TRAFFIC IMPACT & SITE CIRCULATION STUDY

Culver's Frozen Custard 1830 E McKellips Road Mesa, Arizona

Prepared for:

NORTH MESA SCOOP, LLC 620 W LAWRENCE ROAD Phoenix, AZ 85013

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I. INTRODUCTION

This traffic impact & site circulation study is intended for the assessment of the expected trips generated by the proposed Culver's Frozen Custard, and to evaluate the adequacy of the internal circulation and queuing requirements.

This 1.47 Acre vacant parcel is located in an established commercial strip, between Dutch Bros Coffee and Outback Steakhouse, on the north side of E McKellips Road. The proposed Culver's will be accessed from the existing driveways provided for the commercial center. Figure 1 depicts the location of the proposed development and relationship to its neighboring businesses and the transportation network.



II. PROPOSED DEVELOPMENT

The proposed fast-food restaurant with drive-through will consist of 4106 SF GFA building with an additional 300 SF patio space. The proposed drive-through will have 2 ordering kiosks and will circulate counter-clockwise, designed to speed-up ordering and minimize queuing and spill-over. A preliminary site plan is provided in the Appendix.

Culver's daily operation is 10:00 AM to 10:00 PM Mondays through Thursday and Sundays. Friday & Saturday hours are 10:00 AM to 11:00 PM. Because the store does not open until 10:00 AM, it will not impact the morning peak period of the adjacent street or the shared driveways.

Primary access will be via McKellips Road, utilizing the existing shared driveways. Secondary access is also be available at the rear of the property with internal connection to the existing shopping center at the northwest corner of Gilbert Road and E McKellips Road.

E McKellips Road is an east-west 6-lane arterial (3 lanes in each direction) with a center two-way left turn lane (TWLTL), with a posted speed of 45 mph and ADT of 28,666 (City of Mesa 2021). The signalized intersection with Gilbert Road is approximately 0.2 miles to the east of the location.

III. TRIP GENERATION & DISTRIBUTION

ITE Trip Generation, 11th Edition, Land Use Code (LUC) 934 – Fast Food Restaurant with Drive-Through is used for the calculation of the estimated trips. Table 1 is a summary of the proposed new trips for the proposed LUC, for the estimated peak hour trips for the adjacent street. ITE does not provide a weekday mid-day rate or trip estimate. Traffic data from a comparable Culver's store in Chandler, indicate the mid-day rush to be approximately 25% less than the evening rush on a peak day. Therefore, the mid-day volumes are estimated at 75% of the evening peak hour.

Period	Total	In	Out
Mid-day Peak (12-1 PM)	109	57	52
PM Peak (4-6 PM)	145	76	69
Saturday (peak hour of generator)	243	124	119

Table 1- Summary of Proposed New Trips

The proposed development is expected to generate 109 mid-day peak trips, and 145 PM peak trips, for the peak hour of adjacent street. 30% of the new trips will be of "pass-by" type, which are already embedded within the existing volumes on adjacent streets. Table 2 is a summary of the net new trips after adjustment for "pass-by".

Period	Total	In	Out
Mid-day Peak (12-1 PM)	76	40	36
PM Peak (4-6 PM)	102	53	49

Table 2- Adjusted "Pass-by" Trips

Full unadjusted trips are used when determining the driveway volumes. Internal capture and other forms of travel are ignored for this analysis.

Given the adjacent transportation network and population centers, trips are expected to be distributed evenly at 50% to the east and west, on E McKellips Road. Based on the projected trips and distribution, the driveway volumes are determined and will be discussed in following sections.

IV. DRIVEWAY ACCESS

As shown in Figure 2, the proposed Culver's will have 3 access points. There are 2 primary shared driveways along McKellips Road, and a secondary internal access at the north end of the property. Table 3 is a summary of the expected project volumes at each driveway based on the trip generation for the project.



	Mid-day	Volumes	Evening	Volumes
Driveway	In	Out	In	Out
Driveway 1 (shared with Dutch Bros)	34	31	46	41
Driveway 2 (shared w/ Outback)	17	16	23	21
Driveway 3 (shared internal access)	6	5	7	7
Totals	57	52	76	69

Table 3 – Shared Driveway Volumes

Shared driveway with Dutch Bros (driveway 1), which is one of the primary access driveways to Culver's, also serves the Dutch Bros Coffee drive-through. In order to project and evaluate the driveway conditions for the opening day, existing volume data were collected for the shared driveway on March 5, 2025, for the mid-day (12-1 pm) and evening (6-7 pm). Table 4 is a summary of the existing and projected driveway volumes. A copy of the volume data is provided in the Appendix.

	Mid-day Volumes		Evening	Volumes
Business	In	Out	In	Out
Dutch Bros	54	52	32	38
Culver's	34	31	46	41
Total	88	83	78	79

Table 4 – Shared Driveway 1 (Dutch Bros) Volumes

Dutch Bros highest peak is in the morning when Culver's will not be open. In addition, the peaking characteristics of the 2 operations are opposite and complementary meaning Dutch Bros mid-day peak volumes are higher than Culver's but are lower in the evening when Culver's are the highest.

Overall, the highest peak volumes of 171 vehicles in one hour yields 6 vehicles in a 2-minute cycle that will be using the driveway. The moderate rate of shared usage will not cause queuing or spill over onto McKellips Road.

The potential conflict within the driveway, between inbound Dutch Bros traffic and the outbound Culver's traffic has been a concern. However, the magnitude of conflicting volumes (54 vpd Dutch Bros inbound vs. 31 vpd Culver's outbound) is relatively small and should not result in spill-over onto McKellips. The outbound Culver's traffic would yield to the inbound Dutch Bros traffic under normal conditions. However, to re-enforce the "yield," a stop bar and "STOP" pavement message can be provided for the outbound Culver's drive-through lanes.

Queuing on eastbound or westbound McKellips Road is not anticipated. For the highest peak (midday), both the eastbound left turn and westbound right turn volumes of 44 vph, result in arrival of 1.5 vehicles for a typical 2-minute cycle. This relatively low arrival rate will not create a safety concern on McKellips Road.

V. SITE CRICULATION & QUEUNING

This section evaluates the site circulation, drive-through queuing, and overflow stacking space for the proposed Culver's in Mesa. The analysis criteria are based on data collected at a comparable existing Culver's store at 3155 W Ray Road, in Chandler, Arizona. The comparison site is remarkably similar to the proposed Culver's in location, layout, and control features. Both sites are located in a commercial strip using shared driveways with adjacent land uses. The drive-throughs are counter-clockwise, with the drive-through entrance at farthest point from the arterial roadway. The comparison site in Chandler includes only 1 order kiosk which is complemented by a server with tablet at peak times, on an as-needed basis. A full layout of the comparison site with stacking distances is included in the Appendix of the report.

Drive-through queuing data was collected for mid-day (12-1 pm) and evening (6-7 pm) on a Friday, which is typically one of the peak operating days for Culver's. Table 5 is a summary of the critical measurements obtained from the comparison site. This criterion will be applied to the proposed Culver's in Mesa to evaluate the adequacy of the design elements.

	Peak	Hour
Vehicles in Queue	Mid-day	Evening
Average	3.4	5.2
Minimum	1	2
85 th Percentile	4.5	8.5
Maximum	7	10

Table 5 – Queuing Data (Comparison site)

In general, the evening peak (6-7 pm) was found to be the highest peak for the comparison site, with average drive-through queue of 5.2. The 85th percentile queue, which is thought to be the design queue, was determined to be 8.5 vehicles. The entire queue was contained within the drive-through line with no spill-over onto the parking area. Table 6 compares the geometric features of the proposed site in Mesa and the comparison site in Chandler.

Capacity	Proposed Culver's in Mesa	Existing Culver's in Chandler
Order Queue (Q1)	118' (5 to 6 vehicles)	140' (6 to 7 vehicles)
Pick-up Queue (Q2)	139' (6 to 7 vehicles)	50' (2 to 3 vehicles)
Pick-up Parking (Q3)	4 vehicles	4 vehicles
Total Queue Capacity	15 to 17 vehicles	12 to 14 vehicles
Overflow Stacking (in lot)	200' (10 vehicles)	109' (5 vehicles)

Table 6 – Queue Capacity Comparison

Based on the information provided in Tables 4 & 5, the drive-through capacity provided for the proposed Culver's in Mesa (15 to 17 vehicles) exceeds the design 85th percentile requirements and will also contain the maximum queuing (10 vehicles) if it ever occurs. Therefore, drive-through queue is expected to be contained within the drive-through lane without spill-over into the parking lot. This information is graphically shown in Figure 3 below.



As graphically represented, the drive-through queues are expected to be contained within the drivethrough lane. No overflow is anticipated but if needed, stacking room for 10 vehicles is available within the parking lot without spill-over onto McKellips Road.

VI. CONCLUSIONS & RECOMMENDATIONS

The proposed Culver's will be located within an existing commercial strip and will efficiently utilize the existing shared driveways. The projected driveway volumes will have a relatively minor impact on E McKellips in this area.

Shared use of the primary driveway with Dutch Bros is complementary due to the peaking characteristics of traffic volumes associated with the business operations. Culver's will not be open during the morning peak hour when Dutch Bros peak traffic is the highest. Culver's highest peak occurs in the evening when Dutch Bros will have the lowest peak volumes. Therefore, the driveway is expected to function safely and efficiently.

As illustrated in the site circulation & queuing section, the drive-through queue will be contained within the drive-through lane. Spill-over into the parking area is <u>not</u> anticipated, however, stacking space is available within the parking area for any momentary stoppage. Spill-over onto McKellips Road is <u>not</u> anticipated.

It is therefore concluded that the proposed development will have a relatively minor impact on the adjacent streets and will have an efficient internal circulation to contain all the queues anticipated.

APPENDIX

Culver's Comparison Site Study 3155 W Ray Rd, Chandler, AZ

The comparison site used for the study is located at 3155 W Ray Road in Chandler, Arizona. As shown on the location map, this existing Culver's is located in an established commercial strip along the south side of Ray Road.



Figure below is an overview of the sample site layout and approximate dimensions. This site has only 1 ordering kiosk for ordering, which is common for Culver's. The drive-through for this site has capacity to queue 6 to 7 vehicles for ordering. Once ordering is complete, depending on the order, vehicles are either instructed to proceed to the pick-up window or to the waiting area. The by-pass lane provides an efficient detour around waiting vehicles once order has been picked up.

Observation showed that during the peak times, an attendant with a tablet will take orders for vehicles in the queue, speeding up the ordering process. The attendant was present on several occasions only during the lunch rush but was present for the entire evening dinner rush hour.



The waiting queues were tallied every 5 minutes and the total vehicles in the queue were recorded. Average service tie was also noted for the vehicles in queue. Figures below graphically represent the sampling time vs. vehicles in queues for lunch and dinner rush hours. It is noted that these are the total queues which include vehicles waiting to order + vehicles waiting to pick-up order. The actual queuing summary is provided in the Appendix of the report.





The average service time for the lunch rush hour was determined to be approximately 4.5 minutes. The service time for the dinner rush hour was lower at 4 minutes. This is most likely due to presence of the attendance. Below is a summary of notable points from the sampling:

- The evening dinner rush hour volumes were higher than the lunch rush hour.
- Back of the queue never exceeded the drive-through entrance at any time during either of the rush hours.
- Presence of the attendant during the highest peak helped to speed up the ordering process and reduce the queues and the service times.

QUEUE COUNT SUMMARY

Loacation: Culverts - 3155 W Ray Rd, Chandler AZ

Friday, December 20, 2024

Start Time	Veh in Queue	Avg. Wait Time	Comments
12:00 PM	4		
12:05	4		
12:10	5	5 Min	
12:15	4		
12:20	3		
12:25	4		
12:30	3	4 Min	
12:35	3	4 10111	
12:40	2		
12:45	2		
12:50	1	4 Min	
12:55	7	-+ IVIIII	
1:00 PM	2		

6:00 PM	4		
6:05	8	5 Min	
6:10	10		5 Min
6:15	4		
6:20	5		
6:25	4		
6:30	4	4 Min	
6:35	9		
6:40	6		
6:45	3		
6:50	2	3 Min	
6:55	4		
7:00 PM	5		

- 1. At no time, back of queue exceeded the entrance to the drive-through. Attendent with tablet took orders only for a few minutes.
- 2. In evening rush hour, an attendent with tablet took orders for the entire time, which reduced wait times.

	Peak Hour	
Customers in Que	Mid-day	Evening
Average	3.4	5.2
Minimum	1	2
85th Percentile	4.5	8.5
Maximum	7	10







SMALL-TOWN SAUK CITY, WISCONSIN. THEY ARE A HEALTHY FAST-FOOD SERVICE RESTAURANT WITH MULTIPLE LOCATIONS ACROSS THE COUNTRY. "THEIR MISSION IS WHETHER WE'RE COOKING THE PERFECT BUTTER BURGER TO ORDER OR SCOOPING UP OUR FRESH BATCH OF THE FLAVOR OF THE DAY, WE WORK HARD TO ENSURE YOU WILL ALWAYS LEAVE HAPPY." AS CRAIG CULVER ALWAYS SAY, "WE NEVER COMPROMISE ON QUALITY." HOSPITALITY HAS ALWAYS BEEN NEAR AND DEAR TO OUR HEARTS, SO DINING IN OR ON THE GO, WE MAKE A POINT OF TREATING THE WAY WE'D WANT BE TREATED. THEIR PROTOTYPE BUILDING IS ROUGHLY 4,000 SQUARE FEET IN SIZE, AND THEY DO OFFER INDOOR DINING.

THE SITE:

THE PROJECT LIES ON APN 136-06-012H WITH MINOR PROPOSED IMPROVEMENTS TO BE COMPLETED ON APN 136-06-012E. THE PARCEL LIES NORTHWEST OF THE INTERSECTION OF EAST MCKELLIPS ROAD AND NORTH GILBERT ROAD. THE 1.47 AC PARCEL IS CURRENTLY VACANT. WE ARE PROPOSING THE STANDARD BUILDING WITH DUEL DRIVE-THRU, AND THE SITE WILL BE USING EXISTING ACCESS DRIVES FOR CONNECTION TO THE ABUTTING ROADS.

UTILITY SERVICES WILL BE COORDINATED WITH THE CITY OF MESA FOR GAS, ELECTRIC, WATER, AND SEWER CONNECTIONS.

1. 2. 3. 4. 5. 6. 7. 8. 9. 10. 11. 12. 13.



SITE GENERAL NOTES:

DIMENSIONS SHOWN ARE TO THE FACE OF CURB, UNLESS OTHERWISE INDICATED. USE 2' RADII, UNLESS SHOWN OTHERWISE.

THE INFORMATION PERTAINING TO EXISTING CONDITIONS WAS TAKEN FROM A SURVEY PROVIDED BY: DIAMONDBACK LAND SURVEYING.
 THE LOCATION OF ALL EXISTING UTILITIES WERE OBTAINED FROM AVAILABLE INFORMATION. THE CONTRACTOR SHALL VERIFY EXACT LOCATION AND DEPTH OF UTILITY PRIOR TO BEGINNING CONSTRUCTION. CONTRACTOR SHALL NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
 ALL ACCESSIBLE PARKING SPACES AND TRAVEL ROUTES SHALL BE CONSTRUCTED IN ACCORDANCE WITH A.D.A. AND/OR STATE REQUIREMENTS.

 ANY DISCREPANCIES IN THIS PLAN AND ACTUAL FIELD CONDITIONS SHALL BE REPORTED TO THE OWNER AND ENGINEER PRIOR TO THE START OF CONSTRUCTION.
 PRIOR TO STARTING CONSTRUCTION, THE GENERAL CONTRACTOR SHALL BE RESPONSIBLE TO VERIFY THAT ALL REQUIRED PERMITS AND APPROVALS HAVE BEEN OBTAINED. NO CONSTRUCTION SHALL BEGIN UNTIL ALL PERMITS HAVE BEEN RECEIVED.
 CONTRACTOR SHALL MAINTAIN THE SITE IN A MANNER SO THAT WORKERS AND PUBLIC SHALL BE PROTECTED FROM INJURY, AND ADJOINING PROPERTY PROTECTED FROM DAMAGE. CONTRACTOR SHALL REPAIR ANY DAMAGE DONE TO PRIVATE OR PUBLIC PROPERTY.
 ACCESS TO UTILITIES, FIRE HYDRANTS, ETC. SHALL REMAIN UNDISTURBED AT ALL TIMES, UNLESS COORDINATED OTHERWISE.

THE GENERAL CONTRACTOR SHALL REMOVE ALL TRASH AND DEBRIS FROM THE SITE UPON COMPLETION OF THE PROJECT.
 ALL SUBGRADE PREPARATION, PAVING, AND UTILITY TRENCHING MUST BE IN ACCORDANCE WITH THE RECOMMENDATIONS OF THE SOILS INVESTIGATION. IF

THERE IS A CONFLICT BETWEEN THE SOILS REPORT AND THE PLANS, THE MORE PROHIBITIVE OF THE TWO SHALL TAKE PRECEDENCE.
12. CONTRACTOR TO ENSURE COMPLIANCE WITH ANY AND ALL LAND DISTURBANCE NOTIFICATIONS REQUIREMENTS, AND THAT ALL REQUIRED EROSION CONTROL MEASURES ARE INSTALLED AND MAINTAINED IN ACCORDANCE WITH LOCAL, STATE, AND FEDERAL REQUIREMENTS.
13. FOR WORK IN, OR ADJACENT TO, STREET RIGHT OF WAYS, CONTRACTOR SHALL ENSURE APPROPRIATE PERMITS ARE OBTAINED PRIOR TO CONSTRUCTION. CONTRACTOR TO ERECT AND MAINTAIN TRAFFIC CONTROL SIGNS AND DEVICES IN CONFORMANCE WITH THE REQUIREMENTS OF THE AUTHORITY HAVING

JURISDICTION. 14. ALL PARKING LOT LIGHTING MUST BE INSTALLED AND OPERATE SO AS NOT TO PRODUCE GLARE OR CAST DIRECT ILLUMINATION ACROSS THE BOUNDING PROPERTY LINE. LOW PRESSURE SODIUM LIGHTING IS PROHIBITED. ALL LIGHTING FIXTURES MUST BE RESTRICTED TO DOWN-LIGHT OR CUT-OFF TYPES.

| TE
BER | | CORRESPONDING
DETAIL NUMBER
(SEE DETAIL SHEETS) |
|---------------|--|---|
| > TIE | IN CURB/DRIVE TO MATCH EXISTING CURB/STREET WITH CURB TERMINATIONS | - |
| | N CONCRETE CURB - SEE DETAILS | C700 |
| > PRC | DPOSED PAVEMENT (2'' AC OVER 4'' ABC) - SEE DETAILS | C700 |
| > PRC | DPOSED PAVEMENT (3'' AC OVER 6'' ABC) - SEE DETAILS | C700 |
| > PRC | DPOSED HEAVY DUTY PAVEMENT (6" PCC) - SEE DETAILS | C700 |
| > 4" \ | NIDE PAINTED STRIPING @ 2' O.C. AND 45° | - |
| LAN | IDSCAPE AREA | SEE LANDSCAPE PLAN(S) |
| \
4" \ | NIDE PAINTED WHITE TRAFFIC STRIPE (SEE LENGTH THIS SHEET) | - |
| со | NCRETE SIDEWALK (SEE WIDTH THIS SHEET) | C700 |
|) DUI | MPSTER ENCLOSURE | SEE ARCHITECTURAL PLANS |
| H/C | PARKING SIGNAGE | C700 |
| PRC | DPOSED MENU BOARD & ORDER/SPEAKER BOX | SEE ARCHITECTURAL PLANS |
| PRC | DPOSED CLEARANCE BAR | SEE ARCHITECTURAL PLANS |
| EXIS | STING FIRE HYDRANT | - |
| > PRC | DPOSED ADA CURB RAMP - SEE DETAILS | C701 |
|) З' Р | ROPOSED SCREEN WALL | SEE ARCHITECTURAL PLANS |
| BIC | YCLE PARKING SPACE | - |
| PRC | DPOSED MONUMENT SIGN (8' X 2') | SEE ARCHITECTURAL PLANS |
| > PRC | DPOSED GRATE INLET | - |
| > PRC | DPOSED BARRIER CONCRETE CURB - SEE DETAILS | - |
| > PRC | DPOSED RAISED CONCRETE CURB - SEE DETAILS | - |





Application Number: ZON25-00082

Report Date: 02/13/2025 Subject : Culver's Address : 1830 MCKELLIPS RD, MESA, AZ, 85203 Record Type : Planning and Zoning

Thank you for your recent submittal to the City of Mesa. City Staff has reviewed the submission.

Your submission has been reviewed for conformance with: <u>Mesa 2040 General Plan</u>

Mesa Zoning Ordinance

Quality Development Design Guidelines

Please review the attached comments. Each comment must be addressed prior to resubmittal. The comment may require a written response, additional information, written clarification and/or plan revisions.

Please contact your reviewer with any questions.

Reviewer Contact Information:

| Reviewer Name | Reviewer Email | Reviewer Phone |
|------------------------|---|----------------|
| Melody Zyburt | Melody.Zyburt@MesaAZ.gov | 480-644-4672 |
| Sean Pesek | Sean.Pesek@MesaAZ.gov | 480-644-6716 |
| Brian Adkins | brian.adkins@mesaaz.gov | 480-644-3854 |
| Vincent Bruno | Vincent.Bruno@MesaAZ.gov | 480-644-2144 |
| Tulili Tuitleleleapaga | Tulili.Tuiteleleapaga-Howard@mesaaz.gov | 480-644-6451 |
| Pablo Hernandez | Pablo.Hernandez@MesaAZ.gov | 480-644-6479 |
| Devon Clark | Devon.Clark@MesaAZ.gov | 480-644-4863 |
| Michael Pena | Michael.Pena@MesaAZ.gov | 480-644-6262 |

General Comments

| Comment ID | Comment Date | Reviewer : Department | Review Comments |
|----------------|--------------|-----------------------|-----------------|
| Planning Revie | W | | |

| [| CIVIL | |
|---|--------|-----|
| [| ARCH |] |
| | LANDSC | APE |
| | CULVER | 'S |

| Comment ID | Comment Date | Reviewer : Department | Review Comments |
|------------|--------------|--|--|
| | | CIVIL | iii. A minimum 40-foot-long stacking distance between the order-placing box and the entry to the drive-thru lane. |
| | | CIVIL | iv. Please provide these dimensions on the proposed site plan, ensuring compliance with these standards. |
| | | | b. Drive-Thru Circulation Study |
| | | | i. The submitted traffic and circulation study does not seem to address the pertinent
information required to gauge drive-thru stacking and circulation, including sound
attenuation methods, an onsite circulation plan, and evaluation of uses within 1,200 feet.
Please revise the circulation study to include this information, incorporating the stacking and
queuing dimensions required by Code. The revised study follows the example circulation
study provided by Mesa staff. The circulation study comprehensively addresses the
internal circulation including queuing, stacking, and driveway connection and shared
use. |
| | | CULVER'S - DRIVE-THRU
CIRCULATION STUDY
NEEDS TO BE REVISED
AND ADDRESSED
FOLLOWING COMMENTS | ii. An onsite circulation plan is critical to understanding whether the proposed drive-thru stacking fits the subject site. Please provide one with your next submittal. In it, please show a backing radius for a vehicle exiting a parking space on the east side of the building, showing whether there is ample room for this movement within an active driveway. Please see revised circulation study. Civil drawings should show vehicle turning path to ensure adequate space. This is similar to parallel parking. iii. Are there alternative methods of mitigation for overflow stacking? Section V (page 5 & 6) revised circulation study addresses the overflow. Drive-through capacity exceeds the anticipated queue and overflow is not anticipated. |
| | L | | iv. The submitted circulation study reports an anticipated stacking of 6 to 7 vehicles in the ordering line, however the proposed site plan does not seem to support that. Please reevaluate the proposed drive-thru plan. Section V (pages 5 & 6) revised circulation study now clearly indicates the available queuing distance within te drive-through which provides and exceeds the 85% queue of 8.5 vehicles. Figure 3 graphically indicates the queuing capacity. |
| 20 | 02/13/2025 | Tulili Tuitleleleapaga : Planning Review | Site Plan – Pedestrian Connections |
| | | CIVIL | a. Per Section 11-30-8A of the MZO, an on-site walkway shall connect the main entry of each building or primary entry to a public sidewalk on each street frontage of the site. Pedestrian walkways shall be at least 5 feet in width and paved with a hard, durable surface. Proposed within the submitted site plan shows a 5' wide painted striped area. There is also a discrepancy between what is shown and what is called out, for the Site Legend shows a 4' wide painted striped area. Please revise this to ensure this proposed pedestrian walkway is paved with a hard, durable material and verify that it shall be 5' in width. |
| | | ARCH - | b. Per Section 11-30-8(F) of the MZO, pedestrian walkways shall be provided with weather protection such as canopies, awnings, or trellises. Please verify that the pedestrian entrances along the east elevation are shaded, disclosing the depth of the shade provided. |

| | | | | permitted as part of the proposed development. 4. City of Mesa records show an existing 12" DIP water distribution main within the E. McKellips right-of-way. Records also show an existing 6" ACP within the E. McKellips right-of-way with 2 existing service and meter extensions to the subject property. Lastly, there is an existing 8" DIP main extended to the property from McKellips. Provide a comprehensive water plan and report to demonstrate how the proposed development would be adequately served. 5. City of Mesa records show an existing 8" PVC sanitary sewer main within the north half of the E. McKellips right-of-way. Records show an existing manhole near the SE corner of the property. However, records show no existing sewer services extended to the site. Provide a comprehensive sewer plan and report to demonstrate how the proposed development would be adequately served. 6. Utility locations and other services may be requested through Document Retrieval on the Development Services Website DIMES. https://www.mesaaz.gov/business/developmentservices/commercial-construction. 7. Please note that approval of reports as a part of the entitlement process does not constitute final approval. These reports must be reviewed and ultimately approved as a part of the permitting process. All off-site and on-site Civil improvements will be required to be permitted (under the same permit) and be constructed with the development of the first building. 8. Demonstrate cross access agreements are in-place for the shared driveways and parking. |
|----|------------|-----------|---|---|
| 11 | 02/12/2025 | SITE PLAN | Vincent Bruno : Civil
Development Planning
CIVIL - ACKNOWLEDGED
CIVIL - ACKNOWLEDGED
CIVIL - ACKNOWLEDGED | 1. □Transportation does not support the drive-thru entry for Dutch Bros and the drive-thru exit for Culver's being side by side and being served by one driveway. The Traffic and Circulation study does not account for the Dutch Bros and Outback traffic which will use the same driveways and contribute to conflicting turning movements. These conflicting movements will likely contribute, if not cause, queuing breaks in the queuing space within the parking lots as the study claims. To address the shared use of Dutch Bros driveway, additional driveway counts were collected during mid-day & evening rush. Section IV (pages 3 & 4) of the revised report discuss and analyze the shared driveway use. The analysis determined that the conflict will not result in an overflow in parking lot or onto McKellips Rd. 2. 3. □The site design shall adhere to the site plan parameters approved for ZON21-00206. 4. □Verify ROW and PUFE (McKellips Rd requires 65' ROW & 8' PUFE) meet current code requirements, if they do not, dedicate to meet per current COM Stnd Dtl M-19.01 and EDSM 106. Existing and proposed rights-of-way and easements shall be clearly shown, identified and dimensioned. All public facilities, including the sidewalk, driveways, and deceleration lanes, shall reside within the public domain – this may require additional dedication. 4. □PUEs and PUFEs shall be free of all obstructions and shall at all times be accessible to City. |
| | | | CIVIL - ACKNOWLEDGED
CIVIL - ACKNOWLEDGED
CIVIL - ACKNOWLEDGED | service equipment. No buildings, sport courts, swimming pools, fences, shade structures nor permanent structures of any kind shall be constructed upon, over or under any public utility easements. In addition, projects shall consider the proximity of structures to utilities; regardless of the easement width, buildings shall have sufficient offset from the water or sewer pipe such that buildings, building foundations or building slabs will not be undermined or damaged by a water or sewer main break or subsequent repair. No landscaping shall be placed within an easement that will render the easement inaccessible by equipment. The City of Mesa has the right to cause any obstruction to be removed without notice to the property owner and all related costs shall be the property owner's responsibility.
5. □Ensure all signs and sign foundations remain outside of the public domain – ROW and PUFE. Ensure all signs remain outside of the sight visibility triangles at driveways.
6. □The site plan calls out bicycle parking (#17) in the PUFE not near the pedestrian sidewalk. This is likely a monument sign. Note #22 is not listed in the construction notes.
7. □Ensure cross-access agreements are in place and provide proof to the City for our records.
8. □The site plan indicates utilization of existing sidewalks and driveways. Confirm all sidewalk and driveways are free from deficiencies, ADA and COM compliant per COM Stnd Dtl M-42, and Engineering design guidelines. |

| Vehicle Trip Ends vs:
On a: | 1000 Sq. Ft. GFA
Weekday,
AM Peak Hour of Generator |
|---|--|
| Setting/Location:
Number of Studies:
Avg. 1000 Sq. Ft. GFA:
Directional Distribution: | General Urban/Suburban
118
3
52% entering, 48% exiting |
| | |

Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 50.57 | 7.28 - 164.25 | 25.99 |



| Vehicle Trip Ends vs:
On a: | 1000 Sq. Ft. GFA
Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 7 and 9 a.m. |
|--------------------------------|--|
| Setting/Location: | General Urban/Suburban |
| Number of Studies: | 96 |
| Avg. 1000 Sq. Ft. GFA: | 4 |
| Directional Distribution: | 51% entering, 49% exiting |
| | |

Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 44.61 | 1.05 - 164.25 | 27.14 |



Vehicle Trip Ends vs: 1000 Sq. Ft. GFA On a: Weekday

| Setting/Location: | General Urban/Suburban |
|---------------------------|---------------------------|
| Number of Studies: | 71 |
| Avg. 1000 Sq. Ft. GFA: | 3 |
| Directional Distribution: | 50% entering, 50% exiting |
| | |

Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|-----------------|--------------------|
| 467.48 | 98.89 - 1137.66 | 238.62 |



| Vehicle Trip Ends vs:
On a: | 1000 Sq. Ft. GFA
Weekday,
Peak Hour of Adjacent Street Traffic,
One Hour Between 4 and 6 p.m. |
|--------------------------------|--|
| Setting/Location: | General Urban/Suburban |
| Number of Studies: | 190 |
| Avg. 1000 Sq. Ft. GFA: | 3 |
| Directional Distribution: | 52% entering, 48% exiting |
| | |

Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 33.03 | 8.77 - 117.22 | 17.59 |



| Vehicle Trip Ends vs:
On a: | 1000 Sq. Ft. GFA
Weekday,
PM Peak Hour of Generator |
|---|--|
| Setting/Location:
Number of Studies:
Avg. 1000 Sq. Ft. GFA:
Directional Distribution: | General Urban/Suburban
135
3
51% entering, 49% exiting |
| | |

Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 50.94 | 13.36 - 159.07 | 24.91 |



Vehicle Trip Ends vs: 1000 Sq. Ft. GFA On a: Saturday, Peak Hour of Generator

Setting/Location:General Urban/SuburbanNumber of Studies:53Avg. 1000 Sq. Ft. GFA:4Directional Distribution:51% entering, 49% exiting

Vehicle Trip Generation per 1000 Sq. Ft. GFA

| Average Rate | Range of Rates | Standard Deviation |
|--------------|----------------|--------------------|
| 55.25 | 11.25 - 122.92 | 24.62 |

Data Plot and Equation



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Transportation Department Driving Mesa's Future

MCKELLIPS RD 2000 N

MCLELLAN RD

BROWN RD 1200 N

ADOBE ST

UNIVERSITY DR 400 N

MAIN ST

BROADWAY RD 400 S

PUEBLO AVE

SOUTHERN AVE 1200 S

SUPERSTITION FRWY

BASELINE RD 2000 S

GUADALUPE RD 2800 S

ELLIOT RD 3600 S

WARNER RD 4400 S



LEGEND

COUNTS CONDUCTED IN 2021 XXX

COUNTS CONDUCTED IN 2021 XXX (CONSTRUCTION IN THE AREA)

XXX* COUNTS CONDUCTED IN 2020 (COVID-19 PANDEMIC IMPACTS)

CITY BOUNDARIES

NOTES

|) | Numbers shown are average weekday volume in thousands per 24 hour period. |
|-------------|---|
| MS FIELD RD | Loop 101, Loop 202, S.R. 24 and U.S. 60
counts are 2020 Annual Average Daily Traffic
provided by The Arizona Department of
Transportation (http://adot.ms2soft.com). |
| RD
NN RD | Direct any questions about this map
to City of Mesa Transportation Department,
P.O. Box 1466, Mesa, Arizona
85211-1466, or phone 480-644-2160. |
| | City of Mesa Interactive Traffic Counts Map
http://gis.mesaaz.gov/Trafficcounts |

UPDATED: MARCH 2022

Start Date: 3/5/2025 Start Time: 12:00:00 AM Site Code: 1 Station ID: 1 Location 1: Dutch Bros @ 1830 E McKellips Rd in Mesa

| Date | Time | IN | OUT |
|----------|-------------|----|-----|
| 3/5/2025 | 12:00 PM | 13 | 9 |
| 3/5/2025 | 12:15 PM | 14 | 14 |
| 3/5/2025 | 12:30 PM | 16 | 17 |
| 3/5/2025 | 12:45 PM | 11 | 12 |
| | Hour Totals | 54 | 52 |
| | | | |
| 3/5/2025 | 06:00 PM | 7 | 9 |
| 3/5/2025 | 06:15 PM | 15 | 8 |
| 3/5/2025 | 06:30 PM | 7 | 11 |
| 3/5/2025 | 06:45 PM | 3 | 10 |
| | Hour Total | 32 | 38 |
| | | | |

Data Collection

- Collect queuing counts at a comparable Culver's similar to the proposed development.
- 1. Collect vehicular queue data at existing Culver's drive-thru location at 3155 W Ray Road,

Chandler during the highest two peak hours (obtained from the client).

Traffic Statement

- Prepare a draft memorandum including figures, documentation, and conclusions for a Traffic Statement. The memorandum will include the following:
- o Site Plan
- o Adjacent Street Volumes (if available)
- o Trip Generation Calculation
- o Summary of adjacent land uses that share internal drives
- o Traffic Related Impacts of the Proposed Development
- o Queuing study, specific to Culver's
- The draft memorandum will be provided for review and comment.
- Incorporate review comments as appropriate into the final signed and sealed.