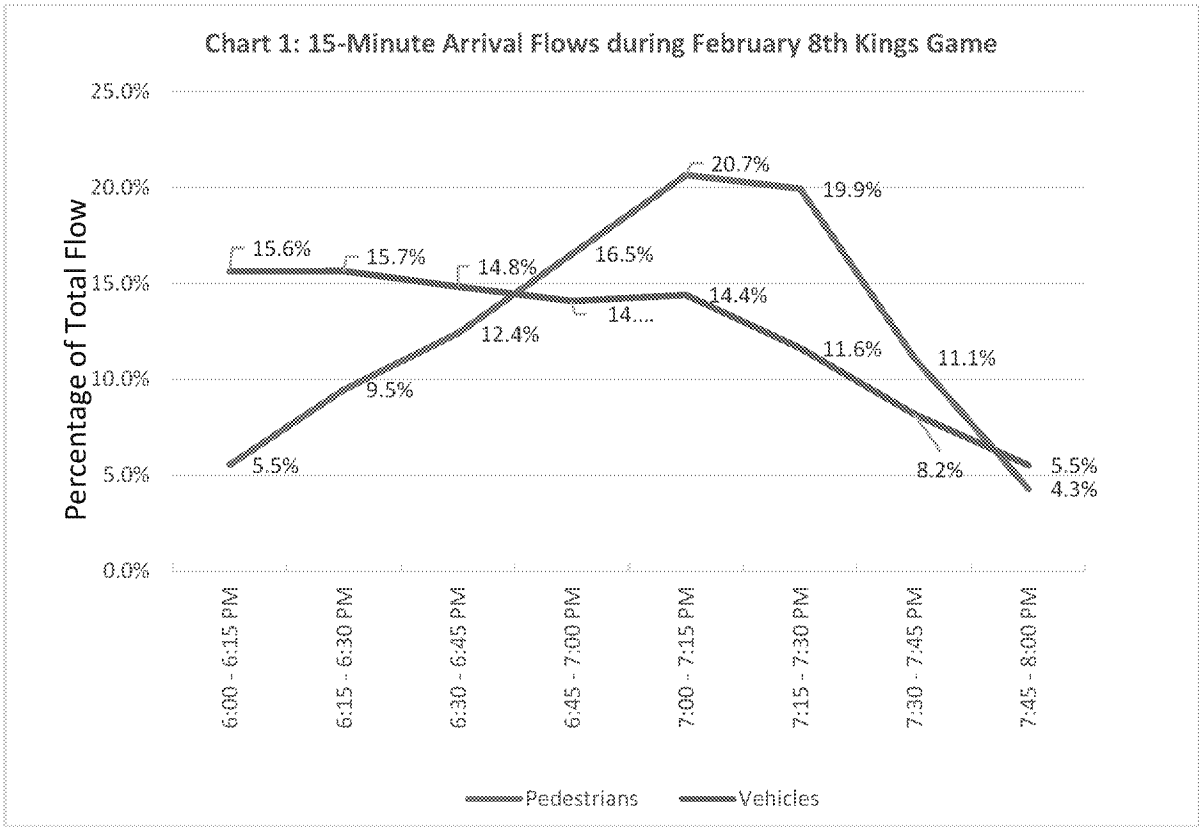
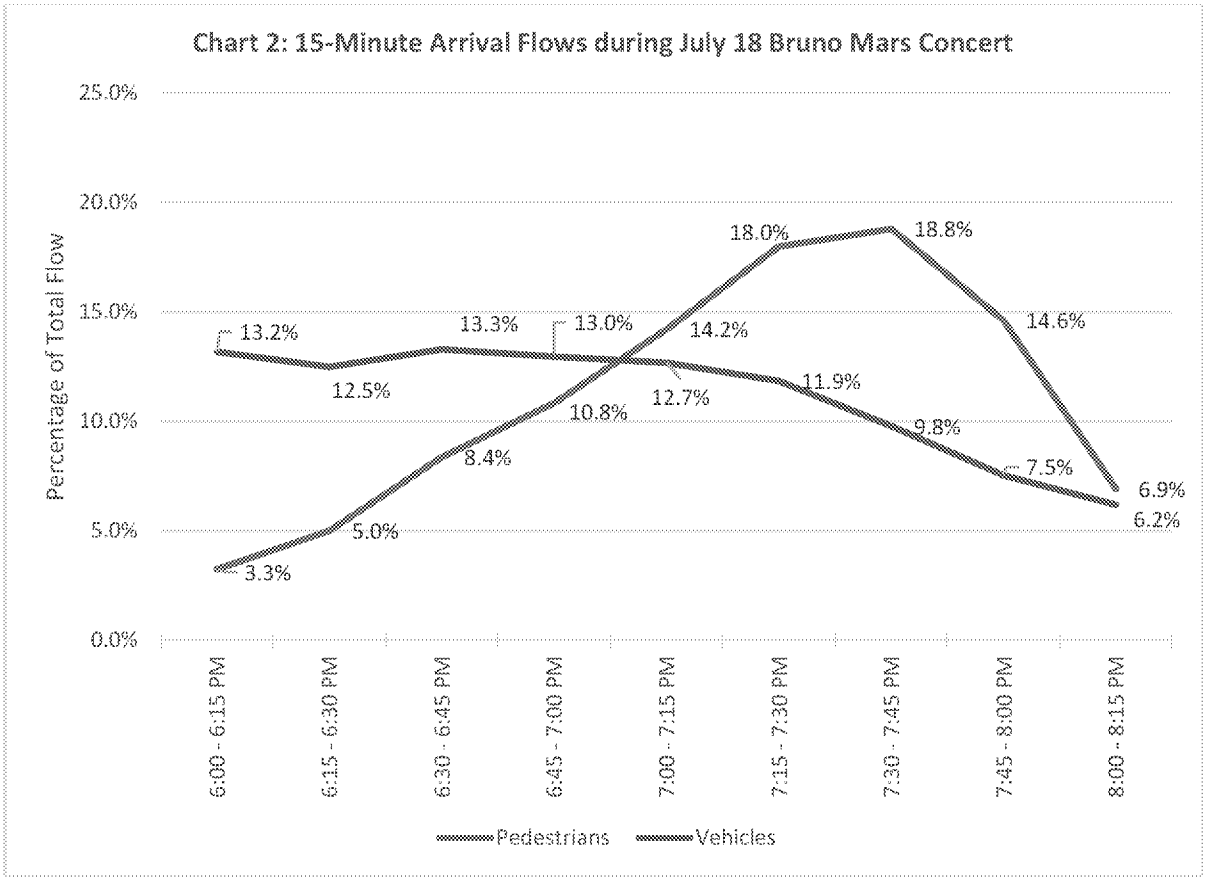


Chart 1 also shows the percentage of pedestrians that enter Golden 1 Center or the pedestrian plaza in 15-minute increments over the two-hour count window during the February 8th Kings game. This chart reveals the following key conclusions:

- Pedestrian flows show a pronounced spike between 7:00 and 7:30 PM, in which 40 percent of the total two-hour demand occurs.
- Approximately 15 percent of attendees entered the arena after the basketball game had started.

Chart 2 displays the percentage of vehicles (in 15-minute increments) entering the study area through the aforementioned gateways during the Wednesday, July 18th Bruno Mars concert. This chart also displays pedestrians arriving at the Golden 1 Center between 6:00 and 8:15 PM for the concert.



Note: Chart also includes some non-project background traffic flows.

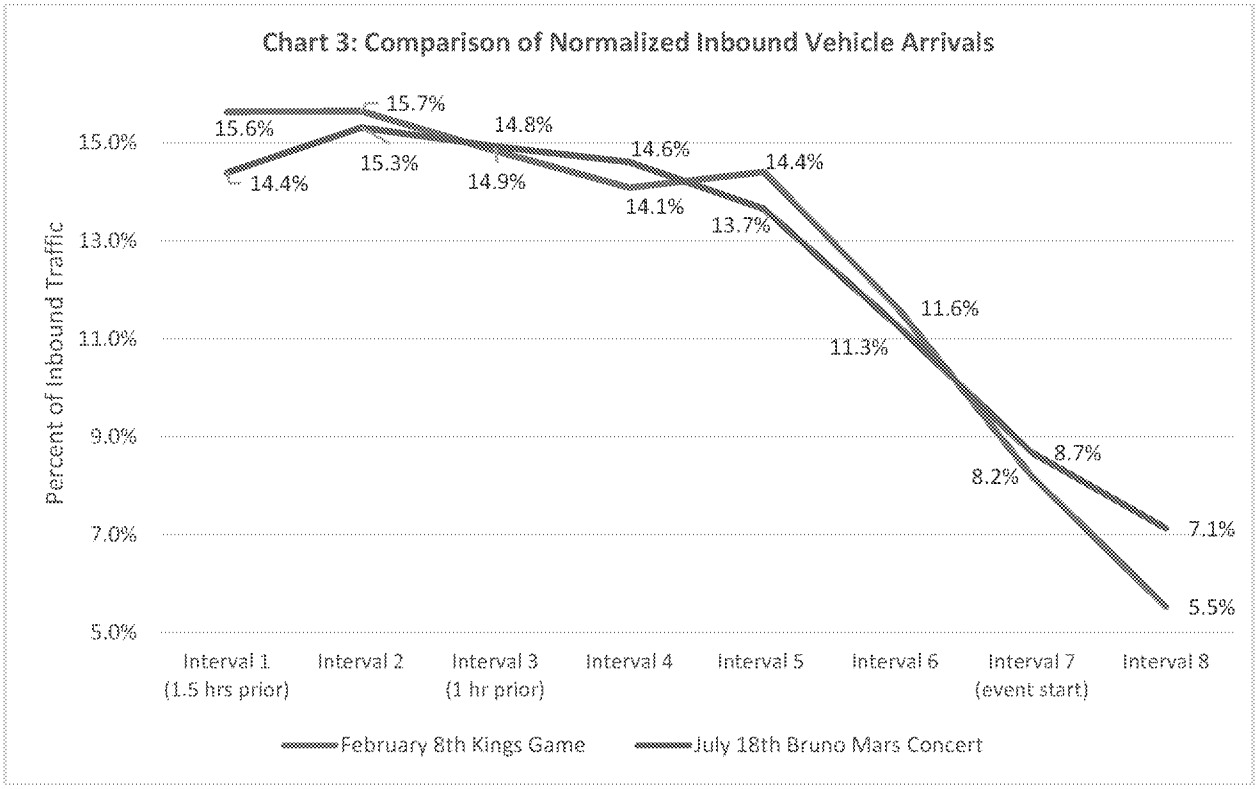
Chart 2 reveals the following:

- Vehicle arrivals were relatively constant between 6:00 and 7:30 PM, ranging from 11.9 percent to 13.3 percent of the total 2 ¼-hour flow.
- At 7:45 PM (i.e., 15 minutes prior to scheduled start), 79 percent of all attendees to the Bruno Mars Concert were already inside the building or within the pedestrian plaza. In contrast, 65 percent of Kings game attendees were inside the arena or the pedestrian plaza at 7:15 PM (i.e., 15 minutes prior to scheduled start). Whereas 15 percent of Kings game attendees entered the arena after the game started, only 6 percent of Bruno Mars Concert attendees entered the arena after the concert was scheduled to begin. In general, the Kings game exhibited a slightly more 'late arriving crowd' when compared to the Bruno Mars concert.

Chart 3 shows normalized (i.e., converted to percentages as a function of total arrival flows for each event) 15-minute vehicular arrival flows for the February 8th Kings game and the July 18th Bruno Mars Concert[1] beginning 90 minutes prior to each event and extending 30 minutes beyond the start of each event. Because the events started at different times, data is shown relative to the same increment in time relative to the event start time. This chart shows that the Kings game and Bruno Mars concert had similar vehicular arrival patterns, with steep declines starting 30 minutes before the events began.

The peak hour of the February 8th Kings game occurred from 6:00 to 7:00 PM, in which 60 percent of vehicle arrivals occurred. The peak hour of the July 18th Bruno Mars Concert also occurred from 6:00 to 7:00 PM, in which 59 percent of vehicle arrivals occurred. During each event's busiest 30 minutes, the Kings Game and Bruno Mars Concert accommodated 31 percent and 30 percent, respectively, of the total two-hour arrival demand. Therefore, while it was believed that the Kings game would have more 'peaky' arrival flows than the concert, this turned out not to be the case.

[1] The percentages in Chart 3 for the Bruno Mars concert do not match those in Chart 2 because Chart 2 represents 135 minutes while Chart 3 represents 120 minutes.



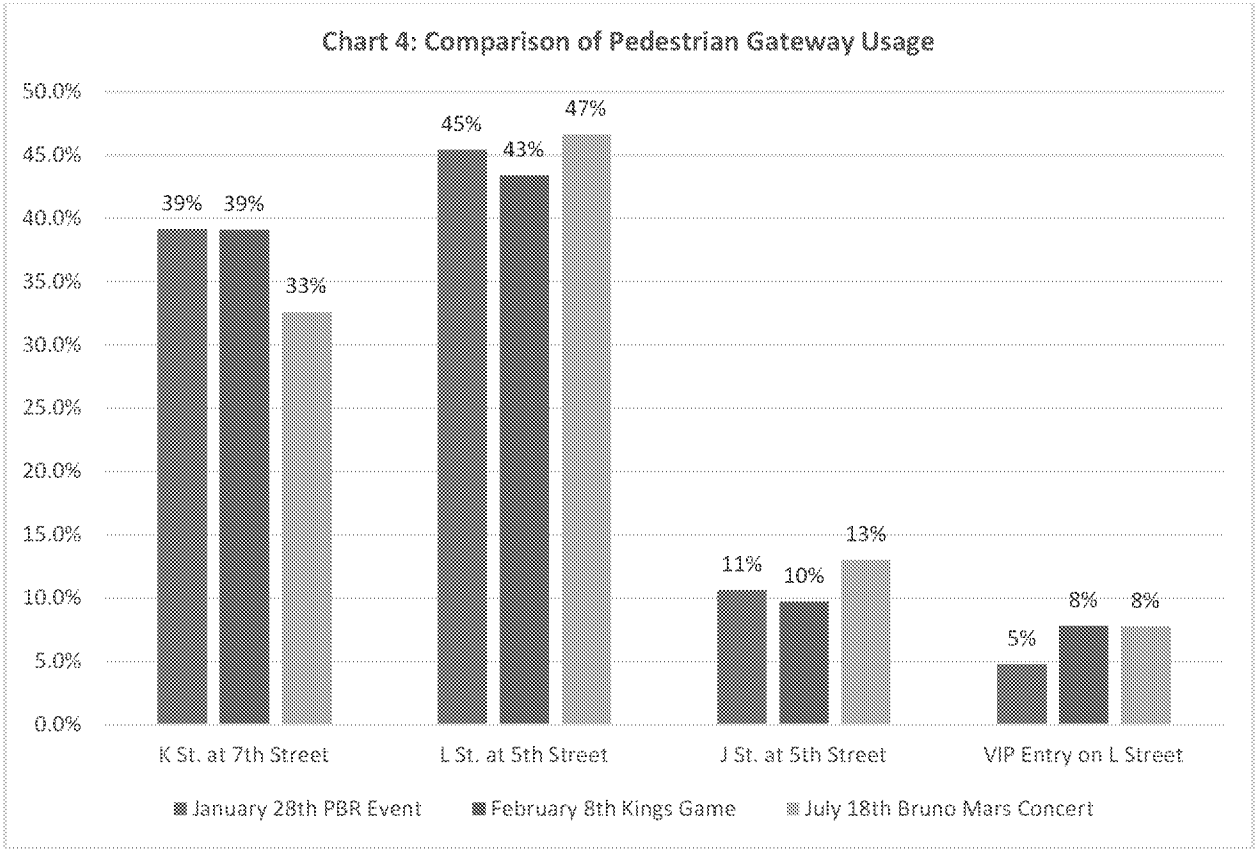
A comparison of Figures 2 and 3 reveals that the 7th Street/L Street intersection carried 17 percent more traffic during the peak hour of the Bruno Mars Concert versus the peak hour of the Kings game. Despite accommodating more traffic, field observations by Fehr & Peers staff (i.e., by staff who were present during for both events) indicated less congestion at this critical intersection during the Bruno Mars Concert. This is likely the result of the following operational improvements:

1. More efficient vehicle ingress to parking garage in the southwest quadrant of the intersection.
2. Less drop-off activity on 7th Street south of L Street (through enhanced signage and barricades).
3. Improved coning patterns on westbound L Street.

A review of pre-event peak hour traffic entering the gateway streets (i.e., J Street, 7th Street, Capitol Mall/Tower Bridge, and L Street) revealed that the Bruno Mars concert had an aggregate total entry volume that was eight percent greater than the Kings game.

Detailed Analysis of Pedestrian Data

Chart 4 shows the pedestrian volume percentages over the count period at each pedestrian gateway to Golden 1 Center for the January 28th PBR Event, the February 8th Kings game, and the July 18th Bruno Mars concert. Usage of each pedestrian access point was very similar for the PBR event and Kings game. For the Bruno Mars concert, a smaller proportion of attendees used the K Street / 7th Street entrance than those of the PBR Event and Kings game, instead shifting to the L Street / 5th Street and J Street / 5th Street entrances.



Note that Bruno Mars Concert totals to 101 percent due to rounding.

The following crosswalks received the greatest amount of utilization during the pre-event peak period of February 8th Kings game:

#1: K Street crosswalk at 7th Street: 4,445 pedestrians
#2: 5th Street crosswalk at Lth Street (east side): 2,995 pedestrians
#3: L Street crosswalk at 5th Street (north side): 1,509 pedestrians
#4: L Street crosswalk at 7th Street (north side): 1,284 pedestrians
#5: 5th Street crosswalk at Capitol Mall (east side): 1,038 pedestrians

#6: 5th Street crosswalk at J Street (east side): 1,008 pedestrians
#7: 7th Street crosswalk at L Street (west side): 944 pedestrians
#8: J Street crosswalk at 5th Street (north side): 913 pedestrians

These crosswalks also had the greatest amount of utilization for the July 18th Bruno Mars concert. It is interesting to note that none of the crosswalk volumes at the J Street/7th Street intersection ranked in the top eight. Also, Sacramento PD decided that it was preferable to close the west leg crosswalk at 5th Street/L Street as part of the pre-event street closures because pedestrians in this crosswalk were having to negotiate both northbound left-turns and southbound right-turns from 5th Street onto L Street.

As part of the street closure plan, Sacramento PD traffic control officers place signs and barricades in the crosswalk on the south leg of the 7th Street/L Street intersection to prohibit its use. This is necessary to allow for efficient movement of the heavy westbound L Street to southbound 7th Street traffic flow, which would otherwise conflict with this pedestrian movement. Data from the traffic counts suggests good compliance with the crosswalk with only five pedestrians using the closed crosswalk during the PBR Event and 20 pedestrians using the closed crosswalk during the Kings game. This crosswalk was closed between 7:45 and 8:15 PM for the Bruno Mars Concert and was used by only five persons during that time.

Detailed Analysis of TNC Activity

During the pre-event peak period prior to the February 8th Kings Game, staff from Fehr & Peers was positioned in various areas near Golden 1 Center to record TNC drop-offs. Figure 7 illustrates the observed drop-off activity. Of the 214 observed drop-offs, 85 (or 41 percent) occurred in the vicinity of 5th Street/ L Street. About 40 percent of all drop-offs occurred on J Street either at the designated drop-off area on the north side of J Street west of 5th Street, in the cul-de-sac area on 4th Street just south of J Street or near J Street/7th Street intersection.

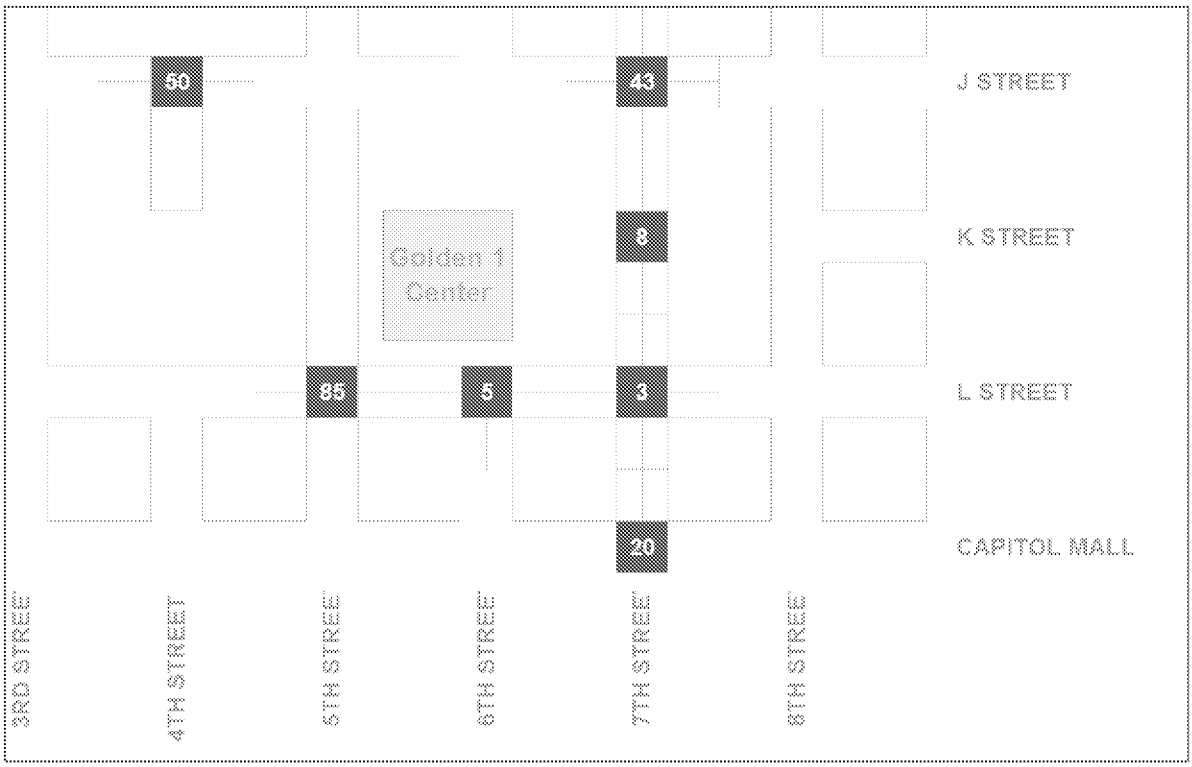


Figure 7: Illustration of TNC drop-offs in vicinity of Golden 1 Center prior to February 8th Kings Game

According to Table 1, nine percent of Kings game attendees used a TNC to arrive to Golden 1 Center. As is presented later, an average of 2.4 persons per vehicle were dropped-off by each TNC. This suggests about 650 individual TNC drop-offs for a sold-out 17,500 person game. Despite having a half dozen staff on hand to observe all quadrants surrounding Golden 1 Center, Fehr & Peers staff was able to observe only about one-third of this total. This suggests that some TNC drop-offs likely occurred not in close proximity to the building, but one or two blocks away. This also suggests that observing TNC activity can be very challenging given how quickly passengers can disembark (i.e., no money changes hands).

Detailed Analysis of Post-Event Traffic Data

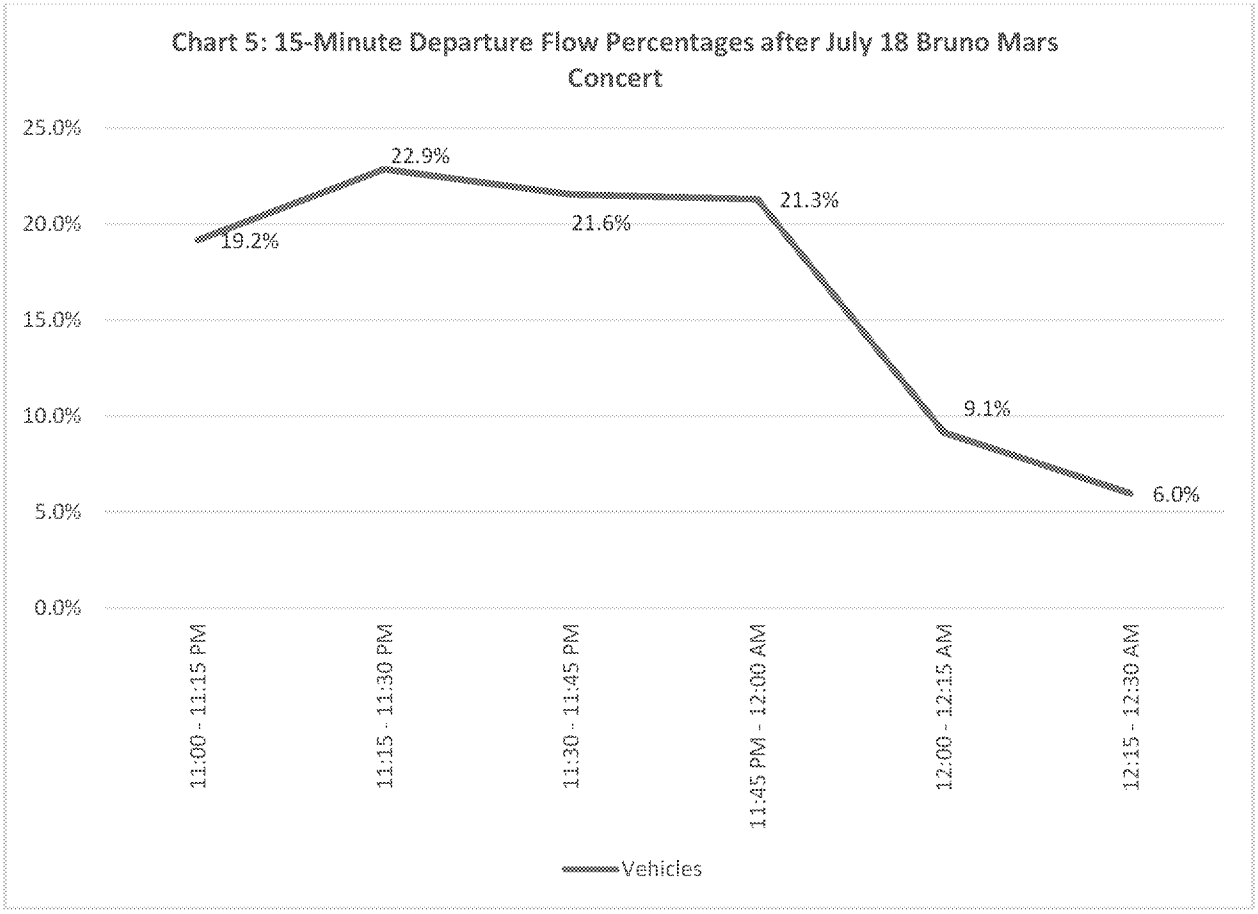
Intersection turning movement volumes were collected between 11 PM and 12:30 AM at the Bruno Mars Concert on July 18th, which ended at approximately 11 PM.

Chart 5 shows the proportion of traffic passing through the following external gateways during each 15-minute interval of this 90 minute period. Although this is not a comprehensive list of all outbound gateways, it nevertheless includes many of the more frequently used gateways and therefore provides

valuable insight into post-event temporal travel patterns. Over this 90-minute period, a total of 3,568 vehicles were observed using these external gateways.

1. Westbound L Street departing 4th Street (i.e., to access I-5, Tower Bridge, etc.)
2. Eastbound J Street departing 7th Street (i.e., to access SR 160 and Midtown)
3. Eastbound Capitol Mall departing 7th Street (i.e., to access multiple destinations)
4. Southbound 7th Street departing Capitol Mall (i.e., to access W-X freeway)

Chart 5 shows that the outbound gateways carried between 19 and 23 percent of the total observed outbound volume during each of the four 15-minute increments between 11 PM and midnight. After midnight, traffic flows dramatically decreased. This would suggest that the parking garages and streets did not fully empty for about one hour after the event concluded. This likely represents a more lengthy and congested departure period when compared to a Kings game because most concert attendees chose to stay until the show concludes. In contrast, basketball game attendees, some of which are repeat guests, may choose to leave early if the game is one-sided or 'to beat the traffic'.



IV. EVALUATION OF PERFORMANCE STANDARDS

This chapter evaluates the extent to which major events at Golden 1 Center met the seven applicable performance standards described in the TMP.

Evaluation of Performance Standards

Table 2 summarizes the seven applicable performance standards from page 50 of the TMP. This table discusses the extent to which the project met each standard for the monitored events.

TABLE 2
EVALUATION OF PERFORMANCE STANDARDS

Performance Standard	Evaluation
1. Vehicle Queuing on City Streets (Pre-Event): Traffic on eastbound J Street does not spill back to the J Street/3rd Street/I-5 off-ramps intersection (due to downstream bottlenecks).	**Standard Partially Met** Traffic spilled back into this intersection during a number of occasions during the PBR Event and Kings game (see image 1 for illustration). Although traffic also spilled back during the Bruno Mars Concert, the frequency and severity of spillbacks was reduced. Image 2 shows queuing on the NB off-ramp, while image 3 shows no queuing on the SB off-ramp (at 7:26 PM during the evening of the Bruno Mars Concert). Queuing was not observed to affect the I-5 mainline, and City staff monitored operations and modified green time allocation at the J Street/3rd Street/I-5 NB and SB off-ramps intersection to accommodate peak surges. During the Bruno Mars Concert, observed conditions were similar to what occurs weekday mornings as traffic enters downtown.
2. Pedestrian Flows (Pre-Event): Pedestrians do not spill out of sidewalks onto streets with moving vehicles, or out of crosswalks when crossing the street (except where streets are purposely closed for enhanced pedestrian use).	**Standard Mostly Met** There were no observed occurrences of pedestrians spilling out of sidewalks onto streets with moving vehicles.[2] However, on several occasions, pedestrians crossing open streets were forced to walk outside of marked crosswalks (see image 4). This most commonly occurred at the J Street/4th Street and J Street/7th Street due to vehicles blocking intersections. Similar conditions occur during weekday peak hours. Widening crosswalks or changing intersection signal timings would not solve problem as the issue relates to driver behavior.

[2] Fehr & Peers staff were near Golden 1 Center during the Twenty One Pilots Concert on February 11, 2017. Image 5 shows fans lining L Street (east of 5th Street) at approximately 6 PM waiting to enter the building for the advertised 7 PM start time. As shown, L Street was still open to traffic at this time. Due to the wide sidewalk width, fans did not spill out into the travel lanes.

TABLE 2
EVALUATION OF PERFORMANCE STANDARDS

Performance Standard	Evaluation
3. Bicycle Parking (Pre-Event): Signage is clearly visible to direct bicyclists to Golden 1 Center event bicycle parking, which has an adequate supply to accommodate a typical Golden 1 Center event.	**Standard Met** Permanent bicycle wayfinding signage is present throughout the downtown area to direct bicyclists to the Golden 1 Center vicinity. Permanent bicycle parking facilities located near the east and southwest entrances to G1C were sparsely occupied during all three events (and bicycle valet at Cesar Chavez Park was not in operation).
4. Traffic Control Equipment Set Up (Pre-Event): For weeknight events, the timing of traffic control equipment set up minimizes impacts to the 4:00 PM to 6:00 PM evening peak commute period. Equipment set up procedures adhere to the following guidelines: a) Equipment set up begins no earlier than 5:30 PM b) Hard street closures are not in place until after 6:00 PM c) Equipment set up is complete at least one hour before event start time (e.g. by 6:30 PM for a 7:30 PM event start time)	**Standard Met** For evening Kings games, traffic control equipment is dropped at intersections in the early afternoon. Sacramento PD staff begins to position equipment in the early evening, with minimal effects on weekday evening commute traffic. Street closures normally go into effect one hour prior to the start of the basketball game (i.e., at 6:30 PM for a 7:30 PM start). Sacramento PD has evolved the traffic management plan (TMP) to delay street closures until necessary (realizing that premature closures can cause streets to become congestion). Street closures began at 7:30 PM for the Bruno Mars Concert, which began at 8 PM.
5. Light Rail Transit Access (Post-Event): The following are recommended: a) 7th Street is closed between J Street and L Street to vehicular traffic. Vehicles exiting the DOCO East garage to Merchant Alley are prohibited from blocking the LRT travel lane on 7th Street. b) The Gold line and Blue line (to Cosumnes River College) trains are loaded from different stations (i.e., the Gold line would load at 7th/I and the Blue line would load at 7th/Capitol). c) The first 'outbound' post-event trains are operated in each direction with sufficient capacity to meet demand.	**Standard Met** 7th Street is closed to vehicular traffic between J and L Streets after major events and vehicles exiting the DOCO East garage are directed to Merchant Alley. RT advertises recommended departure stations (online and via static signs at stations as shown in **Image 6**). RT has increased the frequency and length of trains to meet the demand.
6. Buses (Pre-Event and Post-Event): If required, buses are permitted to travel north via either 3rd Street or 5th Street to reach J Street.	**Standard Met** All motorists are permitted to travel northbound on 3rd Street from L Street to J Street during Pre-Event and Post-Event conditions. Buses are permitted to travel north on 5th Street between L and J Streets when it is closed during events (though such bus travel is rare).

TABLE 2
EVALUATION OF PERFORMANCE STANDARDS

Performance Standard	Evaluation
7. Truck Staging (Throughout): Delivery trucks associated with special events are not permitted to park or idle along the project's L Street frontage. Delivery trucks that deliver to the 5th Street loading docks do not disrupt traffic flows, do not block access to driveways or businesses, and do not exceed any applicable City thresholds.	**Standard Partially Met** Parked or idled delivery trucks were not observed on the project's L Street frontage during any events. However, trucks and concert tour buses were observed to line the east side of 5th Street between L and J Streets prior to and during the Bruno Mars Concert (see image 7). However, they were not observed to disrupt traffic flows or block access to other driveways.

Source: Fehr & Peers, 2017.

Image 1: View of queuing on EB J Street at 3rd Street prior to Kings game.

Image 2: View of queuing on EB J Street and NB off-ramp prior to Bruno Mars Concert.

Image 3: View of no queuing on SB off-ramp (at 7:26 PM) prior to Bruno Mars Concert.

Image 4: View of vehicle queued within activated crosswalk across J Street at 4th Street prior to Kings game.

Image 5: View of fans lining L Street in advance of February 11, 2017 Twenty One Pilots concert.

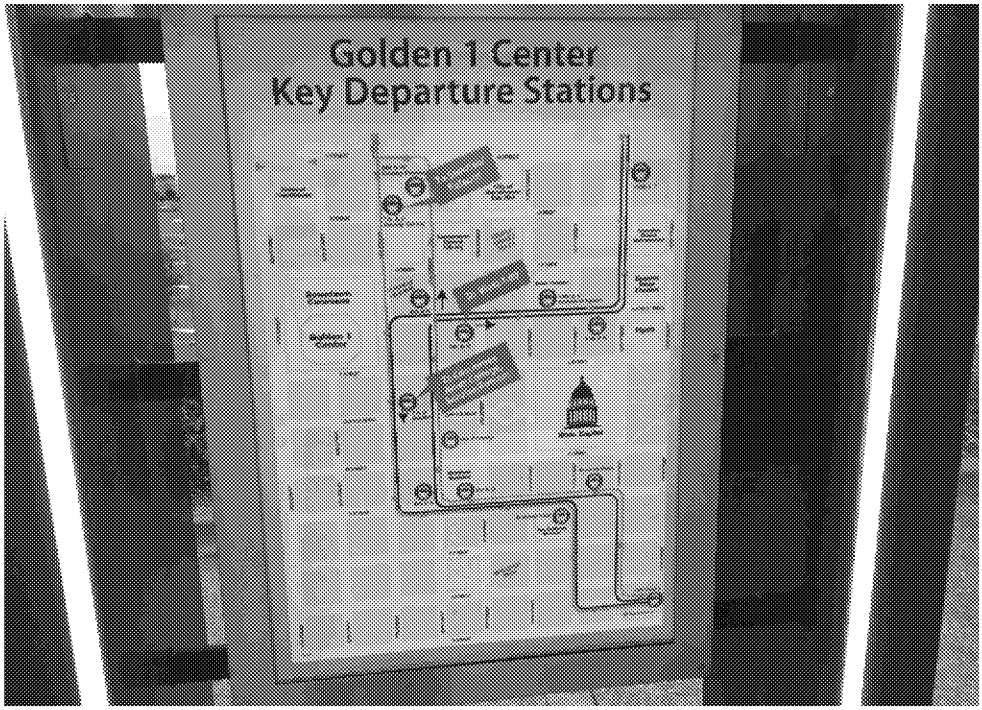


Image 6: View of static sign at LRT station near Golden 1 Center.

Image 7: View of trucks and concert tour buses parked on east side of L Street between L Street and J Street prior to and during Bruno Mars concert.

Suggested Measures to Achieve Unmet Performance Standards

Field observations by Fehr & Peers staff led to the conclusion in Spring 2017 that traffic congestion and queuing on J Street between 3rd and 7th Street was being caused by the following two factors:

1. Vehicles waiting to enter the DOCO East parking garage driveway on 7th Street causing queue spillbacks on 7th Street to wrap-around to J Street (see image 8).
    - The private DOCO East parking garage serves various nearby retail uses. Event attendees are typically not allowed to use the garage for parking. Signs are placed at the driveway stating that a $40 penalty will be assessed for those who park in the garage and attend an event. The degree to which this driveway is a bottleneck is a function of several factors including the number of vehicles desiring to enter driveway and the effectiveness of the parking attendant at minimizing queuing on 7th Street. Sacramento PD reports that the driveway can be a major issue on some events, but not much of an issue on other events.
    - Solutions: Sacramento PD continues to work with the owner/operator of the DOCO East Parking Garage to reduce queuing on J Street caused by this driveway. This driveway did not contribute to queuing on J Street during the pre-event peak hour of the Bruno Mars Concert. It is noted that once the Sawyer Hotel / Mixed-Use Tower (located on the south side of J Street between 5th and 6th Street) opens in Fall 2017, a secondary driveway will be available to access DOCO parking, which will likely reduce queuing at the driveway on 7th Street.
2. Congestion at the 7th Street/L Street intersection.
    - In Spring 2017, pre-event peak hour congestion occurred at the 7th Street/L Street intersection for a variety of reasons. This caused lengthy vehicle queues on westbound L Street and southbound 7th Street (see image 9).
    - Solutions: Sacramento PD has taken the following actions to improve operations at this intersection:
        1. More efficient vehicle ingress to parking garage in the southwest quadrant of the intersection (see image 10).
        2. Less drop-off activity on 7th Street south of L Street (through enhanced signage and barricades shown in image 10).
        3. Improved coning patterns on westbound L Street.

The 7th Street/L Street intersection carried 17 percent more traffic during the peak hour of the Bruno Mars Concert versus the peak hour of the Kings game. Despite accommodating more traffic, field observations by Fehr & Peers staff (i.e., by staff who were present during for both events) indicated less congestion at this critical intersection during the Bruno Mars Concert.

Additionally, congestion on J Street has been reduced by improved detection of light rail trains traveling on southbound 7th Street, which has improved traffic flows along J Street.

The J Street/5th Street intersection can contribute to congestion and queuing along the J Street corridor. This occurs because of left- and right-turning traffic yielding to heavy volumes of pedestrians in the north and south leg crosswalks. However, these queue spillbacks typically disperse by the end of each cycle lenth green interval.

Image 8: View of queued vehicles waiting to enter DOCO east driveway on 7th Street prior to PBR Event.

Image 9: View of queued vehicles on 7th Street extending back from L Street during Kings Game.

Image 10: View of barricades, signage, cones, and garage operations staff in the southwest quadrant of the 7th Street/L Street intersection during beginning of pre-event peak hour during Bruno Mars Concert.

V. GOLDEN 1 CENTER EVENT ATTENDEE SURVEY

The TMP identifies the need to conduct a survey of persons attending events at Golden 1 Center to quantify their travel behavior and travel-related perceptions. This chapter describes the survey that was prepared, the response rate, and the survey results.

SURVEY APPROACH

The TMP was perhaps overzealous in terms of its recommendation to survey 600 attendees during each of five regular season Kings games. After contacting a public opinion survey firm to discuss potential survey approaches, it became apparent that surveying 600 attendees during each of five games would be extremely time-consuming and costly. Moreover, since season ticket members occupy over half the seats, multi-game surveys could result in the questionnaire being completed more than once by the same individual, which would also result in annoying attendees. Therefore, it was decided at the January 10th meeting that a single game would be sufficient for survey purposes.

Several survey methods were considered including:

1. In-person survey of attendees performed by survey administrators (i.e., Fehr & Peers staff)
2. Paper survey placed on all seats or handed out to attendees as they entered Golden 1 Center (with bins placed at exits where attendees could drop off completed surveys)
3. Online survey emailed to Golden 1 Center attendees

Option 1 was rejected for two reasons. First, to obtain a reasonable sample size, a minimum of 20 Fehr & Peers staff would have been needed to sample attendees. A public opinion research firm was also contacted and they reported that they also did not have resources to conduct such a large in-person survey. Second, since an in-person survey prior to the event would take up attendee time, it would have necessarily been short in duration.

Option 2 was considered but ultimately rejected as the online survey (Option 3) had more advantages. The main downside to Option 2 would have been a substantial data entry effort to convert written results into a database. Secondary issues related to attendees having a writing instrument and potential for misuse of the paper survey (e.g., paper airplane, etc.).

The online survey (Option 3) was ultimately selected. The survey was developed by Fehr & Peers with assistance from the City of Sacramento and the Sacramento Kings Customer Insights and Research Department. It was implemented using the online SurveyMonkey platform. The survey included a logic-based / nesting framework that asked different sets of questions depending on what mode of travel the

attendee used to reach Golden 1 Center. See Appendix A for survey instrument. The majority of survey questions consisted of categorical responses, in which attendees could simply click a box. This enabled the survey (which consisted of 20 questions for someone who drove) to be completed in about five minutes. It was believed that keeping the survey short in duration would lead to higher response rates. This was proven true as there were relatively few surveys in which a respondent began the survey and then stopped answering questions midway through.

On February 9, 2017, the Sacramento Kings organization emailed its weekly newsletter, which included a link to the survey, to season ticket members. On that same day, they also emailed the survey link directly to those who purchased tickets for the February 8th game. The first set of responses is henceforth referring to as the 'senior ticket member' group, and the second set of responses is henceforth referred to as the 'single-game buyer' group. It should be noted (as shown on the following page) many 'single-game buyers' attended multiple games. The survey was sent to approximately 5,500 different email addresses.

RESPONSE RATE

Table 3 displays a variety of data relating to the response rate. As shown, 484 surveys were completed by season ticket members and 163 surveys were completed by single-game buyers. The Sacramento Kings report that during the 2016-2017 season, about 66 percent of the 17,500 seats in Golden 1 Center were purchased as season tickets, with the remaining 34 percent available for purchase for a single game. As described in the table, the vast majority of email addresses represents more than one seat. When the number of seats per email address and proportion of season ticket versus single-game seats is considered, the population sampling ratio is 9 percent for season ticket members and 7 percent for single-game buyers.

As described above, separate surveys were sent to season ticket members and single-game buyers. Each season ticket member survey represent an average of 2.16 seats, while each single-game buyer represented an average of 2.5 seats. The footnotes in Table 3 include a somewhat mathematically tedious calculation that calculates a weighting factor to enable the two separate sets of survey results to be merged into a single set of responses for the entire population of interest (i.e., all attendees to the February 8th Kings game).

TABLE 3
ONLINE SURVEY OF SACRAMENTO KINGS ATTENDEES – POPULATION SAMPLING

Sampling and Frequency of Game Attendance		Season Ticket Members	Single-Game Buyers
Sample Size		484	163
Number of Seats Represented by Email Address [1]	1	32 (7%)	9 (6%)
	2	373 (79%)	110 (68%)
	3	22 (5%)	10 (6%)
	4	37 (8%)	19 (12%)
	5 or more	10 (2%)	13 (8%)
	Total	1,047	407
Ratio of Season Ticket Member versus Single-Game Buyers (on a Per Seat Basis)		66%	34%
Population Sampling Ratio [3]		9%	7%
How many of the 25 regular season Kings home games (as of the time the survey was distributed) have you attended?	This is my first	6 (1%)	66 (41%)
	2 to 5	35 (7%)	51 (32%)
	6 to 10	111 (24%)	33 (20%)
	11 to 20	171 (36%)	10 (6%)
	21 or more	152 (32%)	1 (1%)
Gender	Male	275 (58%)	111 (69%)
	Female	197 (42%)	50 (31%)

Notes:

[1] It is highly likely that factual information (e.g., mode split, demographics, etc.) and travel perceptions would be similar for multiple seat members within a single group of attendees. This is important when considering how to weight responses of season ticket members versus single-game buyers.

[2] Calculated based on arena seating capacity and ratio of season ticket member and single-game buyer seats.

[2] The following mathematical formulation was used to calculate the weighting of season ticket member and single-game buyer survey results to develop percentages for the entire sample:

- For 10,000 theoretical seats, 6,600 would be for season ticket members and 3,400 would be for single-game buyers.
- Each season ticket member survey represents 2.16 seats, while each single game buyer survey represents 2.50 seats.
- Thus, the 6,600 season ticket member seats would be represented by 3,056 surveys, while the 3,400 single game seats would be represented by 1,360 surveys. This implies that 69.2 percent of all surveys should be for season ticket members and 31.8 percent of surveys should be for single game buyers. Thus, in the tables that follow, results for each group are weighted using these factors to develop an estimate for the entire population.

Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.

A couple of other caveats regarding this data and sampling:

- Among season ticket members, 57 percent reported attending the February 8th game. However, a total of nearly 90 percent reported attending a home game on either February 3rd, 4th, 6th, or 8th. Among single-game buyers, 95 percent reported attending the February 8th game. Thus, while not every respondent who completed a survey attended the February 8th game, the overwhelming majority attended the February 8th game or a different game in early February.

- It is customary in surveying to 'resample' the initial non-response group to avoid introducing survey bias. But in this instance, it was decided not to do this for two reasons. First, both surveys resulted in a large (i.e., larger than anticipated) sample size that enables a robust analysis. Second and more important, the Sacramento Kings are rightfully sensitive about 'over-contacting' its attendance base. In other words, they would prefer to reach out to the two groups for only the most important reasons. They deemed this transportation survey worthy of sending a response. But sending a follow-up email to those that did not respond would not have been in their best interest from a business perspective.

SURVEY RESULTS

This section presents a series of tables that summarizes the survey results. The following tables are presented:

- Tables 4 – 8 provide basic summary results for the entire sample and by travel mode. Note that due to the small number of attendees who walked, bicycled, rode a bus, or took paratransit, detailed breakdowns of travel characteristics for these modes are not presented.
- Table 9 provides stated preference responses to several questions pertaining to mode choice selection.
- Tables 10 – 13 consist of cross-classification tables that evaluate interactive effects between different explanatory variables (e.g., influence of parking location on perceived congestion).

All responses were rounded to the nearest percentage point.

Table 4 shows that 77 percent of attendees arrived to Golden 1 Center via a private vehicle. Another 11 percent took light rail. Another 9 percent used a Transportation Network Company (TNC), such as Uber or Lyft, for their trip. Walking and bicycling represented the remaining 3 percent.

TABLE 4
OVERALL TRAVEL CHARACTERISTICS OF SACRAMENTO KINGS GAME ATTENDEES

Travel Characteristics, Visitation, and Overall Travel Perception		Season Ticket Members	Single-Game Buyers	Weighted Average
Arrival Travel Mode	Drove Own Private Vehicle	329 (68%)	115 (71%)	69%
	Passenger in Private Vehicle	37 (8%)	12 (7%)	8%
	Uber/Lyft	33 (7%)	19 (12%)	9%
	Light Rail (Drive to Station)	58 (12%)	4 (3%)	9%
	Light Rail (Walk to Station)	10 (2%)	3 (2%)	2%
	Walk	9 (2%)	7 (4%)	2%
	Bus	4 (1%)	2 (1%)	1%
	Bicycle	1 (0%)	0 (0%)	0%
	Taxi	0 (0%)	1 (0%)	0%
	Limo	1 (0%)	0 (0%)	0%
	Paratransit	2 (0%)	0 (0%)	0%
Trip Origin Location	Home	436 (91%)	133 (82%)	88%
	Work	43 (9%)	29 (18%)	12%
Trip Origin ZIP Code (Top 8 Shown)	95831 (Pocket)	1st (6%)	(< 3%)	1st
	95826 (La Riviera / Rosemont)	2nd (4%)	(< 3%)	2nd
	95608 (Carmichael)	3rd (4%)	(< 3%)	3rd
	95624 (East Elk Grove)	4th (4%)	(< 3%)	4th
	95670 (Rancho Cordova)	5th (4%)	(< 3%)	5th
	95833 (South Natomas)	6th (3%)	(< 3%)	6th (tie)
	95630 (Folsom)	7th (3%)	(< 3%)	10th
	95828 (Florin)	8th (3%)	(< 3%)	6th (tie)
	95822 (Freeport)	(< 3%)	1st (6%)	-
	95818 (Land Park)	(< 3%)	2nd (6%)	6th (tie)
	95814 (Downtown)	(< 3%)	3rd (6%)	6th (tie)
	95835 (North Natomas)	(< 3%)	4th (5%)	-
	95816 (Midtown / East Sacramento)	(< 3%)	5th (4%)	-
	95758 (Laguna Elk Grove)	(< 3%)	6th (4%)	-
Visit a restaurant, bar, or retail uses prior to arrival?	Yes, in immediate vicinity	138 (29%)	49 (30%)	29%
	Yes, at an establishment elsewhere	60 (12%)	19 (12%)	12%
	No	283 (59%)	94 (58%)	59%
Visit a restaurant, bar, or retail uses prior to arrival?	Yes, in immediate vicinity	66 (14%)	19 (12%)	14%
	Yes, at an establishment elsewhere	22 (4%)	9 (5%)	4%
	No	393 (82%)	134 (83%)	82%
On average, how often do you visit downtown Sacramento (excluding events at Golden 1 Center)	Daily	75 (16%)	23 (14%)	15%
	Once a week	113 (24%)	37 (23%)	24%
	Once a month	255 (55%)	83 (52%)	54%
	First time here	25 (5%)	17 (11%)	7%

TABLE 4
OVERALL TRAVEL CHARACTERISTICS OF SACRAMENTO KINGS GAME ATTENDEES

Travel Characteristics, Visitation, and Overall Travel Perception		Season Ticket Members	Single-Game Buyers	Weighted Average
Overall, how would you rate your travel experience to and from Golden 1 Center?	Very good	252 (53%)	94 (58%)	54%
	Good	164 (34%)	53 (33%)	34%
	Ok	50 (11%)	14 (9%)	10%
	Bad	6 (1%)	0 (%)	1%
	Very Bad	4 (1%)	0 (%)	1%

The vast majority of attendee trips (88 percent) originated from home. The most commonly cited trip origin ZIP codes were associated with the following neighborhoods: Pocket, La Riviera / Rosemont, Carmichael, East Elk Grove, Rancho Cordova, South Natomas, Florin, Land Park, Downtown Sacramento, and Folsom.

When asked to rate their overall travel experience to and from Golden 1 Center, 54 percent selected 'very good', 34 percent selected 'good', 10 percent selected 'ok', and 2 percent selected 'bad or very bad'.

Table 5 presents travel behavior data for those that arrived to Golden 1 Center via their own private vehicle. As shown, average vehicle occupancy was 2.32 persons.

- Nearly half of respondents (46 percent) indicated using the I-5 off-ramps (either NB or SB) at J Street to access parking near Golden 1 Center.
- Nearly two-thirds of those who arrived via private vehicle reserved parking in advance. Parking was distributed fairly evenly among eight geographic quadrants surrounding Golden 1 Center.
- As expected, attendees rated pre-event congestion in the vicinity of Golden 1 Center as generally better than post-event congestion. When rating pre-event traffic conditions, 63 percent selected 'little congestion', while only 44 percent made this selection for post-event conditions.

TABLE 5
TRAVEL CHARACTERISTICS OF SACRAMENTO KINGS GAME ATTENDEES WHO DROVE

Travel Characteristics and Perceptions		**Season Ticket Members**	**Single-Game Buyers**	**Weighted Average**
Average Vehicle Occupancy		2.25	2.46	2.32
Primary Route to Access Golden 1 Center (Top 6)	J Street from NB I-5	83 (24%)	29 (25%)	24%
	J Street from SB I-5	71 (21%)	29 (25%)	22%
	SB on 12th Street from SR 160	34 (10%)	10 (9%)	10%
	Northbound on 10th Street	31 (9%)	8 (7%)	8%
	Northbound on 5th Street	30 (9%)	8 (7%)	8%
	Westbound on L Street	25 (7%)	7 (6%)	7%
Reserve Parking in Advance?	Yes	244 (68%)	64 (52%)	63%
	No	113 (32%)	60 (48%)	37%
Cost of Parking	Free	42 (12%)	6 (5%)	10%
	$10 or less	97 (27%)	28 (23%)	26%
	$11 to $15	98 (27%)	38 (32%)	29%
	$16 to $25	91 (25%)	42 (35%)	28%
	More than $25	3 (1%)	6 (5%)	2%
	Unknown, parking paid as part of season ticket purchase	28 (8%)	0 (0%)	5%
Where did you Park?	North of I St and east of 7th Street	77 (22%)	21 (17%)	20%
	East of 7th Street between J and L Streets	78 (22%)	20 (16%)	20%
	West of 5th Street between J and L Streets (including Old Sac)	62 (17%)	17 (14%)	16%
	South of L St and west of 5th Street	38 (11%)	14 (11%)	11%
	South of L St between 5th and 7th Streets	33 (9%)	19 (15%)	11%
	South of L St and east of 7th Street	27 (8%)	7 (6%)	7%
	North of I St and west of 5th Street	26 (7%)	16 (13%)	9%
	North of I St between 5th and 7th Streets	16 (4%)	11 (9%)	6%
What type of parking facility did you use?	Parking garage	292 (82%)	106 (85%)	83%
	On-Street	42 (12%)	13 (10%)	11%
	Surface lot	23 (6%)	6 (5%)	6%
How would you describe traffic congestion in the vicinity of Golden 1 Center prior to the event?	Little congestion	230 (64%)	75 (60%)	63%
	Moderate congestion	116 (32%)	44 (35%)	33%
	Severe congestion	12 (3%)	6 (5%)	4%
How would you describe traffic congestion in the vicinity of Golden 1 Center after the event?	Little congestion	166 (46%)	49 (39%)	44%
	Moderate congestion	156 (43%)	65 (52%)	46%
	Severe congestion	37 (10%)	11 (9%)	10%

Table 6 presents data for attendees who used light rail to access Golden 1 Center. As shown, the majority (56 percent) used the Gold Line from Sunrise/Folsom versus the other two inbound lines. It should be noted that the data in Table 4 indicates that season ticket members were much more likely to ride light rail (14 percent) than single-game buyers (5 percent). Those that took light rail provided high marks in terms of safety, convenience, and overall value of their ride.

TABLE 6
TRAVEL CHARACTERISTICS OF SACRAMENTO KINGS GAME ATTENDEES WHO TOOK LIGHT RAIL

Travel Characteristics and Perceptions		**Attendees**
What Light Rail line did you take?	Blue Line from Watt/I-80	18 (24%)
	Gold Line from Sunrise/Folsom	42 (56%)
	Blue Line from Cosumnes River College	15 (20%)
How would you rate your ride in terms of safety?	Very Good	49 (65%)
	Good	19 (25%)
	Ok	7 (10%)
	Bad	0 (0%)
	Very Bad	0 (0%)
How would you rate your ride in terms of convenience?	Very Good	43 (57%)
	Good	20 (26%)
	Ok	12 (16%)
	Bad	0 (0%)
	Very Bad	0 (0%)
How would you rate your ride in terms of value?	Very Good	52 (70%)
	Good	19 (26%)
	Ok	3 (4%)
	Bad	0 (0%)
	Very Bad	0 (0%)
Will you ride light rail to games in the future?	Yes	75 (100%)
	No	0 (0%)

Notes:
Due to small sample size of single-game buyers who used light rail (only 7 of the 75 total samples), the two datasets were merged together into this table.

Table 7 presents data for attendees who used a TNC to access Golden 1 Center. As shown, most TNC trips originated from home, which was a ZIP code within three miles of Golden 1 Center (with exception of the Pocket). When compared to the overall sample, a greater percentage of attendees who used a TNC indicated that they would visit a restaurant, bar, or retail use prior to or after the event. TNC drop-off activity occurred in a number of different areas. The most common reasons cited for using a TNC were their convenience and low cost. Secondary reasons included plans to visit a bar/restaurant before/after the event, and weather conditions.

TABLE 7
TRAVEL CHARACTERISTICS OF SACRAMENTO KINGS GAME ATTENDEES WHO USED A TNC

Travel Characteristics		Season Ticket Members	Single-Game Buyers	Weighted Average
Origin of your primary trip to Golden 1 Center?	Home	30 (90%)	19 (100%)	93%
	Work	3 (10%)	0 (0%)	7%
Trip Origin ZIP Code (Top 6 Shown)	95818 (Land Park)	4 (12%)	3 (16%)	1st
	95816 (Midtown / East Sacramento)	2 (6%)	3 (16%)	2nd
	95831 (Pocket)	3 (9%)	-	3rd (tie)
	95691 (West Sacramento)	3 (9%)	-	3rd (tie)
	95822 (Freeport)	-	3 (16%)	3rd (tie)
	95817 (North Oak Park / Elmhurst)	4 (12%)	-	3rd (tie)
Visit a restaurant, bar, or retail uses prior to arrival?	Yes, in immediate vicinity	14 (42%)	7 (37%)	40%
	Yes, at an establishment elsewhere	5 (16%)	1 (5%)	13%
	No	14 (42%)	11 (58%)	47%
Visit a restaurant, bar, or retail uses prior to arrival?	Yes, in immediate vicinity	15 (45%)	4 (21%)	38%
	Yes, at an establishment elsewhere	1 (3%)	2 (11%)	5%
	No	17 (52%)	13 (68%)	57%
Where were you dropped off? (Top 9 Shown)	5th Street & J Street	6 (21%)	3 (18%)	20%
	7th Street & J Street	4 (14%)	3 (18%)	15%
	5th Street & L Street	4 (14%)	1 (6%)	12%
	6th Street & J Street	3 (10%)	2 (12%)	11%
	K street between 8th and 10th Street	3 (10%)	1 (6%)	9%
	7th Street & K Street	2 (7%)	2 (12%)	9%
	4th Street & L Street	2 (7%)	1 (6%)	7%
	5th Street & Capitol Mall	2 (7%)	0 (0%)	5%
	7th St & L Street	1 (3%)	1 (6%)	4%
How much was your fare to travel to Golden 1 Center?	Less than $5	3 (9%)	4 (21%)	13%
	$5 to $10	18 (55%)	9 (47%)	53%
	$11 to $15	10 (30%)	4 (21%)	27%
	More than $15	2 (6%)	2 (11%)	7%
How many people were dropped off (including yourself)?	One	6 (18%)	2 (11%)	16%
	Two	16 (49%)	12 (63%)	53%
	Three	3 (9%)	2 (11%)	10%
	Four or more	8 (24%)	3 (15%)	21%
What was the primary reason you selected Uber/Lyft to get to Golden 1 Center (select all that apply)	Convenient	28 (85%)	16 (84%)	85%
	Inexpensive	21 (64%)	8 (42%)	57%
	Went to bar/restaurant before/after game	10 (30%)	5 (26%)	29%
	Weather (too cold to walk/bike)	9 (27%)	1 (5%)	20%
	Don't live near light rail	3 (9%)	1 (5%)	8%
	Don't own a car	0 (0%)	0 (0%)	0%
	Uber/Lyft	23 (70%)	17 (90%)	76%

TABLE 7
TRAVEL CHARACTERISTICS OF SACRAMENTO KINGS GAME ATTENDEES WHO USED A TNC

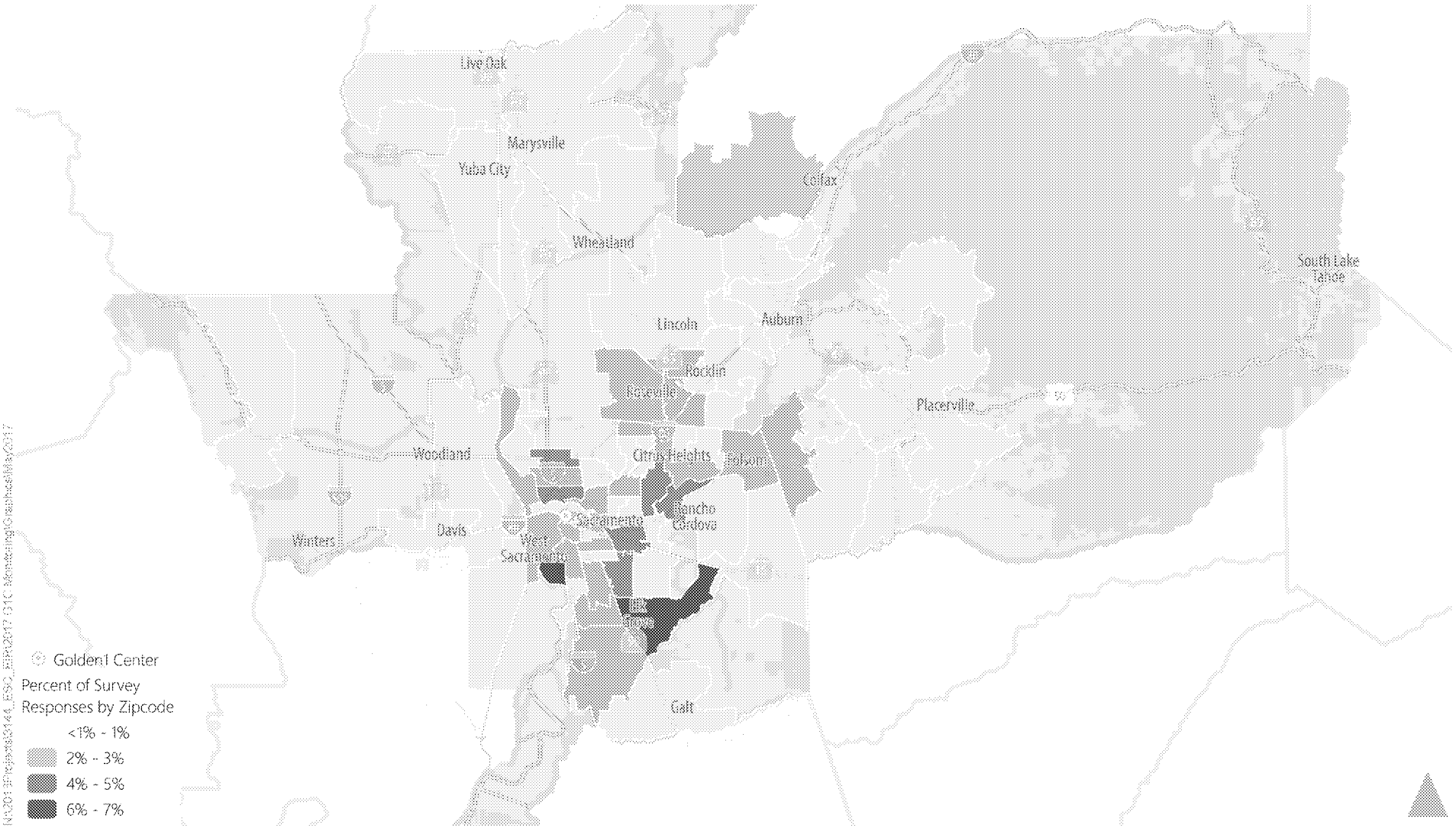
Travel Characteristics		Season Ticket Members	Single-Game Buyers	Weighted Average
What mode of travel did use for your return after the game	Private vehicle	5 (15%)	1 (5%)	12%
	Light Rail	2 (6%)	0 (0%)	4%
	Walked	2 (6%)	0 (0%)	4%
	Taxi	1 (3%)	1 (5%)	4%

Notes:
TNC is a Transportation Network Company such as Uber or Lyft.

Figures 8 and 9 are maps displaying ZIP code trip origins for season ticket members and single-game buyers, respectively, who drove to Golden 1 Center. Table 8 displays the approximate one-way travel distance for those attendees. The values are considered approximate because it is not known exactly which area within a given ZIP code the trip originated. Additionally, as these results were derived using ZIP code data from the survey, it was not possible to confirm the accuracy of the data (e.g., did some attendees mistakenly include their home address versus origin of trip). For these reasons, this data is considered an approximation of overall vehicle travel distances. Key findings from this table include the following:

- When viewing travel distance in terms of averages, single-game buyers drove a considerably longer distance (50 percent more) than season ticket members. About 33 percent of single-game buyers had trip lengths of 20 miles or more, which is substantially greater than the 23 percent of season ticket members reporting these travel lengths.
- When viewing travel distance in terms of the median or 50th percentile, the two groups had very similar values (i.e., about 13 miles).

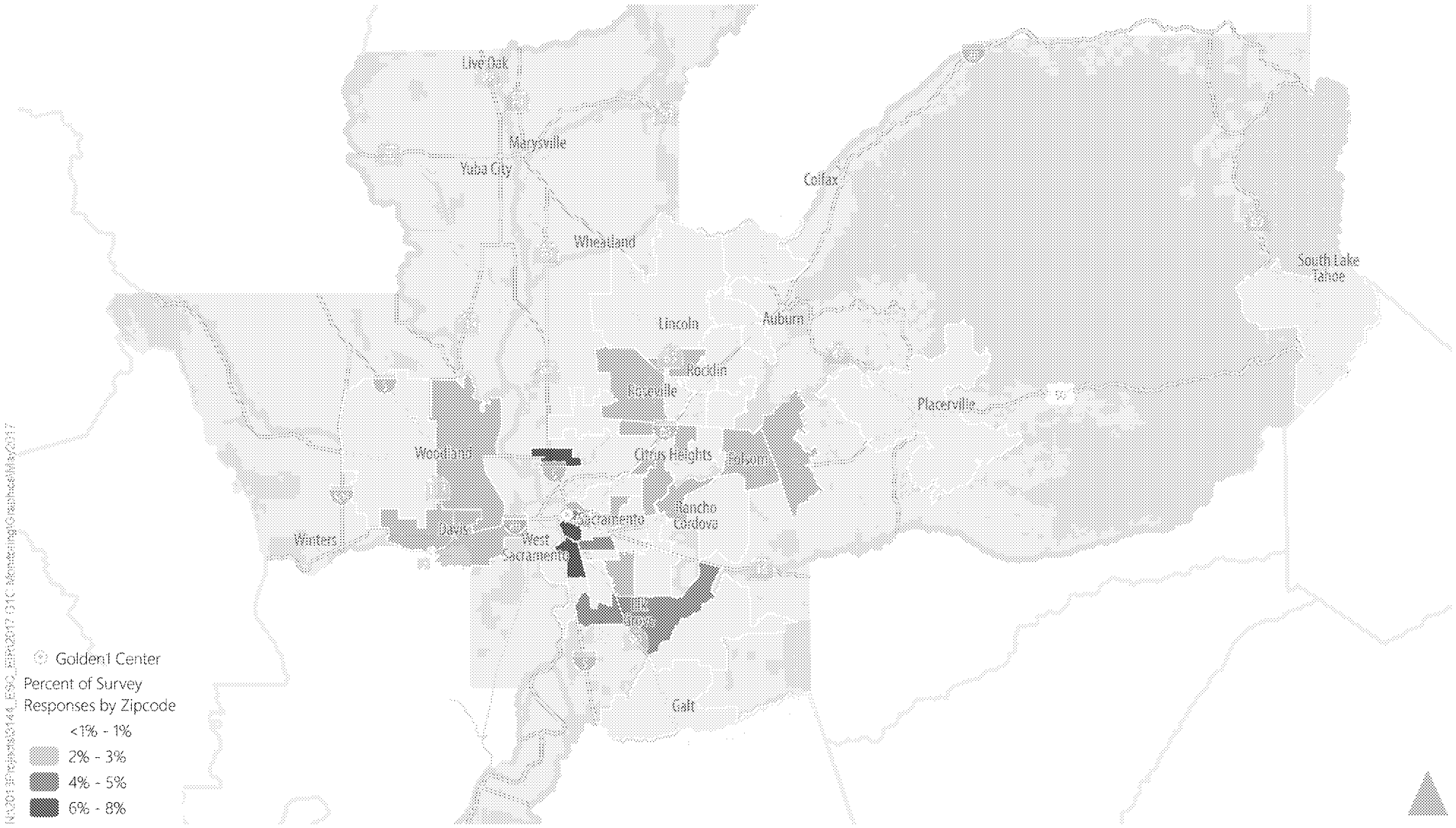
This data suggests that a small subset of single-game buyers live in outlying areas (i.e., beyond SACOG limits), which require considerably longer travel distance to reach Golden 1 Center.



Note: Data displays trip origin by zipcode in the SACOG region, based on a total of 334 survey responses.

Figure 8

Season Ticket Holder Survey Responses - Trip Origins of Respondents who Drove



Note: Data displays trip origin by zipcode in the SACOG region, based on a total of 99 survey responses.

Figure 9

Single Buyer Ticket Holder Survey Responses - Trip Origins of Respondents who Drove

TABLE 8 TRIP LENGTH FOR SACRAMENTO KINGS GAME ATTENDEES WHO DROVE		
Trip Length	**Season Ticket Members**	**Single-Game Buyers**
0 – 5.0 miles	54 (15%)	16 (13%)
5.1 – 10.0 miles	99 (28%)	28 (23%)
10.1 – 15.0 miles	54 (15%)	20 (17%)
15.1 – 20.0 miles	68 (19%)	17 (14%)
20.1 – 25.0 miles	23 (6%)	9 (8%)
25.1 – 40.0 miles	27 (8%)	8 (7%)
40.1 – 60.0 miles	23 (6%)	6 (5%)
60.1 – 100.0 miles	10 (3%)	12 (10%)
100.1 – 160.0 miles	0 (0%)	4 (3%)
Average	17.3 miles	26.0 miles
Median (50th percentile)	13.0 miles	13.5 miles

Table 9 presents results from a series of stated preference questions related to mode choice. For respondents who arrived via private vehicle, the most common reasons cited for not using light rail included: quicker to drive, and station too far from home or work. A number of other write-in responses were provided and included the following responses (top two were most common):

- Use a wheelchair or scooter (i.e., medical reasons)
- I have a parking pass
- Drop-off is not right next to arena
- Need car for errands during day of game
- Green Line doesn't run late enough for return trip
- Safety concerns at Watt Avenue Light Rail parking lot after games

For those that used a TNC to access Golden 1 Center, they were asked to identify what alternative mode of travel they would have taken had TNCs not existed. Half reported that they would have taken a private vehicle. Another 20 percent would have taken a taxi, 17 percent would have taken light rail, 7 percent would have walked, and 4 percent would have rode a bicycle. These proportions suggest that the availability of TNCs (at their current price point) has caused the following mode shifts:

Mode	Percentage without TNCs	Percentage with TNCs
Private vehicle	81.5%	77%
TNC	0%	9%
Light Rail	12.5%	11%
Walk	2.6%	2%
Bus	1%	1%
Bike	0.4%	0%
Taxi	2%	0%

TABLE 9
STATED PREFERENCES RELATED TO MODE CHOICE SELECTION

Mode Choice Selection Questions		Season Ticket Members	Single-Game Buyers	Weighted Average
What was the primary reason you did not take light rail? (Private Vehicles Only)	Quicker to drive	147 (46%)	53 (45%)	46%
	Station too far from work or home	103 (32%)	30 (26%)	30%
	Cheaper for our group to drive	25 (8%)	9 (8%)	8%
	Concerns over safety / cleanliness	28 (9%)	5 (4%)	7%
	Lack of system knowledge	14 (4%)	19 (16%)	8%
	Concerns over crowding	3 (1%)	1 (1%)	1%
If Uber/Lyft didn't exist, what mode of travel would you have taken? (Uber/Lyft Riders Only)	Private vehicle	16 (50%)	9 (50%)	50%
	Light rail	7 (22%)	1 (5%)	17%
	Taxi	6 (19%)	4 (22%)	20%
	Bicycle	1 (3%)	1 (6%)	4%
	Walk	1 (3%)	3 (17%)	7%
	Would not have attended game	1 (3%)	0 (0%)	2%
	Bus	0 (%)	0 (0%)	0%
If the price of Uber/Lyft were to double, how likely would you be to select a different mode of travel? (Uber/Lyft Riders Only)	Not likely	5 (15%)	3 (16%)	15%
	Somewhat likely	9 (27%)	11 (58%)	37%
	Very likely	19 (58%)	5 (26%)	48%

Table 9 indicates that there is price sensitivity toward current TNC fares. If fares were to double, 48 percent would be very likely to select a different travel mode, and another 37 percent would be somewhat likely.

The remainder of this chapter delves more deeply into the survey results in an effort to better understand the degree of correlation between travel perceptions and a variety of other variables. Several basic statistical tests are used to test these relationships and draw inferences. Readers not familiar with statistics may wish to skip this section or focus primarily on the conclusions.

The following tables present cross-classified data of two different categorical survey variables. Each table includes a chi-square (X^2) test of whether that data is independent or not. This test evaluates the null hypothesis that the frequency within cells is what would be expected assuming there is no interaction between variables. The far right column of each table displays the X^2 value and p-value. Higher X^2 values correspond to a greater likelihood that there is some interaction between the two variables. The p-value is a statistical measure of the likelihood of that interaction. A p-value of 0.05 would represent a 95 percent likelihood that the variables are not independent. Similar X^2 values may return different p-values because

the p-value also accounts for degrees of freedom, which considers the number of cells in the cross-classification table.

Statisticians recommend that chi-square tests not be performed for a given set of variables if an expected frequency is below 1 or if the expected frequency is less than 5 in more than 20 percent of the cells. To account for this, certain responses have been aggregated (as described in the footnotes of tables). The online calculator found at: http://www.quantpsy.org/chisq/chisq.htm was used for the calculations.[3]

For these tabulations, the season ticket member and single-game buyer datasets were merged. Since these tables seek to understand interaction effects between two explanatory variables, it was not necessary to weight the samples in any way.

Table 10 shows a cross-classification table of travel mode and pre-event trip origin.

TABLE 10
CROSS-CLASSIFICATION OF TRIP ORIGIN AND MODE CHOICE

Trip to Golden 1 Center		**Pre-Event Trip Origin**		**Statistical Significance**
		Home	**Work**	
Travel Mode	Own Private Vehicle	493 (87%)	57 (79%)	X^2 = 2.93
	Other Mode	76 (13%)	15 (21%)	p-value= 0.09

Notes:
Responses rounded to the nearest 1%.
Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.

Key findings from this table are:

- Whereas 87 percent of attendees whose trip originated from home used a private vehicle, 79 percent of trips originating from work used a private vehicle. This produced a moderately strong (i.e., about 90 percent confidence) degree of interaction between these two variables.

Table 11 shows a cross-classification table of advanced parking reservation and driver satisfaction (in terms of observed congestion and overall experience).

[3] The accuracy of this calculator was confirmed by checking its inputs and outputs against several examples contained in the MS Excel Help function and *Log-Linear Models*, Ronald Christensen, 1990.

TABLE 11 CROSS-CLASSIFICATION OF ADVANCED PARKING RESERVATION AND DRIVER SATISFACTION				
Travel Perceptions		**Parking Purchased in Advance?**		**Statistical Significance**
		Yes	**No**	
How would you describe traffic congestion in the vicinity of Golden 1 Center prior to the event?	Little congestion	187 (60%)	118 (69%)	X^2 = 3.84 p-value= 0.15
	Moderate congestion	112 (36%)	47 (27%)	
	Severe congestion	12 (4%)	6 (4%)	
Overall, how would you rate your travel experience to and from Golden 1 Center?	Very good	165 (53%)	86 (50%)	X^2 = 0.97 p-value= 0.81
	Good	109 (35%)	63 (36%)	
	Ok	30 (10%)	21 (12%)	
	Bad	3 (1%)	2 (1%)	
	Very Bad	3 (1%)	1 (1%)	
Notes: Responses rounded to the nearest 1%. Rates of "bad", and "very bad" were combined for statistical tests. Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.				

Key findings from this table are:

- Somewhat surprisingly, attendees who drove and did not purchase parking in advance were more likely (69% vs. 60%) to report experiencing little congestion in the vicinity of Golden 1 Center than attendees who purchased parking in advance. However, this interaction was somewhat weak and may have been caused by other factors such as frequency of attending games and previous experiences regarding congestion. There were no statistically significant interactive effects between purchasing parking in advance and overall travel experience at Golden 1 Center.

Table 12 shows a cross-classification table of parking location and driver satisfaction (in terms of observed congestion and overall experience).

TABLE 12
CROSS-CLASSIFICATION OF PARKING LOCATION AND DRIVER SATISFACTION

Travel Perceptions		Parking Quadrant								Statistical Significance
		1	2	3	4	5	6	7	8	
How would you describe traffic congestion in the vicinity of Golden 1 Center prior to the event?	Little congestion	20 (57%)	3 (43%)	45 (73%)	32 (48%)	9 (64%)	23 (68%)	12 (67%)	40 (57%)	X^2 = 9.80 p-value= 0.08
	Moderate congestion	14 (40%)	4 (57%)	15 (24%)	33 (49%)	5 (36%)	10 (29%)	6 (33%)	24 (34%)	
	Severe congestion	1 (3%)	0 (0%)	2 (3%)	2 (3%)	0 (0%)	1 (3%)	0 (0%)	6 (9%)	
How would you describe traffic congestion in the vicinity of Golden 1 Center after the event?	Little congestion	16 (46%)	3 (43%)	30 (48%)	17 (25%)	4 (29%)	16 (47%)	8 (44%)	31 (44%)	X^2 = 9.4 p-value= 0.09
	Moderate congestion	17 (49%)	3 (43%)	29 (47%)	42 (63%)	9 (64%)	14 (41%)	9 (50%)	29 (41%)	
	Severe congestion	2 (5%)	1 (14%)	3 (5%)	8 (12%)	1 (7%)	4 (12%)	1 (6%)	10 (14%)	
Overall, how would you rate your travel experience to and from Golden 1 Center?	Very good	17 (50%)	3 (43%)	39 (63%)	37 (55%)	6 (43%)	20 (59%)	10 (56%)	30 (43%)	X^2 = 9.83 p-value= 0.46
	Good	15 (44%)	4 (57%)	18 (29%)	21 (31%)	6 (43%)	9 (26%)	7 (39%)	29 (41%)	
	Ok	1 (3%)	0 (%)	4 (6%)	7 (10%)	2 (14%)	5 (15%)	1 (5%)	9 (13%)	
	Bad	0 (0%)	0 (0%)	1 (2%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1 (2%)	
	Very Bad	1 (3%)	0 (0%)	0 (0%)	1 (2%)	0 (0%)	0 (0%)	0 (0%)	1 (1%)	

Quadrant 1 = North of I St and west of 5th Street
Quadrant 2 = North of I St between 5th and 7th Streets
Quadrant 3 = North of I St and east of 7th Street
Quadrant 4 = East of 7th Street between J and L Streets
Quadrant 5 = South of L St and east of 7th Street
Quadrant 6 = South of L St between 5th and 7th Streets
Quadrant 7 = South of L St and west of 5th Street
Quadrant 8 = West of 5th Street between J and L Streets (including Old Sac)

Responses rounded to the nearest 1%. For statistical test, quadrants 2 and 5 excluded due to small sample size. Moderate and severe congestion combined. Ok, bad, and very bad combined.
Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.

Parking location showed statistically significant effects (at a 90 percent confidence level) on perceived congestion prior to and after events at Golden 1 Center.

- Notably, 73 percent of attendees who parked in quadrant 3 (North of I Street and east of 7th Street) reported experiencing little congestion prior to the event. When this response is removed from the table and the chi-square value is re-calculated, the p-value changes from 0.08 to 0.47, which implies that much of the interactive effects between parking location and perceived congestion prior to the event are due to parking quadrant 3 and its attendees' positive perceptions of traffic congestion.
- After the event concluded, 75 percent of attendees who parked in quadrant 4 (East of 7th Street between J and L Streets) reported experiencing moderate or severe congestion. When this response is removed from the table and the chi-square test is re-calculated, the p-value changes from 0.09 to 0.99. This implies that much of the interactive effects between parking location and perceived congestion after the event are due to parking quadrant 4, and its attendees' negative perceptions of traffic congestion. This conclusion is consistent with field observations, which has revealed long waits exiting some garages located in Quadrant 4.

Of the 12 respondents that rated pre-event traffic congestion as 'severe', all traveled from home and reserved parking in advance. Half of this group parked in quadrant 8 (west of 5th Street between J and L Streets (including Old Sacramento). Three-quarters of this group reported that they visit downtown Sacramento (for purposes other than attending events at Golden 1 Center) about once per month.

Table 13 shows a cross-classification table of games attended and overall driver satisfaction. Key findings from this table are:

- Of those that had attended 11 or more games, 66 percent reported experiencing little congestion prior to the event. In contrast, only 54 percent of those who had attended 10 games or less reported experiencing little congestion. When this statistic was recalculated by aggregating games attended into either 1 to 10, or 11 to 25, the p-value decreased to 0.05, indicating a stronger interaction. This suggests correlation between frequency of games attended and perceptions of pre-event traffic congestion.

TABLE 13
CROSS-CLASSIFICATION OF GAMES ATTENDED AND DRIVER SATISFACTION

Travel Perceptions		Games Attended				Statistical Significance
		1 - 5	6 - 10	11 - 20	21 - 25	
How would you describe traffic congestion in the vicinity of Golden 1 Center prior to the event?	Little congestion	36 (55%)	31 (53%)	83 (67%)	63 (66%)	X^2 = 5.82 p-value= 0.12
	Moderate congestion	25 (38%)	25 (42%)	36 (29%)	28 (29%)	
	Severe congestion	5 (7%)	3 (5%)	5 (4%)	4 (4%)	
Overall, how would you rate your travel experience to and from Golden 1 Center?	Very good	35 (53%)	28 (48%)	63 (50%)	49 (52%)	X^2 = 3.21 p-value= 0.78
	Good	22 (33%)	21 (35%)	48 (38%)	38 (40%)	
	Ok	8 (12%)	8 (14%)	10 (8%)	5 (5%)	
	Bad	0 (0%)	2 (3%)	1 (1%)	1 (1%)	
	Very Bad	1 (2%)	0 (0%)	3 (3%)	2 (2%)	

Notes:
- At the time of the survey, 25 home regular season games had been played.
- For chi-square test calculation, moderate and severe congestion categories and ok, bad, and very bad responses were combined due to their low sample sizes.

Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.

Table 14 shows a cross-classification table of arrival travel mode and overall travel experience. Key findings from this table are:

- Among season ticket members, a somewhat greater proportion (87 percent) of attendees who arrived by private vehicle or Uber/Lyft rated their overall travel experience as 'very good' or 'good', when compared to ratings from attendees that arrived via light rail (77 percent). Although based on a small sample size, 90 percent of those that walked rate their overall experience as 'very good'. The p-value corresponding to the chi-Squared test was 0.10, indicating a high likelihood of interaction between these variables.
- Of the nine attendees that rated their overall travel experience as 'bad' or 'very bad', each used a private vehicle to access Golden 1 Center.

TABLE 14
CROSS-CLASSIFICATION OF ARRIVAL MODE AND OVERALL TRAVEL EXPERIENCE

Travel Perceptions		Overall, how would you rate your travel experience to and from Golden 1 Center?					Statistical Significance
		Very Good	Good	Ok	Bad	Very Bad	
Season Ticket Members							
What primary mode of travel did you use to arrive at Golden 1 Center?	Private Vehicle	182 (51%)	127 (35%)	41 (12%)	5 (1%)	4 (1%)	X^2 = 10.56 p-value= 0.10
	Uber/Lyft	20 (42%)	22 (46%)	6 (12%)	0 (0%)	0 (0%)	
	Light Rail	38 (48%)	23 (29%)	18 (23%)	0 (0%)	0 (0%)	
	Walk	9 (90%)	1 (10%)	0 (0%)	0 (0%)	0 (0%)	
Single Game Buyers							
What primary mode of travel did you use to arrive at Golden 1 Center?	Private Vehicle	69 (55%)	46 (37%)	10 (8%)	0 (0%)	0 (0%)	N / A
	Uber/Lyft	13 (69%)	5 (26%)	1 (5%)	0 (0%)	0 (0%)	
	Light Rail	6 (86%)	0 (0%)	1 (14%)	0 (0%)	0 (0%)	
	Walk	4 (57%)	2 (29%)	1 (14%)	0 (0%)	0 (0%)	

Notes:
- Data not shown for bus and bicycle modes due to very sample size.
- For chi-square test calculation, ok, bad, and very bad responses were combined due to their low sample sizes.
- Chi-square test not possible for single game buyers due to sample size limitations.

Source: Online survey e-mailed by Sacramento Kings organization on February 9, 2017 to all season ticket members and single-game buyers who purchased tickets for the Wednesday, February 8th game.

VI. COMPARISONS WITH ESC DRAFT EIR

Chapters II through V contained a variety of travel-related analyses for major events at Golden 1 Center. This chapter compares relevant results from those chapters against estimates and assumptions from the *ESC Draft EIR* (2013).

Comparison with ESC Draft EIR (2013)

Table 15 compares the measured mode choice, vehicle occupancy, pre-event peak hour arrival percentages, directionality of trips, use of pedestrian linkages, and geographic distribution of parking demand against the estimates and assumptions from the *Draft EIR*.

TABLE 15
COMPARISON OF ESC DRAFT EIR ESTIMATES AND ASSUMPTIONS TO OBSERVED DATA AT GOLDEN 1 CENTER

Attendee Travel Characteristics		**ESC Draft EIR**	**February 8, 2017 Kings Game**	**Comments**
Travel Mode	Arrival via Private Vehicle	90%	86%	TNC classified as private vehicle for this purpose Source of EIR data: Table 4.10-7
	Arrival via Light Rail	7%	11%	
	Arrival via Walk	2.5%	2%	
	Arrival via Bicycle	0.5%	0%	
	Arrival via Bus	0%	1%	
Average Vehicle Occupancy		2.27	2.32	Source of EIR data: Table 4.10-12
Percent of Vehicle Arrivals during Pre-Event Peak Hour [1]		67.4%	55.0%	Source of EIR data: Table 4.10-12
Arriving Vehicle Trip Distribution	EB J Street east of 3rd Street	2,136	2,077	Traffic volume comparisons should be made with caution. Draft EIR did not assume pre-event lane closures currently in operation. EIR estimates also includes trips associated with non-ESC proposed land uses.
	SB 3rd Street south of J St.	1,544	735	
	NB 5th St north of J St.	799	603	
	SB 7th Street approaching J St.	790	467	
	WB L Street approaching 7th St.	1,080	732	
	EB Capitol Mall approaching 4th St.	876	546	
	NB 5th Street approaching Capitol Mall	397	449	
	Total Inbound Flow	7,622	5,609	
Relative Use of Pedestrian Accesses	7th Street at K Street	40%	39%	Source of EIR data: Table 4.10-12 with adjustments to reflect current closure of K Street west of 5th Street
	L Street at 5th Street	35%	43%	
	J Street at 5th Street [2]	25%	10%	
	VIP Entrance on L Street at 6th Street	0%	8%	

TABLE 15
COMPARISON OF ESC DRAFT EIR ESTIMATES AND ASSUMPTIONS TO OBSERVED DATA AT GOLDEN 1 CENTER

Attendee Travel Characteristics		ESC Draft EIR	February 8, 2017 Kings Game	Comments
Geographic Distribution of Parking Demand	West of Golden 1 Center [3]	9%	16%	Source of EIR data: Table 4.10-10 with adjustments to reflect current limited amount of parking at site.
	East of Golden 1 Center	28%	30%	
	North of Golden 1 Center	22%	25%	
	South of Golden 1 Center [3]	41%	29%	

Notes:
[1] Whereas EIR estimate is for project trips only, actual traffic volume observation also includes background (non-project-related) travel, which may dampen the peaking effect. 70 percent of all pedestrians who accessed Golden 1 Center did so during the pre-event peak hour.

[1] Lesser than anticipated use of the J Street at 5th Street pedestrian access most likely due to less available parking in that area (for variety of reasons) and temporary closure of sidewalk on east side of 5th Street north of J Street.

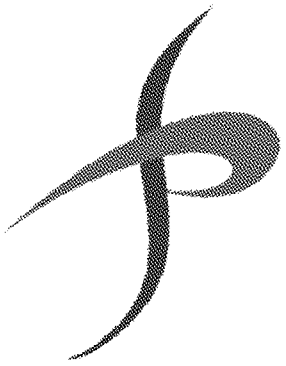
[2] The majority of parking demand south and west of Golden 1 Center used the L Street at 5th Street access, thereby showing consistent results with the pedestrian flow data.

This table indicates that the *Draft EIR* includes several estimates and assumptions that were more conservative than actual conditions. The *Draft EIR* estimated that:

- 90 percent of attendees would arrive to Golden 1 Center by private vehicle (actual = 86 percent).
- Vehicles would have an average occupancy of 2.27 persons (actual = 2.32).
- 67.4 percent of all vehicle trips would arrive during the pre-event peak hour (actual cannot be calculated precisely but is likely in the 55 to 65 percent range).

The above three factors would result in an approximate 17 percent decrease in pre-event peak hour vehicle trips relative to the estimate contained in Table 4.10-12 of the *Draft EIR*. Table 15 shows a combined 26 percent decrease in the total volume of traffic at the eight gateways to Golden 1 Center relative to *Draft EIR* estimates. This decrease is due to a number of factors including fewer project-related vehicle trips, a greater number of pre-event peak hour street closures, and the *Draft EIR* assumptions that the remaining non-ESC proposed land uses are also developed.

In conclusion, the actual traffic characteristics and volumes observed during the February 8th Kings game confirm that the *ESC Draft EIR* used reasonable, if not slightly conservative, travel behavior estimates in its transportation impact analysis.



APPENDIX A:

Survey Instrument

Golden 1 Center Travel Survey

Introduction

We want to hear about your Golden 1 Center travel experience – complete this brief survey.

The goal of this survey is to learn more about how guests travel to and from events at Golden 1 Center. The results of the survey will be used to further enhance the overall experience for Kings fans and other Golden 1 Center event attendees. Your honest feedback is greatly valued.

The survey should take no more than 5 minutes.

1. What was the most recent Kings home game you attended at Golden 1 Center?

- ◯ Wednesday, February 8th against the Boston Celtics
- ◯ Monday, February 6th against the Chicago Bulls
- ◯ Saturday, February 4th against the Golden State Warriors
- ◯ Friday, February 3rd against the Phoenix Suns
- ◯ Game in January 2017
- ◯ Game in November or December 2016
- ◯ None

Travel Characteristics

Please answer the following questions about your travel during the most recent Kings home game you attended at Golden 1 Center.

* 2. For the most recent game you attended, what primary mode of travel did you use to arrive at Golden 1 Center (not including the final walk from a garage, transit station, bar/restaurant, etc.)?

- ◯ Drove my own private vehicle
- ◯ Passenger in a private vehicle
- ◯ Uber/Lyft drop-off
- ◯ Taxi drop-off
- ◯ Limo
- ◯ Light rail (walked to station)
- ◯ Light rail (drove to station)
- ◯ Bicycle
- ◯ Bus
- ◯ Walked
- ◯ Paratransit

Other (please specify)

3. Where was the origin of your primary trip to Golden 1 Center?

- ◯ Home
- ◯ Work

Other (please specify)

4. What ZIP code (or city) did your primary trip originate from?

5. Did you visit a restaurant, bar, or retail use prior to arriving at Golden 1 Center?

- ◯ Yes, within the immediate vicinity of Golden 1 Center
- ◯ Yes, at an establishment elsewhere
- ◯ No

6. Did you visit a restaurant, bar, or retail use after the event at Golden 1 Center?

- ◯ Yes, within the immediate vicinity of Golden 1 Center
- ◯ Yes, at an establishment elsewhere
- ◯ No

If you arrived in a private vehicle...

7. How many people rode in the vehicle (including yourself)?

- ◯ One
- ◯ Two
- ◯ Three
- ◯ Four or more

8. What primary route did you use to drive to the game?

- ◯ J Street ramps from northbound I-5
- ◯ J Street ramps from southbound I-5
- ◯ Eastbound over the Tower Bridge
- ◯ Northbound on 5th Street
- ◯ Northbound on 8th Street
- ◯ Northbound on 10th Street
- ◯ Westbound on I Street
- ◯ Westbound on L Street
- ◯ Westbound on P Street
- ◯ Southbound on 7th Street
- ◯ Southbound on 12th Street from SR-160

Other (please specify)

9. Did you reserve a parking space in advance of driving to the game?

- ◯ Yes
- ◯ No

10. How much did parking cost?

- ◯ Free
- ◯ $10 or less
- ◯ $11 to $15
- ◯ $16 to $25
- ◯ More than $25
- ◯ Unknown, parking paid as part of season ticket purchase

11. Where did you park? Please indicate the location based on the quadrants numbered on the map below.

- ◯ 1
- ◯ 2
- ◯ 3
- ◯ 4
- ◯ 5
- ◯ 6
- ◯ 7
- ◯ 8

12. What type of parking facility did you use?

- ◯ Parking structure/garage
- ◯ Surface lot
- ◯ On-street

13. How would you describe traffic congestion in the vicinity of Golden 1 Center prior to the event?

- ◯ Little congestion
- ◯ Moderate congestion
- ◯ Severe congestion

14. How would you describe traffic congestion in the vicinity of Golden 1 Center after the event?

- ◯ Little congestion
- ◯ Moderate congestion
- ◯ Severe congestion

15. What was the primary reason you did not take light rail?

- ◯ Quicker to drive
- ◯ Station too far from work or home
- ◯ Cheaper for our family to drive
- ◯ Concerns over safety / cleanliness
- ◯ Lack of system knowledge
- ◯ Concerns over crowding

Other (please specify)

If you took Uber/Lyft...

16. How much was your fare to travel to Golden 1 Center?

- ◯ Less than $5
- ◯ $5 to $10
- ◯ $11 to $15
- ◯ More than $15

17. At what street and cross street were you dropped off? For example, J Street at 5th Street.

Street: _____

Cross street: _____

18. How many people were dropped off (including yourself)?

- ◯ One
- ◯ Two
- ◯ Three
- ◯ Four or more

19. What mode of travel did you use for your return trip<u>after</u> the game?

- ◯ Passenger in a private vehicle
- ◯ Uber/Lyft
- ◯ Taxi
- ◯ Light rail
- ◯ Bus
- ◯ Walked
- ◯ Paratransit

Other (please specify)

_____

20. What was the primary reason you selected Uber/Lyft to get to the game? Pick all that apply.

- [ ] Inexpensive
- [ ] Convenient
- [ ] Weather (too cold to walk/bike)
- [ ] Don't own a car
- [ ] Don't live near light rail
- [ ] Went to a bar/restaurant before/after the game

21. If Uber/Lyft didn't exist, what mode of travel would you have taken?

- ◯ Private vehicle
- ◯ Light rail
- ◯ Bus
- ◯ Taxi
- ◯ Bicycle
- ◯ Walk
- ◯ Would not have attended game
- ◯ Other

22. If the price of an Uber/Lyft ride were to double, how likely would you be to select a different mode of travel?

- ◯ Not likely
- ◯ Somewhat likely
- ◯ Very likely

If you took light rail...

23. What line did you use?

- ◯ Blue Line from Watt/I-80
- ◯ Gold Line from Folsom/Sunrise
- ◯ Blue Line from Cosumnes River College

24. What mode of travel did you use for your return trip<u>after</u> the game?

- ◯ Passenger in a private vehicle
- ◯ Uber/Lyft
- ◯ Taxi
- ◯ Light rail
- ◯ Bus
- ◯ Walked
- ◯ Paratransit

Other (please specify)

25. How would you rate your ride in terms of**safety**?

- ◯ Very good
- ◯ Good
- ◯ OK
- ◯ Bad
- ◯ Very bad

26. How would you rate your ride in terms of **convenience**?

- ◯ Very good
- ◯ Good
- ◯ OK
- ◯ Bad
- ◯ Very bad

27. How would you rate your ride in terms of **value**?

- ◯ Very good
- ◯ Good
- ◯ OK
- ◯ Bad
- ◯ Very bad

28. Will you ride light rail to games in the future?

- ◯ Yes
- ◯ No

If you rode a bicycle...

29. What primary streets did you ride on to get to Golden 1 Center?

30. How long did your trip take?

- ◯ Less than 5 minutes
- ◯ 5 to 15 minutes
- ◯ More than 15 minutes

31. How would you describe the quality of your bike route?

- ◯ Very comfortable to bike
- ◯ Somewhat comfortable to bike
- ◯ Somewhat uncomfortable to bike
- ◯ Very uncomfortable to bike

If you walked...

32. What primary streets did you walk on to get to Golden 1 Center?

33. How long did your trip take?

- ◯ Less than 5 minutes
- ◯ 5 to 15 minutes
- ◯ 16 to 30 minutes
- ◯ More than 30 minutes

34. How would you describe the quality of your walking route?

- ◯ Very comfortable to walk
- ◯ Somewhat comfortable to walk
- ◯ Somewhat uncomfortable to walk
- ◯ Very uncomfortable to walk

35. What mode of travel did you use for your return trip<u>after</u> the game?

- ◯ Passenger in a private vehicle
- ◯ Uber/Lyft
- ◯ Taxi
- ◯ Light rail
- ◯ Bus
- ◯ Walked
- ◯ Paratransit

Other (please specify)

Travel Experience

36. Overall, how would you rate your travel experience to and from Golden 1 Center?

- ◯ Very good
- ◯ Good
- ◯ OK
- ◯ Bad
- ◯ Very bad

Season Ticket Holder Profile

37. On average, how often do you visit downtown Sacramento (excluding attending events at Golden 1 Center)?

- ◯ Daily
- ◯ Once a week
- ◯ Once a month
- ◯ First time here

38. How many of the 25 regular season Kings home games have you attended this year?

- ◯ This is my first
- ◯ 2 to 5
- ◯ 6 to 10
- ◯ 11 to 20
- ◯ 21 or more

39. How many seats are included in your Season Ticket Membership?

- ◯ One
- ◯ Two
- ◯ Three
- ◯ Four
- ◯ Five or more

40. Are you:

- ◯ Male
- ◯ Female

All finished - thank you!

41. Email Address