



# University of Iowa Football Special Events Management Strategic Plan

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Prepared for



Prepared by



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# 1.0 Introduction

This project focuses on improving travel, safety and efficiency to and from Iowa's largest traffic generating events. These include:

- Iowa State Fair
- Iowa State University Home Football Games
- University of Iowa Home Football Games

The objective of this work is to analyze traffic and pedestrian flow at each event and to work with event staff, agencies and others in developing roadway, operations and safety improvements where appropriate. The project deliverable is a report which consists of short and long term recommendations.

To complete this effort, the Iowa Department of Transportation (Iowa DOT) selected a professional traffic engineering consulting team to review the traffic management components at each event. This report is focused on the input, feedback, observations and recommendations for the University of Iowa home Football games based upon observations and input over the 2007-2008 football season.

## 2.0 Key Event Elements

### 2.1 Event Characteristics and Attendance

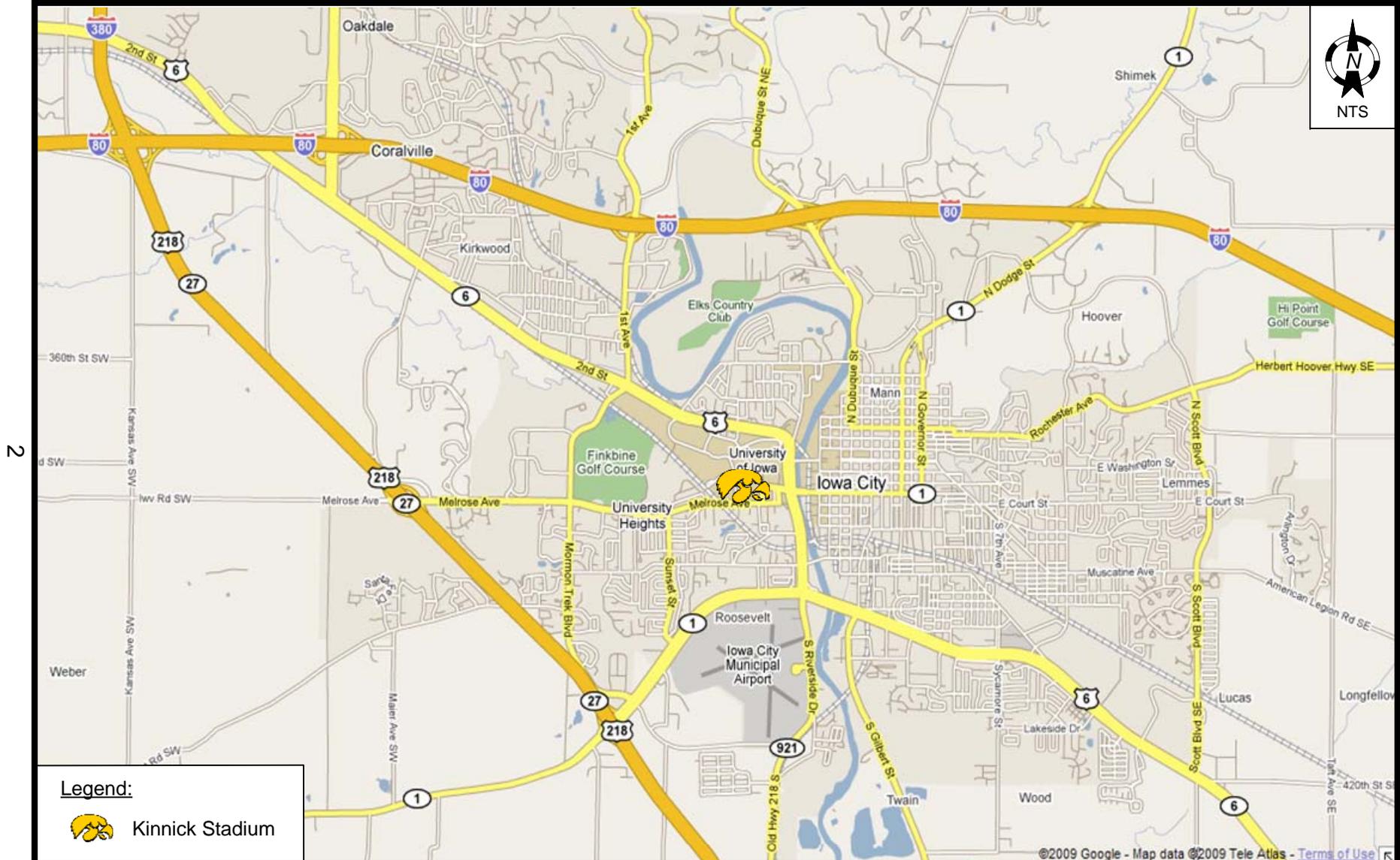
Project Team members conducted on-site observations of event management for the University of Iowa home football game on October 27, 2007. The weekend of October 26-28, 2007 was the University of Iowa's annual Family Weekend, which consists of live entertainment, tailgating, and a family brunch among other activities. On Saturday, October 27, 2007 the University of Iowa played the University of Michigan State Spartans in front of a sellout crowd. Attendance for the game was unofficially reported at 70,585. The additional number of people tailgating has been estimated as high as 40% of the game day crowd.

Previous study and field review of University of Iowa home football games was conducted by the Center of Transportation Research and Education (CTRE) on November 11, 2005 and September 9, 2006. Information obtained from these field reviews has been incorporated into this plan through meetings with CTRE staff.

### 2.2 Surrounding Roadway Network

Figure 1 shows the location of Kinnick Stadium within Iowa City. Key roadways that provide access to the Iowa City area include:

- Interstate 80
- Interstate 380
- U.S. Highway 218
- U.S. Highway 6
- Iowa Highway 1
- Melrose Avenue
- Morman Trek Boulevard



Legend:  
 Kinnick Stadium



Kinnick Stadium Vicinity Map

FIGURE 1

©2009 Google - Map data ©2009 Tele Atlas - Terms of Use

Figure 2 shows the primary access routes to the stadium along with basic roadway characteristics. Additional roadway descriptions and directions to the stadium are summarized in the Appendix.

### 2.3 On-Site Parking

The University of Iowa Department of Athletics parking map, as illustrated in Figure 3, identifies available football parking areas. Reserved parking lots are for members of the I-Club and require a parking pass. The I-Club is the University of Iowa’s Foundation’s annual fund-raising program for all of the University’s intercollegiate athletic programs. General parking and free parking are open to the public and don’t require a parking pass. Parking is available on a first come first serve basis for all lots.

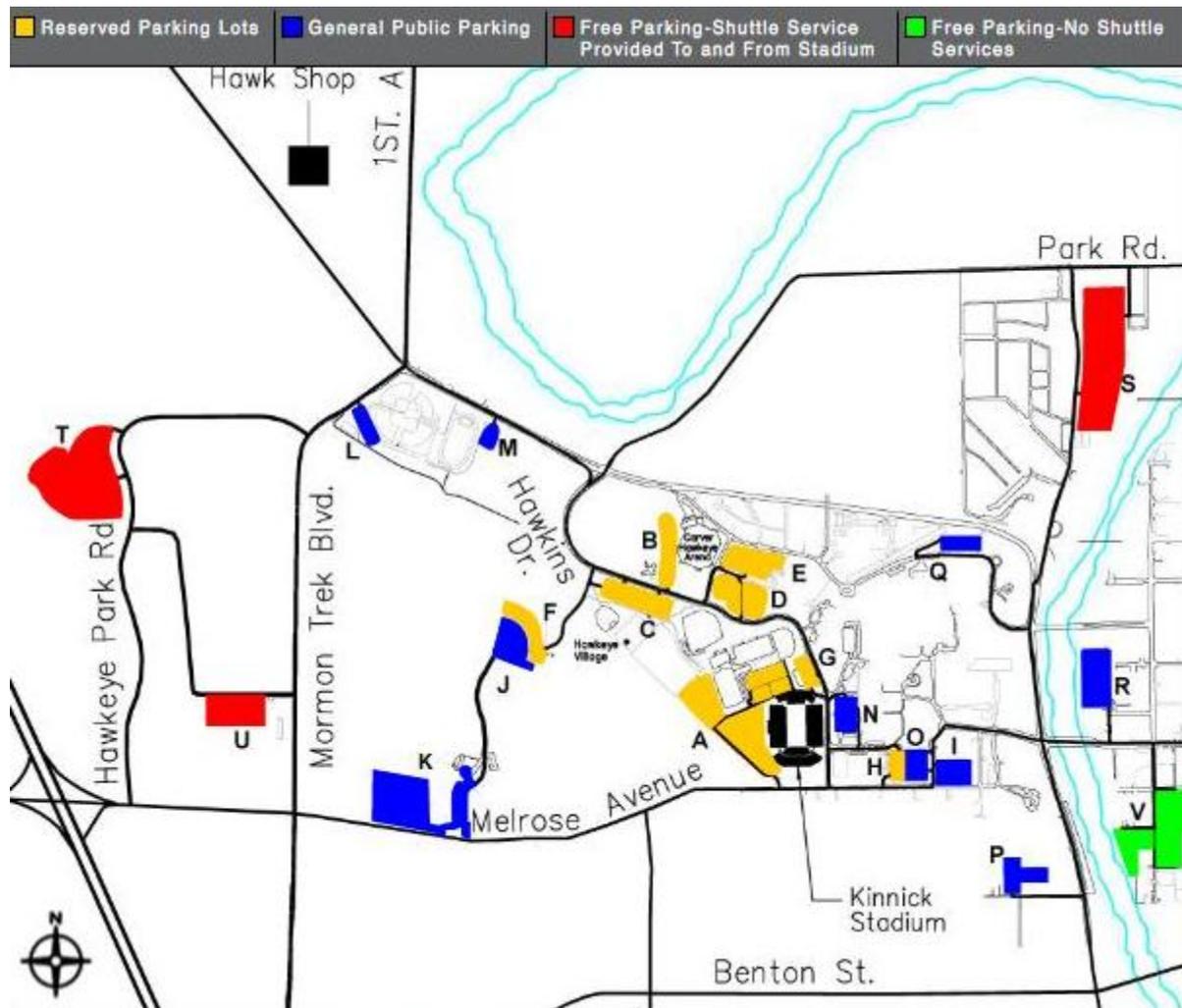
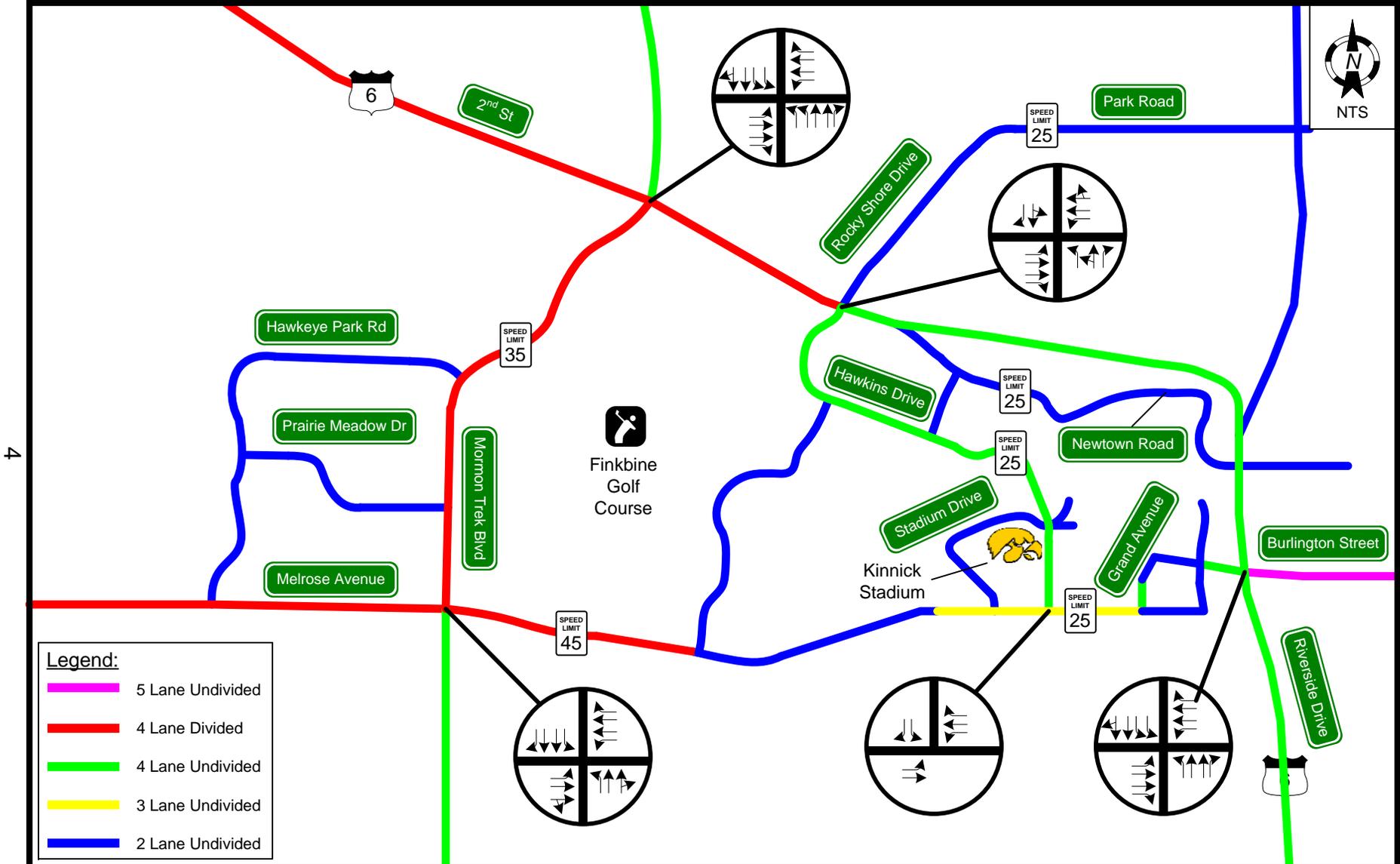


Figure 3: University of Iowa Parking Map

Parking for all lots not designated as free parking lots, including reserved lots, are \$10 for cars, trucks, and SUV’s, with the exception of lots Q and R, which charge \$0.90 per hour. Select lots allow parking for RV’s and buses, with the cost to park being \$20 for mobile homes and \$30 for buses. Mobile homes are permitted to park in lots A2, D1, F, L, M, and K, while buses are



Lane Geometrics and Speed Limits

FIGURE 2

allowed to park in lots A2 and K. Handicapped parking is available in lots A3 and N. A3, located north of the stadium, has a limited number of handicapped parking available, while lot N is completely reserved for handicapped parking.

The University of Iowa Athletic Department offers and promotes pre-paid parking at the reserved lot locations, this helps reduce congestion and improve access to the stadium. Further information regarding parking can be found on the University of Iowa's athletic website at: <http://www.hawkeyesports.com/gameday/gameday-m-footbl.html>. Parking map is located at: <http://www.uifootballparking.com/>

## **2.4 Traffic Event Management Staffing**

There are a number of public agencies who provide direct traffic control for each game. These include the Iowa City Police, University Police, Iowa State Patrol, City of Coralville and Iowa Department of Transportation. Traffic control is provided at a number of ramp junctions by Iowa State Patrol. Local streets near the stadium are controlled by Iowa City Police, Coralville and University Police. Figure 4 illustrates the intersection management provided by each agency.

## **2.5 Emergency Management Staffing**

Game-day emergency services are coordinated through the University and include:

- Johnson County Emergency Management
- Iowa State Patrol
- City of Iowa City
- City of Coralville
- Iowa City Fire Department
- Iowa DOT

With the I-80 reconstruction, Johnson County in 2007, hosted a table top exercise to work through game-day incident management. The result of the exercise identified the two primary opportunities to improve the use of the portable DMS and to improve the direct communication to the media.

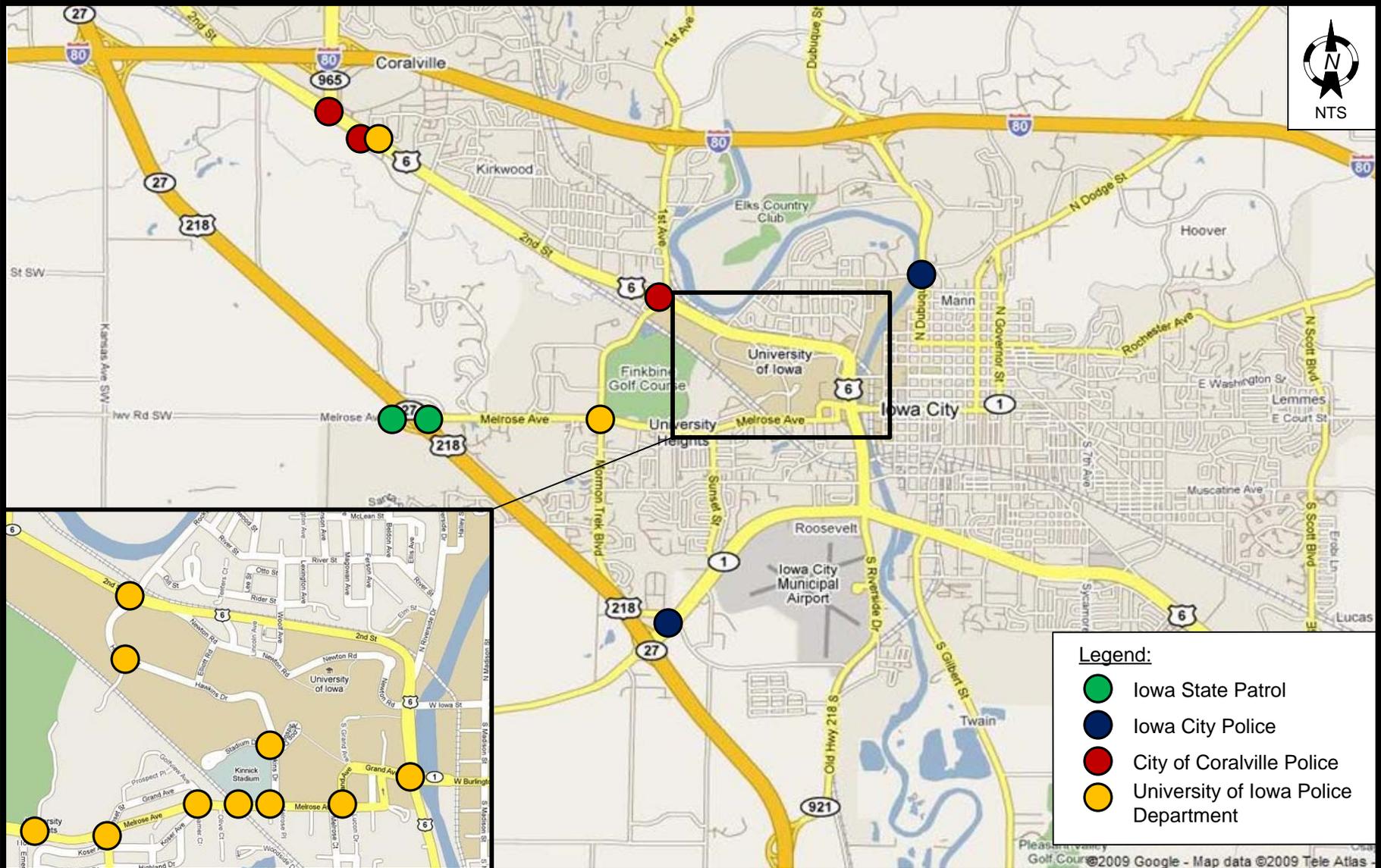
The official website should contain, at a minimum, a generic statement related to emergency evacuation procedures. This would provide those fans that are concerned about their safety with a level of comfort knowing that a plan is in place, even though the plan is not specifically stated. The current practice is to not post detailed and specific emergency plans for public viewing, for reasons of liability and safety.

## **2.6 Shuttle Service**

There are three free parking lots that provide a free shuttle to Kinnick Stadium. Those lots are S, T, and U as shown in Figure 3. Shuttle service begins two hours prior to kickoff.

Additionally, remote service is also provided on the Hawkeye Express. The Hawkeye Express is a train service that transports fans from the parking area located near the Coral Ridge Mall to the southwest corner of Kinnick Stadium for a round-trip fee of ten dollars per person with children twelve and under riding for free. The train is leased by the athletic department from Iowa Northern Railroad. Service to the stadium starts three hours prior to





Agency Intersection Control

FIGURE 4

kickoff pre-game, while post-game service starts at the beginning of the fourth quarter and runs until 90 minutes after the game. In 2007, the service transported about 4,000 fans per game.

Tickets for the Hawkeye Express can be purchased in advance at the University of Iowa athletic ticket office in Carver-Hawkeye Arena and the Iowa City/Coralville Convention and Visitors Bureau visitors' information desk at Coral Ridge Mall. Tickets are also available on game day at the Hawkeye Express depot. Fans that have a parking pass may also trade the pass in for four free tickets on the Hawkeye Express. The Hawkeye Express is not wheelchair accessible.

## **2.7 Media Coordination**

Iowa Radio Network covers Hawkeye Football on KXIC 800 AM in Iowa City. Traffic reports were provided approximately every half hour starting at 8:45 am, 2 hours prior to kick-off, from the Iowa State Patrol helicopter. KXIC supplements these reports with staff and volunteers on the ground.

## **2.8 Intelligent Transportation Systems**

Iowa DOT provides real time traffic conditions and streaming video at [www.511ia.org](http://www.511ia.org). Figure 5 shows the location of the field devices that Iowa DOT manages within the region. Currently, the TripGuide website displays 21 CCTV locations that can be used by traffic management officials to gauge levels of traffic congestion. Additionally, average speed is reported on segments of the interstate and freeway systems with conditions below 45 mph reported as "slow traffic". The Iowa DOT uses the permanent dynamic message signs (DMS) to start with pre programmed messages along I-80 and I-380 three hours prior to kick-off. Staff from the Coralville Maintenance Garage monitor the cameras and the DMS message content and make changes throughout the day as conditions warrant.

# **3.0 Field Observations**

Several observations were noted during the field review on October 27, 2007. Observations were made regarding positive practices in use and areas where there is the potential for improvement. The following sections discuss the positive practices and issues for consideration based on the field review.

## **3.1 Positive Existing Practices**

The following observations were made regarding positive practices in use.

1. **Event Planning** – The University of Iowa does a good job in its preparation for home football games. Meetings are held the week of a home game to discuss traffic control, security, and other issues related to game day activities. Staff members from all agencies involved in game day operations are welcome to attend, including University of Iowa staff, University Police, Iowa City Police, and Iowa State Patrol.
2. **Parking Web Page** – The University of Iowa's Athletic Department's website provides detailed information about available game day parking. Information available includes parking lot locations, times lots open, cost of parking, shuttle information, and a parking map, among other information.



Legend:

Existing DMS

Proposed DMS

Iowa DOT Field Device Locations

FIGURE 5

- The Hawkeye Express – This train shuttle service provides a unique way to arrive and depart from the game serving about 4,000 fans per game. The train parking area is located approximately four miles from the stadium and it drops passengers off at the southwest corner of the Stadium. The Hawkeye Express provides great access to the Stadium for fans and reduces the number of vehicles on the roadway near the Stadium.



Source: N. Hawkins, CTRE/ISU

Figure 6: Looking East at The Hawkeye Express

- Free Parking with Shuttle Service – The three free parking lots with shuttle service are located approximately two miles from the Stadium, with two of the lots located west of the Stadium and one to the east. The location of the lots away from the stadium helps to reduce the amount of vehicles on the roadways directly around the Stadium, where pedestrian activity is high.
- Active and Visible Traffic Control – The staffing and placement of traffic control devices is good. Staffing for manual control of congested intersections and pedestrian locations is well done and traffic control personnel are dressed appropriately in highly reflective garments. The placement of traffic control devices is well thought out and visible on the approach.



Figure 7: Implemented Traffic Control Devices

- Fixed Pedestrian Grade Separation – The pedestrian overpasses over US Highway 6 at the intersections of W. Iowa Street and W Burlington Street separate the heavy pedestrian movement from the vehicular movements reducing the conflict between the two making traffic and pedestrian flow safer and more efficient.



**Figure 8: Pedestrian Grade Separation located at Grand Avenue/Burlington Street and Riverside Drive (Hwy 6)**

7. Fixed Wing Traffic Control Support – The Iowa State Patrol operates a fixed wing airplane pre- and post game providing an excellent view of traffic operations. Communication is maintained between the aircraft and ground about the flow of traffic and reports are provided to the local radio station.



**Figure 9: View from Fixed Wing Support**

8. Iowa DOT Existing ITS Communications – The Iowa DOT currently operates several types of ITS field devices in the Iowa City area, including CCTV cameras and DMS. These devices provide fans with information that can be used pre-trip and in route to estimate travel conditions and assist in the selection of a preferred arrival route. Refer to Figure 5 for the ITS field device locations.
9. Egress Traffic Control Plan – The post game plan for directing traffic away from the Stadium is effective. The closing of portions of Stadium Drive, Hawkins Drive, and Melrose Avenue for 20 minutes after the game allows for the movement of a large number of pedestrians with reduced conflicts with vehicles. The one way traffic flows that are instituted are also effective in moving traffic away from the Stadium quickly.



Source: N. Hawkins, CTRE/ISU



Source: N. Hawkins, CTRE/ISU

Figure 10: Pedestrian Activity near Kinnick Stadium

### 3.2 Issues for Consideration

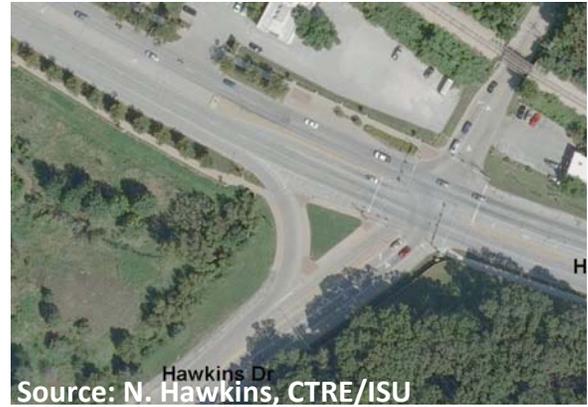
Several observations were also noted that have the potential for improvement, which included:

1. Vehicle and Pedestrian Conflicts along Melrose Avenue – Pre-game pedestrian activity along Melrose Avenue mixes vehicular traffic and pedestrian movements. This situation has been improved slightly during post game as parking management staff surrounding the Stadium hold vehicular traffic for 20 minutes post game to allow pedestrian flow and reduce conflicts.



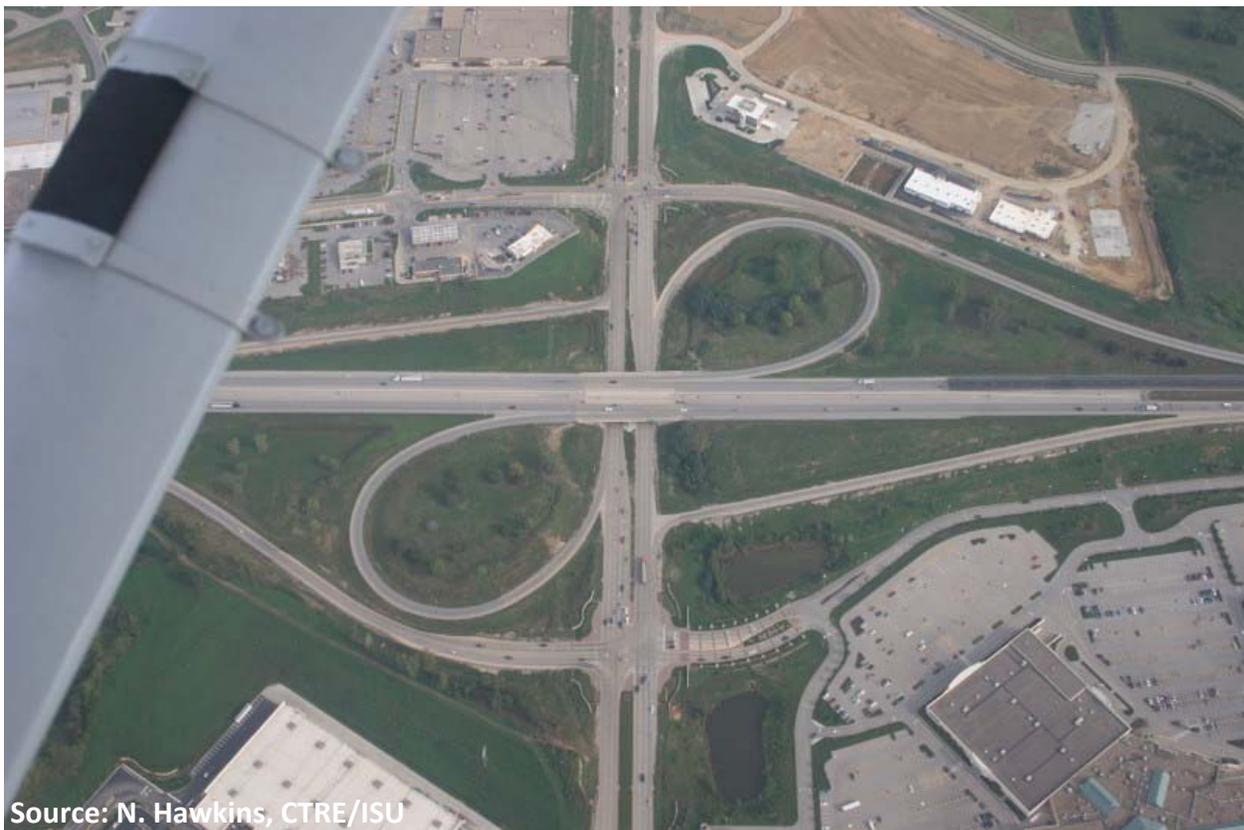
Figure 11: Pre-Game Pedestrian Activity along Melrose Avenue

2. The Eastbound Right Turn at Highway 6 and Hawkins Drive - The eastbound, channelized right-turn lane at the intersection of Highway 6 and Hawkins Drive experiences considerable delay during pre-game. The delay experienced at the intersection contributes to large queues pre-game along Highway 6 and southbound 1<sup>st</sup> Avenue.



**Figure 12: (left) Traffic Queues at Highway 6 and 1<sup>st</sup> Avenue southbound and (right) Aerial View of US Highway 6 and Hawkins Drive**

3. Northbound Right Turn at Highway 965/US Highway 6/I-80 - Northbound Coral Ridge Avenue has three right-turns (Mall Entrance, I-80 Eastbound and I-80 Westbound) all within 1000 feet. Each maneuver carries a considerable amount of traffic post game. The result is significant delay and congestion northbound on Coral Ridge Avenue from I-80 to Highway 6. The lane assignment to complete the proper right-turn and the vertical profile hinder the operation along this segment.



**Figure 13: Northbound Coral Ridge Road at Coral Ridge Mall and the I-80 Interchange**

- Ingress from the West – The balance of traffic arrival to the Stadium is heavily weighted toward arrival from the west. Most of the pre-game traffic congestion can be attributed to the large number of arrivals from I-80 utilizing the Iowa Highway 965 and 1<sup>st</sup> Avenue Interchanges, as well as those vehicles arriving on Melrose Avenue from US Highway 281.



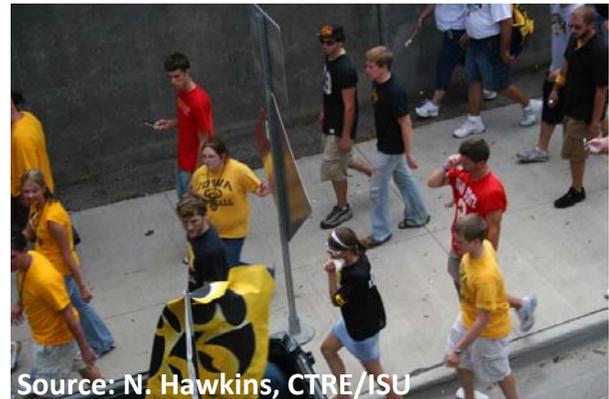
Source: N. Hawkins, CTRE/ISU

Figure 14: Melrose Avenue Ingress Queue

- Egress Pedestrian Flow - The pedestrian overpasses over US Highway 6 at the intersections of W Iowa Street and W Burlington Street are not utilized by all fans. Pedestrians that cross at street level do not have marked cross walks or pedestrian signal heads on all approaches. Pedestrians were also observed colliding with fixed signs along the south side of Grand Avenue.



Source: N. Hawkins, CTRE/ISU



Source: N. Hawkins, CTRE/ISU

Figure 15: Post-Game Pedestrian Activity at Grand Avenue & Riverside Drive

- Communications – Event management staff currently use several different communication channels, with each different agency utilizing a different channel. This requires the use of multiple radios/channel changing to monitor the communications of each agency and maintain coordination of event activities.
- Evacuation Planning – The current game-day web site does not identify evacuation or destinations for emergency management such as severe weather.

## 4.0 Recommendations

The following section addresses the issues for consideration as described in the previous section. Short and long term strategies were developed for each of the issues.

### 1. Vehicle and Pedestrian Conflicts along Melrose Avenue

**Short Term:** Close Melrose Avenue from Hawkins Drive to Golfview Avenue one hour prior to kickoff. This will eliminate the pedestrian-vehicle conflicts that currently exist with pedestrians utilizing Melrose Avenue, as there is not enough room on the sidewalk/curb to accommodate them. Closure can be implemented with barricades and traffic control personnel. DMS or static signs should communicate Local Traffic Only and not a Through Street at key decision locations such as Mormon Trek Boulevard and Sunset Street intersections with Melrose Avenue. This traffic pattern change should be communicated through an active public involvement program to communicate the change through web and local media. A high-level concept of the closure traffic control is illustrated in Figure A1 of the Appendix.

**Long Term:** It is recommended that the short term strategy also be implemented long term. Additional methods of implementing the closure of Melrose Avenue, such as the evaluation of geometric improvements, should be considered. Potential geometric improvements to the surrounding roadway network to improve traffic flow and reduce conflicts should also be considered.

### 2. The Eastbound Right Turn at Highway 6 and Hawkins Drive

**Short Term:** Modify existing right turn to allow dual right turns. Creating dual right turns will increase the capacity of the movement and reduce the queuing and delay experience along US Highway 6 to the west of the intersection, as it will eliminate the need for merging into a single lane to make the right turn at Hawkins Drive.

**Long Term:** Construct dual southbound left turn lanes at 1<sup>st</sup> Avenue. With the construction of dual right turn lanes at Hawkins Drive, dual southbound lanes at 1<sup>st</sup> Avenue will reduce the queuing and delay experienced southbound along 1<sup>st</sup> Avenue.

### 3. Northbound Right Turn at Highway 965/US Highway 6/I-80 - Northbound Coral Ridge Avenue has three right-turns (Mall Entrance, I-80 Eastbound and I-80 Westbound) all within 1000 feet. Each maneuver carries a considerable amount of traffic post game. The result is significant delay and congestion northbound on Coral Ridge Avenue from I-80 to Highway 6. The lane assignment to complete the proper right-turn and the vertical profile hinder the operation along this segment.

**Short Term:** Utilize static signs and traffic control to improve traffic flow. Conceptually, this would involve temporary traffic control for dual westbound right turn lanes from Hwy 6 to Coral Ridge Avenue and static signing or DMS directing traffic destined to eastbound I-80 to the inside right-turn lane and westbound I-80 traffic to the outside

lane. Temporary traffic control will be placed at the I-80 eastbound on ramp to direct traffic as a right-turn only; this will allow traffic headed to I-80 westbound to adjust lanes to the westbound on-ramp (loop ramp). A high-level concept is illustrated in Figure A2 of the Appendix.

Long Term: Based on the success of the short-term solution, the long-term solution could incorporate permanent DMS and Dynamic Lane Assignment devices.



Figure 16: Dynamic Lane Assignment

#### 4. Ingress from the West

Short Term: Identify staff to manage messages and Highway Advisory Radio. Messages being posted to DMS should also be reviewed prior to the 2009 season for possible modification. These options are aimed at reducing congestion by providing the traveler with better information.

Long Term: Improve game day traffic operations with the development of a traffic management system. Planning should be undertaken to determine the scale, equipment, personnel, etc. required for the traffic management system. Implementation of a traffic management system will provide a central location for coordination of traffic management operations with the ability to monitor all areas of interest on game day.

#### 5. Egress Pedestrian Flow

Short Term: Several options were identified for improving pedestrian flow post game which included closing the westbound right turn lane on Burlington Street at US Highway 6, improving the pedestrian crossing on the south leg of Hwy 6, and remounting signs that pedestrian collide with, specifically on the south side of Grand Avenue. These options are intended to reduce friction between pedestrians, which will increase flow, and reduce conflicts with vehicles.

Long Term: Continuation of the westbound lane closure to accommodate pedestrian flow to and from the pedestrian structure. Consider widening the pedestrian structure when it reaches the structures life-cycle.

#### 6. Communications – Event management staff currently use several different communication channels, with each different agency utilizing a different channel. This requires the use of multiple radios/channel changing to monitor the communications of each agency and maintain coordination of event activities.

Short Term: Incorporate all communications between various event staff on a common frequency that can be managed by a coordinator at the command center. A common frequency will allow for increased communication and coordination among the various agencies managing the event.

Long Term: Agency coordination required to maintain upward compatibility as new systems are deployed by traffic management and supporting agencies.

7. Evacuation Planning - Identifying the safe and most efficient route for directing or evacuating fans to a secure environment. Document this information on the game-day web site.

Short Term: Include a generic description of what will happen if an emergency were to occur during a game. A sample description of the how the text might read, as found on the Kansas City Chiefs website (<http://www.kcchiefs.com/arrowhead/policies/>), follows:

### **EVACUATION**

*Should there be an immediate need to evacuate the stadium, fans will be given instructions via the public address system. Stadium personnel will help direct you to the nearest concourse so you can proceed to the closest spiral ramp and exit the stadium at street level.*

Long Term: Issue adequately addressed with the implementation of the short term solution.

# APPENDIX

## Description of the Surrounding Roadway Network

### **2<sup>nd</sup> Street (US Hwy 6)**

2<sup>nd</sup> Street is a four lane roadway that is on a northwestern alignment and serves people to the north of Kinnick Stadium. It provides connectivity to the freeway system on the north (Interstate 80 via Coral Ridge Avenue). 2<sup>nd</sup> Street has a transitioning cross section between divided and undivided roadway segments. Between Coral Ridge Avenue to 22<sup>nd</sup> Avenue and 4<sup>th</sup> Avenue to Hawkins Drive the roadway is a four lane divided cross section, while between 22<sup>nd</sup> Avenue to 4<sup>th</sup> Avenue and Hawkins Drive to Riverside Drive it's a four lane undivided cross section. 2<sup>nd</sup> Street intersects Hawkins Drive, which provides access to the stadium and multiple parking lots. Additionally, parking for the Hawkeye Express is located along 2<sup>nd</sup> Street south of Coral Ridge Avenue.

### **Riverside Drive (US Hwy 6)**

Riverside Drive is a four lane north/south roadway between 2<sup>nd</sup> Street and Iowa Highway 1/US Highway 6 that serves traffic arriving from the south. Iowa Highway 1 provides connectivity to the freeway system to the east (US-218/Iowa Hwy 27). The roadway segment between 2<sup>nd</sup> Street and Iowa Highway 1/ US Highway 6 is primarily undivided, with the exception of the segment between Newton Street/Iowa Street and Grand Avenue/Burlington Street, which is median divided. Access to Kinnick Stadium is available via Grand Avenue to Melrose Avenue. North of Iowa Street, Riverside Drive separates from US Highway 6 and follows the Iowa River north. This section is two lanes between Iowa Street to Park Road and provides access to a free parking lot that provides shuttle service to the stadium.

### **Melrose Avenue**

Melrose Avenue is an east/west roadway that runs along the south side of Kinnick Stadium providing direct access to the stadium and connectivity to the freeway system on the east (US-218/Iowa Hwy 27). The roadways cross section transitions from four lane divided, between US-218/Iowa Hwy 27 to Emerald Street, down to two lane, between Emerald Street and Koser Avenue, and out to a three lane section with a two way left turn lane, between Koser Avenue and Grand Avenue. Melrose provides direct access to several parking lots, as well as lots located along Hawkins Drive, Mormon Trek Boulevard, and Hawkeye Park Road.

### **Mormon Trek Boulevard**

Mormon Trek Boulevard is a four lane, divided, north/south roadway that connects 2<sup>nd</sup> Street to Melrose Avenue. Mormon Trek provides access to Hawkeye Park Road and Prairie Meadow Drive, which each have a free parking lot that provides shuttle service to the stadium.

### **Hawkeye Park Road**

Hawkeye Park Road is two lane roadway that is on a north/south and east west alignment connecting Melrose Avenue to Mormon Trek Boulevard. It provides direct access to a free parking lot that provides shuttle service to the stadium and to Prairie Meadow Drive, which also has a have a free parking lot that provides shuttle service to the stadium.

### **Prairie Meadow Drive**

Prairie Meadow Drive is two lane roadway that is on a north/south alignment that ties into Hawkeye Park Road and Mormon Trek Boulevard. It provides direct access to a free parking lot that provides shuttle service to the stadium.

### **Rocky Shore Drive / Park Road**

Rocky Shore forms the north leg of the intersection of 2<sup>nd</sup> Street and Hawkins Drive. Rocky Shore Drive is a two lane roadway segment on a northeastern alignment that transitions into Park Road, which is on an east/west alignment. Park Road provides access to a free parking lot that provides shuttle service to the stadium near its intersection with Riverside Drive.

### **Hawkins Drive**

Hawkins Drive connects 2<sup>nd</sup> Street to Melrose Avenue through a winding alignment that runs along the east side of Kinnick Stadium providing primary access to the stadium. The roadway is a four lane undivided roadway section. Hawkins provides access to a majority of the parking lots designated for game day traffic, either directly or indirectly through connections to other local roads on campus, which includes Stadium Drive.

### **Stadium Drive**

Stadium Drive is a two lane roadway that is located directly north of Kinnick Stadium. Stadium Drive provides access to several parking lots in the vicinity of the stadium.

### **Grand Avenue / Burlington Street**

Grand Avenue has a north/south and east/west alignment. The north south/alignment is a two lane section that curves into the east/west alignment, which is a four lane divided section. Grand Avenue connects Melrose Avenue to Riverside Drive. East of Riverside Drive Grand Avenue becomes Burlington Street. Burlington Street is a five lane section with a two way left turn lane that crosses the Iowa River and provides access to a couple of parking lots across the river.

### **Newton Road**

Newton Road is a two lane east/west roadway that winds through campus and provides access to a parking lot. The west end connects to 2<sup>nd</sup> Street and the east end intersects Riverside Drive as the west leg, with the east leg being Iowa Street.

**Directions from the University of Iowa Athletics Website**

**From Eastern Iowa:** Interstate 80 to Exit 242 (1<sup>st</sup> Avenue), then south to US Highway 6. Head east on US Highway 6 to Hawkins Drive. Take Hawkins Drive south to the Stadium.

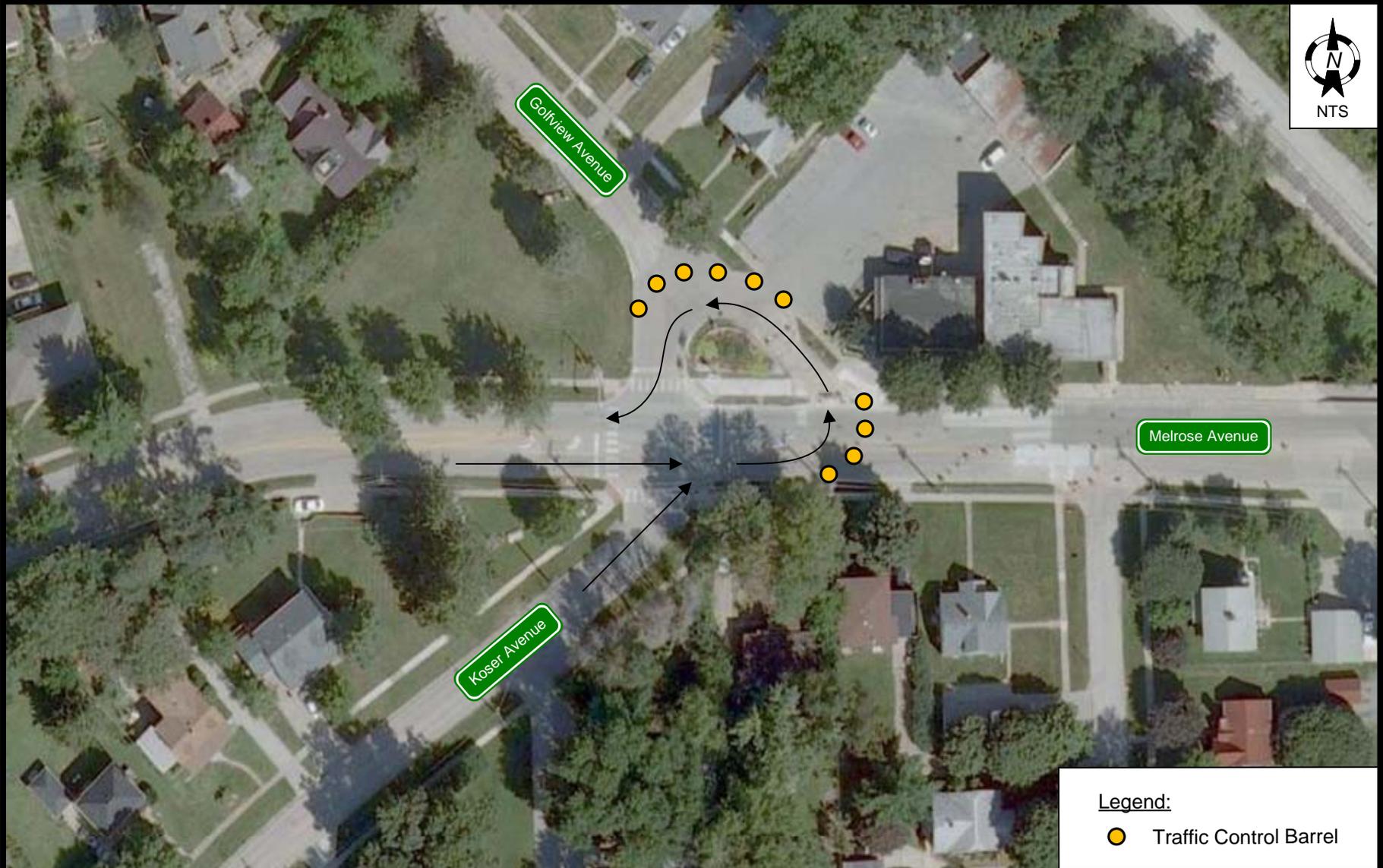
**From Northern Iowa:** US Highway 218/Iowa Highway 27 south to Melrose Avenue. Take Melrose Avenue east to the Stadium.

**From Western Iowa:** Interstate 80 to Exit 240 ((Coral Ridge Road)), then south to US Highway 6. Head east on US Highway 6 to Hawkins Drive. Take Hawkins Drive south to the Stadium.

**From Southern Iowa:** From US Highway 6 continue following the Highway to Grand Avenue. Take Grand Avenue west to Melrose Avenue. Turn right on Melrose Avenue and follow it west to the Stadium.



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High Level Pre-Game Closure Concept for Melrose Avenue

FIGURE A1

