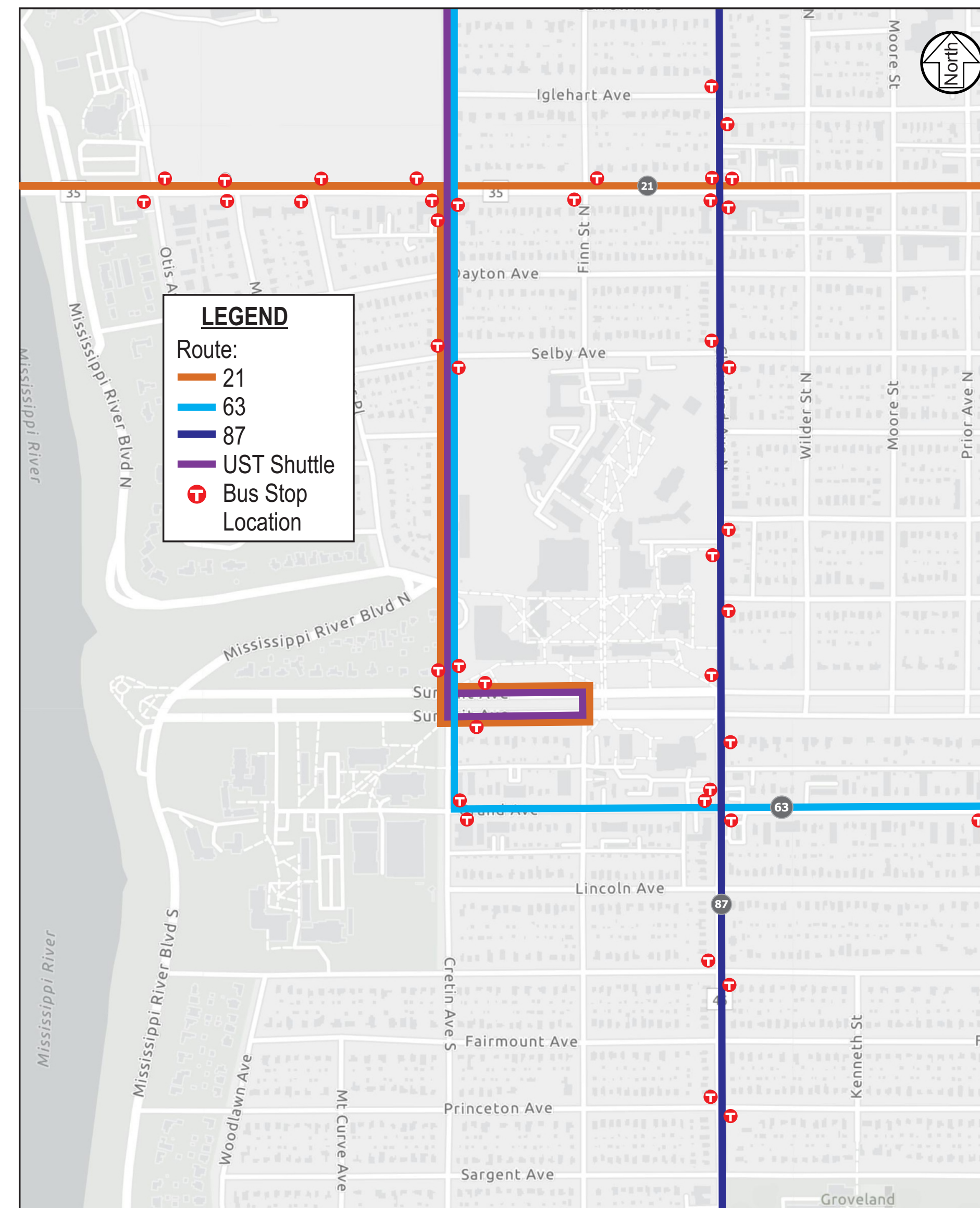




STUDY INTERSECTIONS

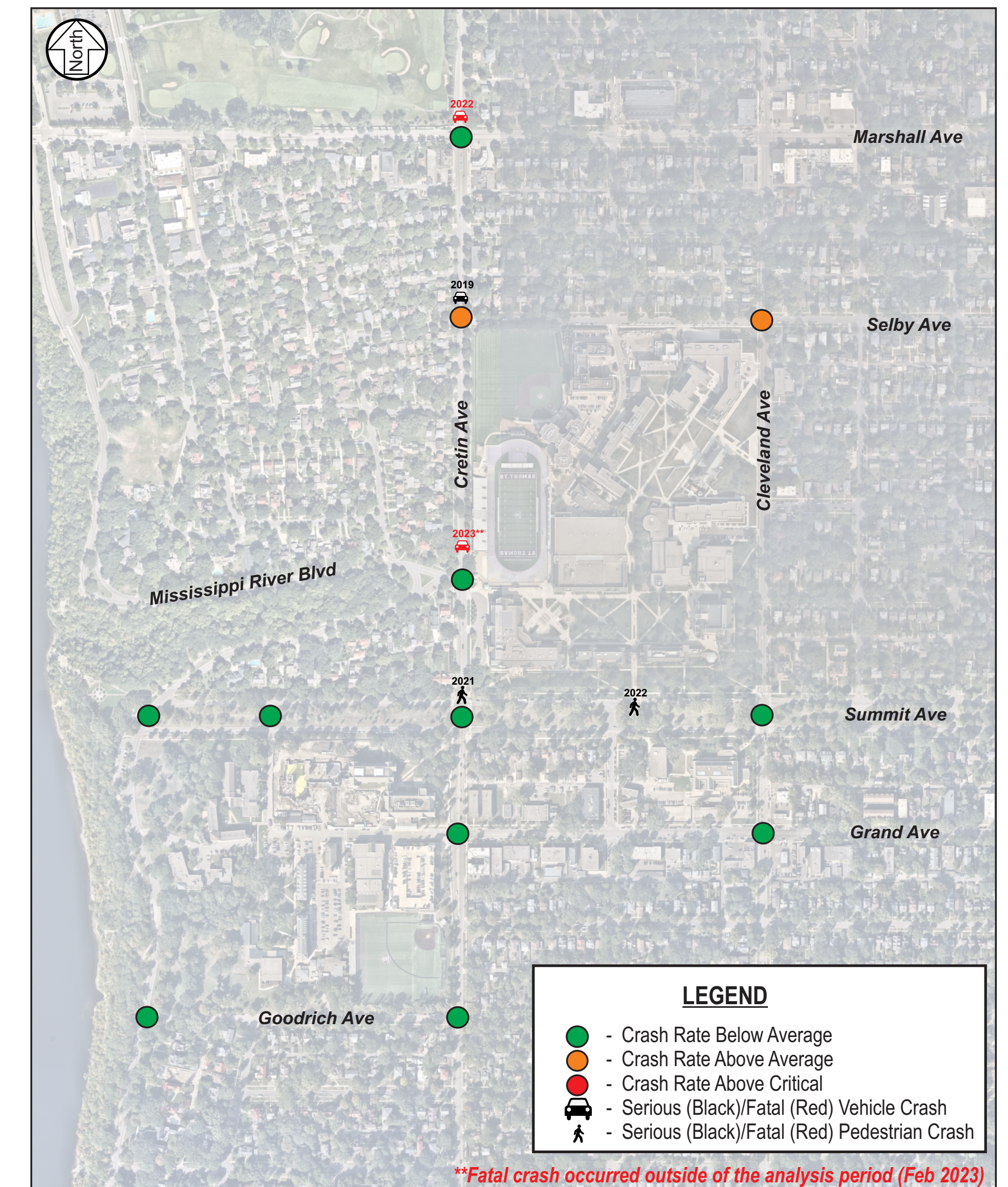
Existing PM Peak Hour Operations

- 12 Intersections surrounding the St. Thomas campus were analyzed and represent the focus of the transportation study.
- Other signalized intersections from I-94 to the north to Highway 5 to the south, were also evaluated during event conditions.
- All intersections operate at an acceptable overall LOS D or better during peak hours. No significant issues were observed.



EXISTING TRANSIT SERVICE

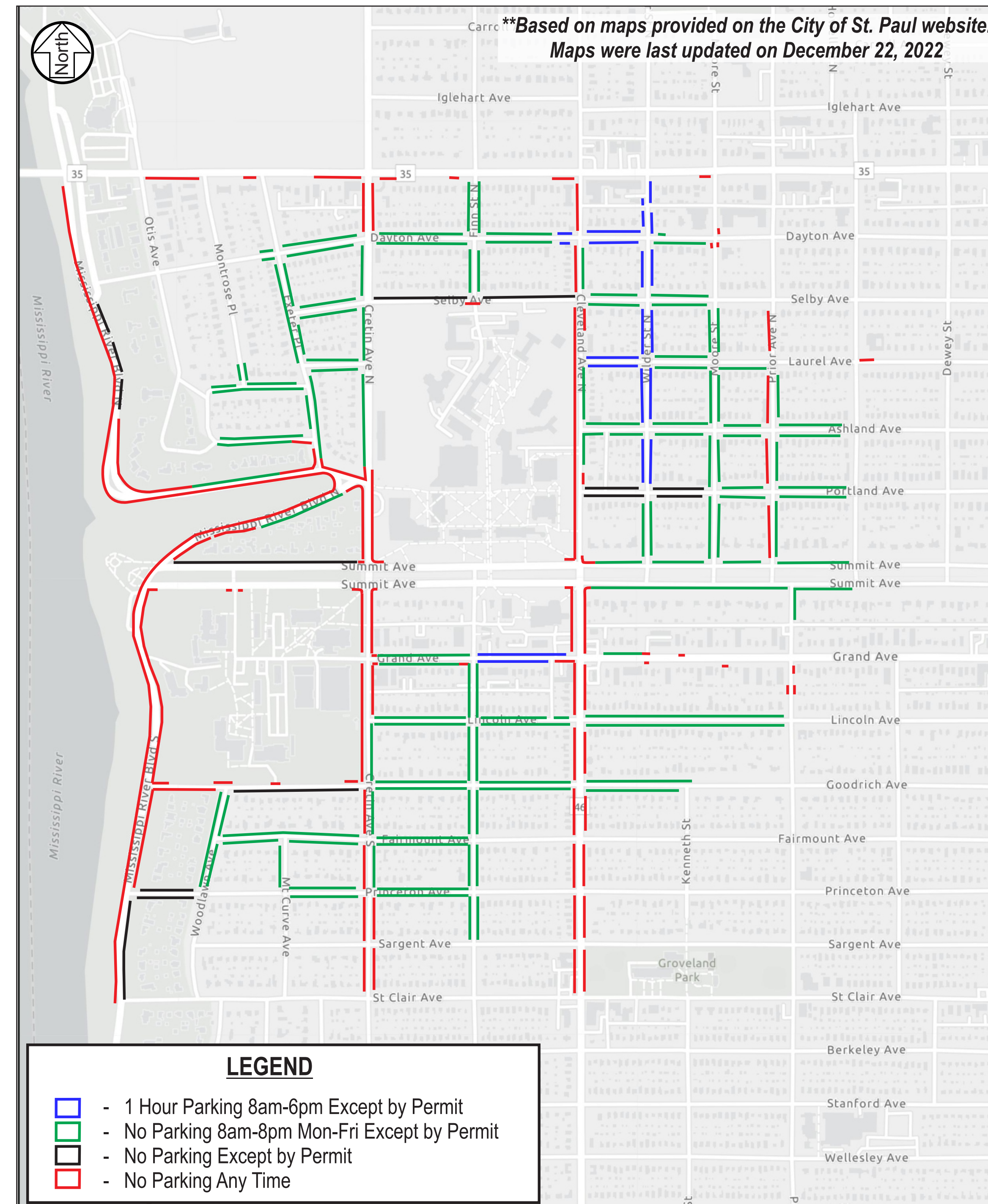
- Route 21 – E/W along Marshall Ave/Lake St from downtown Saint Paul to Uptown
- Route 63 – E/W along Grand Ave/3rd St serving Metro Green Line, Macalester College, downtown Saint Paul, Sun Ray Transit Center
- Route 87 – N/S along Cleveland Ave serving U of MN campus and Metro Green Line
- St. Thomas Shuttle - Between Saint Paul and Minneapolis Campuses



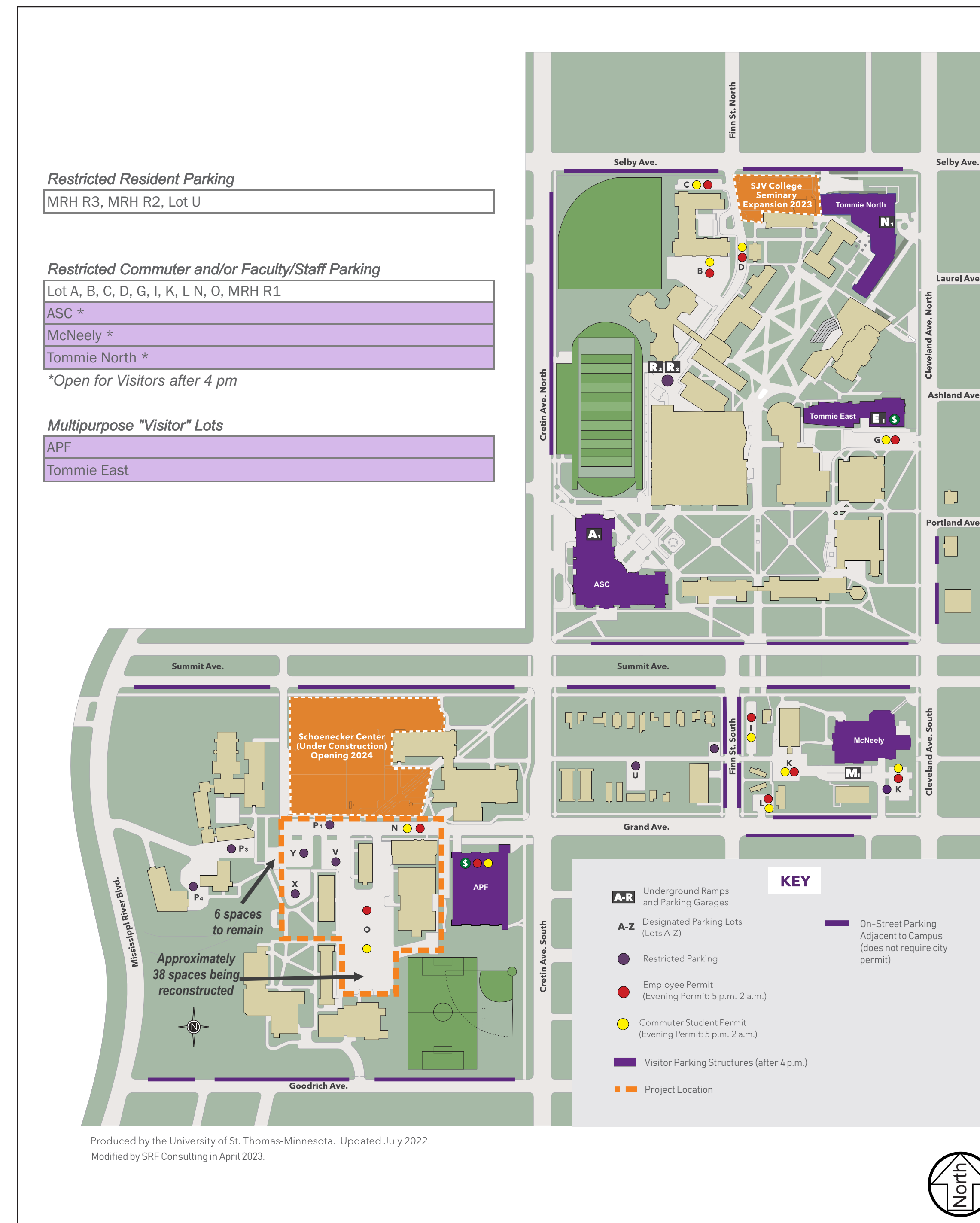
SAFETY ANALYSIS SUMMARY

- No study intersections are above the critical crash rate, indicating no study intersection has a statistically significant crash problem.

RESIDENTIAL CITY PERMIT PARKING LOCATIONS



ST. THOMAS CAMPUS PARKING SUMMARY



- Project results in a net loss of 265 parking spaces
- Parking conditions on/near the St. Thomas Campus were analyzed during the peak non-event parking demand period (a weekday at 1 pm).

PARKING DEMAND ANALYSIS

Available Supply	259
Relocated Parking	173
Surplus Parking	86

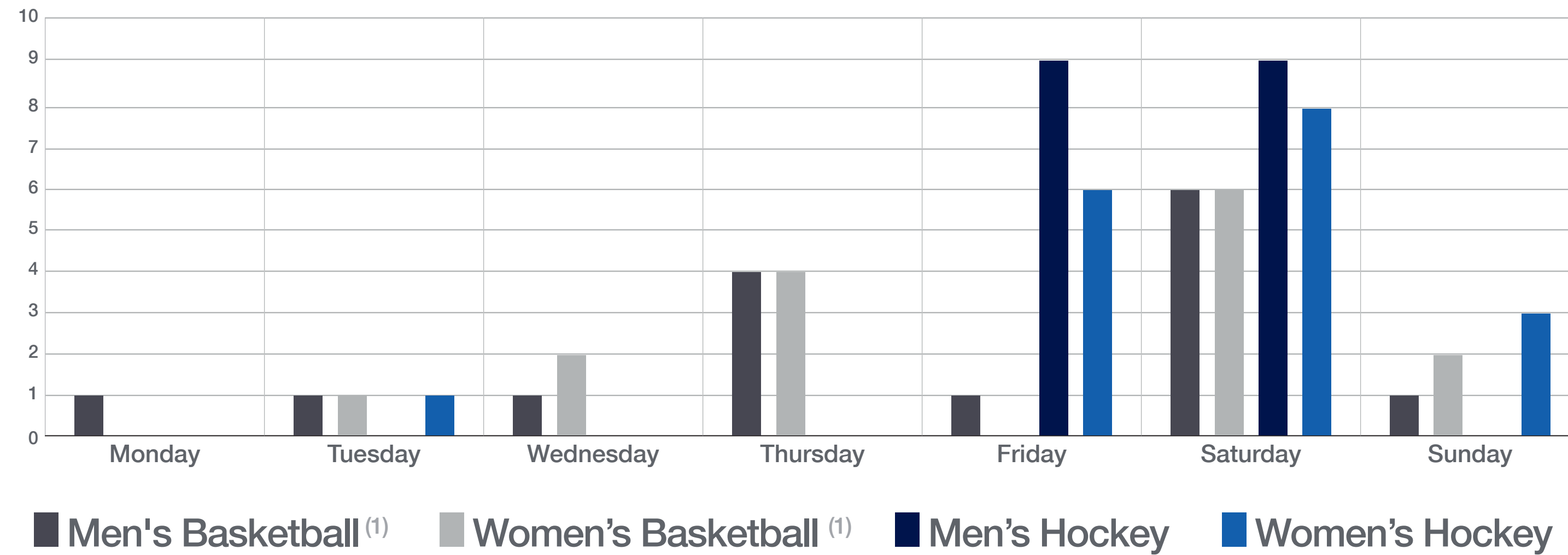
While a parking surplus is expected, other factors such as ramp capacities, desired parking locations, and current parking restrictions should be considered.

Parking strategies to help decrease parking demand are summarized below:

- Issue Less Permits
- Increase Transit Incentives
- Expand St. Thomas Shuttle Service
- Encourage MSP Campus Parking
- Enhance Bike Storage
- Improvements
- see **Event Parking Board**

ANTICIPATED EVENT SCHEDULES, TIMES, AND ATTENDANCES

ESTIMATED EVENT SCHEDULE



ESTIMATED EVENT SCHEDULE

ESTIMATED EVENT SCHEDULE								
	MON	TUE	WED	THU	FRI	SAT	SUN	TOTAL
Men's Basketball (1)	1	1	1	4	1	6	1	15
Women's Basketball (1)	0	1	2	4	0	6	2	15
Men's Hockey	0	0	0	0	9	9	0	18
Women's Hockey	0	1	0	0	6	8	3	18
Total	1	3	3	8	16	29	6	66

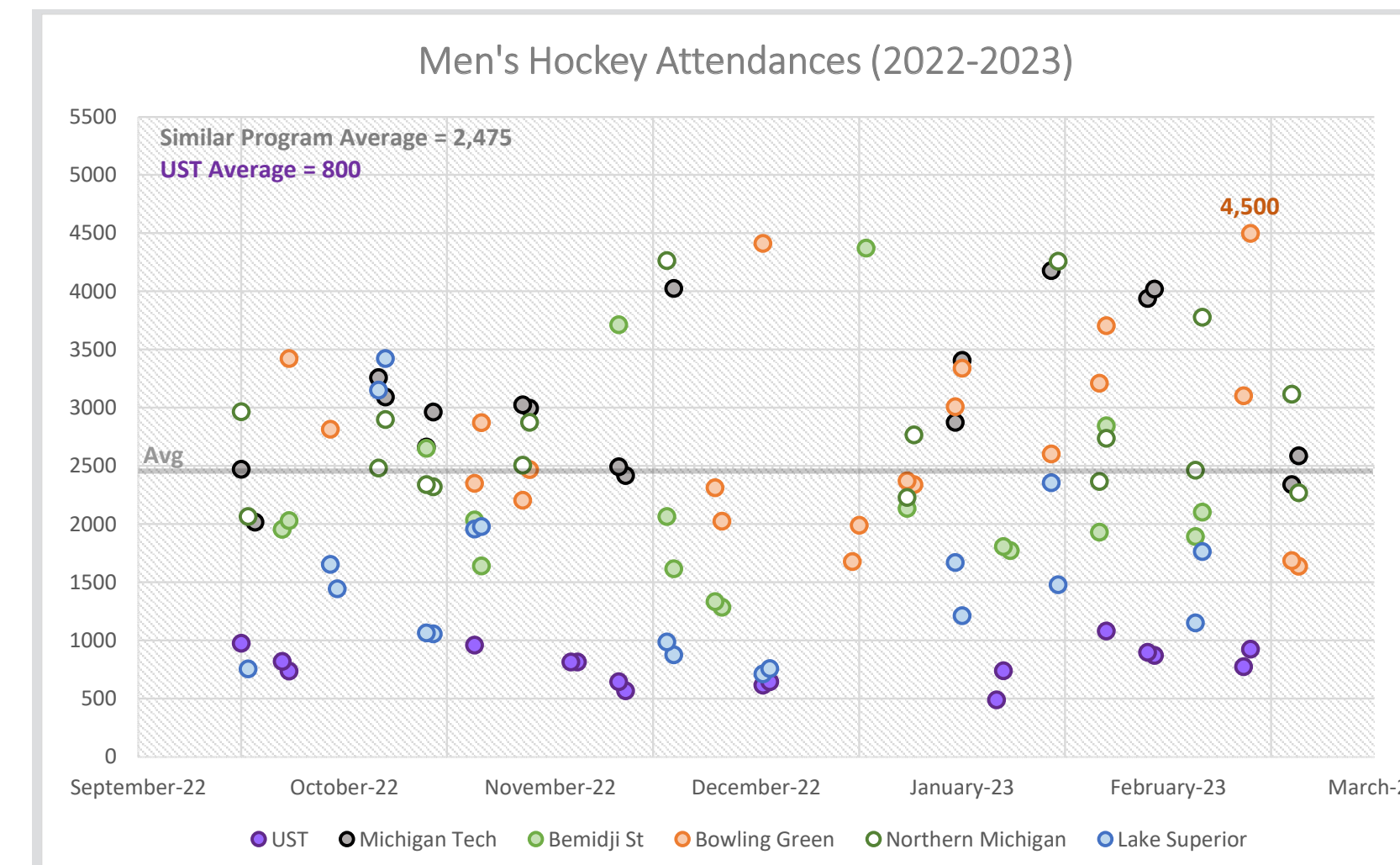
(1) Note Men's and Women's Basketball games are currently played on-campus

EVENT TIME ASSUMPTIONS

Men's Basketball	Women's Basketball	Men's Hockey	Women's Hockey
All Days - 7:00 pm ⁽¹⁾	Mon-Fri - 6:00 or 7:00 pm Sat/Sun - 1:00 or 2:00 pm	Fri - 7:07 pm Sat - 6:07 pm ⁽¹⁾	Fri - 6:00 or 7:00 pm ⁽²⁾ Sat/Sun - 1:00 or 2:00 pm

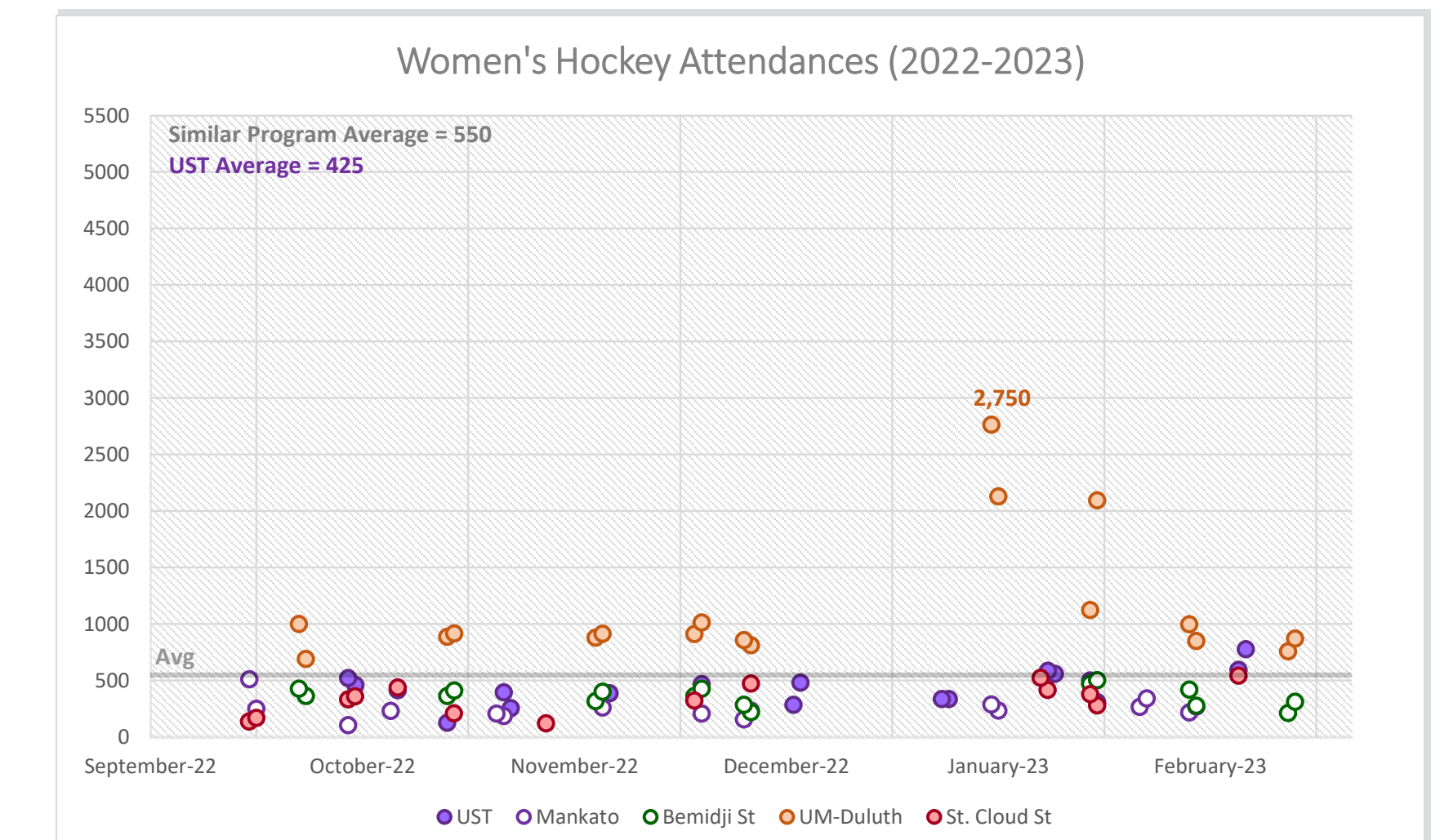
(1) May have day games sporadically throughout season, either on a weekend or holiday

(2) If a game is scheduled on the same day as a men's game, the women's game is generally shifted to earlier in the day.



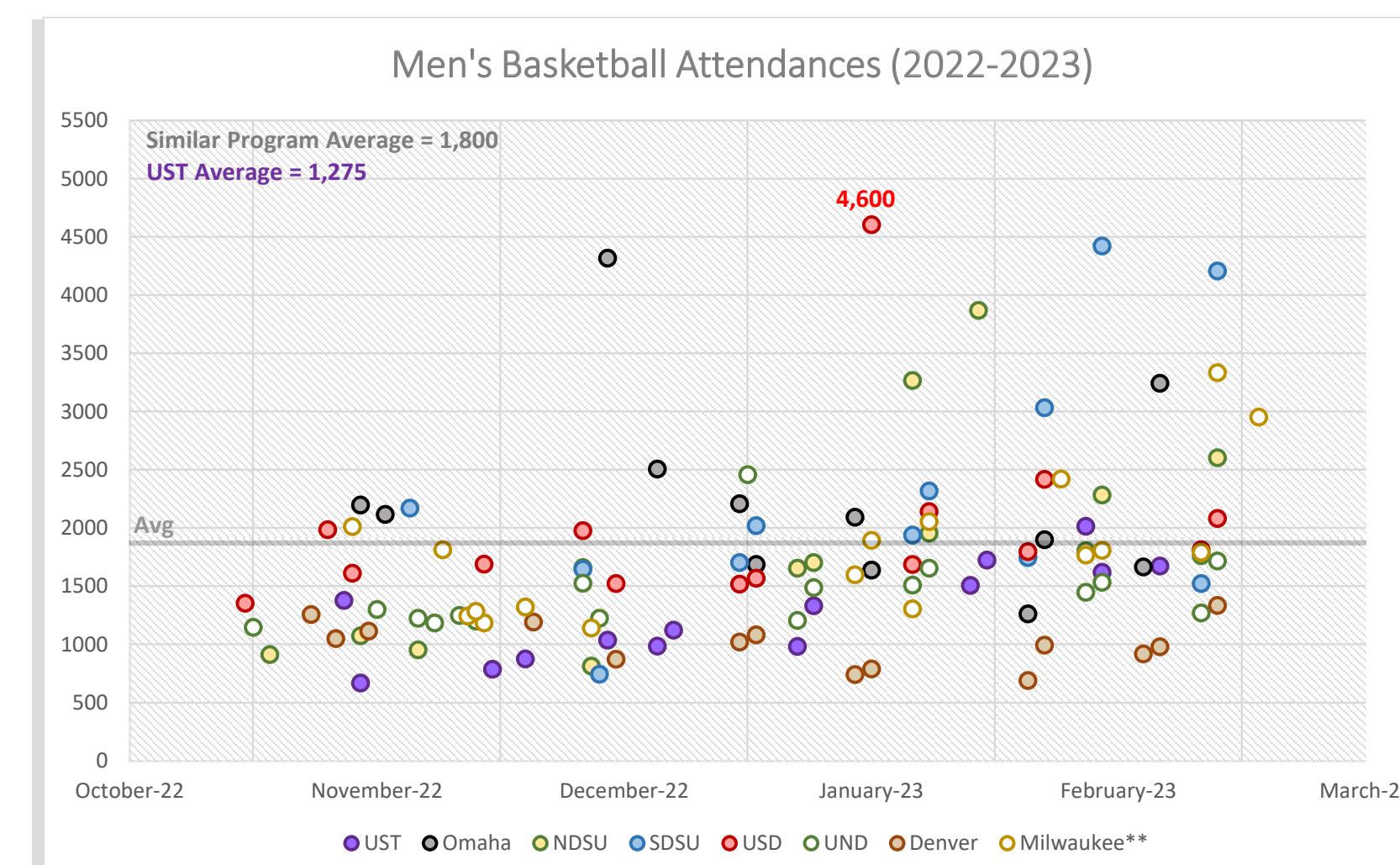
MEN'S HOCKEY:

- Generally, 2 to 4 higher attendance games per year
- Highest Attendance = 4,500 (Bowling Green)
- Average attendance = 2,475



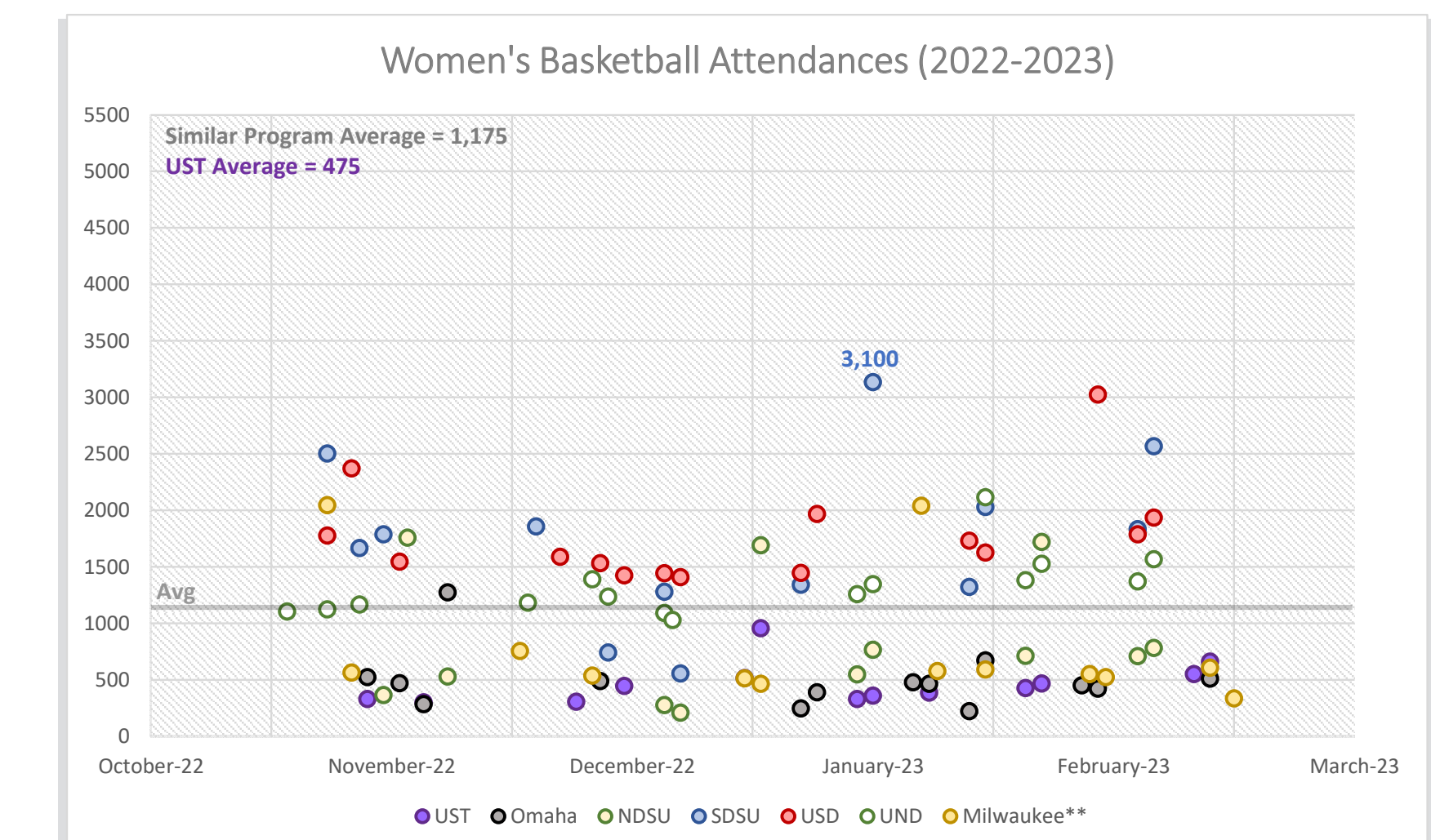
WOMEN'S HOCKEY:

- Beyond UM Duluth, attendances were generally consistent throughout the year
- Max Attendance = 2,750 (UM Duluth)
- Average Attendance = 550



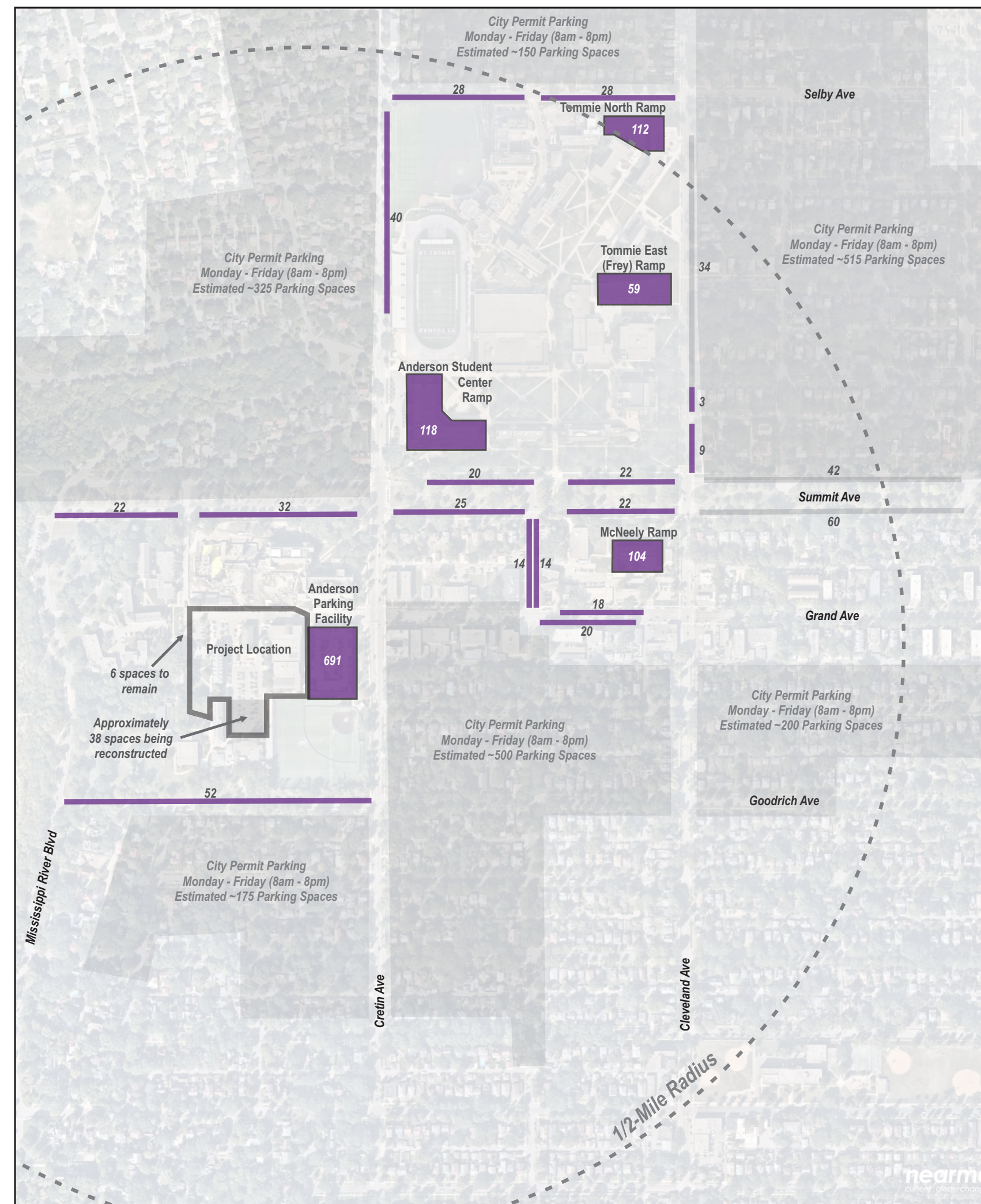
MEN'S BASKETBALL:

- Generally, 1 to 2 higher attendance games per year (rivalry games or later in season)
- Highest Attendance = 4,600 (USD)
- Average Attendance = 1,800



WOMEN'S BASKETBALL:

- Generally, 1 to 2 higher attendance games per year (rivalry games)
- Highest Attendance = 3,100 (SDSU)
- Average Attendance = 1,175



EVENT PARKING DEMAND ANALYSIS

	Total Number of Games ⁽¹⁾	Estimated Frequency	Available Supply	Demand ⁽²⁾	Deficit/Surplus
Thursday/Weeknight Night Event					
Max Basketball (5,500)	4 to 7 BBall	0 - 1	678	1420	-742
Typical (3,000)	No Hockey	6		773	-95
Friday Night Event					
Max Basketball (5,500)	1 BBall 9 Hockey	0	1016	1420	-404
Max Hockey (4,000)		2		1053	-37
Typical (3,000)		8		773	243
Saturday Night Event					
Max Basketball (5,500)	6 BBall 9 Hockey	0 - 1	1090 ⁽³⁾	1420	-330
Max Hockey (4,000)		2		1053	37
Typical (3,000)		13		773	317

(1) Based on expected men's hockey and basketball schedules.

(2) St. Thomas players/coaches and event staff are expected to park in the reconstructed lot O or other commuter and faculty/staff lots.

(3) Note nearby city permit parking restrictions are generally not in effect on Saturday.

KEY TAKEAWAYS:

- **Max Basketball events** (parking deficit of 330 to 740 spaces)
 - ▶ Vehicles will likely utilize public parking in the neighborhood.
 - ▶ Expected to occur 1 to 2 times a year, if at all.
- **Max Hockey Events** (deficit/surplus of 40 spaces, depending on night)
 - ▶ Vehicles may utilize public parking in neighborhood over NE quadrant of North Campus
 - ▶ Expected to occur 2 to 4 times a year.
- **Typical Events** (deficit of 100 on weeknights, surplus of 250+ on weekends)
 - ▶ Typical attendance is a conservative estimate compared to similar programs.
 - ▶ Most weekend events will have parking available in desirable locations.

POTENTIAL PARKING STRATEGIES AND IMPROVEMENTS:

Strategies:

- Restrict campus parking areas for event parking
- Require pre-paid event parking tickets (mobile) for all visitor lots
- Schedule higher attendance games on weekends
- Provide transit incentives with the purchase of a ticket
- Utilize restricted commuter and faculty/staff parking lots
- Form a partnership with a rideshare company
- Communicate bicycle parking locations on the university website
- Provide overflow parking on the south athletic fields
- Study area two years after construction

Improvements:

- Provide a shuttle service
- Expand Anderson Parking Facility (APF)
- Expand surface parking

EVENT ASSUMPTIONS AND TRIP GENERATION

	Max Capacity	Typical Event
Attendance	5,500	3,000
Vehicle Trips	~1,400	~750

KEY ASSUMPTIONS:

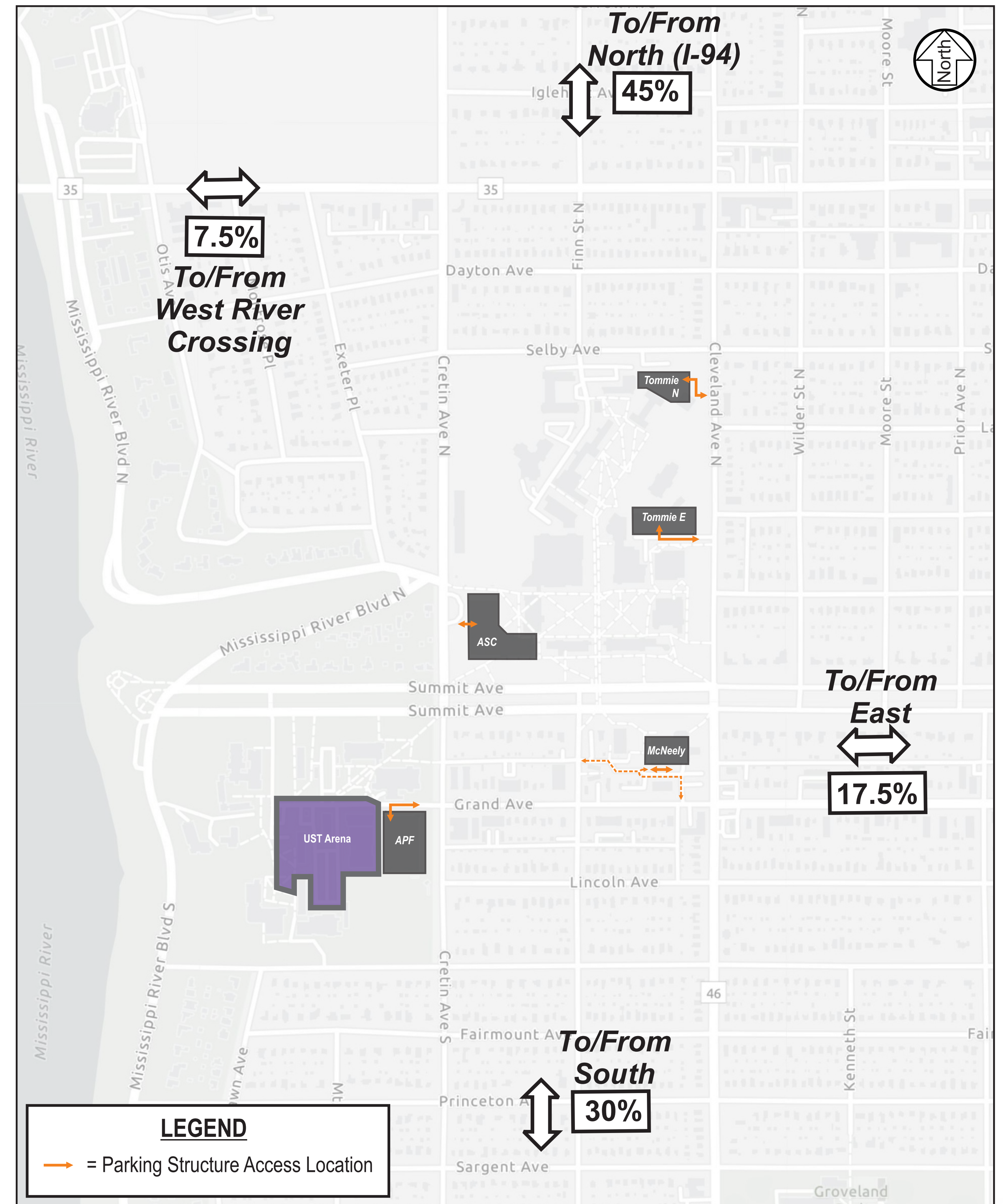
Vehicle Occupancy = 2.75 persons/vehicle

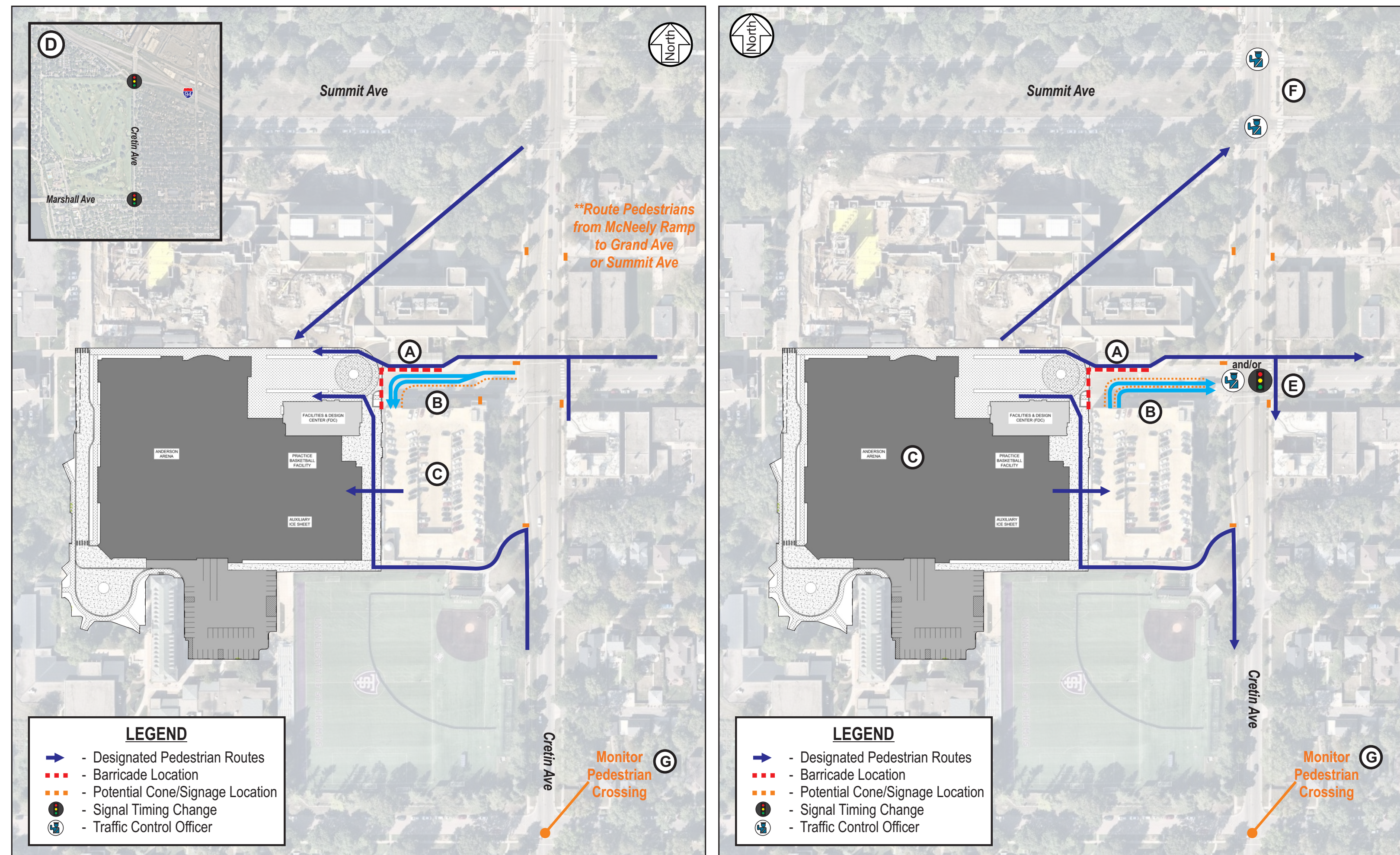
Students = ~22 percent of attendance (based on student seating)

Modal Splits Assumptions summarized below

MAX CAPACITY (5,500 ATTENDEES) EVENT MODAL SPLIT ASSUMPTIONS

Transportation Modes for Students/ Non-Students	Percent by Mode	Person Trips
Students	22%	1200
Non-Students	78%	4300
Student Modal Split Assumptions		1200
Passenger Vehicle Trips	10%	120
Rideshare (Uber/Lyft/Taxi, etc.)	10%	120
Transit/Shuttle (Local Bus)	5%	60
Walk/Bike	75%	900
Non-Student Modal Split Assumptions		4300
Passenger Vehicle Trips	88%	3784
Rideshare (Uber/Lyft/Taxi, etc.)	5%	215
Transit/Shuttle (Local Bus)	2%	86
Walk/Bike	5%	215

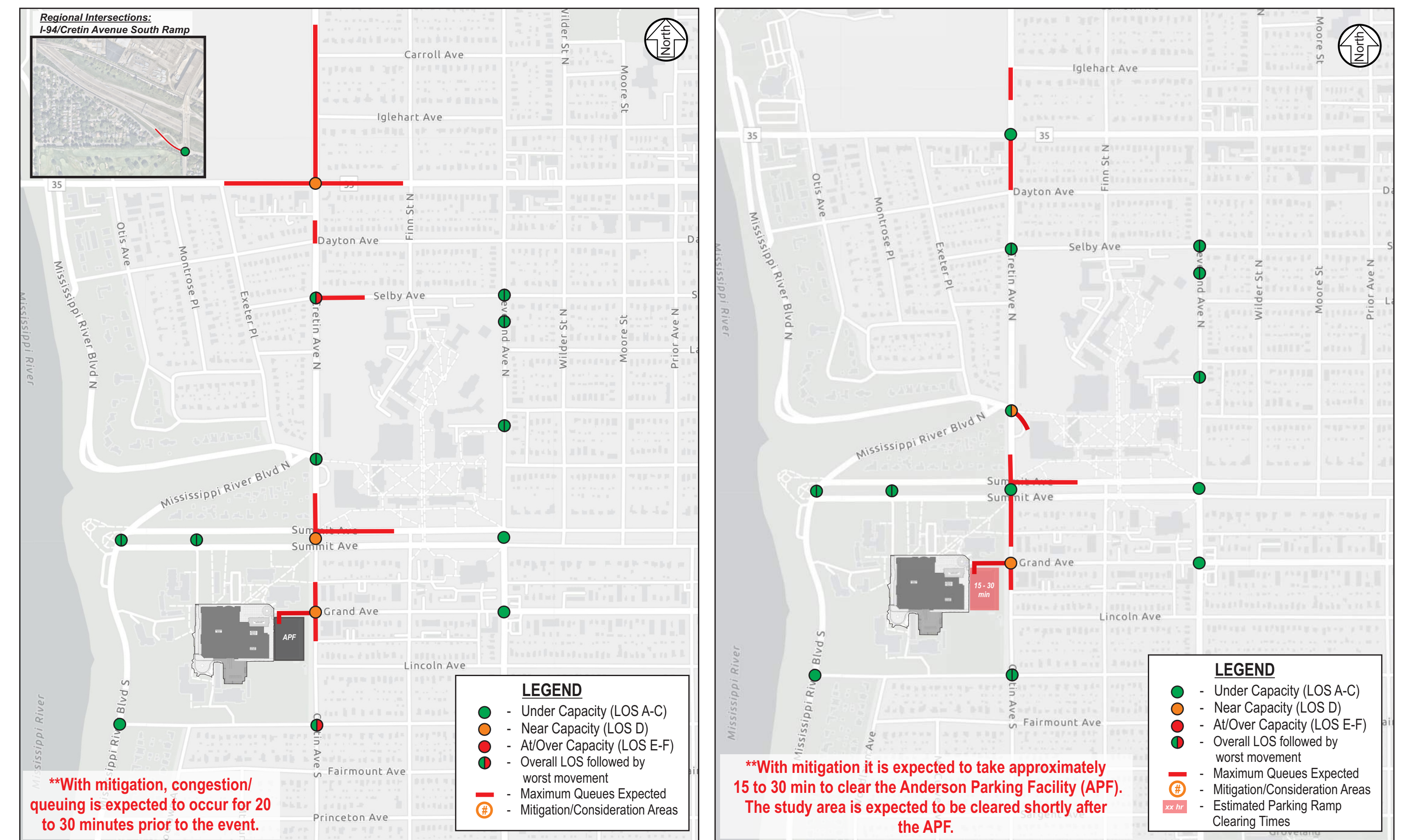




Event Management Strategies

The following event management strategies were recommended to reduce pedestrian/vehicle conflicts, thus improving pedestrian safety and reducing event congestion:

- A** Designate Pedestrian Routes through Cones, Barricades, and Signage
- B** Utilize cones to facilitate two travel lanes during pre- or post-event conditions.
- C** Provide internal wayfinding to/from the arena and APF
- D** Implement Event Signal Timing
- E** Provide Traffic Control Officers and/or construct Signal Timing Improvements
- F** Provide Traffic Control Officers
- G** Monitor Pedestrian Crossing



Operations with Mitigation

With mitigation, congestion/queuing is expected to occur for 20 to 30 minutes before and after events.