

Dougherty Arts Center

Preliminary Transportation Impact
Analysis (DRAFT)



In partnership with:



Prepared for:

City of Austin Parks and Recreation
Department

Prepared by:

Bobak J. Tehrany, P.E.

TBPE Firm Registration #: 19220



April 1, 2021

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Introduction

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1.0 INTRODUCTION

BOE Consulting Services, LLC (BOE) was retained by the City of Austin Parks and Recreation Department (PARD) to complete a Preliminary Transportation Impact Analysis (TIA) for the proposed relocation of the Dougherty Arts Center (the Project) to be located immediately adjacent to the ZACH Theater and Park's Department Headquarters located between West Riverside Drive and Toomey Road, west of South Lamar Boulevard in Austin, Travis County, Texas. As part of a directive from the City of Austin City Council, an evaluation of development options is required to be brought to Boards and Commissions and ultimately City Council for consideration and final approval in order to allow the project to progress into full design and permitting. Due to this stepped approach, this initial phase of the project will provide a preliminary analysis of the project, and once a final development option has been chosen a full TIA shall be performed as part of the Site Development Permit (SDP) process. As part of this preliminary evaluation, three (3) access scenarios have been evaluated to understand the preliminary impact of having the Project take access to West Riverside Drive only, Toomey Road only, or both. The location of the proposed development is shown in **Figure 1**.

Figure 1 Proposed Site Location¹



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The scope of this study was determined by coordinating with the Austin Transportation Department (ATD). Per our discussions with the Transportation Development Services (TDS) Division within ATD, the following shall be required to be included within this analysis:

- Study Intersections
 - South Lamar Boulevard and West Riverside Drive
 - South Lamar Boulevard and Toomey Road
 - South Lamar Boulevard and Barton Springs Road
 - Barton Springs Road and Jessie Street
 - Barton Springs Road and Sterzing Street
- Travel Demand Management
 - Evaluate opportunities to promote the use of alternative transportation for patrons to the Project
 - Include the ZACH Theater, the PARD Headquarters, and adjacent Recreational Uses in the analysis to evaluate a “district-wide” area
- Background Projects
 - 218 South Lamar (C814-2018-0121)
 - 211 South Lamar (C814-2012-0160)

All development schemes that will be presented to the Boards, Commissions, and City Council for consideration are approximately 45,000 square feet in size. Since the final development scheme will not be known until the City Council has provided their input, the final analysis on the chosen development scheme shall be completed at the time of the Site Development Permit (SDP) process. The intent of this preliminary study is to provide information on the preliminary impact of access and where access to the Project is recommended to be taken. More detailed information on the public engagement process, schedules, and presentation materials can be found on the Project’s website:

- <http://www.austintexas.gov/department/dougherty-arts-center-redevelopment-project>

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Existing Conditions

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2.0 EXISTING CONDITIONS

The existing Dougherty Arts Center (DAC) is located within the repurposed Naval and Marine Reserve Center which was originally constructed in 1947 in which the DAC moved into in 1978. During a 2010 Conditions Assessment, the building was deemed to be beyond repair and has been utilized well beyond its usable life. In 2018, the citizens of Austin voted for a bond measure (Proposition B) which would provide the funding to construct a new facility within the Butler Shores area. The Butler Shores area is currently zoned as Public which allows public activity centers such as the DAC. The original DAC is approximately 24,600 square feet in size.

2.1 IMAGINE AUSTIN COMPREHENSIVE PLAN

The Project lies along the Activity Corridor of South Lamar as defined by the Imagine Austin Comprehensive Plan. Activity Corridors are the connections that link activity centers and other key destinations to one another and allow people to travel throughout the City and region by bicycle, transit, or automobile. Corridors are also characterized by a variety of activities and types of developments located along the roadway. There may also be a series of small neighborhood centers connected by the roadway.

The Project will adhere to the vision of the Imagine Austin Comprehensive Plan by providing a civic use along the South Lamar Activity Corridor, and will allow patrons to walk, bike, or take transit to the Project. A Transit Map reflecting the proximity of the various transit routes to the Project's site has been included in the Appendix of this Report as *Exhibit 1*. Additionally, a Bicycle Map has also been included reflecting the bicycle network surrounding this site as *Exhibit 2*.

2.2 SOUTH LAMAR BOULEVARD CORRIDOR PLAN

The Austin Strategic Mobility Plan (ASMP) is the City of Austin's Master Transportation Plan which was approved April 11, 2019 by City Council. This plan identifies the mobility needs of Austin into the future for all modes of transportation (e.g., vehicular, pedestrian, bicycle, etc.). In conjunction with that plan, the City of Austin voters approved the 2016 Mobility Bond which allocated funds to improve the major corridors in Austin, South Lamar Boulevard being one of those major corridors. While the Project does not directly front South Lamar Boulevard, its proximity to this major corridor provides great benefits of mobility for the patrons of the Project.

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Existing Conditions

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Improvements associated with the South Lamar Corridor include sidewalk improvements, providing bicycle paths off-street and behind the curb, traffic signal improvements, transit improvements, and other improvements. Due to the complexity of this planned improvements along this corridor, the City has phased the improvements and have identified the segment of South Lamar Boulevard between West Riverside Drive and Barton Springs Road to be the initial phase. It is currently anticipated that construction will start some time in 2021 to 2022. A schematic layout depicting the planned improvements has been included as *Exhibit 3* within the Appendix of this report.

As can be seen in the schematic layout, a new transit stop will be located at the intersection of South Lamar Boulevard and West Riverside Drive providing access to not only the future Project, but also the ZACH Theater and other active uses within this general area.

2.3 CAPITAL METRO

The City of Austin voters approved the Project Connect bond initiative in November 2020. The goal of Project Connect is to find new and better ways to move people into, out of, and around Central Texas. Historically, development teams have been required to evaluate how to better move single occupancy vehicles. This is evident in the Austin modal split, which is dominated by single occupancy vehicle use. Capital Metro and their partners have shifted the methodology of evaluating the movement of cars to the movement of people. This forward-thinking approach re-evaluates the existing infrastructure to be utilized with high-capacity transit. By doing this, it is proven to move more people through the roadway network and encourage the use of alternate modes of transportation. Making high-capacity transit a priority will allow this analysis to become reality.

Capital Metro is currently underway with various projects to increase transit connectivity, service, and frequency. Recently, Capital Metro implemented the Cap Remap initiative where service was enhanced to become more frequent, reliable, and better connected. Specifically, this increased the frequency of service along South Lamar Boulevard, Barton Springs Road, West Riverside Drive and other major roadways surrounding the Project. As discussed in Section 2.2 of this report, major transit improvements are planned along the South Lamar Corridor which will be further enhanced with the implementation of the Project Connect vision. The initial investment system map for the Capital Metro Project Connect improvements is included within the appendix as *Exhibit 4*. The system map shows that the surrounding roadway network is rich with transit service providing efficient access to downtown Austin, northeast and northwest Austin, and to southeast and southwest Austin. All corners of Austin can be accessed with transit service within this area.

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Existing Conditions

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Jointly with Cap Remap, Capital Metro has been working on the Connections 2025 project since 2015. In February 2018, the Capital Metro Board of Directors approved a plan to move forward with the phased implementation of the Connection 2025 project which will increase ridership throughout the bus system, match service to lifestyle, commuter and coverage markets, enhance the customer experience, and ensure financial stability so Capital Metro can keep improving service. The service recommendations within the approved report are divided into implementation phases spread over 10 years as shown below:

Figure 2 Connections 2025 Timeline²

TIMELINE	
The service recommendations are divided into implementation phases spread over the next 10 years.	
2017 CURRENT NETWORK ADJUSTMENTS	<ul style="list-style-type: none">• Simplified fare structure (implemented Jan. 2017).• Express routes operating in MoPac Managed Lanes (service to begin after lanes open).• Increased frequency on MetroRapid Route 801 and 803 to every 10 minutes.
2018 NEW NETWORK ADDITIONS	<ul style="list-style-type: none">• Frequency enhancements on high-ridership routes.• Route adjustments and realignments.• Elimination of duplicative routes.• Some UT Shuttle transition to Local routes.
2019 MOBILITY INNOVATION PROJECTS	<ul style="list-style-type: none">• Development and implementation of Mobility Innovation Zones.• Removal of unproductive service.
2020 INFRASTRUCTURE	<ul style="list-style-type: none">• Installation of new MetroRapid stations (additional stations along Routes 801 and 803 to create 1/3 mile stop spacing & new Routes 804 and 820).• Implementation of priority treatments (transit signal priority, queue jumps, bus bulbs and transit-only lanes).• Increased core MetroRail frequency to every 15 minutes during peak travel times.• Increased MetroRapid Route 801 frequency to every 7 minutes.• Additional Park & Ride facilities introduced.
2023 IH-35 BRT	<ul style="list-style-type: none">• Implementation of IH-35 Bus Rapid Transit service.

2.4 ROADWAY NETWORK

South Lamar Boulevard is classified as a Level 3 Roadway which provides north-south movements in the vicinity of the Project. The posted speed limit on South Lamar Boulevard is 35 miles-per-hour (mph). Based on 2019 Annual Average Daily Traffic (AADT) provided in the TxDOT planning maps, South Lamar Boulevard experiences approximately 46,800 vehicles per day (vpd).

West Riverside Drive is classified as a Street Level 3 Roadway which provides east-west movements in the vicinity of the Project. The posted speed limit on West Riverside Drive is 30 mph. The intersection of South Lamar Boulevard and West Riverside Drive is the terminus of West Riverside Drive as it does not extend past South Lamar Boulevard. The driveway that extends west of South Lamar Boulevard is a Park Department

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Future Conditions

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driveway which currently provides access to the Austin Parks and Recreation Department Headquarters as well as the active uses within the Butler Shores Park.

Barton Springs Road is classified as a Street Level 3 Roadway which provides east-west movements in the vicinity of the Project. The posted speed limit on Barton Springs Road is 35 mph.

Toomey Road is classified as a Street Level 1 Roadway that provides access to the various residential and commercial uses along the roadway. The posted speed limit on Toomey Road is 30 mph.

Sterzing Street is classified as a Street Level 1 Roadway that provides access to the various residential and commercial uses along the roadway. While Sterzing Street does provide a posted speed limit, given that the roadway is a continuation of Toomey Road, it has been assumed that the posted speed limit is 30 mph.

3.0 FUTURE CONDITIONS

The existing location of the Dougherty Arts Center shall be closed and relocated to the new location planned within the Butler Shores area. The location of the new Center was chosen after extensive community engagement in 2018 and ultimately approved by the voters as part of Proposition 1B during the 2018 elections. The new location will provide approximately 45,000 square feet of space for programming as well as outdoor space that is intended to be programmed for use as well. Given the various other civic/public uses immediately adjacent to this new location, this analysis was completed including the ZACH Theater programming, the Parks and Recreation Department Offices, and the various active uses in the area. This holistic approach allows the City to better understand the combined impact of the various programming that could occur within this immediate area.

3.1 BUILD-OUT

We are currently anticipating the development of the Project to occur as a single-phase development over the course of approximately three (3) years. As with anything related to development and construction, timelines could shift due to unforeseen circumstances. As per the past experiences, assumptions on when development will occur is an estimation at this point in time. For the purposes of this analysis, a build-out year of 2024 is anticipated for the Project.

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Data Collection

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3.2 BACKGROUND GROWTH

Between the existing condition year of 2019 and the 2024 build-out year, traffic around the proposed site is expected to increase by the natural growth of the area and due to other development projects, which must be taken into account. For this study, a growth rate of **4 percent per year** utilized. It should be noted that this growth rate does not represent population growth, but instead vehicular volume growth which is what used in traffic studies.

As for background projects, the City of Austin provided two (2) developments to evaluate and include within this analysis. **Table 1** includes the projects identified by City Staff:

Table 1 Background Project List

Project Name	Permit Number
211 South Lamar	C814-2012-0160
218 South Lamar	C814-2018-0121

Each one of the projects listed above was researched and evaluated to include the trips associated with these projects within the future, no-build (Forecasted) scenario to account for their added impact on the roadway network.

4.0 DATA COLLECTION

At the time that this analysis was initiated, the City of Austin, and the rest of the world for that matter, were under various mandates in order to mitigate the COVID-19 spread. Collecting traffic data during that time would not have been feasible since the traffic volumes during that time did not reflect the actual peak hour conditions experienced during non-pandemic times. Since we must continue to progress as a City, an alternative solution was determined for the traffic data that is needed for the analysis. The Transportation Impact Analysis (TIA) that was performed for the 218 South Lamar project was collected in May 2018, while all schools were still in session. This data was then grown into the year 2020 which is considered the Existing Conditions for the Project. That would then become our baseline data. This methodology has been discussed with City Staff and agreed upon for use with this analysis.

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Shared Parking Demand Analysis Methodology

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4.1 TRAFFIC DATA

The 218 South Lamar TIA utilized counts collected by Quality Counts Transportation Data Collection Services. Turning Movement Counts (TMC) were collected from 7:00-9:00 AM and from 4:00-6:00 PM for the study intersections in May 2018. Please note that schools were in session when traffic counts were collected. The intersections analyzed by this analysis are as follows:

Turning Movement Counts

- South Lamar Boulevard and West Riverside Drive
- South Lamar Boulevard and Toomey Road
- South Lamar Boulevard and Barton Springs Road
- Barton Springs Road and Jessie Street
- Barton Springs Road and Sterzing Street

Moreover, the traffic signal timing for all the signalized intersections which were analyzed as part of this study were obtained from the City of Austin (COA). All traffic counts collected by Quality Counts and the signal timings obtained from COA have been included within the Appendix of this report as *Exhibit 5*.

5.0 SHARED PARKING DEMAND ANALYSIS METHODOLOGY

Based on discussions with the City of Austin Transportation Department, it became evident that the Project should be evaluated in isolation. Given the adjacent civic and public uses, a holistic analysis was performed to evaluate the various uses together in order to understand the combined needs for this immediate area. This area is referred to as the Arts District through this report for simplicity. Specifically focusing on parking needs, the old methodology of providing each individual use their own parking thus inducing vehicular demand/impact on the roadway, the Project instead evaluated a shared parking model to better understand the complementary nature of the various uses and to right size the parking for this area to minimize the impact on the environment as well as potentially reduce infrastructure cost to the City of Austin.

This section summarizes the methodology used for parking demand generation for the Project. The shared parking model used for this study generated parking demand scenarios based on industry standard measures of demand generation for common land use types. The model was modified to reflect local context and expected visitor patterns based on conversations with representatives of the Dougherty Arts Center (DAC), ZACH Theatre, Austin Parks and Recreation Department (PARC), and Active uses.

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Shared Parking Demand Analysis Methodology

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These measures were then compared to the actual local context via existing parking inventory and utilization counts on the site based on pre-pandemic aerial imagery. The following objectives were completed by this analysis:

- Catalog the existing parking supply on site, as well as potential changes based on DAC facility design options and surrounding developments.
- Understand the relationship between DAC facility design options and parking space demand
- Understand the relationship between event activity within the Arts District and parking space demand
- Help identify the net new spaces necessary to help meet desired parking ratios

5.1 PARKING DEMAND ANALYSIS SCENARIOS

The Project Team studied parking demand under three scenarios at the future Arts District that vary in terms of activity hosted on site and reflecting the design options for the future DAC and PARD buildings. The first scenario is a baseline weekday earlier in the week where there is no theater performance or evening event at either the DAC or ZACH, but normal classes and normal office population. The second, intermediary scenario does include a weeknight performance or event at both the DAC and ZACH and utilizing the theatres most often hosted performances. This is considered a typical weekday. The third is rare and represents a major event weekend day in the Arts District when there are overlapping events, but the office staff is diminished even though the event attendees are expanded.

For rare events it might make sense to develop event parking and traffic management plans or programs rather than build spaces that would remain empty on otherwise typical programming days. The net new parking space recommendations reflect the intermediary weeknight with event analysis scenario, otherwise known as the typical weekday.

Rather than base parking demand on square footages and building sizes of different land uses, the unique dynamic of the Project required parking demand be modeled based on the number of people on site during each event scenario, whose patterns, trip timing, and travel needs can be understood in categories of user groups, such as office staff, event attendee, student, or instructor. Time of day factors used in the parking modeling were taken from both industry-standard Institute of Transportation Engineers (ITE) parking generation rates and calibrated to local conditions with input from DAC, ZACH, and PARD officials.

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Shared Parking Demand Analysis Methodology

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Under Options 1A, 1B, and 2, the following on-site population is included in the parking model:

Table 2 Options 1A, 1B, and 2 Site Population

Arts District Facility	Land Use	Capacity (people)
Dougherty Arts Center	Administrative Offices	30
	Arts Classes/Studios	150
	Large Theater	150
	Black Box Theater	75
	Gallery Space	200
ZACH Theatre	Administrative Offices	30
	Classes/Rehearsal	80
	Topfer Theatre	420
	Whisenhunt Stage	130
	Kleberg Stage	230
Parks and Recreation Department	Office	71
Active Uses	Ballfields	3 (fields)

Under Option 3, the following on-site population is included in the parking model:

Table 3 Options 3 Site Population

Arts District Facility	Land Use	Capacity (people)
Dougherty Arts Center	Administrative Offices	30
	Arts Classes/Studios	150
	Large Theater	150
	Black Box Theater	75
	Gallery Space	200
ZACH Theatre	Administrative Offices	30
	Classes/Rehearsal	80
	Topfer Theatre	420
	Whisenhunt Stage	130
	Kleberg Stage	230
Active Uses	Ballfields	3 (fields)

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Shared Parking Demand Analysis Methodology

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5.2 TRADITIONAL DEMAND PROJECTIONS

Understanding the relationship between land use and parking demand is critical. The Arts District will function as a mixed-use parking district with a unique user behavior profile that poses challenges in managing parking resources, particularly with overlapping events.

Traditional development expectations often assume that parking will be provided for each separate use on site, with little or no consideration of shared parking or access among different uses. Most often, parking generation analyses rely solely on the Institute of Transportation Engineer's (ITE) periodic report titled Parking Generation, which is the prevailing national standard in determining expected parking demand for a development or set of land uses. To estimate parking demand generated by a development like the DAC relocation in the future Arts District, analysts multiply a peak parking demand factor for each land-use type by the physical size of each use type and assume that the peak amount of parking is required all day, every day and exclusively for that use.

This may be applicable to sites with lots of space and isolated single land uses, but that is not appropriate in a mixed-use environment (particularly in a transit-oriented and walkable area placing such a premium on compatibility with the natural surroundings). In the future Arts District, the theatres, art classrooms, offices, rehearsal rooms, and active uses, each with different demand profiles across the course of the day, are located in close proximity to each other and could more efficiently share local parking resources.

5.3 ARTS DISTRICT PARKING MODEL RATIONALE

By contrast, the shared parking model used for this Arts District analysis applies time-of-day factors, using the Urban Land Institute's (ULI) Shared Parking Manual (2nd Edition, 2005) to track the accumulation of aggregate demand. In a principle often referred to as "**staggered peaks**," the actual demand for parking varies by use throughout the hours of a day and days of a week: office space generates parking demand during traditional weekday business hours; parking for theatre performances is often highest in the evenings; and the parking demand generated by students is highest during the afternoon. If parking is shared between multiple uses, the aggregated parking demand by time of day is less than the total that would be programmed separately for each use.

This dynamic is already in play in the Butler Shores area today; the surface lots used by PARD during the day are available to ZACH Theater guests during performances, reserved for those attendees who are patrons or season-pass holders.

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Shared Parking Demand Analysis Methodology

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If parking is shared between multiple uses, the aggregated parking demand by time of day is less than the total that would be programmed separately for each use. The parking model assumes that parking supply needed to meet peak demand at individual locations can be absorbed in other facilities not experiencing peak demand or using one space for multiple destinations.

Beyond utilizing staggered peaks to characterize total parking demand by time of day when parking spaces can be shared between uses, the parking model utilizes **Transportation Demand Management (TDM)** adjustments for the user groups on site in the future Arts District. These TDM programs work collectively to change how, when, where, and why people travel and provide people the options to reduce reliance on the single-occupant vehicle. TDM measures include a range of cycling, walking, transit, and carpooling incentives that can range from simple infrastructure such as bicycle parking, bus shelters, and sidewalks to more advanced information campaigns and financial incentives to leave the car at home.

The TDM measures recommended in the Arts District vary by user group on site, as the impact of programs and incentives will differ by user group based on how frequently and how routine trips to the site are. For the office population, TDM is likely to reduce parking demand on-site by 20%, as employees will have greater opportunity to learn and become accustomed to alternative commute options. For instructors and students, TDM is likely to reduce parking demand on site by 10%, especially if storage facilities are available for art and theater supplies. For performance-goers, TDM is likely to reduce parking demand on site by 5%, as programs and incentives to reach new or one-time guests is harder to market and gain acceptance.

5.4 ADDITIONAL ARTS DISTRICT PARKING MODEL ASSUMPTIONS

The parking model included several additional assumptions that helped general parking demand results:

- 90% drive alone rate for office workers.
- 2.8% average absentee rate per day (based on BLS statistics).
- After-school program students at DAC arrive by bus from their schools, but get picked up by parents afterwards, so are included in parking demand. However, pick-ups do not always park—sometimes, they stop at the curb only briefly. Therefore, modeled demand for this group represents a conservative estimate of parking needed on site.
- Student attendees at Kleberg Stage mid-day performances travel by bus and are excluded from parking demand.

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Shared Parking Demand Analysis Methodology

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5.5 PARKING DEMAND RESULTS

Under the “Weeknights with Events” intermediary scenario and when incorporating shared parking and TDM, the Arts District is expected to require the following number of peak parking spaces under each design option:

- Option 1A, 1B, or 2, which includes the PARD offices on-site: 449 parking spaces
- Option 3, which relocates the PARD offices off-site: 421 parking spaces

These values include a 10% buffer above the modeled parking demand to ensure that finding a space when facilities are near capacity is not onerous.

5.6 NET NEW PARKING SPACE RECOMMENDATIONS

The number of net new parking spaces recommended is a function of the peak parking demand results for each DAC facility design option, the number of existing parking spaces retained on site after construction, and the number of parking spaces that are available to the Arts Facility population from the neighboring supply at the future 218 South Lamar development’s garage. Per the PUD Zoning Ordinance for that project, the 218 South Lamar development is obligated to reserve 30 spaces for DAC users all day, as well as 50 additional spaces at 50% market rate for other users of the Arts District, including guests, students, instructors, and theatre attendees. The following number of net new parking spaces are recommended under each design option, as seen in the table below.

Table 4 Parking Recommendation Summary Table

Design Option	PARD Status	Peak Parking Demand (shared +TDM)	Retained Spaces	Net New Spaces Needed
Option 1A	Included	449	137	232
Option 1B	Included	449	147	222
Option 2	Included	449	129	240
Option 3	Relocated	421	129	212

A presentation deck visually that explains the methodology described above has been included in the Appendix of this report as *Exhibit 7*.

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Projected Site and Future Build Traffic

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6.0 PROJECTED SITE AND FUTURE BUILD TRAFFIC

The Project is currently anticipated to be completed by 2024. The four (4) concept options currently being considered as part of this preliminary stage of the project have been included within the Appendix of this report as *Exhibit 06*.

- Option 1A - achieves access via West Riverside Drive Only
- Option 1B – achieves access via West Riverside Drive and Toomey Road
- Option 2 – achieves access via Toomey Road Only
- Option 3 – achieves access via Toomey Road Only

6.1 TRIP GENERATION

With the presence of the existing Daugherty Arts Center just a half mile from the location of the new Daugherty Arts Center, it is assumed that the trips related to the existing Center are already accounted for in the roadway network. The existing trips then be redistributed to the new location. In addition to the redistribution of the existing trips, the new DAC will be larger in size, providing added programming and events, thus generating additional trips beyond what existing DAC generated.

The trip generation for any development is typically estimated by utilizing the Institute of Transportation Engineers (ITE) Trip Generation Manual, 10th Edition, which is the latest edition at this time. Given the unique characteristics of the Daugherty Arts Center, the ITE Trip Generation Manual does not provide a land use that fits exactly within the definition provided. Based on our research, we have determined that the closest land use provided ITE is the Museum land use (ITE 580). The ITE definition for a Museum has been included in the Appendix of this report as *Exhibit 8*. The land use data for ITE 580 included only one (1) study performed on a facility in Tennessee that provided approximately 45,000 square feet of space. Due to the limited data available by the ITE Trip Generation Manual, it became evident that establishing custom trip generation rates for this land use would be more appropriate.

In order to establish custom trip generation rates, our team coordinated with DAC Staff to understand daily activities, office staff, average numbers of patrons during the day, and more specifically, the number of patrons/classes during the AM Peak Hour (7-9am) and PM Peak Hour (4-6pm) for the existing DAC facility. By understanding the number of individuals participating in programming in DAC activities during the peak hours, we are then able to calculate a trip generation rate per square feet. As we are currently in the preliminary stage of this project and a final development scheme is not yet known, the full trip generation analysis of the custom

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Trip Distribution

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rates and application of the rates to the new facility shall be completed as part of the second phase of the Project which will be during the Site Development Permit process.

7.0 TRIP DISTRIBUTION

The overall trip distribution is defined as how patrons are moving through the roadway network on a macro level by cardinal direction. Typically, existing data is evaluated to understand how drivers are currently traveling through the system; however, that methodology would not necessarily be appropriate to be used for DAC related traffic. The travel patterns currently observed through the roadway network are heavily weighted towards those people who are going to their employment centers in the morning and going back to their residence in the evening. Since Austin has a large percentage of their employment centers located within the Central Business District (CBD) and given the proximity of the site to the CBD, the existing traffic data shows heavy movements traveling northbound along South Lamar Boulevard and eastbound along Barton Springs Road during the AM Peak Hour. Conversely, heavy traffic volumes are observed traveling southbound along South Lamar Boulevard and westbound along Barton Springs Road during the PM Peak Hour. This distribution does not generally coincide with what would be seen for the DAC.

Per our discussions and coordination with DAC Staff, zip code data was utilized to create a “heat” map providing us with some level of insight as to where patrons of the DAC are originating from and heading to. The heat map has been included within the Appendix of this report as *Exhibit 9*. The DAC serves people from all over the greater Austin area and with the data that we have evaluated, those patrons are generally coming uniformly from across the City of Austin. A larger percentage of the patrons are originating immediately south, southwest, and southeast of the site, with the next largest percentage originating immediately north, northwest, and northeast of the site. This overall area of major influence is bound by Loop 1 to the west, US 290 to the south, US 183 to the east, and 51st Street to the north. Outside of those limits, patrons are generally dispersed evenly through the region. Based on these findings, the table below provides a summary of the overall trip distributions for site related trips. At this time, an even distribution of overall traffic has been assumed in each cardinal direction for the roadway network.

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Trip Distribution

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Table 5 Overall Trip Distributions

Direction	Overall Distribution
West Barton Springs Rd	20%
East Barton Springs Rd	20%
South Lamar Blvd	20%
North Lamar Blvd	20%
East Riverside Dr	20%
Total	100%

7.1 NETWORK ADJUSTMENTS

Certain adjustments were required to be made to the analysis network to account for the future South Lamar Boulevard Corridor Improvements. As previously discussed in **Section 2.2** of this report, there are planned improvements along the South Lamar Boulevard Corridor at the study intersections which are anticipated to be in place by the completion of this Project in 2024; therefore, these adjustments will be accounted for in the 2023 Forecasted (future, no-build) conditions. The adjusted conditions will carry through the entirety of the analysis. This will be completed as part of the second phase of the Project once a development scheme has been chosen to move forward with design and permitting.

7.2 SITE ACCESS AND MOBILITY

With each of the development options currently being evaluated, different access is contemplated for each.

- Option 1A - achieves access via West Riverside Drive Only
- Option 1B – achieves access via West Riverside Drive and Toomey Road
- Option 2 – achieves access via Toomey Road Only OR West Riverside Drive Only
- Option 3 – achieves access via Toomey Road Only OR West Riverside Drive Only

It should be noted that for Options 2 and 3, a parking structure has been identified to take access to Toomey Road only OR West Riverside Drive only. While these schemes provide the option, placing the parking structure under the Civic Plaza identified along West Riverside Drive would be measurably less efficient and more costly to the City of Austin. Our evaluation assumed the parking structure would take access to Toomey Road Only for Options 2 and 3.

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Trip Distribution

April 1, 2021

Prior to studying the viability of access for the new DAC location, we first evaluated how access, mobility, and generally operations are working at the current DAC facility. The existing DAC is located at the northwest corner of Barton Springs Road and Dawson Road. Dawson Road, north of Barton Springs Boulevard acts as the DAC site driveway and is a dead-end roadway. Among the various programming that the DAC provides, after school programs are one of the larger programming efforts provided for school aged children. Buses will drop off students after school, and parents will then pick students after classes have let out. The current Dawson driveway and turnaround at the north end allows for buses to enter off Barton Springs, turnaround to queue and drop students, then proceed back onto Barton Springs Road. Similarly, parents utilize the "loop" to queue and pickup their children. The available storage mostly allows for adequate stacking within the property. Knowing this programming and operational need, consideration was taken to provide school bus accommodation as well as a parent pickup loop that would allow for queuing within the property limits.

Then evaluating the potential for access to the Project via West Riverside Drive versus Toomey Road, it became more of an evaluation of mobility and connectivity. Options 1A, 2, and 3 provide access to the Project via only roadway. By limiting access, mobility is then limited as well creating a focused node of traffic impact as opposed to dispersing the traffic volumes to multiple points and allowing for greater mobility and connectivity. Based on our understanding of the goals of the City of Austin, connectivity and mobility are essentially in order to allow greater capacity and disperse congestion as best as possible.

When access is limited to West Riverside Drive Only, the intersection of West Riverside Drive and South Lamar Boulevard will be overburdened and experience greater degradation in performance due to the focused volumes of traffic at that node. Everyone that would be entering and exiting the Project would be required to travel through that intersection. Additionally, since there would be a lack of connectivity and mobility, adjacent intersections would also be impacted unnecessarily. Conversely, when access is limited to Toomey Road Only, Toomey Road would be overburdened with regular programming traffic, school buses, and parent pickup traffic.

With Option 1B, the site is presented with a unique opportunity to be able to utilize access from two roadways that provides greater mobility and allows for increased connectivity to the overall roadway network. For example, the access from West Riverside Drive can be identified as the school bus dropped loop as well as the parent pickup loop. For those parents that choose to park and go into the DAC to pick-up their child, parking access will be provided via the West Riverside Drive access. Regular programming and patrons would be able to access the site from either Toomey Road or West Riverside Drive with parking access from both roadways. It should be noted that in no scenario or situation will direct access between West Riverside Drive and Toomey Road be provided as part of the Project. As can be seen in the Option 1B, the parking garage provides a "barrier" between the West Riverside Drive access and the Toomey Road access preventing cut-through traffic.

8.0 FINDINGS AND RECOMMENDATIONS

For this preliminary analysis, our team evaluated the various development options to evaluate and provide a recommendation on how access could be achieved to/from the new location of the Daugherty Arts Center. Upon our evaluation of the roadway network, understanding the functionality of the existing DAC and the goals of the future DAC, it is recommended that access to West Riverside Drive and Toomey Road be provided. This will allow for greater mobility, connectivity, and allow for the dispersal of traffic so as not to create a concentrated load on any specific intersection. Additionally, providing access to both roadways will allow for certain programming and traffic operations to be located in one location versus the other preventing an undue burden on any specific roadway(s).

For situations in which multiple events potentially coincide with one another between the DAC, ZACH, and other events, it is recommended that an Event Specific Traffic Control Plan be prepared to manage the ingress, egress, and the overall mobility of the area to minimize the impact to the roadway network. Such event plans would be closely coordinated with the City of Austin's Center for Events (ACE) which is responsible for the mobility management of other events throughout Austin.

With the wholistic evaluation of the DAC, ZACH Theater, PARD Offices, and Active Uses in this "Arts District", a shared parking model can be achieved limiting excess parking which is a net positive for environmental considerations as well as providing a cost savings to the City of Austin by limiting parking infrastructure. Lastly, a Travel Demand Management approach to encouraging the use of alternative transportation modes would potentially reduce the volume of single occupancy vehicles. Upon the completion of this initial phase of the Project and a development option has been chosen, more detailed analysis shall be performed as part of the Site Development Permit process.

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References

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9.0 REFERENCES

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3. City of Austin. South Lamar Boulevard Corridor Improvement Schematics, August 16, 2019 Mobility Bond.
4. Trip Generation Manual 10th Edition Desk Reference. Institute of Transportation Engineers, Washington, D.C. 2017.
5. Trip Generation Handbook, 3rd Edition. A Recommended Practice of the Institute of Transportation Engineers. Institute of Transportation Engineers, Washington, D.C., 2017.

Appendix A

- A.1 TRANSIT MAP
- A.2 BIKE MAP
- A.3 SOUTH LAMAR BOULEVARD CORRIDOR IMPROVEMENTS
- A.4 CAPITAL METRO PROJECT CONNECT SYSTEM MAP
- A.5 TRAFFIC DATA
- A.6 DEVELOPMENT OPTIONS
- A.7 NELSON NYGAARD SHARED PARKING/TDM PRESENTATION
- A.8 ITE LAND USE DEFINITION
- A.9 PATRON HEAT MAP