

June 20, 2024



# TRANSPORTATION IMPACT ANALYSIS EXECUTIVE SUMMARY

## Raleigh Convention Center Expansion and Red Hat Amphitheater Relocation

*Raleigh, NC*

Project # 230425

Prepared For: City of Raleigh

## EXECUTIVE SUMMARY

### Introduction and Project Overview

The City of Raleigh proposes to expand both the Raleigh Convention Center and the Red Hat Amphitheater, which are located in the southern part of downtown Raleigh between Dawson Street, Salisbury Street, Cabarrus Street, and Lenoir Street. The existing Raleigh Convention Center (RCC) is approximately 500,000 square feet in area and is proposed to expand to 800,000 square feet. This will accommodate an expansion of the RCC from 19,656 people currently to 39,079 in the future. In effect, the RCC will expand westward across McDowell Street to the block currently occupied by the Red Hat Amphitheater (RHA).

The RHA, in turn, would relocate south across Lenoir Street and across South Street, which is proposed to be closed between Dawson and McDowell Streets. As a result, the RHA would encompass the area between Lenoir Street on the north, McDowell Street on the east, and the Norfolk Southern Railroad on the west and south. The RHA is planned to expand from a current capacity of 6,000 people to 6,500 in the future. However, for traffic analysis purposes, a more conservative future capacity of 7,000 was assumed.

The RHA and RCC will largely utilize surrounding City-owned parking decks. Access to the truck loading areas for both the RHA and RCC are proposed along Lenoir Street.

DAVENPORT was retained to determine the potential traffic impacts of this development and to identify transportation improvements that may be required to accommodate the impacts of the new development traffic. The Transportation Impact Analysis (TIA) was performed based on the scope agreed upon with City of Raleigh Department of Transportation (RDOT) and North Carolina Department of Transportation (NCDOT). The expected build-out year for this development is 2028. Information regarding the property was provided by the project architect, RATIO, and by City of Raleigh staff.

### Capacity Analysis Results and Recommendations

Based on scoping coordination with NCDOT and RDOT, it was discussed there is potential, although unlikely and infrequent, for simultaneous high-volume events to occur at both the Convention Center and the Amphitheater. Hence the reviewing agencies requested for worse case special event analysis scenario to be used.

The trip generation utilized for this transportation study was based on maximum occupancy of the RCC and RHA during a special event which depicts the worst-case scenario. Capacity analysis was performed based on this “worst-case scenario” of simultaneous events at full capacity.

The capacity analysis shows all the other study intersections operating at an acceptable level of service with the exception of the signalized intersections mainly along Dawson Street and McDowell Street operating at LOS E or LOS F because of special event traffic. Given the downtown context of this project and the inability to widen most streets, special event signal timing plans for event Arrival and Departure periods along Dawson Street and McDowell Street in the study area is the most feasible strategy to mitigate special event traffic. Furthermore, it is understood that the RCC and RHA currently use traffic officers at key locations during high traffic-generating special events to direct traffic. This is expected to remain the case with the future expansion and relocation. It is recommended the current special event Traffic Management Plan (TMP) be modified to accommodate the expansion of the City of Raleigh Convention Center and Red Hat Amphitheater relocation.

At the intersections of South Street at Dawson Street and McDowell Street, a traffic signal modification is recommended as a result of the closure of South Street between Dawson Street and McDowell Street.

Additionally, a key objective is the safe and efficient movement of pedestrians. Given the high volumes of pedestrians that can be anticipated at the intersection of McDowell and Lenoir Street, a pedestrian scramble phase (and associated signing and pavement marking improvements) is recommended. This pedestrian scramble can be part of alternate phasing plan which only takes effect during special events.

At the intersection of Dawson Street at Lenoir Street, a traffic signal modification is recommended to provide exclusive pedestrian phases in order to enhance pedestrian safety and mobility.

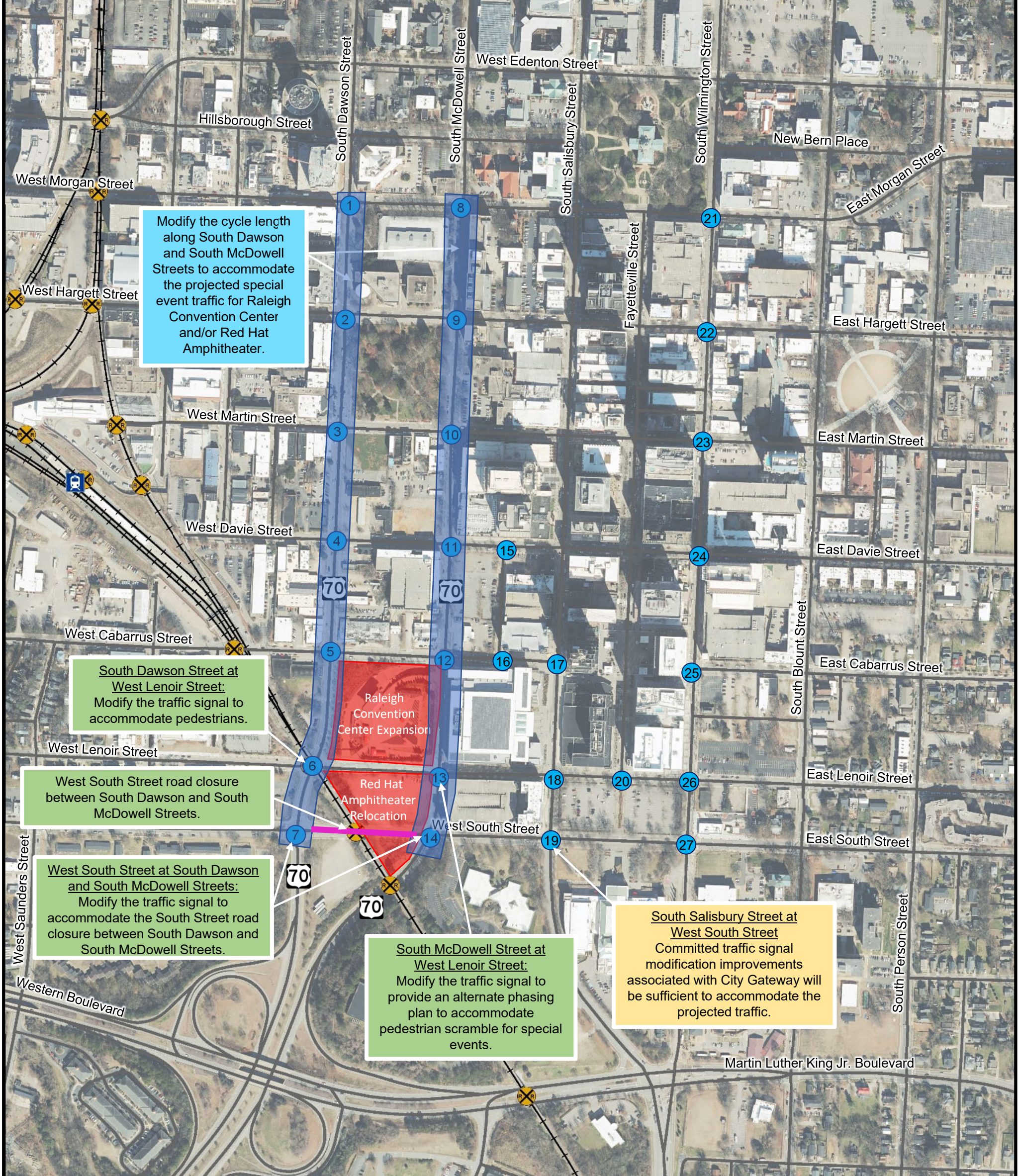
### **Summary and Conclusion**

The transportation impact analysis has made recommendations to accommodate both background and special event traffic from the City of Raleigh Convention Center Expansion and Red Hat Amphitheater relocation at full utilization, which represents the worst-case scenario. Even under these conditions, the roadway network can handle the traffic with the above-mentioned appropriate accommodations and recommendations.

In conclusion, this study has determined the potential traffic impacts of this development and recommendations have been given where necessary to mitigate the impacts of future traffic (both vehicular and pedestrian). The analysis indicates that with the recommended improvements in place, the proposed site is not expected to have a detrimental effect on transportation capacity and mobility in the study area. The recommendations are also summarized in Figure A. All improvements should be constructed to comply with applicable NCDOT *Policy on Street and Driveway Access to North Carolina Highways* and City of Raleigh standards.

**STUDY INTERSECTIONS**

1. South Dawson Street at West Morgan Street	15. West Davie Street at Gale Street
2. South Dawson Street at West Hargett Street	16. West Cabarrus Street at Gale Street
3. South Dawson Street at West Martin Street	17. South Salisbury Street at West Cabarrus Street
4. South Dawson Street at West Davie Street	18. South Salisbury Street at West Lenoir Street
5. South Dawson Street at West Cabarrus Street	19. South Salisbury Street at West South Street
6. South Dawson Street at West Lenoir Street	20. West Lenoir Street/East Lenoir Street at Fayetteville Street
7. South Dawson Street at West South Street	21. South Wilmington Street at East Morgan Street
8. South McDowell Street at West Morgan Street	22. South Wilmington Street at East Hargett Street
9. South McDowell Street at West Hargett Street	23. South Wilmington Street at East Martin Street
10. South McDowell Street at West Martin Street	24. South Wilmington Street at East Davie Street
11. South McDowell Street at West Davie Street	25. South Wilmington Street at East Cabarrus Street
12. South McDowell Street at West Cabarrus Street	26. South Wilmington Street at East Lenoir Street
13. South McDowell Street at West Lenoir Street	27. South Wilmington Street at East South Street
14. South McDowell Street at West South Street	



**230425 RALEIGH CONVENTION CENTER EXPANSION AND RED HAT AMPHITHEATER RELOCATION  
FIGURE A - RECOMMENDED IMPROVEMENTS**