KYLE FIELD TRANSPORTATION PLAN

2018 Look Ahead Report Texas A&M Transportation Institute By Madison Metsker-Galarza and Tim Lomax

The 2018 season welcomes fans and a new coach in the sixth year in the SEC (Southeastern Conference) and the fourth year in the fully redeveloped Kyle Field. This new era for Texas A&M football will bring more ticket holders and attendees to the Bryan-College Station community. The Kyle Field Transportation Plan set fan expectations to include more than just an Aggie win. Being home to the 4th largest Texas downtown on gamedays - and every day - fans expect numerous mobility services and options for getting to, around and away from campus. A team leads the Kyle Field Transportation Plan and continues to successfully meet these expectations by incorporating a variety of fan interests and gameday operations requirements. The team consists of the following local on- and off-campus entities:

- Texas A&M Transportation Services
- City of College Station
- City of Bryan
- Brazos County
- Bryan-College Station Chamber of Commerce
- Downtown Bryan Association
- Experience BCS
- Tailgate Guys
- Texas A&M University Athletics

- Texas A&M University Marketing and Communications
- Texas A&M University Student Affairs
- Texas A&M Transportation Institute
- Texas A&M Ventures
- 12th Man Foundation
- Texas Department of Transportation (TxDOT)
- Local and state safety and law enforcement agencies

The integrated partnership and a combination of transportation, communications, policy, and customer service elements continue to make the Kyle Field Transportation Plan successful. This report provides an overview of the first four seasons of the enlarged Kyle Field and a look into changes for the 2018 season.

Overview

The Kyle Field Transportation Plan was designed to accommodate the 25 to 30 percent increase in seating plus larger tailgate crowds drawn by the SEC affiliation and the new stadium. The goal was to have no more traffic congestion or transportation problems than in previous seasons, and to support the other enhancements to improve the game weekend experience. This goal was accomplished through a planning and operations program that integrated partner agencies and their goals. Better and timelier information dispersed to agencies and fans allow for quicker and more informed decisions. Awareness of parking lots, traffic routes, shuttle bus information, and entertainment options are also a direct result of these relationships. With each new football season and school year, Texas A&M University and the Bryan-College Station area continue to see new challenges. The 2018 Look Ahead Report includes a review of the 2013 (pre-Kyle Field Transportation Plan), and the 2014, 2015, 2016, and 2017 football seasons. Successes, changes, and challenges are highlighted to address present and future needs.

2013 Season – Before the New Kyle Field

The 2013 Alabama game showed the need for an improved, comprehensive, and coordinated transportation plan to accommodate the increased number of fans visiting College Station. With more than 88,000 fans in Kyle Field and approximately 35,000 extra tailgaters on campus, transportation planners had a preview of the challenges ahead.

- Better situational awareness of off-campus traffic conditions and the ability to change traffic flows in reaction to that information. Campus parking and transportation staff covered the campus roads and were in communication with central coordinating staff who had access to cameras and radios to find and solve problems. Off-campus staffing was provided by College Station Police who monitored most, but not all, major intersections, and communicated through their central gameday office. Campus control and CSPD officers communicated well, without the interagency issues that are seen in some event situations. But the College Station reaction was hindered by the inability to alter signal timing, and lack of some extraordinary measures that would make transportation work better. A few key signalized intersections operated with the evening peak signal timing plan, which was found to not be sufficient for very large games.
- The inability to communicate with the traffic signals meant that city street intersections created bottlenecks around Kyle Field. Traffic volume could not be dispersed into the city street system and as a result, traffic control had to be maintained for three to four hours.
- The transportation plan sought to satisfy too many competing needs. Vehicles oncampus were allowed to go in many directions, and off-campus intersections attempted to get fans away from Kyle Field and also satisfy 'non-fan' traffic needs into and across key Kyle Field exit routes.
- Working on each problem, rather than implementing a plan Each intersection operated to address the problems at that area, even when some directions were not part of the exiting traffic flow.

The Revised Kyle Field Transportation Plan

The new plan relied on a combination of fewer fan traffic route choices and better communication about fan travel options. This was manifest in a few significant changes that have remained relatively constant through the subsequent seasons. Big picture elements guide the plan design:

- Overall philosophy "let the leavers, leave" Fans, residents and both on-and offcampus leadership indicated a desire to have traffic conditions return to something close to normal as soon after the game as possible. This is accomplished by making the outbound routes as efficient as possible for those wishing to leave. It also means that many travel route choices are taken away, or there were longer wait times at some signals.
- "Know Before You Go" Fans and residents are encouraged to study their travel options before arriving at the game, and while choosing their parking locations. The awardwinning Destination Aggieland smartphone app was developed and the gameday website information is now the consolidated information source. The 'know before' message is also appropriate with the lack of cell phone or Wi-Fi service for several hours around Kyle Field. The app has evolved into a year-round information source and communication device for sports, cultural and community events.
- Use of the significant City of College Station investment The City's \$5 million upgrade in signals, controllers and monitoring cameras connected to the Traffic Control Center in 2014 provided gameday transportation operators with the understanding to aggressively use the road and signal system. It also allows the CSPD to reduce the number of staffed locations, and adjust the signals and officer instructions to enact the plan.
- Improved bus travel Bus routes serve many apartment complexes, two park-and-ride locations and all on-campus parking areas. Routes were designed to avoid most of the usual congestion spots, and the traffic routes designed to facilitate bus travel with minimal staffing and resources.

Many specific routing and access designs help implement these broad philosophies:

- Jointly funded traffic operations plan: Together the City of College Station and Texas A&M Transportation Services fund the postgame traffic plan for placing barricades and positioning officers.
- Wellborn Road contraflow: Four of the five lanes on Wellborn north of Southwest Parkway are used in the southbound direction. Turns from Wellborn Rd are prohibited in that section and about 85% of the green time is for southbound traffic. A tow truck is positioned near the north end of the corridor to respond to problems.
- Discovery Drive contraflow: All four lanes operate outbound from west campus. The non-signalized intersection of Research Parkway at Stotzer is closed to outbound traffic, and the almost 4,000 parking spaces on west campus are directed out Discovery.

- FM 2818 at Holleman: Much more than half of the traffic from west campus uses this intersection to leave the area. The Wellborn contraflow lane provides fast access to south College Station and beyond from the area bounded by Wellborn, Luther, and 2818; so most of the green time at the 2818/Holleman intersection is given to FM 2818.
- University Drive green time: Approximately 3/4s of the green time at intersections east of Texas Avenue is dedicated to Kyle Field exiting traffic.
- Park-and-ride lots: There are more than 1,500 parking spaces at two locations. American Momentum Bank offered their parking lot for Kyle shuttle service when the previous location cancelled the service. Additionally, there is a shuttle from downtown Bryan supported by the merchants and the city.
- Ample parking and on-campus shuttle service: At least 27,000 parking spaces are available for gameday parking and all of the distant lots and many of the premium donor spaces are served by a bus route.
- Using simple directions to improve pedestrian safety, reduce traffic conflicts and creating better bus service. Vehicles are routed away from pedestrians and buses, and car traffic is separated in ways that reduce the amount of inefficient 'turn-taking.' On west campus, parking lots north of Kimbrough Blvd/Research Parkway are routed north to Stotzer Parkway and lots to the south are routed to George Bush Drive. The road (the only east-west road on west campus) is not used as a through road, but is used for four different traffic flows with empty pieces of road between. Most of Kimbrough Blvd/Research Parkway is used to provide congestion-free bus service.
- Better communication with fans. The Destination Aggieland app and gameday website, along with Facebook and Twitter accounts provide predictable routing maps and update information as needed. The fan site TexAgs is used to distribute information and to update fans on operating procedures before gameday. The TexAgs channel was particularly useful when problems were being addressed, as it offers a chance for better dialogue and explanation than twitter or a web posting.
- Game evaluation reports posted at <u>tti.tamu.edu/kyle</u> to provide fans and stakeholders with an overview of the performance for the plan. This site also contains all evaluation reports from past seasons.

2014 Season

A season of many "firsts" was seen after completion of the first half of the Kyle Field Redevelopment project. The expansion brought in record crowds, including the University of Mississippi game with the largest-ever football crowd in Texas (110,633) and an extra tailgate crowd bringing the total on-campus population close to the 125,000. With only one game of more than 21,000 parked cars before 2014, five of the six 2014 games exceeded that level. Bus ridership more than doubled over 2013. The new transportation plan provided quicker alleviation of congestion and reduced the time for traffic control removal than for comparable 2013 games.

2015 Season

The second season of the transportation plan served the completed Kyle Field Redevelopment. The opening of the stadium meant slightly smaller stadium crowds in comparison to the 2014 season, but more people visiting College Station to enjoy the gameday experience. More parking and bus ridership records were set and additional progress was made on congestion goals, with five games out of seven meeting the goal of removing traffic control before two hours postgame. Notable was the return of Alabama, with a similar crowd size and down-tothe-end game result, once again testing the transportation plan. In addition, there was a crash, and several suspected drivers under the influence that tested the enforcement and traffic staff. Even with those challenges, traffic congestion declined to the goal level 45 minutes sooner than in 2013. Much of the congestion after that point was headed into campus as fans returned to eat and enjoy postgame entertainment opportunities.

2016 Season

The 2016 football season saw parking changes that altered pedestrian and vehicle traffic flow. A new RV lot, and consolidation of other RV parking allowed more parking near the edges of campus, making it easier for fans to leave campus. The new 1,400 space Cain Garage (less than an average Aggie running yardage game away from Kyle Field) challenged the entry and exit process, but staff adjusted, the fans were informed about their options, and the garage cleared within 45 minutes after every game.

There were more cars parked on campus in 2016, but about 10 percent fewer bus riders than in 2015. The two-hour traffic control removal goal was met for all seven games, despite three big attendance games that ended with almost full stadiums. Small changes in on-campus traffic flow helped reduce the conflicts between those leaving the parking garages near Kyle and those returning to pick up their tailgating supplies and equipment. In addition to the near campus changes, the intersections of Wellborn/Holleman and Wellborn/University Drive had some traffic routes closed for 60 to 90 minutes postgame to reduce the slow traffic on Wellborn.

2017 Season

The 2017 football season brought easier traffic challenges with less-than-capacity attendance, smaller tailgate crowds, and few changes to the transportation plan. Six of the seven games saw A&M and City of College Station traffic control picked up by 90 minutes postgame and the other game (Alabama) beating the two-hour postgame goal. One of the biggest challenges was the pregame Olsen Boulevard closure implemented to enhance pedestrian safety and accommodate the large tailgate crowd on West Campus. The first couple of games experienced the most complications; fans were confronted with closures on their typical route, although mass communication by multiple outlets went out before the first football game to promote the closure. Rideshare drivers and riders appeared to have the greatest effect on the closure as they continuously tried to access the permit-only area even though they were repeatedly turned away. Communications are in place to help rideshare drivers and riders understand the procedures during closures for the 2018 season.

The first-ever march through West Campus for the Corps of Cadets, during the Mississippi State University game, posed another challenge. Step-off occurred two hours prior to kickoff and went around Reed Arena, restricting access to many parking lots in this area for about an hour. Although, normal access was restricted for just an hour, this caused major disruption to fans. Numerous outreach measures by multiple outlets including email, Eagle newspaper articles, tweets, push notifications, and other media helped spread the word. While some "road bumps" were encountered during the West Campus March, the lessons learned will help make the 2018 march better.

The 2017 football season saw the fewest parked cars since 2014 and the third highest bus ridership between 2013 and 2017, although transit ridership was around 1,350 rides lower than the 2016 season. Bright spots in the annual changes include less traffic congestion, nimble and flexible implementation of the new pregame road closures, more parkers in the second year of Cain Garage operation, and growth in the Downton Bryan bus ridership during its third year, despite overall transit ridership declines.

Parking

and Exhibit 2 summarizes the parking and ridership outcomes from 2013 to 2017. The tables show more cars parking in campus lots since the stadium reconstruction. But when compared to the typical 2013 game (removing Alabama from the average) only an additional 2,000 vehicles per game are parking in lots. The 2013 Alabama game is removed from the average as many more parking areas were utilized (including grassy, illegal areas). Smaller games with significantly lower parking numbers are not included in the average (typical) as they do not accurately represent a normal gameday in Aggieland. With 19,000 to 20,000 cars parked during large 2013 games, and 22,000 to 24,000 during the large 2015 and 2016 games (and stadium seating increasing from 83,000 to 102,700) there are also many fans parking in off-campus areas or using the buses to get to the games.

A variety of changes implemented in 2016 helped accommodate the increased number of parked vehicles. Key aspects during the 2016 season included the addition of the 1,400 car Cain Garage near Kyle Field (in the Main Campus totals of Exhibit 3) and revised parking for recreational vehicles. Since Cain Garage opened, it continues to be a favorite for 12th Man parkers, with its close proximity to Kyle Field and relatively congestion free load-in and exit. The opening of the on-campus hotel before the 2018 season, which provides hotel guest valet parking, will mean changes to the Cain Garage traffic planning. The 'buy ahead' electronic purchasing service offered by Transportation Services (through their partner ParkMobile) provides a method to speed entry and reward fans who plan ahead.

2013	Ridership	Parking	2014	Ridership	Parking	2015	Ridership	Parking
Rice	14,040	17,820	Lamar	25,720	21,400	Ball State	34,050	22,160
Sam Houston	16,820	19,410	Rice	24,800	20,970	Nevada	28,610	19,320
Alabama	22,990	23,700	Univ Miss	31,010	23,630	Miss State	32,840	22,440
SMU	11,360	18,910	LA Monroe	23,370	18,740	Alabama	33,900	23,595
Auburn	12,810	20,110	Missouri	31,070	21,070	So Carolina	23,030	18,450
Vanderbilt	10,490	17,700	LSU	27,670	21,130	Auburn	29,590	21,990
UT-El Paso	10,440	19,560				W Carolina	28,750	20,530
Miss State	12,820	19,460						
Total	111,770	156,670		163,640	126,940		210,770	148,485
Typical	12,680	19,000		27,270	21,640		31,290	21,670

Exhibit 1. Football Season Parked Vehicles and Ridership - 2013 to 2015

Exhibit 2. Football Season Parked Vehicles and Ridership - 2016 and 2017

2016	Ridership	Parking	2017	Ridership	Parking
UCLA	30,340	21,970	Nich St	26,680	20,280
PVAMU	23,330	18,090	LA-Lafyt	23,590	17,560
UTenn	32,320	24,520	So Carolina	25,340	21,630
NMSU	27,290	21,520	Alabama	29,060	22,690
Univ Miss	30,490	23,950	Miss St	25,460	21,430
UTSA	27,010	19,380	Auburn	25,620	19,810
LSU	26,150	20,850	NMexico	26,600	21,040
Total	196,930	150,280		182,350	144,440
Typical	28,930	22,030		26,460	21,150

Annual Trend

The all-weather surface in Fan Field continues to make this parking lot a popular choice for dayof-game parkers despite various weather conditions. Parking for several hundred Kyle Field workers also played a role in changing parking numbers. In 2014, they were accommodated on Fan Field, in 2015 in the Agronomy Road area, and for the past two seasons (2016 and 2017) the Vet School area. This location appears to be a stable home for them in the near future. Future evaluations will add Vet School to the total ridership, which past reports did not.

(II	molt 5. Typical Gameday Campus Parked Venicles by Area - 2015 to 20								
	Parking Areas	2013	2014	2015	2016	2017			
	Main Campus	4,290	4,660	4,570	5,430	5,050			
	East Main	2,030	2,320	2,370	2,240	2,670			
	Reed/Agriculture	9,400	8,900	8,430	8,930	8,910			
	Research Park	1,510	3,040	3,320	3,240	2,640			
	Vet/Agronomy	1,770	2,720	2,980	2,190	1,880			
	Total	19,000	21,640	21,670	22,030	21,150			

Exhibit 3. Typical Gameday Campus Parked Vehicles by Area - 2013 to 2017

Pre-paid parking technology also improved lot entry, and the permit and information distribution process. The Destination Aggieland (DA) smartphone app and Transportation Services website provides locations for customers to get a parking permit days, weeks, or even just minutes before arrival. This process allowed Transportation Services to adapt to increased electronic security standards (which removed the ability to handle credit card transactions before the 2015 season) without longer entry processing times. Pre-payment is also improving entry routing for West Campus Garage, a popular parking area. Many fans would go to the garage as the first cash option, and then have to re-route if the garage was full. Having only pre-paid and 12th Man Foundation parking in the garage meant that the "day-of" parking goes to other lots where additional options are closer (e.g., west campus, north side). (The combination of prepaid, 12th Man Foundation donor parking and cash at arrival provides a good mix of parking assets).

Problems With the Any Valid Permit Parking Access Method

The other gameday parking method "Any Valid Permit (AVP)" is less beneficial and efficient. A&M students, faculty and staff with a valid permit are able to park for no additional charge. This method is a significant part of non-12th Man parkers and a growing component of gameday parking. Since the 2013 season, the percentage of those using their A&M permit as a gameday parking option has steadily increased (Exhibit 4). In 2013, fewer than 40 percent of non-12th Man parkers used their A&M permit on gamedays. Between 2014 and 2016, the number was relatively stable around 45 percent. In 2017, the number jumped to 55 percent of the paid/prepaid parkers using their valid A&M permit on gameday.

Season	Total Any Valid Permit	Total Paid Parkers	Percent AVP	
2013	29,450	46,630	39%	
2014	28,280	34,980	45%	
2015	32,070	36,780	47%	
2016	31,840	35,300	47%	
2017	34,540	28 <i>,</i> 550	55%	

Exhibit 4. Increasing Number of Any Valid Permit and Decreasing Number of Paid Parkers

Studies during past seasons found that 'any valid permit' parkers had about half a person less in each vehicle than cash payers. No surprise for economic students (free goods are always overconsumed), but in this case the typical 5,000+ any valid permits seen on gamedays could accommodate more than 2,500 additional gameday fans if they had the same persons-per-vehicle ratio as the paying customers. Out of the seven 2017 homes games, five saw over 5,100 TAMU permits used for parking access (Exhibit 5). Each of the three big SEC games (South Carolina, Alabama, and Mississippi State) had over 5,600 cars use their regular permit to park, with the South Carolina game close to 6,000 any valid permit parkers. About 8,500 additional cars were parked during the 2017 season than if they had the occupancy rate of paid gameday parking. The 2017 season was the first time any valid permit was not honored in the campus garages; nonetheless, this meant parkers used other campus parking areas.

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2017 Game Totals	Sept 9 Nicholls State	Sept 16 LA- Lafayette	Sept 30 South Carolina	Oct 7 Alabama	Oct 28 Miss State	Nov 7 Auburn	Nov 11 New Mexico	
Pay Tickets	3,600	3,100	4,170	5,400	4,110	4,240	3,930	
Any Valid Permit	5,100	2,880	5,850	5,630	5,660	3,920	5,500	
% AVP	59%	48%	58%	51%	58%	48%	58%	
Additional Cars Parked	1,260	710	1,440	1,390	1,390	960	1,350	

Exhibit 5. Free Parking "Overconsumed" During the 2017 Season

The "valid permit" parkers required more buses on the Bush Library and Bonfire routes. The pregame and postgame traffic plans were also forced to handle these additional vehicles. It is unlikely additional buses will be available in the near-term and new road space is still a few years away. As crowds grow and parking resources change, this parking policy should be re-examined. As existing parking spaces are converted into classroom, office, and lab buildings, inefficient parking methods will be a greater strain on the systems. Preliminary solutions to these constraints include requiring the valid TAMU permits to carry at least two people in their vehicle (the same concept as high-occupancy vehicle lanes on freeways), reducing the number of lots accepting valid TAMU permits, or having a less-than-full-price parking fee for these permits.

Pregame Parking

We continue to see improvement in pregame traffic because of the adjustment to the parking entry process to bring vehicles off the streets before credentials or permits are checked. Better signage at the curb before the lot driveways and well-trained parking staff with the ability to adapt to demand changes get parkers off the roads and into their lots more efficiently allowing for better flow of other traffic. This is particularly important on west campus where the Fan Field parking area has filled for a few big games in previous seasons, although not during the 2017 season.

In the 2017 season the additional left-turn lane on Kimbrough Boulevard into the northwest corner of the West Campus garage improved the entering capacity. Parking staff still experienced issues getting people to use this entrance, however, as fans went to their "traditional entrance." A&M staff will continue to encourage parkers to use all the entrances with the inflatable 'wavy men' and on-street staff.

Shuttle Ridership

Texas A&M University Transit has provided fans an alternative method to get to campus for 15 years and operated bus service during gamedays for more years than that. The 'teenage' Get to the Grid shuttle has provided a free parking and shuttle option, and on-campus routes served many parking areas. The post-2013 gameday route structure includes service to the Bonfire Memorial, along Agronomy Road and the Stotzer Parkway parking areas, as well as three routes around west campus. Four routes of modified regular day operations provide service to off-campus student apartment areas.

The unprecedented demand at the 2013 Alabama game showed the importance of bus and traffic plans to be tightly coordinated. Both before and after that game, the buses on west campus were moving slower than pedestrians were walking due to competition from auto traffic. The Kyle Field Transportation Plan concentrated on reducing conflicts in regular vehicle, bus and pedestrian traffic streams. The plan ultimately meant that fewer sections of road were used for cars, leaving more sections for buses to travel unimpeded to parking lots, particularly those farther from Kyle Field.

Bus routes with faster and more reliable travel times mean that buses can make more round trips, carrying more riders and making the bus a more attractive travel option. Get to the Grid service was so good, in fact, that the contract with the long-time location was not renewed following the 2014 season. American Momentum Bank made a gracious offer to provide parking for more than 1,000 vehicles – a significant number of vehicles and riders, but only about half of the number at the previous location. The downtown Bryan shuttle has operated for 3 seasons and offers more than 500 free parking spaces.

Trends

Bus ridership increased dramatically (Exhibit 6), from an average (typical) gameday ridership of 12,700 for the seven non-Alabama games in 2013, to between 25,000 and 33,000 riders during the 2014, 2015, 2016, and 2017 football seasons. Smaller games with significantly lower ridership are not included in the average (typical) as they do not accurately represent a normal gameday in Aggieland. Ridership in 2015 was the highest in the five seasons with the help of the 11 hours of operation for the inaugural Kyle Field game against Ball State. Like the parking totals, the 2017 season experienced its lowest total ridership since 2013. The Downtown Bryan shuttle route, however, set a new average gameday ridership high, with three of the four highest ridership days in the three years of service. The 2017 route had almost 30 percent of the park-and-riders, compared to less than 20 percent in 2015. A survey of Downtown Bryan shuttle patrons showed more than 50 percent of riders from outside Brazos County, indicating service is achieving the goal of attracting new users. All of the 90 TAMU transit fleet operates on gameday, usually beginning around 3 hours pregame until 90 to 120 minutes postgame. More routes also serve the 12th Man parking areas from stops near Kyle Field that attract fans to ride the buses.



Exhibit 6. Typical Ridership and Parking 2013 to 2017

Exhibit 7 shows the increase in both on- and off-campus bus ridership from 2013. The drop in off-campus ridership brought by the elimination of the large Get-to-the-Grid parking location has been somewhat offset by the increase in on-campus shuttles. Many of these riders are coming from distant parking lots made more desirable by the shuttle service. Another pattern seen since the new route structure in 2014 is the use of shuttles to move tailgaters from their parking area to their party. Additional stops were provided to allow this to happen more easily,

and particularly for afternoon and evening games these stops provide improved gameday experiences.

Exhibit 7. Increa	sed On- and O	Off- Campu	s Football Bu	ıs Ridership	Since 2013
Route	2013	2014	2015	2016	2017
On-Campus	6,180	14,650	20,190	19,430	17,560
Off-Campus	6,500	12,620	11,100	9 <i>,</i> 500	8,900
Total	12,680	27,270	31,290	28,930	26,460

It is notable that every gameday in 2014, 2015, 2016, and 2017 had higher ridership than all previous gamedays (including the 2013 Alabama game). The typical – and even the low ridership games – are double the typical pre-2014 games.

A typical game sees more ridership pregame than postgame across all route types for all game times. Many fans use the bus routes to move from parking to pregame tailgates to Kyle Field; the postgame bus waiting lines, although cleared before an hour postgame, probably deter some fans from using bus service. Inclement weather and game times also affect ridership, with bad weather and later games increasing ridership on all route types.

Operational Flexibility

On the upside, the well-trained drivers and alert operations staff allow the TAMU transit fleet to have exceptional flexibility, allowing buses to shift between routes so they can serve the largest waiting groups, contributing to the 2017 lines clearing faster than any other season. While this type of operation is normally accomplished in other cities with full-time professional drivers, TAMU transit operates with a mix of full-time professionals, part- and full-time student drivers.

Next Year

The 2018 season bus service will experience several changes with the new on-campus hotel opening its doors and construction around the MSC. The three Joe Routt bus routes (Para Transit, WHR, and Reed/Olsen) will move closer to the Routt/Stallings intersection. The MSC routes (Bush, Agronomy, Downtown Bryan and Stotzer) drop-off locations will move to Old Main Drive. Additionally, parking for the Para Transit operation will move from Lot 50 to Lot 88 at the General Services Complex (GSC).

Congestion

The congestion goals for the Kyle Field transportation plan are designed around maintaining safe travel paths for pedestrians, bicyclists and vehicles that have a reasonable amount of extra travel time. The plan explicitly recognizes the difficulties in loading and unloading the Kyle Field area, which regularly has more than 120,000 spectators and extra tailgaters. This demand is equivalent to the 4th largest Texas downtown, in the 15th largest Texas metro area. The lack of freeways, and basically no new roadway capacity, meant that the plan relied on aggressively

operating the network, as well as accepting that some traffic congestion will exist. Combined staff from A&M Transportation Services, the City of College Station, and Texas A&M Transportation Institute monitor, analyze and adapt to the changing gameday transportation situation from the College Station Traffic Control Center, Kyle Field Command Center and many campus intersections, parking lots and garages.

The policy approach from both on- and off-campus entities is to provide as much exiting capacity as practical in an effort to reduce the amount of time that traffic congestion affects postgame travel to homes, hotels, condos, restaurants, and entertainment venues. The on- and off-campus agencies have a goal of beginning to remove traffic controls within two hours postgame, a goal that has been accomplished for most games since 2014 and for all 14 games in 2016 and 2017.

The major road system serving the Kyle Field exit traffic plan is analyzed before and after the game using traffic speed maps. The percentage of about 40 miles of road (80 miles of directional road) that show red or black map lines (serious stop-and-go traffic congestion) are estimated every 5 minutes to produce summary graphs like in Exhibit 8.

- North-South Roads Earl Rudder Frwy (SH 6), Texas Ave, Wellborn Rd
- East-West Roads Villa Maria Rd, University Dr/Stotzer Blvd, George Bush Dr, Harvey Rd, Holleman Dr, Rock Prairie Rd, Wm D Fitch Pkway (SH 40)
- Loop Road Harvey Mitchell Pkway (FM 2818)

Congestion data for the 2013 Alabama game (nearest comparable crowd size to the renovated Kyle Field) are used as the comparison point for pre-transportation plan conditions. The "congestion goal line" of 6 percent of these roads is similar to the edges of the average weekday evening rush hour. The weekday rush hour peak regularly exceeds 15 percent. Congestion patterns change with attendance, start and end times, opponent, weather conditions, and game score.

2013 Season

The 2013 Alabama and Auburn games showed similar patterns, congestion began to rise at approximately 30 minutes postgame as fans reached their cars and began leaving (Exhibit 8). At about the one-hour mark postgame, congested roadways reached a maximum of 12 to 14 percent and stayed at that level for a while. The decline from that peak was relatively slow. The peak congestion levels were dictated by the bottlenecks near the stadium, which did not allow more of the road network to play a key role in handling traffic. The slow decline was likewise the result of relatively low capacity – in relation to the demand – on the key exit corridors.





The benchmark 2013 Alabama game saw much larger pregame traffic problems than any previous game, and postgame traffic congestion that lasted until four hours after the game ended. The estimated 125,000 fans showed the need for a more extensive traffic control plan and greater investment in technology, equipment and staffing. The 2014 plan focused on the near campus bottlenecks that caused the congestion line in Exhibit 8 to peak below 15 percent, stay there for more than two hours and then decline at a relatively slow rate. Feedback from fans, nearby residents and many in leadership positions was that, essentially, everyone wanted to have a more predictable travel route and time, have traffic controls removed as soon as possible and not be confronted with 'stop-and-stop' conditions. Fans value movement relatively highly, and a plan that provides the ability to continue moving, even if that travel was sometimes in a direction away from the ultimate destination, was the goal.

New Transportation Plan Elements

Wellborn Road, Harvey Mitchell Parkway and University Drive were particularly problematic in the 2013 postgame traffic plan, and thus became targets of the new planning effort. Some of the changes altered traffic control on-campus, some took advantage of additional technology investments, and some changes were the result of policy and institutional support for substantial changes directed to achieving the gameday experience goals.

The traffic control and communication plan developed for the 2014 season and refined since, provides parkers with maps showing the best routes into their lot or garage, and the route that they will be directed during the postgame period. This information is provided to 12th Man

Foundation donors in the early spring before they choose parking. It is also worth noting that there are a large number of new game attendees each week and education is an ongoing process. This allows a fan, for example, to park in an area that easily allows them to travel north from campus after the game if they want to prioritize that element of their gameday experience. Adjustments are made for events such as crashes, law enforcement stops, and medical emergencies. The adjustments are typically a combination of altered traffic routes, signal timing changes and law enforcement operations. The full complement of dedicated and experienced traffic and law enforcement staff, monitoring equipment and communication technology works together to deliver information and better system performance.

A number of traffic signal changes were made to implement the new traffic control plan. The "Go with the Green" plan was developed in the mid-1990s and refined several times. The new revisions put more traffic signal green time on the exit routes and converted Wellborn Road south of George Bush into a mostly-southbound roadway with only one lane northbound from FM 2818. Signal timing on FM 2818, University Drive, George Bush and Texas Avenue were modified to prioritize outbound traffic. The plan also attempted to remove officers from traffic signal responsibility and concentrate those resources on pedestrian safety, and intersections with complicated traffic movements.

An innovative vehicle detection element was added at the George Bush/2818 intersection. The eastbound Bush roadway (between Olsen and FM 2818) is converted to a limited use westbound section that allows high-speed priority travel for groups like the opposing team or police-escorted dignitaries. One element of the video detector system at FM 2818 points at the east side of the eastbound roadway to detect a westbound shuttle bus using the VIP route. This unusual detector location (pointing at the 'wrong way' road) is connected to the signal and provides green time to the bus without need for human intervention and only for the two or three times per hour when a bus is present.

An unexpected challenge for the traffic plan is the postgame off-peak direction traffic – fans and residents coming back toward Kyle Field for dining and entertainment. The traffic plan is focused on 'exiting' and since 2016 the operations staff closely monitors conditions to identify this 'rebound wave' and attempts to begin picking up the barricades and cones before the offpeak direction congestion begins growing too rapidly. The graph in Exhibit 8 includes both directions of the major roads – away from and toward Kyle Field.

2014 Season

The first two 2014 games with a partially completed stadium and the largest seating capacity ever for Kyle Field provided an opportunity to identify shortcomings and other opportunities. Pregame congestion is monitored (Exhibit 9) and while it does not typically reach the same levels as postgame, it provides guidance to fan travel behavior. The University of Mississippi pregame congestion illustrated a different story than most games. At close to 3 hours pregame 12 percent of the roadway was congested.





A two-hour lightning delay before kickoff of the first game caused a very uneven departure pattern (some families with young children decided the full day in the sun had been enough and left before the delayed kickoff) that stressed a system that assumes fans will stay at least until the Aggie Band wins halftime. The City of College Station signal foreman returned to the shop and reset the departure signal system timings, a particular problem because the older system reset all timing at midnight. This 'old school' traffic and timing plan was assisted by roving monitors and law enforcement and parking officer communications. The campus video cameras were used to monitor nearby roads, but outer intersections relied on radio communication and on-site visits.

The initial tests showed the value of working a system plan to clear out the traffic as soon as possible, and helped modify the plan so that traffic for the Mississippi game – with a crowd close to the size of the 2013 Alabama game - was much better than the 2013 benchmark. Congested road percentages (Exhibit 10) went higher than the 2013 Alabama game, but also fell at a much faster rate, getting to the congestion goal by 1 hour, 45 minutes postgame. Early departures caused congestion to go past the 6 percent goal line about 30 minutes prior to game end, but the total congested time was about 2 hours, 15 minutes – 45 minutes less than 2013 Alabama.

Early 4th-quarter leads for the Aggies (or the other team) caused fans to depart early for the first five 2014 games. The close-at-the-end LSU game saw the first really large postgame traffic peak. That Thanksgiving Day crowd, however, exited with low traffic volume from Bryan-College Station residents. Traffic did not encounter the usual slowdowns on College Station streets causing more traffic to reach SH 6 faster, which led to some stop-and-go conditions in south College Station. By season's end, there had not been a full transportation plan test, but there had been six very good opportunities to refine the transportation and communication plan.



Exhibit 10. 2014 Postgame Congestion Levels

2015 Season

The 2015 season, the first with the fully redeveloped Kyle Field, began at noon with the "world's largest tailgate" against Ball State University (6 p.m. kickoff) causing a peak in congestion not normally witnessed pregame. The highly anticipated Alabama and Auburn games brought higher levels of pregame congestion than typically seen. The majority of this traffic calmed by an hour pregame, with the exception of the 11 a.m. South Carolina which witnessed a peak in congestion by an hour pregame; a trend during most early morning games.



Exhibit 11. 2015 Pregame Congestion Levels

The new City of College Station cameras, signal controllers and traffic detection equipment performed very well at the intersections during postgame operations. Signal timings were frequently adjusted to enhance traffic flow and adjust to changing patterns. The Mississippi State University game tested the postgame plan with a late kickoff, good weather and a nearly full stadium at the final whistle (Exhibit 12). Postgame congestion peaked around 1 hour, 10 minutes post-game, but dropped sharply as planned. The highly anticipated University of Alabama game kicked off at 2:30 p.m. with pregame congestion following the normal trend. Postgame congestion peaked higher than any previously recorded percentage, but declined more rapidly than the 2013 Alabama game, reaching the congestion goal at 3 hours postgame. With the early evening game end, fans went home, and then headed back into Bryan/College Station for evening activities. This prevented traffic from diminishing as quickly as hoped. Traffic control was removed by the 2-hour goal time for the other six home games.





2016 Season

The 2016 football season saw two significant parking changes that affected traffic congestion. Parking resources change every year due to revised policies, new buildings, new garages or lots, or the loss of parking locations. The Cain Garage (less than ¼ mile from Kyle Field) opened in the Fall of 2016 with a 1,400-vehicle capacity. Cain Garage has only one entry and exit path onto Stallings Boulevard, a street with many pedestrians during pregame and postgame periods. The path also connects a highly constrained on-campus road network, requiring a more regulated MSC area street system.

The pregame congestion graph in Exhibit 13 has a few salient points that were consistent for the three years of the new plan.

- Pregame congestion is not generally a large problem at Aggie football games. With most games in the afternoon or evening, there are many hours for the crowd to enter for tailgates or pregame activities like Fan Zone.
- The Prairie View A&M and UTSA 11 a.m. kickoff games have congestion peaks close to kickoff with fewer hours for the parking lot loading process. Attendance at these games

 particularly the extra tailgater crowds – were less and although there were fewer hours pregame, their congestion peaks are not as high as the large games.
- The large games Tennessee, Mississippi and UCLA had higher peak congestion levels and the values stayed relatively high for more hours, including time before the congestion graph begins.



Exhibit 13. 2016 Pregame Congestion Levels

Limiting the incoming traffic on Old Main, Lamar, Stallings, and Joe Routt helped empty the garage within 45 minutes for every game while keeping pedestrians safe and bus traffic flowing. A new premium RV Lot (with electrical, water and sewer connections) opened on Penberthy Road south of George Bush. All other non-12th Man RV parking was consolidated in a 'dry lot' (RV parking that does not include electrical or water connections) on west campus near the Bush Library. This meant that more cars could be parked in areas that are relatively easy to exit to the city street system during postgame traffic, reducing the amount of congestion.

Exhibit 14 shows that traffic control removal began within two hours postgame for all seven 2016 home games. Two high attendance games – Tennessee and UCLA – went to overtime, and the other very large attendance game (Mississippi) also saw most fans stay until the end. The attendance point is relevant to the congestion issue; average crowd was 102,000 and all but one game exceeded 99,900 fans. The term 'small game' is now applied to attendance levels of 95,000 – much higher than Kyle's capacity before 2014.

Additional changes were instituted to reduce the amount of incoming postgame 'tailgate pickup' traffic on Throckmorton, like the approach that has been used on Houston Street for many years and around Reed Arena since 2014. Tailgaters are not allowed onto campus to pick up their supplies and equipment until the exiting traffic is substantially gone. New traffic signal timings were used and the numbers of officers deployed in street intersections were reduced.



Exhibit 14. 2016 Postgame Congestion Levels

2017 Season

The relatively quiet 2017 football traffic season for parking and transit also applied to congestion. With the majority of the games during the evening, pregame congestion was typically less than early morning or mid-afternoon kickoffs. This is most likely because fans have ample time to trickle onto campus before kickoff, including people just attending a tailgate or visitors to campus. Morning games, two during the 2017 season, see the majority of the fan groups trying to enter campus during the 60 to 90 minutes pregame, resulting in a much bigger surge in traffic congestion.

The biggest pregame challenge came with the new roadway closures implemented to provide safer corridors for pedestrians. With many communication messages sent out through websites, the Destination Aggieland app, email, and social media sites such as Twitter and TexAgs, pregame congestion (Exhibit 15) was not significant for most games.

The 2017 season saw the inaugural West Campus march for the Mississippi State game, advertised through extensive communication channels including emails, Eagle newspaper articles, tweets, push notifications, and social media spreading the message to "come early to avoid traffic problems". While it did not reach everyone, the majority of fans received the message and were not as affected by traffic congestion. Due to the success of the march and increased tailgate activity on West Campus, we anticipate this event becoming a Corps tradition.



Exhibit 15. 2017 Pregame Congestion Levels

Exhibit 16 illustrates the quiet postgame congestion levels, with Alabama 2017 being the season peak. Although this game had the highest congestion levels, slow speed conditions declined quickly, reducing the overall time the road network was congested. During two games in the 2017 season (University of New Mexico and Mississippi State) traffic congestion never reached a level above the goal line for both pre-and postgame congestion. Traffic control was removed for all the games by an hour and a half postgame and Houston Street opened for tailgater pickup by 45 minutes after game end. Through the combination of four years experience with the traffic plan and slightly lower crowds, congestion was a non-issue for most fans. Some of the credit goes to the city and campus traffic and law enforcement staffs, and some is due to fans understanding the traffic plan, and adjusting their parking, shuttle, and exit routes accordingly. Residents that live near the stadium and the exit routes are the beneficiaries of less time for traffic control deployment.



Exhibit 16. 2017 Postgame Congestion Levels

2017 Gameday Evaluation Survey

A postseason transportation survey conducted in spring of 2018 helped understand improvements that could be made to the transportation plan from a fan experience perspective. There were five parts of the survey: travel overview, traffic information sources, gameday parking, bus service, and traffic. The survey was promoted through social media as well as Texas A&M Athletics and the 12th Man Foundation and collected over 750 responses.

Travel Overview

Almost half of the fans travel from the Bryan/College Station area and remain in the area after the game. Houston is another popular origin area for fans, with Dallas/Fort Worth, Austin, and San Antonio handling other large traffic flows. The survey asked fans to indicate the lot they parked in, and their arrival time. Many of the fans entered their lot between 4 hours and one hour prior to kick (Exhibit 17). Only the largest lot responses are shown below; they are all 12th Man lots.



Exhibit 17. Average Fan Arrival Time for 12th Man Lots

Traffic Information Sources

A variety of traffic information sources provide guidance for fans traveling to Kyle Field on gameday. Of the 44 percent of fans that use Destination Aggieland, 67 percent are satisfied with the app's content and usability (

Exhibit 18 and Exhibit 19). This suggests that a more expansive effort to publicize the app will yield better awareness of transportation plan elements. It also presents a challenge to understand why 40 percent of fans do not use the app.



Exhibit 18. Percentage of Fans that Use the Destination Aggieland App



Exhibit 19. Fan Satisfaction with Destination Aggieland

Respondents listed other information they would like to see in the app:

- Live traffic updates.
- Best routes to lots.
- Off-campus parking information and methods to purchase.
- Special events on gameday.
- Best exit routes after games.
- Concession stand information.
- Accurate road closures before and after the games.
- Information on traffic congestion.

All of the items listed except for "concession stand information" are in the Destination Aggieland app in some form. Improvements to highlight these features will be evaluated for the upcoming football season to make them more prominent.

Respondents provided information about traffic information sources that supplement their trip to Kyle Field. While the Destination Aggieland app is heavily promoted through Transportation Services and Texas A&M University, not everyone uses the app. Texas A&M websites, TexAgs, and social media are other popular traffic information sources (Exhibit 20).



Exhibit 20. Fan-Preferred Communication Source

While the largest number of respondents did not face gameday traffic challenges, 30 percent felt navigating traffic congestion was an issue, and about 18 percent did not understand gameday road closures (Exhibit 21).



Exhibit 21. Challenging Traffic Aspects for Fans

The results show most respondents are satisfied with the app, but there are still communication opportunities to raise awareness of the existence and content of Destination Aggieland. We can reduce congestion and confusion, and better prepare fans for the challenges they may face on gameday.

Football Gameday Parking

The greatest number of respondents gained access to parking through a 12th Man Parking Permit. The use of "Any Valid Permit" and paying cash upon entrance were other popular options (Exhibit 22).





Large majorities of respondents were either "very satisfied" or "satisfied" with the condition, effectiveness of parking signage, and service provided by the parking lots (Exhibit 23).



Exhibit 23. Satisfaction With On-Campus Gameday Parking

Bus Service

Texas A&M University Transportation Services provides numerous free on-campus and offcampus gameday shuttle routes. Momentum Bank (Get-to-the-Grid) and Downtown Bryan provide free park-and-ride opportunities for fans, with the Downtown Bryan shuttle continuing to grow in popularity. Around 17 percent used Get-to-the-Grid, 8 percent used the Downtown Bryan shuttle, and 63 percent of respondents indicated not using a gameday shuttle. Those that did ride the bus were overwhelmingly satisfied with the service, cleanliness, signage, convenience, and travel time of the routes (Exhibit 24).





Traffic

The 2017 season introduced three new closures to enhance pedestrian safety. There was an almost even split between fans that encountered a closure and those that did not. Of the over 50 percent that did encounter a closure, half of them did not remember which closure they experienced (Exhibit 25). Olsen was the most frequently encountered closure, which is not a surprise as this is near where the majority of fans park on gameday.



Exhibit 25. Closure Fans Encountered

Unfortunately, close to 50 percent of respondents did not hear about the road closure prior to arriving on campus. Texas A&M websites, such as Transportation Services and Texas A&M Athletics, Destination Aggieland, and TexAgs were the most frequently mentioned information sources (Exhibit 26).



Exhibit 26. How Did Fans Hear About Gameday Closure?

Aggies pride themselves on traditions which are not limited to on-campus sites. Over half of the respondents indicated they chose their route to campus because that's what they've always done (Exhibit 27). The full range of communication channels will be used to help fans understand their options and explore different routes.



Exhibit 27. How Did Fans Choose Their Route To Campus?

Respondents appeared overwhelmingly satisfied with both their pregame and postgame routes in terms of effectiveness of signage, staff direction, ease of traffic plan, and acceptable travel time (Exhibit 28 and Exhibit 29).



Exhibit 28. How Did Fans Like Their Pregame Route?



Exhibit 29. How Did Fans Like Their Postgame Route?

What We Accomplished in 2017

The 2017 season saw new changes to the traffic plan to accomplish pedestrian safety for the over 100,000 fans at each football gameday. The Houston Street, Coke/Throckmorton, Olsen Blvd., and Old Main closures help ensure the thousands of pedestrians that walk on gameday have a safe path. The traffic plan helped accomplish pregame congestion levels below the goal line of 6 percent for the entire season, and postgame congestion was completed by an hour and a half for each game – even with Alabama coming to town. We saw the growing partnership between the City of College Station and Texas A&M University work to be nimble to take on all traffic issues. This includes redirecting traffic on-campus in response to a collision on the College Station street network, and working hard to spread the message about "Knowing Your Options" to the community. The consolidation of RV parking in 2016 continues to free up additional space on campus to park more vehicles. More efficient bus routes make it easier for fans to get to the game, helping pregame and postgame traffic operations run smoother. The Downtown Bryan shuttle in its third year of operation was the only route to see an increase in ridership. This not only benefits the traffic plan, but also helps boost the Bryan economy as fans have the ability to eat and shop before and after the game.

Partnerships with transportation network companies (TNCs) such as Lyft and Uber helped create better participation in the Lot 30E postgame rider pick-up area. Pregame drop-offs and pick-ups continue to be a challenge, and the 2018 season will look for ways to achieve greater success in this area. Pedicabs may reduce some campus vehicular traffic but seem to create hazards for pedestrians as they do not comply with dismount zones and basic traffic laws. While enforcement is a tool for requiring pedicabs to follow the rules, the best approach for the 2017 season was to provide a preferred route which helps the traffic plan and the pedicab operator business. Handouts were distributed to each pedicab on gameday, and by the end of the season we were seeing better compliance (not perfect). We will continue to work with pedicab operators and seek solutions to make the environment better for everyone.

Accomplishing each of these items in the 2017 season required a lot of communication. The Destination Aggieland app not only provides fans with their gameday transportation options, but also gives them a glimpse of "All Things Aggie" to make their trip to College Station better. New maps that are accessible even with bad cell coverage help provide fans with this information throughout the day. The app, plus communication outlets through all the various partners, help Aggie and opposing team fans come prepared to the game so they can enjoy gameday festivities. We will continue to refine and build our relationships with the various agencies and fans in the upcoming season. As campus and the community grows, we must ensure that the traffic plan evolves.

Opportunities for the 2018 Football Season

The 2018 season will bring a new era in Aggie football as a new head football coach will likely boost morale and Kyle Field attendance. The main challenge for the 2018 football season will be the first game which lands on the first Thursday of classes. The first week of classes is typically the busiest week of the school year as first-year students are still trying to figure out their transportation options and student schedules are constantly changing. "Two Typical Days in One" will require the traffic plan to concurrently operate a regular class day and a gameday. Communication will be the main factor in making this day successfully. The three main messages pushed through traditional and social media channels from Bryan-College Station and beyond will be:

- Know Your Options
- Be Flexible
- Plan Ahead

The new campus hotel will operate a valet service from Cain Garage. Valet is a new concept for Texas A&M football parking and will be a major challenge due to the proximity to Kyle Field and the traffic and transit operations. The hotel and valet operator will be included in the planning, evaluation and adaptation to ensure pedestrian safety and operational efficiency. There are alternatives that include using the main hotel entrance while Joe Routt at Wellborn is open, and move to the hotel loading dock when Joe Routt is closed. We may modify this plan as the season progresses.

Transportation network companies (TNCs – for example the rideshare companies Uber and Lyft) continue to play a role in gameday fan transportation. This helps the traffic plan – fewer vehicles are parked on campus – but they also contribute to congestion and drivers that do not always pay attention to the road closures. Lot 30E, the focus of postgame pick-up activity is seeing increased usage in its second season. There are, however, many drop-offs and pick-ups in places that disrupt traffic flow. The 2018 season will introduce additional pregame and postgame drop-off and pick-up areas on campus to accommodate TNCs (Exhibit 30). This includes designated areas in all parts of campus (West, Main, East Main). The City of College Station implemented a new street closure in the Northgate Entertainment District to provide safer conditions for pedestrians Thursday through Saturday from 9:00 pm to 3:00 am, which also includes a designated area for TNCs.

Exhibit 30. 2018 Destination Aggieland Rideshare and Taxi Services Map



During the Spring of 2018, Texas A&M University Alternative Transportation rolled out a pilot program of the dockless bikeshare company, ofo. Fall 2018 will see over 3,000 ofo bikes on campus. Designated ofo locations near the edge of the dismount zones that maintain safe pedestrian-only zones on gameday will support the dockless bikeshare program (Exhibit 31).

Exhibit 31. 2018 Destination Aggieland ofo Parking and Routes Map

The first phase of the MSC Streets Reconstruction Project will finish at the start of the 2018 football season. The project creates a better pedestrian environment for fans, introducing 20-to 30-foot sidewalks on Gene Stallings Blvd and Joe Routt Blvd, a bike lane, and updated street space. The University Drive project being constructed by the City of College Station will introduce pedestrian improvements, but will not be complete until after the 2018 football season. TTI will work with the city to minimize disruption to gameday traffic. The Texas Department of Transportation (TxDOT) Diverging Diamond Interchange (DDI) project at the Stotzer Parkway/Harvey Mitchell Parkway intersection will introduce a new challenge. While the overall construction of the project will not be completed before football season, the new DDI traffic pattern will be in place. The City of College Station, TTI and TxDOT are working together to ensure the temporary traffic signals can safely and efficiently handle gameday traffic.

While the overall traffic plan from previous seasons remains the same, 2018 will introduce new community and University growth challenges. Stakeholder communication and relationships will help achieve another successful 2018 football traffic season.