

## ZONING CHANGE REVIEW SHEET

**CASE:** C814-2015-0074  
(The Grove at Shoal Creek Planned Unit Development)

**Z.A.P. DATE:** December 1, 2015  
May 17, 2016  
June 7, 2016  
June 21, 2016  
July 5, 2016  
July 14, 2016

**ADDRESS:** 4205 Bull Creek Road

**DISTRICT AREA:** 10

**OWNER:** ARG Bull Creek, Ltd. (Garrett Martin)

**AGENT:** Thrower Design (A. Ron Thrower)

**ZONING FROM:** Unzoned (UNZ)    **TO:** PUD    **AREA:** 75.74 acres

**SUMMARY STAFF RECOMMENDATION:**

The staff recommendation is to approve The Grove at Shoal Creek Planned Unit Development (PUD) subject to the following conditions:

1. The Planning and Zoning staff recommends PUD zoning as requested subject that the following additional conditions be incorporated in the proposed Land Use Plan (Exhibit C):
  - a) The total square footage of all development within the PUD shall not exceed 2.4 million square feet.
  - b) The total square footage of all office development within the PUD shall not exceed 210,000 square feet.
  - c) The total square footage of all retail/commercial development shall not exceed 150,000 square feet.
  - d) The total number of congregate care beds shall not exceed 300.
  - e) At least 30,000 square feet of retail development shall be required once 700 units of residential development are constructed before any additional residential development can occur on the property.
  - f) At least 35% of the total required affordable rental units shall be provided once 325 multifamily residential units are constructed before any additional multifamily residential units may be constructed. At least 35% of the total required affordable for-sale residential units shall be provided once 100 condominium residential units are constructed in a "podium style" condominium residential building before any additional condominium residential units may be constructed.
  - g) 130,000 square feet of development may be used for Tier 2 affordable housing that is separate from and does not count against the overall development cap of 2.4 million square feet.
  - h) The staff recommends a baseline of 1.892 million square feet.
2. The conditions of the PUD shall be established in the proposed Land Use Plan (Exhibit C), that includes a breakdown of: a) tract layout and size/acreages, b) permitted land use tables, c) site development regulations table, d) additional setbacks on specific tracts, e) approximate driveway and trail locations, , f) notes on limitations of uses, conditions on site development regulations, definitions, provision for public art installation, conditions for a

proposed pedestrian and bicycle bridge, and benefits to encourage alternative transportation options.

3. The PUD shall be subject to the conditions regarding the riparian grow zone, CEF buffer area, wet pond surface area, detention infiltration feature, wetland fringe and upland infiltration feature as agreed to on the Environmental Resource Exhibit (Exhibit F). The proposed PUD shall comply with the Environmental staff recommendations that include:
  - a. The PUD will provide at least 18.12 acres of open space.
  - b. The PUD will exceed minimum Code requirements for landscaping through The Grove at Shoal Creek Design Guidelines by requiring a minimum of three-inch caliper street trees on all internal roadways, requiring street trees along Bull Creek and requiring that a minimum of 95% of all non-turf plan materials be from or consistent with the City's Grow Green Guide.
  - c. Provide that a minimum of ten acres of impervious cover on the site will drain to and be substantially treated by green water quality controls that infiltrate or reuse water, such as rain gardens and rainwater harvesting.
  - d. Use of a wet pond and/or green water quality controls for a minimum of 50% of the required water quality volume on-site.
  - e. Preserve a minimum of 75% of all protected size native caliper inches and prepare a tree care plan for all preserved heritage and protected trees on site.
  - f. Provide additional protections for the grove of trees surrounding the proposed wet pond.
  - g. Cluster development/impervious cover along Bull Creek Road and in the interior of the property away from Shoal Creek and the larger oak groves on the property to avoid environmentally sensitive areas.
  - h. Direct storm water runoff from impervious surfaces to a landscaped area at least equal to the total required landscape area.
  - i. Provide on-site detention for the 9.39 acres of existing impervious cover on site that is not currently detained.
  - j. The City of Austin Watershed Protection Department will choose the most effective flood mitigation option for the site at the time of subdivision or site plan review.
  - k. Provide educational signage at the wetland Critical Environmental Feature.
  - l. Implement an Integrated Pest Management Plan for the whole property.
4. The development of the PUD shall comply with the conditions stipulated in the Parks Plan Exhibit (Exhibit G). The applicant shall provide for parkland for park and recreational purposes under the terms of the Grove at Shoal Creek Parks Plan and Parkland Improvement Agreement as attached exhibits to the PUD ordinance. To be clear, the Parks and Recreation Department has determined that the parks component of the PUD application does not meet superiority for parks.
5. The development of the PUD site will be subject to the attached TIA memorandum from the Development Review Development (DRD) Department and Austin Transportation Department (ATD) dated July 11, 2016 – Exhibit M. The TIA memo limits the site development to uses and intensities that will not exceed or vary from the projected traffic conditions assumed in the final TIA [R-K Traffic Engineering, LLC – March 28, 2016]. The proposed conceptual right-of-way layout, major vehicle circulation and pedestrian and bicycle connections are shown on the Roadway Framework Plan (Exhibit H).

6. Development within the PUD shall comply with the Tree Survey & Disposition Plan (Exhibit J). A representation of the applicant's proposal for tree mitigation on the site is shown on Tree Mitigation Example conceptual plan and table (Exhibit L).
7. The PUD zoning will be subject to draft language agreed upon with the Neighborhood Housing and Community Development Department (NHCD) concerning compliance with the affordable housing on the property. The project has been certified under SMART Housing and the PUD language will require 5% of permanent ownership units and 10% of the rental for 40 years. They will receive a 100% fee waiver. Ten percent of the total number of multifamily rental housing units located within the Grove at Bull Creek PUD will be set aside for occupancy by households with incomes at 60 percent of or below the median family income. At least 5 percent of the total number of units sold as owner-occupied residential housing units located within the Grove at Bull Creek PUD will, through a mechanism agreed upon by the City and Landowner, be made permanently available at a price affordable to households with incomes at 80 percent of or below the median family income. NHCD and the developer have signed off on the attached language stated in the, The Grove at Bull Creek PUD Affordable Housing Program – Exhibit N.

The applicant agrees with the staff's recommendation.

#### **ENVIRONMENTAL COMMISSION MOTION:**

November 4, 2015: Motion to postpone the case to December 16, 2015, with a briefing on the status of the review to be presented at the November 18, 2015 meeting (8-1, H. Smith-abstain); M. Perales-1<sup>st</sup>, M. Neely-2<sup>nd</sup>.

December 16, 2015: Refer case to Development Committee when the staff review and recommendation is complete.

May 18, 2016: Refer case to Development Committee when the staff review and recommendation is complete.

June 1, 2016: Motion to postpone the case to June 15, 2016 to negotiate and find resolution of the following:

1. Obtain superiority in regards to parkland by working with the Parks and Recreation Board and the Park and Recreation Department;
2. Comply with at least three star green building requirements;
3. Create a drainage plan to ensure the safety of the surrounding properties;
4. Draft contingency plan to address unresolved drainage issues after the site is built out;
5. Remove flex space from the parkland;
6. Evaluate the impact that increased traffic to the site would have on air quality and noise pollution;
7. Protect 100% of the critical root zone of all trees on the site;
8. List all the trees on the property including those 8" – 19";
9. Evaluate the potential to tie in public transit to the site and develop other incentives to significantly reduce the number of car trips per day; and
10. Reduce the total development to 2.1 million square feet.
11. Work with staff to develop a plan to conduct an erosion control study along the entire length of the development's Shoal Creek frontage.

(Vote: 6-4-1, Gooch, Maceo, Perales, Neely, Guerrero, Thompson – For; B. Smith, Creel, Moya, Grayum-No; H. Smith-abstain); P. Maceo-1<sup>st</sup>, M. Neely-2<sup>nd</sup>.

June 15, 2016: Motion to state that the Grove at Shoal Creek PUD is found to lack of environmental superiority. The Environmental Commission included recommendations regarding the amount and arrangement of parkland, green building requirements, drainage system, air quality impacts, tree protection, density level and erosion controls for the applicant to achieve environmental superiority (6-4, Gooch, Maceo, Perales, Neely, Guerrero, Thompson-For; B. Smith, Creel, Moya, Grayum-No; H. Smith-absent); P. Maceo-1<sup>st</sup>, M. Neely-2<sup>nd</sup>.

#### **PARKS AND RECREATION BOARD:**

May 24, 2016: Affirmed the PARD (Parks and Recreation Department) staff findings that The Grove at Shoal Creek Planned Unit Development application, as currently submitted on March 28, 2016, is not superior in relation to parks (Vote: 6-1-1-3 with Board Member Casias-against, Board Member Schmitz-abstaining, and Board Members Donovan, Vane and Wimberly-absent).

#### **ZONING AND PLATTING COMMISSION MOTION:**

December 1, 2015: Postponed indefinitely at the staff's request by consent (10-0); B. Evans-1<sup>st</sup>, S. Harris-2<sup>nd</sup>.

May 17, 2016: Postponed indefinitely at the staff's request by consent (7-3, A. Aguirre-absent, B. Evans, S. Lavani, S. Harris-No); G. Rojas-1<sup>st</sup>, J. Kiolbassa-2<sup>nd</sup>.

June 7, 2016: Postponed to June 21, 2016 at the staff's request (7-1, D. Breithaupt, J. Kiolbassa, S. Lavani-absent and A. Aguirre-No); B. Evans-1<sup>st</sup>, S. Harris-2<sup>nd</sup>.

June 21, 2016: Continued the public hearing to July 5, 2016 (11-0); G. Rojas-1<sup>st</sup>, A. Denkler-2<sup>nd</sup>.

July 5, 2016: Motion to hold a Special Called Meeting on July 14, 2016 at 6:00 p.m. (Sponsors: B. Evans, Denkler, S. Lavani)  
Continued the public hearing to the July 14, 2016 Special Called Meeting (10-0, T. Weber-absent); A. Denkler-1<sup>st</sup>, S. Harris-2<sup>nd</sup>.

July 14, 2016: Motion to approve staff's recommendation for PUD zoning with the following additional conditions:

- 1) Permit 250,000 square feet of additional residential units.
- 2) Provide an on street bike lane on northbound Bull Creek Road.
- 3) Request that the applicant to consider flat level structured parking garages.
- 4) Prohibit Single-Family Detached Residential uses on Tract B, with the exception of within 150 feet from Tract A.
- 5) Prohibit Single-Family Detached Residential uses on Tracts F and G.
- 6) Revise Note 17b on the Land Use Plan to allow for eight (8) car-sharing parking spaces.

- 7) Revise Note 16a on the Land Use Plan to state that if the proposed bicycle and pedestrian bridge is not constructed across Shoal Creek, then funds shall be utilized for pedestrian and bike improvements east of the site.
- 8) Provide a 25-foot building setback from homes along Bull Creek Road on Tract D.
- 9) Provide a trail connection from the greenbelt to Jefferson Street.
- 10) Add the Group Residential use to Tracts B, F and G as a permitted use.
- 11) Request that the applicant consider working with Transportation Review (ATD and DSD Departments) on a Transportation Demand Management Plan (TDM) prior to 3<sup>rd</sup> reading of the case at City Council to reduce vehicular trips to the site.

Vote: (6-4, A. Aguirre, A. Denkler, J. Kiobassa, B. Greenberg-No); S. Harris-1<sup>st</sup>, G. Rojas-2<sup>nd</sup>.

### **EXHIBITS AND ATTACHMENTS TO THE STAFF REPORT:**

Exhibit A: Zoning Map  
 Exhibit B: Aerial Map  
 Exhibit C: The Grove at Shoal Creek Land Use Plan  
 Exhibit D: Tier 1 and Tier 2 Compliance Summary  
 Exhibit E: Proposed Code Modifications  
 Exhibit F: Environmental Resource Exhibit  
 Exhibit G: Parks Plan Exhibit  
 Exhibit H: Roadway Framework Plan  
 Exhibit I: Conceptual Site Plan  
 Exhibit J: Tree Survey and Disposition Plan  
 Exhibit K: Educational Impact Statement (EIS)  
 Exhibit L: Tree Mitigation Example  
 Exhibit M: TIA memorandum dated March 25, 2016  
 Exhibit N: Affordable Housing Program Language  
 Exhibit O: Staff Baseline Map  
 Exhibit P: Additional Review Information Provided by the Applicant  
 Exhibit Q: Written Comments from the Public  
 Exhibit R: Parks & Recreation Board Recommendation  
 Exhibit S: Environmental Commission Motion  
 Exhibit T: Additional Information Received

### **DEPARTMENT COMMENTS:**

The proposed The Grove at Shoal Creek Planned Unit Development (PUD) is generally located on Bull Creek Road at 45<sup>th</sup> Street. The property in question was previously owned by the State of Texas and therefore is listed as "UNZ" or unzoned on the zoning case map (please see Exhibits A and B: Zoning Map and Aerial Map). There are undeveloped areas along the north and east portions of the property. The south and west portions of the site are developed with state owned office buildings with parking facilities. Surrounding properties are primarily a mix of residential and office uses. The site under consideration is adjacent to single family residences to the north (SF-2 zoning) and south (SF-3 zoning). There are apartments and a senior living center to the west (MF-6-CO, MF-4 and GO-MU-CO zoning). The property directly to the east is unzoned and is developed with

an industrial warehouse facility for the State of Texas archives. Further to the east are single family residences (SF-2 zoning). The site is located in the Rosedale Neighborhood Planning area, which does not have an adopted neighborhood plan.

The property is located in the Shoal Creek watershed which is classified as urban. Therefore, the allowable impervious cover is governed by the allowable zoning impervious cover not watershed impervious cover. This tract of land is not located within the Edwards Aquifer recharge or contributing zones.

The applicant is requesting PUD district zoning for a 75.74 acre mixed use project. According to the Yield sheet from Transportation Impact Analysis (TIA) dated February 2016, the proposed PUD may include up to 110 single family residential units, 600 apartment units, 425 residential condo units, a 600 unit congregate care facility, a 7,500 sq. ft. health/fitness club, 200,000 sq. ft. of office uses, 25,000 sq. ft. of medical office uses, 55,000 sq. ft. of specialty retail uses, a 35,000 sq. ft. supermarket/food sales uses, 8,500 sq. ft. of pharmacy/drug store/general retail sales (convenience) uses, a 3,000 sq. ft. walk-in bank/financial services use, 8,000 sq. ft. of drinking place/cocktail lounge uses, 15,000 sq. ft. quality restaurant/restaurant (general) uses, 9,000 sq. ft. high turnover restaurant/restaurant (limited) uses, and a 2,000 sq. ft. coffee-donut shop without drive through use//restaurant (limited) use.

As shown in Exhibit C (Land Use Plan), the area has been divided into seven tracts:

- Tract A, a 7.02 acre area along the northern portion of the proposed PUD adjacent to the existing single family residences fronting W. 45<sup>th</sup> Street, and Tract E, a 6.17 acre area along the southeastern portion of the proposed PUD adjacent to the single-family residences fronting Idlewild Road, are primarily low density residential areas that permit single family residential uses through condominium/townhouse residential uses, as well as a Religious Assembly civic use.
- Tract B is a 33.77 acre area directly to the south of Tract A that fronts onto Bull Creek Road. It is the largest area within the PUD. Tract B traverses the width of the PUD property from the east along Shoal Creek to the west fronting Bull Creek Road across from 45<sup>th</sup> Street to Jackson Avenue. This tract is a mixed use area that will permit a wide range of uses from single family residential, multi-family residential to office, civic and more intensive commercial uses, such as Automotive Rentals/Sales/Washing, Cocktail Lounge, Exterminating Services, Outdoor Sports and Recreation and Research uses.
- Tract C, a 10.82 acre area, is located along the eastern edge of the PUD on Shoal Creek to the traveling to the southwest. It is bordered by Tract B to the north, Tract E to the southeast, Tract D to the immediate south and Tract G to the west. This tract of land will permit single family residential uses, multifamily residential uses, schools, religious assembly and other civic uses.
- Tract D is a 10.23 acre area that is located along the southern portion of the PUD. The tract fronts Bull Creek Road, across from the single-family residences/SF-3 zoning from W. 42<sup>nd</sup> Street to the south at about W. 40<sup>th</sup> Street. The applicant proposes to permit a mix of residential and civic uses with a live work units that will allow for office uses, art gallery and art workshop uses, counseling services, cultural services, day care services, financial services personal services, pet services, schools etc.

- Tracts F is a 3.42 acre area that fronts along Bull Creek Road, across from office/LO zoning and single family residences/SF-3 development from Jackson Street to W. 42 Street. Tract G is a 4.33 portion that is located within the central area of the PUD. Both Tracts F and G will permit the same uses: single family residential uses, multifamily residential uses, office uses, and lower intensity commercial uses such as art gallery/workshop, financial services, personal services and pet services as well as numerous civic uses. The notable difference between these two proposed tracts is allowable height. Tract F will have a maximum height of up to 40 feet, with a caveat that the height may be increased to a maximum of 60 feet for an affordable housing development with the Affordable Housing program. Tract G permits a maximum height of 60 feet outright.
- Currently, the proposed 18.12 acres of parkland and open space areas are interspersed throughout the project area over all of the Tracts within the PUD as a Signature Park, Shoal Creek Trail area, Greenbelt area and Neighborhood Park (Please see Exhibit G: Parks Plan Exhibit).

Per the Land Development Code, PUD district zoning was established to implement goals of preserving the natural environment, encouraging high quality development and innovative design, and ensuring adequate public facilities and services. The City Council intends PUD district zoning to produce development that achieves these goals to a greater degree than and thus is superior to development which could occur under conventional zoning and subdivision regulations.

City Council approved revisions to the PUD regulations that became effective June 29, 2008. To help evaluate the superiority of a proposed PUD, requirements are divided into two categories: Tier 1, which is requirements that all PUDs must meet, and Tier 2 which provides criteria in 13 topical areas in which a PUD may exceed code requirements and therefore demonstrate superiority. A PUD need not address all criteria listed under Tier 2, and there is no minimum number of categories or individual items required.

As more fully detailed on the Land Use Plan and in the Tier 1 and Tier 2 Compliance Summary (please refer to Exhibits C and D), this proposed PUD meets the applicable Tier 1 items and offers some elements of superiority in thirteen Tier 2 categories (*Open Space; Environment/Drainage; Art; Community Amenities, Transportation, Affordable Housing and Accessibility*).

### ***Proposed Code Modifications***

There are 27 modifications to Code and Criteria Manual requirements requested by the Applicant (please refer to Exhibit E – Proposed Code Modifications for details). These proposed modifications are summarized below:

- Chapter 25-1 (GENERAL REQUIREMENTS AND PROCEDURES), Article 2 (Definitions; Measurements), Section 25-1-21(103) (*Site*) – Revises the definition of Site to allow a site to cross a public street or right-of-way if that public street or right-of-way is within the boundaries of The Grove at Shoal Creek PUD.
- Chapter 25-1 (GENERAL REQUIREMENTS AND PROCEDURES), Article 14 (Parkland Dedication), Section 25-1-602 (*Dedication of Parkland Required*) and Section 25-4-211 (*Parkland Dedication*) – Specifies the parkland dedication and open space requirements. Modifies Section 25-1-602(A) (*Dedication of Parkland Required*) to state that the subdivider or site plan applicant shall provide for parkland for park and recreational purposes under the terms of The Grove at Shoal Creek Parks Plan and Parkland Improvement Agreement as attached exhibits to the PUD ordinance.

- Chapter 25-1 (GENERAL REQUIREMENTS AND PROCEDURES), Article 2 (Definitions; Measurements), Section 25-1-21(44) (*Gross Floor Area*) – Revises the definition of Gross Floor Area to apply this term to include the addition of parking structures.
- Chapter 25-2 (ZONING), Article 2 (Principal Use and Development Regulations), Section 25-2-492 (*Site Development Regulations*) – To propose that the site development regulations applicable to the Property be as shown on the Land Use Plan.
- Chapter 25-2 (ZONING), Article 2 (Principal Use and Development Regulations), Section 25-2-492 (*Site Development Regulations*) and Chapter 25-1 (GENERAL REQUIREMENTS AND PROCEDURES), Article 2 (Definitions; Measurements), Section 25-1-21 (47) (*Height*) – To request a modification to state that a parking level shall not be and is not considered a “story”.
- Chapter 25-2 (ZONING), Article 9 (Landscaping), Section 25-2-1006 (*Visual Screening*) – To state that Section 25-2-1006 (A) shall not apply to any water quality and/or storm water drainage facility that serves as an amenity or to any Green Storm Water Quality Infrastructure as defined in the Environmental Criteria Manual and that Section 25-2-1006 (C) shall not apply between uses or sites that are both located within the PUD boundaries. (Section 25-2-1006 (C) shall still apply at the boundaries of the PUD.)
- Chapter 25-2 (ZONING), Subchapter B (Zoning Procedures), Article 2 (Special Requirements for Certain Districts), Division 5 (Planned Unit Developments), Section 3.2.3.D.1 (*Planned Unit Development Regulations: Nonresidential Uses*) – To state that these conditions of the Code that require a minimum front yard and street side yard setbacks be at least 25 feet for a front yard and 15 feet for a street side yard shall not apply to the PUD.
- Chapter 25-2 (ZONING), Article 10 (Compatibility Standards) – To state that Compatibility Standards do not apply within the PUD. However, Compatibility Standards will apply where development outside of the PUD triggers these standards for development within the PUD.
- Chapter 25-2 (ZONING), Article 10 (Compatibility Standards), Section 25-2-1063(*Height Limitations and Setbacks for Large Sites*)(C)(2) and (3) – To establish an area within Tract B where Section 25-2-1063(C)(2) shall not apply and where Section (C)(3) is modified to allow for a structure more than 50 feet but not more than 300 feet from the property zoned SF-5 or more restrictive to have a height up to 60 feet.
- Chapter 25-2 (ZONING), Article 10 (Compatibility Standards), Section 25-2-1067(G) (*Design Regulations*) and (H) – To state that this section of the Code does not apply to the Tract A for the construction of an alley, public road, trails and/or sidewalks.
- Chapter 25-2 (ZONING), Subchapter E (Design Standards and Mixed Use) – To request to that the requirements of Subchapter E not apply to the property within the PUD and to replace these conditions with the applicant’s proposed The Grove at Shoal Creek Design Guidelines.

- Chapter 25-4 (SUBDIVISION), Section 25-4-132(B) (*Easements and Alleys*) – To modify this section so that loading and unloading may also occur in any alley that also services as a fire lane.
- Chapter 25-4 (SUBDIVISION), Section 24-4-153 (*Block Length*) – To request that this section not apply to the property within the PUD.
- Chapter 25-4 (SUBDIVISION), Section 24-4-157 (*Subdivision Access Streets*) – To request that this section that requires secondary street access not apply to the property within the PUD.
- Chapter 25-4 (SUBDIVISION), Section 24-4-171(A) (*Access to Lots*) – To modify this section so that to add that each lot in a subdivision may also abut a private street or private drive subject to a permanent access easement.
- Chapter 25-1 (GENERAL REQUIREMENTS AND PROCEDURES) and Chapter 25-4 (SUBDIVISION), Section 25-4-211 (*Parkland Dedication*) – To request that platting requirements for parkland dedication be modified so that it is governed by the conditions of the PUD ordinance/exhibits.
- Chapter 25-4 (SUBDIVISION), Section 25-4-151 (*Street Alignment and Connectivity*) – To state that notwithstanding the requirements of Section 25-4-151 that private drives and/or streets within the property may be aligned to connect to existing or future street on adjoining property.
- Chapter 25-4 (SUBDIVISION), Section 25-4-152 (A) (*Dead-End Streets*) – Adding to this requirement that a street may terminate in a connection with private drives and/or private streets within the property.
- Chapter 25-6 (TRANSPORTATION), Section 25-6-171(A) (*Standards for Design and Construction*) – To modify requirements so that a roadway, private drive street or alley must be designed and constructed in accordance with The Grove at Shoal Creek Design Guidelines. Stating that the Transportation Criteria Manual and City of Austin Standards and Standard Specifications shall apply to the extent they do not conflict the proposed PUD Design Guidelines.
- Chapter 25-8 (ENVIRONMENT), Section 25-8-641(B) (*Removal Prohibited*) – To change the requirements for the removal of heritage trees within the PUD. Specifically identifying which heritage trees may be removed and adding language to speak to the administrative variance process under Section 25-8-642 for trees indicated to be saved on The Grove at Shoal Creek Tree Survey and Disposition Plan.
- Chapter 25-10 (SIGN REGULATIONS), Section 25-10-1 (*Applicability*) – Adding a condition under this section to state, “(D) To the extent they are in conflict, the signage standards set forth in the project Design Guidelines for The Grove at Shoal Creek shall supersede this chapter.”
- Chapter 25-10 (SIGN REGULATIONS), Section 25-10-103 (*Signs Prohibited in the Public Right-of-Way*) – To state that this section shall not apply to the public Right-of-

Way dedicated for the Jackson Avenue extension within the boundaries of the PUD as identified on the Roadway Framework Plan.

- Chapter 25-10 (SIGN REGULATIONS), Section 25-10-191 (*Sign Setback Requirements*) – To state that this section shall not apply for setbacks from the public Right-of-Way dedicated for the Jackson Avenue extension within the boundaries of PUD as identified on the Roadway Framework Plan.
- Drainage Criteria Manual, Section 1.2.4.E.1(a) (*Fencing Requirements for Drainage Facilities*) – To amend this DCM Section to remove the requirement for barrier-type fences.
- Environmental Criteria Manual, Section 1.6.3.A.4 (*Maintenance Responsibilities for Water Quality Control Facilities*) – Modify this section to state that water quality control facilities at The Grove at Shoal Creek PUD that treat publicly owned roads and facilities within and adjacent to the PUD may be privately maintained, instead of being designed and built according to the appropriate city standards.
- Transportation Criteria Manual, Section 1.3.2.B.2 (*Classification Design Criteria*) – To modify this provision to state that the extension of Jackson Avenue in the PUD as identified on the Roadway Framework Plan shall be considered a Neighborhood Collector and shall be designed per The Grove at Shoal Creek Design Guidelines. The cross section and any other design information contained in those design guidelines shall supersede any requirements of the Transportation Criteria Manual. All other circulation routes within the PUD shall be considered as private driveways and intersection with these driveways shall be subject to the 50' minimum spacing for Neighborhood Collectors.
- Transportation Criteria Manual, Section 1.3.2.F (*Classification Design Criteria*) – To state that the Jackson Avenue extension shall not be considered a Single Outlet Street upon the connection of any public access that is open to the public and connects Jackson Avenue to Bull Creek Road.

***Proposed Benefits of the PUD:***

The applicant is offering the following –

***Affordable Housing***

- Provide a substantial on-site affordable housing component. They will describe this proposal in The Grove at Shoal Creek Affordable Housing Program Plan. The project has been certified under SMART Housing and the PUD language will require 5% of permanent ownership units and 10% of the rental units for 40 years. Through compliance with the Affordable Housing Requirements of LDC Section 25-1-704(B)(2)(a), development within the Grove at Shoal Creek PUD shall be eligible for a waiver of 100% of the development fees, including capital recovery fees, described in LDC Section 25-1-704 and Section 25-9-397 as allowed by and in accordance with the City's SMART Housing Program.

***Accessibility***

- Provide for accessibility for persons with disabilities to a degree exceeding applicable legal requirements.

***Art***

- Participate in the Art in Public Places Program. The applicant will develop a Public Art Plan that will consist of a minimum of three (3) significant art pieces. A minimum budget of \$60,000 shall be spent on public art within the PUD site. The applicant will consult with and consider the City's Art in Public Places (AIPP) program for implementing this program.

***Community Amenities***

- Provide a large on-site, publically accessible signature park space with park improvements and amenities open to the public.
- Provide public community and public amenities including spaces for community meetings, gatherings and other community needs.
- Provide publicly accessible multi-use trails and greenways within the property along Shoal Creek.
- Provide a pedestrian and bicycle bridge across Shoal Creek.

***Environmental/Drainage***

- Use of a wet pond and/or green water quality controls for a minimum of 50% of the required water quality volume on-site.
- Provide that a minimum of ten acres of impervious cover on the site will drain to and be substantially treated by green water quality controls that infiltrate or reuse water, such as rain gardens, biofiltration facilities, and rainwater capture systems.
- Proposing no modification to the existing 100-year floodplain.
- Preserve more than 75% of all protected size native caliper inches and prepare a tree care plan for all preserved heritage and protected trees on site.
- Cluster development/impervious cover along Bull Creek Road and in the interior of the property away from Shoal Creek and the larger oak groves on the property to avoid environmentally sensitive areas.
- Direct storm water runoff from impervious surfaces to a landscaped area at least equal to the total required landscape area.
- Provide on-site detention for the 9.39 acres of existing impervious cover on site that is not currently detained.
- Provide educational signage at the wetland Critical Environmental Feature.
- Implement an Integrated Pest Management Plan for the whole property.
- The Grove at Shoal Creek Design Guidelines will require street trees on all internal streets and along Bull Creek Road in excess of the Code requirements in Subchapter E.
- The proposed Design Guidelines will also require that a minimum of 95% of all non-turf plant materials be from or consistent with the City's Grow Green Guide.

***Great Streets***

- Provide private street cross sections that will meet the intent and purposes of the Great Streets Program through the proposed The Grove at Shoal Creek Project Design Guidelines.

***Green Building***

- Comply with at least a 2-star Green Building requirement.

***Parkland and Open Space***

- Provide a minimum of 18.12 acres of open space, including parkland.
- The Parks and Recreation Department has stated that they find that The Grove at Shoal Creek PUD is not superior to traditional zoning as it pertains to parks. The plan for the Signature Park submitted by Milestone lacks adequate street frontage, acreage and opportunities for active recreation. The CEF buffer reduction and mitigation further hampers park development. The visibility from the public right-of-way could be better. The overall credited park acreage does meet minimum requirements of traditional zoning only if the 2 acres labeled as “Flex Park Space” continues to be part of the parks plan.

***Transportation***

- Roadway and intersection improvements through the use of turn lanes and signalization shall be funded 100% by the applicant.
- Provide bicycle facilities, including bike storage and trails.

***Utility Facilities***

- Provide water system improvements that will improve water pressure to the area.

**EXISTING ZONING AND LAND USES:**

|              | <b>ZONING</b>                                 | <b>LAND USES</b>                                                                                  |
|--------------|-----------------------------------------------|---------------------------------------------------------------------------------------------------|
| <i>Site</i>  | UNZ                                           | Undeveloped, Office                                                                               |
| <i>North</i> | SF-2                                          | Single-Family Residences                                                                          |
| <i>South</i> | SF-3                                          | Single-Family Residences                                                                          |
| <i>East</i>  | UNZ, SF-3                                     | Industrial Warehouse (State of Texas Archives), Single-Family Residences                          |
| <i>West</i>  | SF-2, SF-3, MF-6-CO, MF-4, GO-MU-CO, LO, SF-3 | Single-Family Residences, Multifamily Residences, Senior Living, Office, Single-Family Residences |

**TIA:** Is required (Please see TIA Memorandum – Exhibit M)

**WATERSHEDS:** Shoal Creek – Urban

**DESIRED DEVELOPMENT ZONE:** Yes

**CAPITOL VIEW CORRIDOR:** No

**SCENIC ROADWAY:** No

**NEIGHBORHOOD ORGANIZATIONS:**

Allandale Neighborhood Association  
 Austin Heritage Tree Foundation  
 Austin Neighborhoods Council  
 Bike Austin  
 Central Austin Community Development  
 5702 Wynona Neighbors  
 45<sup>th</sup> St. Concerned Citizens  
 Friends of Austin Neighborhoods  
 Friends of the Emma Barrientos MACC  
 Highland Park West Balcones Area Neighborhood Association

Lower District 7 Green  
 North Austin Neighborhood Alliance  
 Oakmont Heights Neighborhood Association  
 Preservation Austin  
 Ridgelea Neighborhood Association  
 Rosedale Neighborhood Association  
 Save Barton Creek Association  
 SELTEXAS  
 Shoal Creek Conservancy  
 Sierra Club, Austin Regional Group  
 Sustainable Neighborhoods  
 The Real Estate Council of Austin, Inc.  
 Westminster Manor Residents Association

**SCHOOLS:** Austin Independent School District

Bryker Woods Elementary School    O Henry Middle School    Austin High School

*Note:* An Educational Impact Statement (EIS) is required. Please refer to Exhibit K.

**CASE HISTORIES:**

| NUMBER                                                            | REQUEST      | COMMISSION                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | CITY COUNCIL                                           |
|-------------------------------------------------------------------|--------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------|
| C14-06-0200<br>(Kingswood Place Apartments: 4318 Bull Creek Road) | MF-4 to MF-6 | 2/06/07: Approved staff rec. of MF-6-CO zoning (9-0), with CO to 1) limit the site to 2,000 vtpd, 2) prohibit vehicular access to 44 <sup>th</sup> Street except for emergency vehicle use, 3) limit height to 60 feet, 4) require a 25 foot building setback from Bull Creek Road, 5) limit the max FAR to 2.25 to 1.0 and 6) limit the max density to 80 dwelling units.                                                                                                                                            | 3/22/07: Approved MF-6-CO zoning (6-0); all 3 readings |
| C14-06-0100<br>(Bull Creek Apartments: 4320-4330 Bull Creek Road) | MF-4 to MF-6 | 8/01/06: Approved staff rec. of MF-6-CO zoning (6-3, B. Baker, J. Pinnelli, J. Martinez-No), with CO to 1) limit the site to 2,000 vtpd, 2) limit height to 60 feet, 3) limit density to 250 units (64.98 units per acre, 4) require a 25 foot building setback from Bull Creek Road, 5) require a 25 foot setback from 44 <sup>th</sup> Street, 6) state upon redevelopment that vehicular access is prohibited to 44 <sup>th</sup> Street except for emergency vehicle use and 7) limit the max FAR to 2.25 to 1.0. | 8/31/06: Approved MF-6-CO zoning (6-0); all 3 readings |

|                                                                                                             |                         |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                 |
|-------------------------------------------------------------------------------------------------------------|-------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| C14-02-0147:<br>Westminster<br>Manor Health<br>Facilities Corp.,<br>1902-1906 W.<br>42 <sup>nd</sup> Street | SF-3 to SF-6            | 9/10/02: Case expired.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | N/A                                                                                                                                                             |
| C14-99-0080:<br>Congregation<br>Adudas Achim:<br>4200 Jackson)                                              | LO, SF-3 to<br>GO-MU-CO | 6/15/99: Approved staff's rec. of GO-MU-CO zoning (5-0-1, BH-abstain), with additional conditions: 1) limit the site to 2,000 vtpd, 2) prohibit Bed and Breakfast, College or University Facilities, Administrative and Business Offices, Cultural Services, Art and Craft Studio (Limited), Guidance Services, Business or Trade School, Hospital Services (Limited and General), Business Support Services, Local Utility Services, Medical Offices, Private Primary Educational Facilities, Off-Site Accessory Parking, Private Secondary Educational Facilities, Personal Services, Public Primary Educational Facilities, Professional Office, Public Secondary Educational Facilities, Software Development, Safety Services, Community Recreation (Private and Public), Multifamily Residential uses. | 7/15/99: Approved PC rec. of GO-MU-CO zoning, with conditions (6-0); 1 <sup>st</sup> reading<br><br>9/09/99: Approved 2 <sup>nd</sup> /3 <sup>rd</sup> readings |
| C14-94-0054<br>(Westminster<br>Manor: 4100<br>Jackson)                                                      | LO to GO                | 5/24/94: Approved GO zoning, with conditions (6-0)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | 7/14/94: Approved GO zoning, with ROW requirement (7-0); all 3 readings                                                                                         |

**RELATED CASES:** N/A

**CITY COUNCIL DATE:** June 16, 2016

**ACTION:** Postponed to August 11, 2016  
at the staff's request (11-0)

August 11, 2016

**ACTION:** Postponed to September 22,  
2016 at the neighborhood's request (11-0);  
S. Gallo-1<sup>st</sup>, L. Pool-2<sup>nd</sup>.

September 22, 2016

**ACTION:**

**ORDINANCE READINGS:** 1<sup>st</sup>

2<sup>nd</sup>

3<sup>rd</sup>

**ORDINANCE NUMBER:**

**CASE MANAGER:** Sherri Sirwaitis

**PHONE:** 512-974-3057  
sherri.sirwaitis@austintexas.gov

### **SUMMARY STAFF RECOMMENDATION:**

The staff recommendation is to approve The Grove at Shoal Creek Planned Unit Development (PUD) zoning as requested subject that the following additional conditions be incorporated in the proposed Land Use Plan (Exhibit C) and supporting Exhibits F through J.

- 1) The total square footage of all development within the PUD shall not exceed 2.4 million square feet.
- 2) The total square footage of all office development within the PUD shall not exceed 210,000 square feet.
- 3) The total square footage of all retail/commercial development shall not exceed 150,000 square feet.
- 4) The total number of congregate care beds shall not exceed 300.
- 5) At least 30,000 square feet of retail development shall be required once 700 units of residential development are constructed before any additional residential development can occur on the property.
- 6) At least 35% of the total required affordable rental units shall be provided once 325 multifamily residential units are constructed before any additional multifamily residential units may be constructed. At least 35% of the total required affordable for-sale residential units shall be provided once 100 condominium residential units are constructed in a "podium style" condominium residential building before any additional condominium residential units may be constructed.
- 7) 130,000 square feet of development may be used for Tier 2 affordable housing that is separate from and does not count against the overall development cap of 2.4 million square feet.

A Public Restrictive Covenant will include all recommendations listed in the Traffic Impact Analysis memorandum, dated March 25, 2016, as provided in Attachment M.

### **BASIS FOR LAND USE RECOMMENDATION (ZONING PRINCIPLES)**

1. *The proposed zoning should be consistent with the purpose statement of the district sought.*

The Planned Unit Development (PUD) zoning district is intended for large or complex developments under unified control, planned as a single contiguous project. The PUD is intended to allow single or multi-use projects within its boundaries and provides greater design flexibility for development proposed within the PUD. Use of the PUD district should result in development superior to that which would occur using conventional zoning and subdivision regulations. PUD zoning is appropriate if the development enhances preservation of the natural environment; encourages high quality development and innovative design; and ensures adequate public facilities and services for development within the PUD.+

2. *Zoning changes should result in a balance of land uses, provides an orderly and compatible relationship among land uses, and incorporates environmental protection measures.*

The staff is recommending PUD zoning at this location with a reduction in the total square footage to not exceed 2.4 million square feet. The staff believes that the proposal can result in a superior mixed use development with a reduced density as the site fronts along a

collector street and is surrounded by primarily single family residential uses. The staff recommends PUD zoning based on the following factors: accessibility, affordable housing, participation in the Art in Public Places Program, environmental superiority, drainage improvements, compliance with at least a 2-star Green Building regulations, provision for a minimum of 18.12 acres of open space/ including parkland, transportation roadway and intersection improvements, and utility facility improvements that will provide for a superior development at this location.

3. *Zoning should promote clearly-identified community goals, such as creating employment opportunities or providing for affordable housing.*

One of the primary benefits of the proposed PUD is that the applicants will provide a substantial on-site affordable housing component. The applicants and the Neighborhood Housing and Community Development Department (NHCD) have agreed to language in The Grove at Shoal Creek Affordable Housing Program Plan (Exhibit N). The project has been certified under SMART Housing and the PUD language will require 5% of permanent ownership units at 80% median family income (MFI) and 10% of the rental units at 60% MFI for 40 years.

4. *Zoning should allow for reasonable use of the property.*

The proposed PUD zoning will enable the applicant to redevelop this tract of land within the core of the City with a project that will provide residential, employment and office/retail services in close proximity of each other to encourage walking, bicycling and other transit options. The evaluation of the staff's proposed baseline recommendation for this property would allow for approximately 1.892 million square feet of development at this location. The staff analyzed the applicant's revised request for approximately 2.9 million square feet of development and determined that a one million square foot difference between the staff's recommended baseline and the amended request was too great for the offered superiority through the proposed PUD. For that reason, the staff is suggesting a 2.4 million square foot cap on development for the PUD.

## **EXISTING CONDITIONS**

### **Site Characteristics**

The PUD site consists of undeveloped areas along the north and east portions of the property. The south and west portions of the site are developed with state owned office buildings with parking facilities. Surrounding properties are primarily a mix of residential and office uses. The site under consideration is adjacent to single family residences to the north (SF-2 zoning) and south (SF-3 zoning). There are apartments and a senior living center to the west (MF-6-CO, MF-4 and GO-MU-CO zoning). The property directly to the east is unzoned and is developed with an industrial warehouse facility for the State of Texas archives. Further to the east are single family residences (SF-2 zoning).

### **Impervious Cover**

The overall project impervious cover is capped at 65 % and the overall project building coverage is capped at 55%. This is specified in Note # 6 on the Land Use Plan (Exhibit C).

### **Comprehensive Planning**

This project is located on a 75.74 acre site, formerly owned by the State of Texas. The property is surrounded by single family housing to the north and south, apartments and a senior living center to the west, and single family housing and state property to east. The site is also located in the Rosedale Neighborhood Planning area, which does not have an adopted neighborhood plan.

The PUD plan for this property calls for mixed use project, including approximately 1,500 residential units (apartment units, single family and duplexes, townhouses and condominiums), a congregate care facility, general and medical office uses, a variety of retail uses, and over 10 acres of park and open space areas. Tract C and D property would permit public and private primary and secondary education, while Tract B would permit university facilities. Some of the buildings within the project area would be up to 65 ft. tall, with Tract B allowing up to 10 percent of the site to be up to 75 ft. in height.

### **Imagine Austin Analysis and Conclusion**

One of the goals of the Imagine Austin Comprehensive Plan (IACP) is to achieve ‘*complete communities*.’ Page 88 pf the IACP states that complete communities are areas that provide amenities, transportation, services, and opportunities that fulfill all residents’ material, social, and economic needs. Page 107 of the IACP also states, “*While most new development will be absorbed by centers and corridors, development will happen in other areas within the city limits to serve neighborhood needs and create complete communities. Infill development can occur as redevelopment of obsolete office, retail, or residential sites or as new development on vacant land within largely developed areas. New commercial, office, larger apartments, and institutional uses such as schools and churches, may also be located in areas outside of centers and corridors. The design of new development should be sensitive to and complement its context. It should also be connected by sidewalks, bicycle lanes, and transit to the surrounding area and the rest of the city.*”

The following IACP policies are applicable to this project:

- **LUT P4.** Protect neighborhood character by directing growth to areas of change that includes designated redevelopment areas, corridors and infill sites. Recognize that different neighborhoods have different characteristics and new and infill development should be sensitive to the predominant character of these communities.
- **LUT P5.** Create healthy and family-friendly communities through development that includes a mix of land uses and housing types and affords realistic opportunities for transit, bicycle, and pedestrian travel and provides both community gathering spaces, parks and safe outdoor play areas for children.
- **LUT P7.** Encourage infill and redevelopment opportunities that place residential, work, and retail land uses in proximity to each other to maximize walking, bicycling, and transit opportunities.
- **UD P1.** Develop accessible community gathering places such as plazas, parks, farmers’ markets, sidewalks, and streets in all parts of Austin, especially in the Downtown, future

TODs, in denser, mixed-use communities, and other redevelopment areas, that encourage interaction and provide places for people of all ages to visit and relax.

- **HN P10.** Create complete neighborhoods across Austin that have a mix of housing types and land uses, affordable housing and transportation options, and access to healthy food, schools, retail, employment, community services, and parks and recreation options.

#### **Conclusion:**

The proposed project provides a mix of uses, a mix of housing types, open space, and addresses household affordability. The proposed project also meets a number of Imagine Austin core principles for action (p. 10 - 11) including: Grow as a compact, connected city; Integrate nature into the city; and Develop as an affordable and healthy community. Based on the Imagine Austin text and policies above, this project appears to be supported by the Imagine Austin Comprehensive Plan.

#### **Environmental**

Please refer to Exhibit F.

#### **Site Plan**

Site plans will be required for any new development other than single-family or duplex residential.

#### **Subdivision**

FYI - Platting will be required. A preliminary plan application will be required if the development proposes public or private roads. Final plats will then be required to be approved and recorded prior to any site plan or residential permits.

#### **Transportation**

Please refer to Exhibit M.

#### **Water and Wastewater**

FYI: The landowner intends to serve the site with City of Austin water and wastewater utilities. The landowner, at own expense, will be responsible for providing any water and wastewater utility improvements, offsite main extensions, water or wastewater easements, utility relocations and/or abandonments required by the proposed land uses. It is recommended that Service Extension Requests be submitted to the Austin Water Utility at the early stages of project planning. Water and wastewater utility plans must be reviewed and approved by the Austin Water Utility in compliance with Texas Commission on Environmental Quality rules and regulations, the City's Utility Criteria Manual, and suitability for operation and maintenance. All water and wastewater construction must be inspected by the City of Austin. The landowner must pay the City inspection fees with the utility construction. The landowner must pay the tap and impact fee once the landowner makes an application for a City of Austin water and wastewater utility tap permit.

Water and wastewater SERs 3607 and 3608 in currently in review and must be approved.

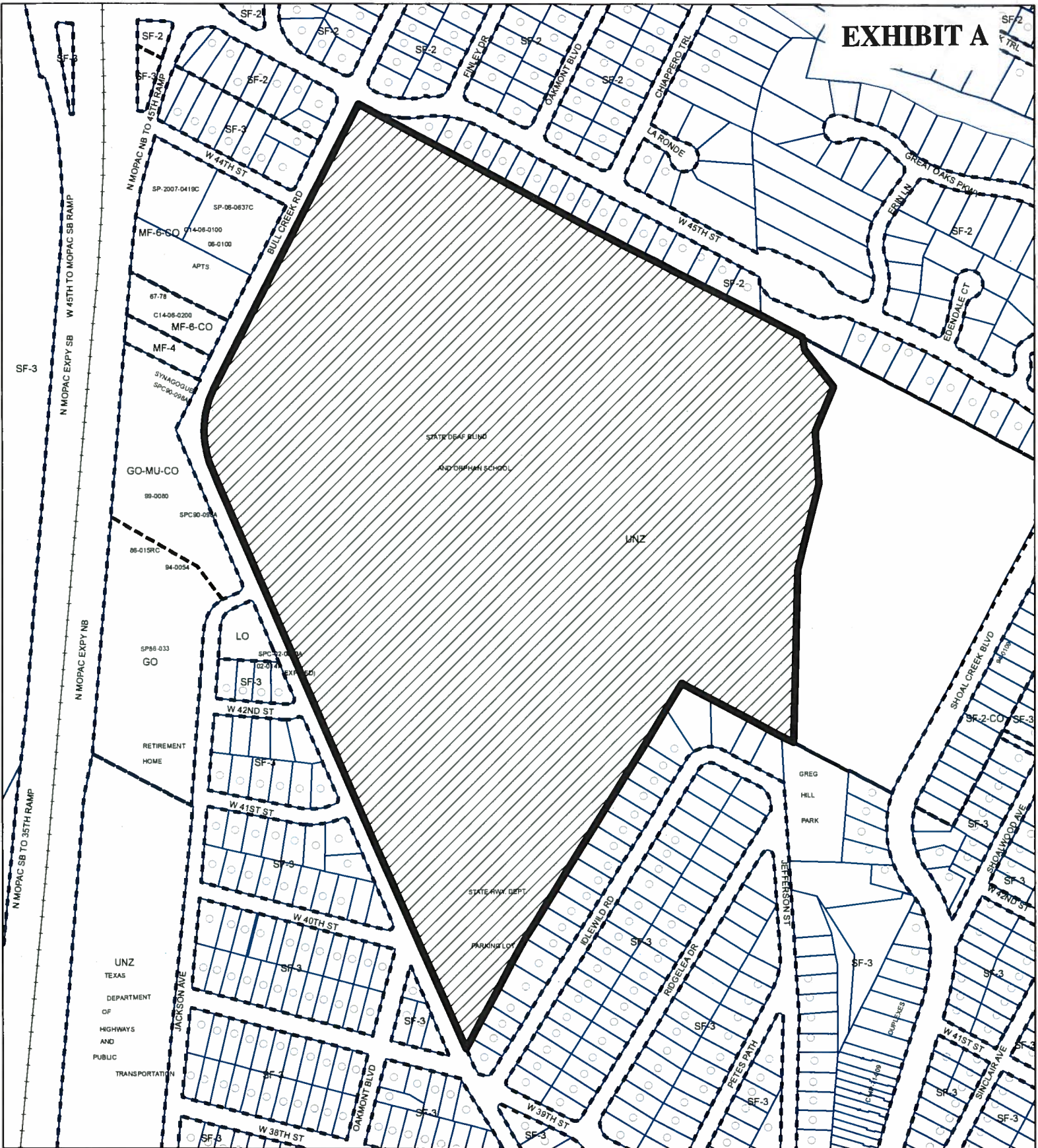
The utility strongly recommends against the proposal to plat on private streets as this results in inferior streets over our utilities and the lack of ROW greatly complicates system design with complex easement and PUE dedications. The project Engineers are advised to get with Pipeline Engineering (Lonnie Robinson) as soon as possible to discuss the private street option and what will be required regardless of any variances granted including but not limited to the requirements listed below.

Typical water system operating pressures in the area are above 65 psi. Pressure reducing valves reducing the pressure to 65 psi (552 kPa) or less to water outlets in buildings shall be installed in accordance with the plumbing code.

All AWU infrastructure and appurtenances must meet all TCEQ separation criteria. Additionally AWU must have adequate accessibility to safely construct, maintain, and repair all public infrastructure. Rules & guidelines include:

1. A minimum separation distance of 5 feet from all other utilities (measured outside of pipe to outside of pipe) and AWU infrastructure;
2. A minimum separation distance of 5 feet from trees and must have root barrier systems installed when within 7.5 feet;
3. Water meters and cleanouts must be located in the right-of-way or public water and wastewater easements;
4. Easements AWU infrastructure shall be a minimum of 15 feet wide, or twice the depth of the main, measured from finished grade to pipe flow line, whichever is greater.
5. A minimum separation of 7.5 feet from center line of pipe to any obstruction is required for straddling line with a backhoe;
6. AWU infrastructure shall not be located under water quality or detention structures and should be separated horizontally to allow for maintenance without damaging structures or the AWU infrastructure.
7. The planning and design of circular Intersections or other geometric street features and their amenities shall include consideration for access, maintenance, protection, testing, cleaning, and operations of the AWU infrastructure as prescribed in the Utility Criteria Manual (UCM)
8. Building setbacks must provide ample space for the installation of private plumbing items such as sewer connections, customer shut off valves, pressure reducing valves, and back flow prevention devices in the instance where auxiliary water sources are provided.

# EXHIBIT A



-  SUBJECT TRACT
-  PENDING CASE
-  ZONING BOUNDARY

## PLANNED UNIT DEVELOPMENT ZONING CASE#: C814-2015-0074

1" = 400'

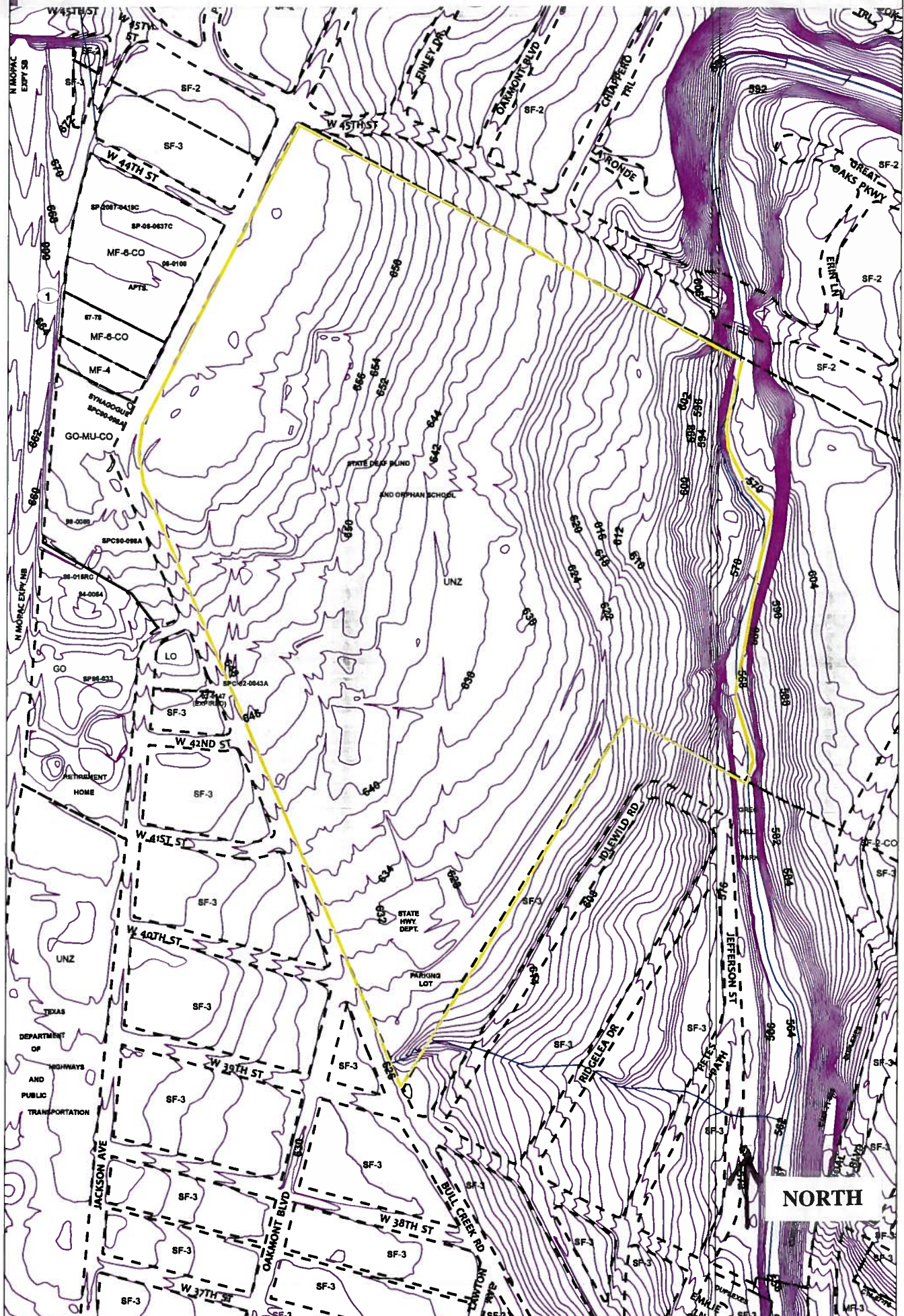
This product is for informational purposes and may not have been prepared for or be suitable for legal, engineering, or surveying purposes. It does not represent an on-the-ground survey and represents only the approximate relative location of property boundaries.

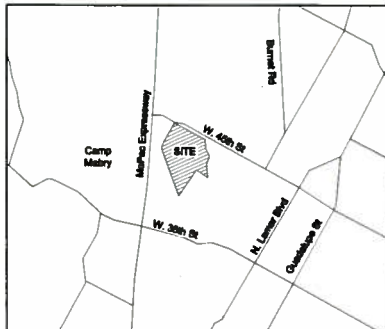
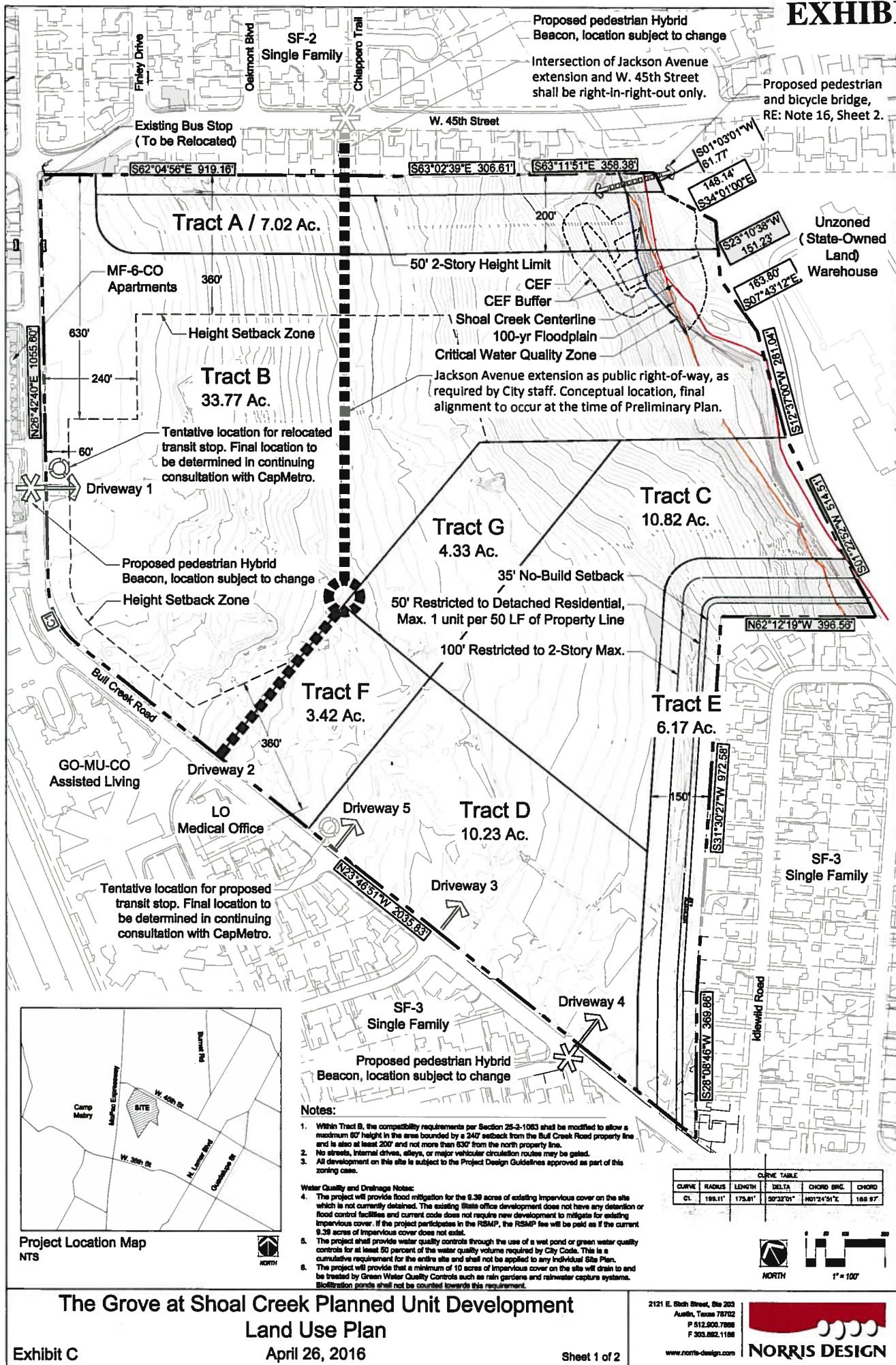
This product has been produced by CTM for the sole purpose of geographic reference. No warranty is made by the City of Austin regarding specific accuracy or completeness.





# THE GROVE AT SHOAL CREEK PUD TOPOGRAPHICAL CONTOURS

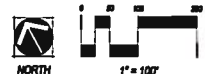




Project Location Map  
NTS

- Notes:**
1. Within Tract B, the compatibility requirements per Section 25-3-1063 shall be modified to allow a maximum 60' height in the area bounded by a 240' setback from the Bull Creek Road property line and is also at least 200' and not more than 630' from the north property line.
  2. No streets, internal drives, alleys, or major vehicular circulation routes may be gated.
  3. All development on this site is subject to the Project Design Guidelines approved as part of this zoning case.
- Water Quality and Drainage Notes:**
4. The project will provide flood mitigation for the 6.39 acres of existing impervious cover on the site which is not currently delineated. The existing flood office development does not have any detention or flood control facilities and current code does not require new development to mitigate for existing impervious cover. If the project participates in the RSMP, the RSMP fee will be paid as if the current 6.39 acres of impervious cover does not exist.
  5. The project shall provide water quality controls through the use of a wet pond or green water quality controls for at least 50 percent of the water quality volume required by City Code. This is a cumulative requirement for the entire site and shall not be applied to any individual site plan.
  6. The project will provide that a minimum of 10 acres of impervious cover on the site will drain to and be treated by Green Water Quality Controls such as rain gardens and rainwater capture systems. Stormwater ponds shall not be counted towards this requirement.

| CURVE |         | CURVE TABLE |           |             |         |
|-------|---------|-------------|-----------|-------------|---------|
| CL    | RADIUS  | LENGTH      | DELTA     | CHORD BEC   | CHORD   |
| 1     | 189.11' | 175.81'     | 50°32'01" | N01°24'51"E | 168.97' |



**TRACTS A & E**

Condominium Residential  
 Duplex Residential  
 Family Home  
 Group Home, Class I (Limited)  
 Public Primary Education Facilities  
 Public Secondary Education Facilities  
 Religious Assembly  
 Retirement Housing (Small Site)  
 Short-Term Rental  
 Single-Family Attached Residential  
 Single-Family Residential  
 Small Lot Single-Family Residential  
 Townhouse Residential  
 Two-Family Residential

**TRACT B**

Administrative & Business Offices  
 Art Gallery  
 Art Workshop  
 Automotive Rentals  
 Automotive Sales (max. 3000 SF)  
 Automotive Washing (accessory only)  
 Business or Trade School  
 Business Support Services  
 Cocktail Lounge  
 College & University Facilities  
 Commercial Off-Street Parking  
 Community Garden  
 Community Recreation (Private)  
 Community Recreation (Public)  
 Condominium Residential  
 Congregate Living  
 Consumer Convenience Services  
 Consumer Repair Services  
 Counseling Services  
 Cultural Services  
 Day Care Services (Commercial)  
 Day Care Services (General)  
 Day Care Services (Limited)  
 Duplex Residential  
 Family Home  
 Financial Services  
 Food Preparation  
 Food Sales  
 General Retail Sales (Convenience)  
 General Retail Sales (General)  
 Group Home, Class I (Limited)  
 Hospital (General)  
 Hospital Services (Limited)  
 Hotel-Motel  
 Indoor Entertainment  
 Indoor Sports & Recreation  
 Liquor Sales  
 Medical Offices (all sizes)  
 Mobile Food Establishments  
 Multifamily Residential  
 Off-Site Accessory Parking  
 Outdoor Sports & Recreation  
 Personal Improvement Services  
 Personal Services  
 Pet Services  
 Printing & Publishing  
 Private Primary Education Facilities  
 Private Secondary Education Facilities  
 Professional Office  
 Public Primary Education Facilities  
 Public Secondary Education Facilities  
 Religious Assembly  
 Research Services  
 Restaurant (General)  
 Restaurant (Limited)  
 Retirement Housing (Small Site)  
 Safety Services  
 Short-Term Rental  
 Single-Family Attached Residential  
 Single-Family Residential  
 Small Lot Single-Family Residential  
 Software Development  
 Theater  
 Townhouse Residential  
 Two-Family Residential  
 Urban Farm

**TRACT C**

Community Garden  
 Condominium Residential  
 Congregate Living  
 Duplex Residential  
 Family Home  
 Group Home, Class I (Limited)  
 Multifamily Residential  
 Off-Site Accessory Parking  
 Public Primary Education Facilities  
 Public Secondary Education Facilities  
 Religious Assembly  
 Retirement Housing (Small Site)  
 Short-Term Rental  
 Single-Family Attached Residential  
 Single-Family Residential  
 Small Lot Single-Family Residential  
 Townhouse Residential  
 Two-Family Residential  
 Urban Farm

**TRACT D**

Community Garden  
 Condominium Residential  
 Congregate Living  
 Duplex Residential  
 Family Home  
 Group Home, Class I (Limited)  
 Multifamily Residential  
 Off-Site Accessory Parking  
 Public Primary Education Facilities  
 Public Secondary Education Facilities  
 Religious Assembly  
 Retirement Housing (Small Site)  
 Short-Term Rental  
 Single-Family Attached Residential  
 Single-Family Residential  
 Small Lot Single-Family Residential  
 Townhouse Residential  
 Two-Family Residential  
 Urban Farm

**TRACT F&G**

Administrative & Business Offices  
 Art Gallery  
 Art Workshop  
 Community Garden  
 Condominium Residential  
 Congregate Living  
 Counseling Services  
 Cultural Services  
 Day Care Services (Commercial)  
 Day Care Services (General)  
 Day Care Services (Limited)  
 Duplex Residential  
 Family Home  
 Financial Services  
 Group Home, Class I (Limited)  
 Hospital (General)  
 Medical Offices (all sizes)  
 Multifamily Residential  
 Off-Site Accessory Parking  
 Personal Services  
 Pet Services  
 Private Primary Education Facilities  
 Private Secondary Education Facilities  
 Professional Office  
 Public Primary Education Facilities  
 Public Secondary Education Facilities  
 Religious Assembly  
 Retirement Housing (Small Site)  
 Short-Term Rental  
 Single-Family Attached Residential  
 Single-Family Residential  
 Small Lot Single-Family Residential  
 Software Development  
 Townhouse Residential  
 Two-Family Residential  
 Urban Farm

**OPEN SPACE**

Drainage, Detention & Water Quality Facilities  
 Trails (hiking trails, multi-use trails, pedestrian/bicycle bridges) and Related Improvements  
 Open Space (privately owned and maintained)  
 Parkland (City owned, may be privately maintained)

**Notes:**

- Impervious cover, number of dwelling units, and building coverage are not listed per Individual Tracts in the Site Development Regulations table and shall be dealt with via a "bucket" system. Individual Tracts and/or Site Plans may vary above or below the listed limits, as long as the calculation for the overall 75.78 acre site does not exceed the limit. Applicants shall add a tabulation table (as adopted per this PUD ordinance) to each site plan and subdivision application submittal which will show the current standing of the overall Site Development Regulations. City Staff shall review the table provided with each application and verify that it is in accordance with the Site Development Regulations outlined in the PUD Land Use Plan.
- Total residential units on the site is capped at 1515 dwelling units (affordable housing units are included in this cap). Congregate living does not count towards this 1515 unit cap, and is limited to a maximum of 600 beds.
- Total multi-family residential units, that are not also condominium residential units, on the site are capped at 850 dwelling units. Congregate living and the first 250 affordable housing units do not count towards this 650 unit cap.
- Total office uses on site, including Administrative and Business Office, Medical Office, and Professional Office, are capped at 225,000 square feet.
- Total non-office commercial uses on the site are capped at 158,000 square feet and a maximum size of 47,500 square feet for any one tenant space.
- Overall project impervious cover is capped at 85% and overall project building coverage is capped at 55%.
- The FAR maximums listed in the Site Development Regulations table apply to Individual Tracts within the PUD and the FAR shall not be exceeded on an individual Tract basis but may be exceeded on an individual site plan within a Tract. Tacking the allotted and remaining FAR within each Tract is the responsibility of the Applicant.
- Parks and open space are allowed uses in all Tracts.
- Cocktail lounge uses are capped at 15,000 SF total and a maximum size of 7500 SF for any one tenant space. Additionally, cocktail lounge uses are not permitted within 300' of an SF-5 or more restrictive zoning district or properties on which uses permitted in an SF-5 or more restrictive zoning district are located.
- Liquor sales uses are capped at 15,000 SF total and a maximum size of 10,000 SF for any one tenant space.
- Hospital (General) uses are allowed only in association with Congregate Living, on the same site as Congregate Living, and are limited to a total of 65,000 SF.
- Live-work units are defined as residential units which are similarly configured to residential row houses or townhomes but are distinguished by a workspace, studio, storefront, or business that is flush the with street frontage. The non-residential portion of the unit shall be located on the ground floor only and the residential and non-residential areas must be used and occupied by the same owner or occupant.
- Driveway and trail locations shown on the Land Use Plan are approximate and will be determined at the time of Site Plan.
- Public art shall be installed in a minimum of three (3) locations throughout the project. A minimum budget of \$60,000 shall be spent on public art within the PUD site.
- Off-site Parking per 25-6-501 may be provided for a use located in any Tract within the PUD so long as the off-site parking is located in a Tract where Off-site Accessory Parking is a permitted use.
- Proposed Pedestrian and Bicycle Bridge over Shoal Creek.
- a. The applicant will post fiscal with the City of Austin for the construction of a bicycle and pedestrian bridge crossing Shoal Creek enabling a trail connection from the site to Shoal Creek Blvd. The amount of the fiscal shall be based on the Applicant's approved engineering cost estimate. Subject to City approval of the proposed bridge location (the City considering environmental, connectivity and other factors) the Applicant will construct the bridge and trail. If the City of Austin or the applicant is unable to secure an easement to allow for the construction of said bridge, the posted fiscal may be utilized by the City to complete other bicycle and pedestrian improvements in the area. The Applicant further agrees to provide easements, if needed, for future bicycle and pedestrian bridge crossings at both the northern and southern portions of Shoal Creek, whether or not the bridge described above is constructed.
- b. Bridge location shown is approximate and subject to change. Bridge may be located elsewhere on site with City approval so long as it does not impact the wetland CEF or the portion of the wetland CEF buffer that is outside the 100-year flood plain.
- The project shall provide the following benefits to encourage alternative transportation options:
  - A minimum of one location shall be set aside for a B-cycle station, as coordinated with B-cycle (station to be installed by B-cycle when network is expanded to encompass project).
  - A minimum of 5 car-sharing parking spaces will be reserved on the site, subject to inclusion of the site in the coverage area of a car-share service.
  - All office buildings that are 10,000 SF or greater will provide shower and changing facilities meeting the requirements of Austin Energy Green Build Commercial Ratings (2013).
  - Bike parking will be provided for a minimum of 10% of all required vehicular parking spaces. Private garages serving a residential unit are considered to meet this requirement.
  - A minimum of two bus stops will be provided on Bull Creek Road. Each stop shall feature improvements including, at a minimum: a bench, a trash receptacle, and some form of shade located nearby (shade structure, bus shelter, trees, etc.). Bus stops should be approximately 25 feet in length by 10 feet in width and incorporated into the sidewalk. A larger area of approximately 15 feet in length (perpendicular to the road) by 50 feet in length (parallel to the road) surrounding the stop should maintain a level slope to ensure that all ADA slope requirements are met.
  - All multi-family developments shall incorporate bicycle cage parking for residents.

**SITE DEVELOPMENT REGULATIONS**

|                                                     | TRACT A | TRACT B            | TRACT C            | TRACT D            | TRACT E | TRACT F            | TRACT G           |
|-----------------------------------------------------|---------|--------------------|--------------------|--------------------|---------|--------------------|-------------------|
| Minimum Lot Size in s.f.                            | 3,000   | 3,000              | 3,000              | 3,000              | 3,000   | 3,000              | 3,000             |
| Minimum Lot Width                                   | 30'     | 30'                | 30'                | 30'                | 30'     | 30'                | 30'               |
| Maximum Height                                      | 40'     | 65' <sup>(1)</sup> | 40' <sup>(2)</sup> | 40' <sup>(2)</sup> | 35'     | 40' <sup>(2)</sup> | 60'               |
| Minimum Setbacks from Public Streets <sup>(4)</sup> |         |                    |                    |                    |         |                    |                   |
| Front Yard                                          | 10'     | 0'                 | 10'                | 0'                 | 10'     | 0'                 | 0'                |
| Street Side Yard                                    | 10'     | 0'                 | 10'                | 0'                 | 10'     | 0'                 | 0'                |
| Minimum Interior Yard Setbacks                      |         |                    |                    |                    |         |                    |                   |
| Interior Side Yard                                  | 0'      | 0'                 | 0'                 | 0'                 | 0'      | 0'                 | 0'                |
| Rear Yard                                           | 0'      | 0'                 | 0'                 | 0'                 | 0'      | 0'                 | 0'                |
| Maximum Floor Area Ratio <sup>(5)</sup>             | 0.75:1  | 1.5:1              | 0.75:1             | 1:1                | 0.75:1  | 1:1                | 1:1               |
| Impervious Cover Maximum <sup>(2)</sup>             | 55%     | NA <sup>(2)</sup>  | NA <sup>(2)</sup>  | NA <sup>(2)</sup>  | 55%     | NA <sup>(2)</sup>  | NA <sup>(2)</sup> |
| Building Coverage Maximum <sup>(2)</sup>            | 45%     | NA <sup>(2)</sup>  | NA <sup>(2)</sup>  | NA <sup>(2)</sup>  | 45%     | NA <sup>(2)</sup>  | NA <sup>(2)</sup> |
| Maximum Residential Units                           | 87      | NA <sup>(2)</sup>  | NA <sup>(2)</sup>  | NA <sup>(2)</sup>  | 77      | NA <sup>(2)</sup>  | NA <sup>(2)</sup> |

(1) Up to 5% of Tract B is permitted to be up to 75' in height. This additional height is permitted only within the Height Setback Zone, as shown on the LUP Plan. Height on Tract B may not exceed 5-stories.

(2) Within 100 feet of Tract G, height may be increased to a maximum of 60' for an Affordable Housing development with the project's Affordable Housing Program. A minimum of 25% of the residential units in a building must be affordable under the project's Affordable Housing Program in order for that building to qualify for this height exception. Building height will be required to comply with City of Austin Compatibility Standards.

(3) Tracts B, C, D, F, and G do not have individual Impervious Cover, Building Coverage, or Unit Caps, but they are subject to the overall IC, Building Coverage, and Unit Cap as stated in notes 2 and 6, above.

(4) The minimum setback from Bull Creek Road is 15' for all tracts.

(5) Right-of-Way dedicated from a given tract shall still be included in the total site area to calculate Site Development Regulations including FAR, Impervious Cover, Building Coverage, and Dwelling Units.

# The Grove at Shoal Creek Planned Unit Development Land Use Plan

Exhibit C

April 26, 2016

Sheet 2 of 2

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## EXHIBIT D

### ATTACHMENT 1

#### *Tier 1 and Tier 2 Compliance Summary*

| Tier 1 Requirements – Section 2.3.1                                                                                                                                                                         | Compliance/ Superiority                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A. meet the objectives of the City Code;                                                                                                                                                                    | <b>YES.</b> The Project is located in the urban core and within an Urban watershed. The Project is located near Mopac Expressway and is located along the proposed Shoal Creek Urban Trail and an existing CapMetro bus route. The Project will promote the Imagine Austin priority of creating a “compact and connected” City increasing population density within the urban core. The Project is compatible with surrounding uses and zoning which is consistent with the general neighborhood preferences. Except as set forth in the Proposed Code Modifications Summary, the Project will comply with the current City Code requirements.                                                                                                                                                                                                                                      |
| B. provide for development standards that achieve equal or greater consistency with the goals in Section 1.1 ( <i>General Intent</i> ) than development under the regulations in the Land Development Code; | <b>YES.</b> The Project will meet the goals of Section 1.1 as follows:<br><br>1. <u>Preserve Natural Environment.</u> The Project will preserve all of the high quality heritage trees on the Property, and remove only a handful poor to fair condition “heritage” pecan trees. The Project will provide for greater open space than required by the City Code. The Project will provide green water quality controls and will provide water quality controls and drainage improvements for the entire site. The current state office development does not have any detention or flood control facilities.<br><br>2. <u>High Quality Development and Innovative Design.</u> The Project will utilize mixed use and urban design principles that will allow clustering of uses in higher densities that promote urban living, working and shopping on the site and encourage use of |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
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|                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | <p>alternative transportation options. The Project will integrate pedestrian and bicycle connectivity throughout the Property. The Project will be designed to make use of scenic views from public spaces. Parking structures will be used in connection with office and apartment uses. Higher development intensity will be focused along Bull Creek Road and the interior of the Property and lower development intensity will be located near existing single family residences.</p> <p>3. <u>Adequate Public Facilities and Services.</u> The Project will provide (i) a large on-site, publicly accessible signature park space with park improvements and amenities open to the public providing recreation and natural open space to the whole City; (ii) plazas and other open and community spaces with public amenities that will provide opportunities for people to gather and socialize; (iii) hike and bike trails along Bull Creek Road and Shoal Creek and improvements to enhance transit use so that area residents will have greater transportation options; (iv) roadway intersection improvements through the use of turn lanes and signalization funded 100% by the Applicant, (v) shared access improvements to provide existing 45<sup>th</sup> Street homes with safe, alternative access, (vi) water system improvements that will improve water pressure (especially for fire flow purposes) to the area, (vii) a pedestrian and bicycle bridge across Shoal Creek.</p> |
| <p>C. provide a total amount of open space that equals or exceeds 10 percent of the residential tracts, 15 percent of the industrial tracts, and 20 percent of the nonresidential tracts within the PUD, except that:</p> <ol style="list-style-type: none"> <li>1. a detention or filtration area is excluded from the calculation unless it is designed and maintained as an amenity; and</li> <li>2. the required percentage of open space may be</li> </ol> | <p><b>YES.</b> Even though the Project is an “urban property”, the Project will <i>exceed</i> these requirements by providing at least 18.12 acres of open space as shown on the Parks Plan Exhibit. This <i>minimum</i> amount of open space for the purpose of determining compliance with Tier 1 and Tier 2 requirements is also shown on the Parks Plan Exhibit and is approximately 11 and 12 acres respectively. The Applicant actually intends that the Project will provide more open space than the minimum 18.12 acres. This open space, which the Applicant may sometimes also refer to as “Park</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

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| <p>reduced for urban property with characteristics that make open space infeasible if other community benefits are provided;</p>                                                                                                                                       | <p>Space”, will be publicly accessible and offer excellent recreational and natural areas throughout the Project.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| <p>D. comply with the City's Planned Unit Development Green Building Program;</p>                                                                                                                                                                                      | <p><b>YES.</b> The Project will comply with at least a 2-star Green Building requirement.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| <p>E. be consistent with applicable neighborhood plans, neighborhood conservation combining district regulations, historic area and landmark regulations, and compatible with adjacent property and land uses;</p>                                                     | <p><b>YES.</b> There is no applicable neighborhood plan, NCCD or historic area or landmark regulations applicable to the site. However, as stated above, the largely residential Project will be compatible with area land uses and zoning districts and is consistent with the principles and priorities of Imagine Austin. In addition, the Applicant believes the Project is consistent with neighborhood preferences established in surveys conducted by the Applicant and with the Bull Creek Road Coalition’s Design Principles.</p>                                                                                                                                                                                                                                                 |
| <p>F. provide for environmental preservation and protection relating to air quality, water quality, trees, buffer zones and greenbelt areas, critical environmental features, soils, waterways, topography, and the natural and traditional character of the land;</p> | <p><b>YES.</b> The Project will preserve all of the higher quality heritage oak trees on the Property, and remove only a handful poor to fair condition “heritage” pecan trees.<br/>The project will preserve a minimum of 75% of Protected Size native tree inches on site.<br/>The Project will provide for greater open space than required by the City Code. The Project will provide green water quality controls and will provide water quality controls and drainage improvements for the entire site. The current state office development does not have any detention or flood control facilities. The Project will not propose any flood plain modifications. The Project will incorporate the natural features, topography and character of the land in its overall design.</p> |
| <p>G. provide for public facilities and services that are adequate to support the proposed development including school, fire protection, emergency service, and police facilities;</p>                                                                                | <p><b>YES.</b> As stated above, the Project will provide (i) a large on-site, publicly accessible signature park space with park improvements and amenities open to the public providing recreation and natural open space to the whole City; (ii) plazas and other open and community spaces with public amenities that will provide</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

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|                                                                                                                                                                                                                       | <p>opportunities for people to gather and socialize;; (iii) hike and bike trails along Bull Creek Road and Shoal Creek and improvements to enhance transit use so that area residents will have greater transportation options; (iv) roadway intersection improvements through the use of turn lanes and signalization funded 100% by the Applicant, (v) shared access improvements to provide existing 45<sup>th</sup> Street homes with safe, alternative access, (vi) water system improvements that will improve water pressure (especially for fire flow purposes) to the area, and (vii) a pedestrian and bicycle bridge across Shoal Creek. In addition, there are currently existing adequate school, fire protection, emergency service, and police facilities located in the area. Bryker Woods School for example is populated by approximately 20% - 30% of transfer students and, therefore, has sufficient capacity to meet the needs of the Project.</p> |
| <p>H. exceed the minimum landscaping requirements of the City Code;</p>                                                                                                                                               | <p><b>YES.</b> The Project will exceed the minimum Code requirements for landscaping. The Project will implement an Integrated Pest Management Plan, which shall apply to all sites and uses within the PUD. The project Design Guidelines require minimum 3" caliper street trees on all internal streets. Under conventional zoning, Tracts A, C, D, and E would be residential zoning districts and would not require street trees under Subchapter E. This area of additional street trees represents 34.24 acres or approximately 45% of the total project area. Additionally, street trees will be required along Bull Creek Road where they would not be required by Subchapter E. The Design Guidelines will additionally require that a minimum of 95% of all non-turf plant materials be from or consistent with the City's Grow Green Guide.</p>                                                                                                             |
| <p>I. provide for appropriate transportation and mass transit connections to areas adjacent to the PUD district and mitigation of adverse cumulative transportation impacts with sidewalks, trails, and roadways;</p> | <p><b>YES.</b> There is currently a CapMetro bus route located on Bull Creek Road adjacent to the Property that provide transit to major employment centers like the Seton Medical Center, the University of Texas and downtown. The Applicant is in discussions with</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                                                                                                                                                                                                                                                                                                                  | CapMetro about how to provide enhancements to this transit stop to facilitate increased ridership. In addition, the Project will provide greater pedestrian and bicycle trails and sidewalks along Bull Creek Road, within the Property and along Shoal Creek, including a pedestrian and bicycle bridge across Shoal Creek. A TIA has been performed and demonstrates that impacts on area intersections from the Project are properly mitigated with turn lane and signal improvements. |
| J. prohibit gated roadways;                                                                                                                                                                                                                                                                                      | <b>YES.</b> The Project will prohibit gated communities.                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| K. protect, enhance and preserve areas that include structures or sites that are of architectural, historical, archaeological, or cultural significance; and                                                                                                                                                     | <b>NOT APPLICABLE.</b> There are no such areas within the Property. However, the Applicant is willing to memorialize the prior use of the site for the education of disabled African Americans in public spaces located within the Project.                                                                                                                                                                                                                                               |
| L. include at least 10 acres of land, unless the property is characterized by special circumstances, including unique topographic constraints.                                                                                                                                                                   | <b>YES.</b> The Property is approximately 75.74 acres.                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>Additional Requirements – Section 2.3.2</b>                                                                                                                                                                                                                                                                   | <b>Compliance/ Superiority</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
| A. comply with <u>Chapter 25-2</u> , Subchapter E ( <i>Design Standards And Mixed Use</i> );                                                                                                                                                                                                                     | <b>MODIFICATIONS REQUESTED.</b> As permitted by Section 2.2 of PUD Code Provisions, the Applicant will be proposing modifications to the Subchapter E standards that will replace and supersede Subchapter E. The Project Design Guidelines meet the intent and purposes of Subchapter E, while making compliance simpler and easier to implement.                                                                                                                                        |
| B. inside the urban roadway boundary depicted in Figure 2, Subchapter E, <u>Chapter 25-2</u> ( <i>Design Standards and Mixed Use</i> ), comply with the sidewalk standards in <u>Section 2.2.2.</u> , Subchapter E, <u>Chapter 25-2</u> ( <i>Core Transit Corridors: Sidewalks And Building Placement</i> ); and | <b>MODIFICATIONS REQUESTED.</b> As permitted by Section 2.2 of PUD Code Provisions, the Applicant has proposed modifications to the Subchapter E sidewalk and building placement standards that will replace and supersede Subchapter E. The Project Design Guidelines meet the intent and purposes of Subchapter E, while making compliance simpler and easier to implement.                                                                                                             |
| C. contain pedestrian-oriented uses as defined in <u>Section 25-2-691(C)</u> ( <i>Waterfront Overlay District Uses</i> ) on the first                                                                                                                                                                            | <b>YES.</b> The Project will contain pedestrian-oriented uses on the first floor of multi-story commercial or mixed use buildings                                                                                                                                                                                                                                                                                                                                                         |

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| floor of a multi-story commercial or mixed use building.                                                                                                                                                                                                                                                                                                                                                                                                                                     | located along roadways with pedestrian walkways. The size of the Project is such that some interior buildings that are not located on significant pedestrian walkways do not have such uses.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>Tier 2 Requirements – Section 2.4</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                     | <b>Compliance/ Superiority</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| A. <u>Open Space</u> – Provides open space at least 10% above the requirements of Section 2.3.1.A. ( <i>Minimum Requirements</i> ). Alternatively, within the urban roadway boundary established in Figure 2 of Subchapter E of <u>Chapter 25-2</u> ( <i>Design Standards and Mixed Use</i> ), provide for proportional enhancements to existing or planned trails, parks, or other recreational common open space in consultation with the Director of the Parks and Recreation Department. | <b>YES.</b> The Project will provide at least 18.12 acres of open space as shown on the Park Plan Exhibit which is far above the requirement in Section 2.3.1.A. This <i>minimum</i> amount of open space for the purpose of determining compliance with Tier 1 and Tier 2 requirements is also shown on the Parks Plan Exhibit and is approximately 11 and 12 acres respectively. The Applicant actually intends that the Project will provide more open space than the minimum 18.12 acres. This open space will largely consist of dedicated parkland and will be publicly accessible and offer excellent recreational and natural areas throughout the Project.                                                                                                                                                                                          |
| B. <u>Environment/Drainage</u> –                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 1. Complies with current code instead of asserting entitlement to follow older code provisions by application of law or agreement.                                                                                                                                                                                                                                                                                                                                                           | <b>NOT APPLICABLE.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 2. Provides water quality controls superior to those otherwise required by code.                                                                                                                                                                                                                                                                                                                                                                                                             | <b>YES.</b> The project will meet current code requirements for water quality volume. The Project will provide water quality controls through the use of a wet pond and/or Green Water Quality Controls for a minimum of 50% of the required water quality volume on-site, which provide superior Total Suspended Solid and nutrient removal to more conventional controls and also offer wetland and habitat benefits that are particularly appropriate to the Project. Makeup water for the wet pond will be provided by air conditioner condensate from commercial buildings on site. Site plans for commercial buildings will be required to include plumbing connections to the makeup water system unless it has been demonstrated that prior connections (from other buildings on site) will provide sufficient makeup water for the pond. Potable or |

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|                                                                                                                                                                                                                                 | well water may be used for makeup water only during buildout of the project.                                                                                                                                                                                                                                                                                          |
| 3. Uses green water quality controls as described in the Environmental Criteria Manual to treat at least 50 percent of the water quality volume required by code.                                                               | <b>YES AS MODIFIED.</b> The project will provide that a minimum of 10 acres of impervious cover on the site will drain to and be treated by Green Water Quality Controls such as rain gardens, and rainwater capture systems. Biofiltration ponds shall not be counted toward this requirement.                                                                       |
| 4. Provides water quality treatment for currently untreated, developed off-site areas of at least 10 acres in size.                                                                                                             | <b>NOT APPLICABLE.</b>                                                                                                                                                                                                                                                                                                                                                |
| 5. Reduces impervious cover by five percent below the maximum otherwise allowed by code or includes off-site measures that lower overall impervious cover within the same watershed by five percent below that allowed by code. | <b>NOT APPLICABLE.</b> The site is not currently zoned. While a baseline may be established by City Council, Council has been directed by City Staff that the baseline is solely for determining development bonuses and not for other zoning factors. As such, it would not be appropriate to apply the established baseline to determine environmental superiority. |
| 6. Provides minimum 50-foot setback for at least 50 percent of all unclassified waterways with a drainage area of 32 acres.                                                                                                     | <b>NOT APPLICABLE.</b>                                                                                                                                                                                                                                                                                                                                                |
| 7. Provides volumetric flood detention as described in the Drainage Criteria Manual.                                                                                                                                            | <b>NO.</b>                                                                                                                                                                                                                                                                                                                                                            |
| 8. Provides drainage upgrades to off-site drainage infrastructure that does not meet current criteria in the Drainage or Environmental Criteria Manuals, such as storm drains and culverts that provide a public benefit.       | <b>NOT APPLICABLE.</b>                                                                                                                                                                                                                                                                                                                                                |
| 9. Proposes no modifications to the existing 100-year floodplain.                                                                                                                                                               | <b>YES.</b> The Project will not modify the existing 100-year flood plain.                                                                                                                                                                                                                                                                                            |
| 10. Uses natural channel design techniques as described in the Drainage Criteria Manual.                                                                                                                                        | <b>NOT APPLICABLE.</b>                                                                                                                                                                                                                                                                                                                                                |
| 11. Restores riparian vegetation in existing, degraded Critical Water Quality Zone areas.                                                                                                                                       | <b>NO.</b> Existing riparian vegetation along the top of the bank is already in good condition and will be protected by a Riparian Grow Zone. This Riparian Grow Zone will also serve as wetland                                                                                                                                                                      |

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|                                                                                                                                                                           | mitigation.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 12. Removes existing impervious cover from the Critical Water Quality Zone.                                                                                               | <b>NOT APPLICABLE.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
| 13. Preserves all heritage trees; preserves 75% of the caliper inches associated with native protected size trees; and preserves 75% of all of the native caliper inches. | <b>YES AS MODIFIED.</b> The Project will preserve more than 75% of all Protected Size native caliper inches. The Project will preserve all of the higher quality heritage oak trees on the Property, and remove only a handful of poor to fair condition "heritage" pecan trees. The heritage pecan trees to be removed are of a variety that is not native to the area and structurally poor and of lower quality. The Applicant has met with the City Arborist to discuss removal of these small number of trees and the preservation of all of the high-quality heritage oak trees. Additionally, the project will provide additional protection for the $\frac{3}{4}$ critical root zone for all protected and heritage trees within the Signature Grove, which includes all trees around the proposed pond and the highest quality oak trees throughout the Signature Park. |
| 14. Tree plantings use Central Texas seed stock native and with adequate soil volume.                                                                                     | <b>NO.</b> While the Project will utilize native and adapted trees from the Grow Green Guide, a commitment to 100% native seed stock is not feasible at this time.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| 15. Provides at least a 50 percent increase in the minimum waterway and/or critical environmental feature setbacks required by code.                                      | <b>NO.</b> While the project does propose a Riparian Grow Zone along the Critical Water Quality Zone boundary that would effectively increase the waterway buffer for Shoal Creek, it also proposes a reduction in the Wetland CEF buffer.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 16. Clusters impervious cover and disturbed areas in a manner that preserves the most environmentally sensitive areas of the site that are not otherwise protected.       | <b>YES.</b> The Project will cluster development along Bull Creek Road and the interior of the Property and away from Shoal Creek and the large oak groves located on the Property where a large amount of open space will be provided instead.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| 17. Provides porous pavement for at least 20 percent or more of all paved areas for non-pedestrian in non-aquifer recharge areas.                                         | <b>NO.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
| 18. Provides porous pavement for at least 50 percent or more of all paved areas limited to pedestrian                                                                     | <b>NO.</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                                                                                                                                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
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| use.                                                                                                                                                                                                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
| 19. Provides rainwater harvesting for landscape irrigation to serve not less than 50% of the landscaped areas.                                                                                                                | <b>NO.</b> Due to the size of the proposed parks in particular, this option is not feasible for this Project.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| 20. Directs stormwater runoff from impervious surfaces to a landscaped area at least equal to the total required landscape area.                                                                                              | <b>YES.</b> The Project will direct stormwater runoff from impervious surfaces to a landscaped area at least equal to the total required landscape area.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 21. Employs other creative or innovative measures to provide environmental protection.                                                                                                                                        | <p><b>YES.</b> The Project will provide flood mitigation for the 9.39 acres of existing impervious cover on site that is not currently detained. The current state office development does not have any detention or flood control facilities, and current code does not require new development to detain for existing impervious cover. If the Project participates in the RSMP, the RSMP fee will be paid as if the current 9.39 acres of impervious cover does not exist.</p> <p>The City of Austin Watershed Protection Department will choose the most effective flood mitigation option for the site, which may include onsite detention in compliance with the Environmental Criteria Manual or RSMP participation, at the time of commercial site plan or residential subdivision application. The City of Austin selected flood mitigation option will be required to demonstrate no downstream adverse impact up to the confluence of Shoal Creek with Lady Bird Lake.</p> <p>Additionally, the Project will provide educational signage for the Wetland CEF.</p> |
| C. <u>Austin Green Builder Program</u> – Provides a rating under the Austin Green Builder Program of three stars or above.                                                                                                    | <b>NO.</b> While certain buildings and development within the Project may meet or exceed a 3-star rating, requiring such compliance for all such buildings and development is not feasible.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| D. <u>Art</u> – Provides art approved by the Art in Public Places Program in open spaces, either by providing the art directly or by making a contribution to the City's Art in Public Places Program or a successor program. | <b>YES AS MODIFIED.</b> The Project will provide art in public places through development of a public art plan developed by the Applicant that will consist of a minimum of three (3) significant art pieces. The Applicant will consult with and consider the                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |

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|                                                                                                                                                                                                                                                                                                                                                                   | City's Art in Public Places (AIPP) program in implementing this program.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| E. <u>Great Streets</u> – Complies with City's Great Streets Program, or a successor program. Applicable only to commercial, retail, or mixed-use development that is not subject to the requirements of <u>Chapter 25-2</u> , Subchapter E ( <i>Design Standards and Mixed Use</i> ).                                                                            | <b>YES AS MODIFIED.</b> The Project will provide private street cross sections that will meet the intent and purposes of the Great Streets Program through its Project Design Guidelines.                                                                                                                                                                                                                                                                                                                                                                                                                            |
| F. <u>Community Amenities</u> –<br>1. Provides community or public amenities, which may include spaces for community meetings, community gardens or urban farms, day care facilities, non-profit organizations, or other uses that fulfill an identified community need.<br>2. Provides publicly accessible multi-use trail and greenway along creek or waterway. | <b>YES.</b> The Project will provide community and public amenities including spaces for community meetings, gatherings and other community needs, and publicly accessible multi-use trails and greenways along Shoal Creek. The project will also provide a pedestrian and bicycle bridge across Shoal Creek.                                                                                                                                                                                                                                                                                                       |
| G. <u>Transportation</u> – Provides bicycle facilities that connect to existing or planned bicycle routes or provides other multi-modal transportation features not required by code.                                                                                                                                                                             | <b>YES.</b> The Project will provide (i) bicycle trails and shared use paths throughout the project that will facilitate connection to existing and planned bike routes and trails, (ii) a pedestrian and bicycle bridge across Shoal Creek, (iii) a location for a B-cycle Station, (iv) at least 5 car-sharing parking spaces, (v) shower facilities in all office buildings over 10,000 SF, (vi) bike parking for a minimum of 10% of required vehicular spaces, (vii) bicycle cage parking in multifamily buildings, and (viii) improved bus stops developed in consultation with CapMetro and the neighborhood. |
| H. <u>Building Design</u> – Exceeds the minimum points required by the Building Design Options of Section 3.3.2. of <u>Chapter 25-2</u> , Subchapter E ( <i>Design Standards and Mixed Use</i> ).                                                                                                                                                                 | <b>NO.</b> While certain buildings and development within the Project may exceed such minimum points, requiring such compliance for all such buildings and development is not feasible. The intent and purpose of such building design will be met through the Project Design Guidelines.                                                                                                                                                                                                                                                                                                                            |
| I. <u>Parking Structure Frontage</u> – In a commercial or mixed-use development, at least 75 percent of the building frontage of all parking structures is designed for                                                                                                                                                                                           | <b>NO.</b> While certain buildings and development within the Project may meet such percentage, requiring such compliance for all such buildings and development is not feasible.                                                                                                                                                                                                                                                                                                                                                                                                                                    |

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|    | pedestrian-oriented uses as defined in <u>Section 25-2-691(C)</u> ( <i>Waterfront Overlay District Uses</i> ) in ground floor spaces.                                                                                   |                                                                                                                                                                                                                                                                                                                                                                                    |
| J. | <u>Affordable Housing</u> – Provides for affordable housing or participation in programs to achieve affordable housing.                                                                                                 | <b>YES.</b> The Applicant will provide a substantial on-site affordable housing component as more particularly set forth in the The Grove at Shoal Creek Affordable Housing Plan.                                                                                                                                                                                                  |
| K. | <u>Historic Preservation</u> – Preserves historic structures, landmarks, or other features to a degree exceeding applicable legal requirements.                                                                         | <b>NOT APPLICABLE.</b> There are no such features within the Property. However, the Applicant is willing to memorialize the prior use of the site for the education of disabled African Americans in public spaces located within the Project.                                                                                                                                     |
| L. | <u>Accessibility</u> – Provides for accessibility for persons with disabilities to a degree exceeding applicable legal requirements.                                                                                    | <b>YES.</b> The Project will provide for accessibility for person with disabilities to a degree exceeding applicable legal requirements.                                                                                                                                                                                                                                           |
| M. | <u>Local Small Business</u> – Provides space at affordable rates to one or more independent retail or restaurant small businesses whose principal place of business is within the Austin metropolitan statistical area. | <b>NO.</b> While the Applicant fully intends to actively seek local small businesses for the Project and may use incentives to induce such local businesses, given the on-site affordable housing commitment, increased parks and open space commitments, and increased traffic mitigation commitments, requiring a specific criteria for affordable retail rates is not feasible. |

**EXHIBIT E**

**ATTACHMENT 2**

***Proposed Code Modifications***

| <b>CHAPTER 25-1 MODIFICATIONS</b>                                      |                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                       |
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| <b>CODE SECTIONS TO BE MODIFIED</b>                                    | <b>CURRENT CODE LANGUAGE</b>                                                                                                                                                                          | <b>PROPOSED MODIFICATION FOR THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                                                                                                                                                         |
| 1. <i>Definitions, Article 2, Chapter 25-1-21</i>                      | "SITE means a contiguous area intended for development, or the area on which a building has been proposed to be built or has been built. A site may not cross a public street or right-of-way."       | "SITE means a contiguous area intended for development, or the area on which a building has been proposed to be built or has been built. A site may cross a public street or right-of-way if that public street or right-of-way is within the boundaries of The Grove at Shoal Creek PUD."                                                                                                            |
| 2. <i>Parkland Requirements, Article 14, Chapter 25-1 and 25-4-211</i> | 25-1-602(A) "A subdivider or site plan applicant shall provide for the parkland needs of the residents by the dedication of suitable parkland for park and recreational purposes under this article." | "Section 25-1-602 (Dedication of Parkland Required) is modified to provide that subdivider or site plan applicant shall provide for the parkland needs of the residents by providing suitable parkland for park and recreational purposes under the terms of The Grove at Shoal Creek Parks Plan and Parkland Improvement Agreement attached as exhibits to Planned Unit Development Ordinance No. ." |
| 3. <i>Gross Floor Area, 25-2-21(44)</i>                                | 25-1-21 "(44) GROSS FLOOR AREA means the total enclosed area of all floors in a building with a clear height of more than six feet, measured to the outside surface of the exterior walls.            | "(44) GROSS FLOOR AREA means the total enclosed area of all floors in a building with a clear height of more than six feet, measured to the outside surface of the exterior walls. The term includes loading docks and excludes atria airspace,                                                                                                                                                       |

|                                                                                                                      |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
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|                                                                                                                      | The term includes loading docks and excludes atria airspace, parking facilities, driveways, and enclosed loading berths and off-street maneuvering areas.” | parking facilities, parking structures, driveways, and enclosed loading berths and off-street maneuvering areas.”                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>CHAPTER 25-2 MODIFICATIONS</b>                                                                                    |                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| <b>CODE SECTIONS TO BE MODIFIED</b>                                                                                  | <b>CURRENT CODE LANGUAGE</b>                                                                                                                               | <b>PROPOSED MODIFICATION FOR THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |
| 4. <i>Site Development Regulations, 25-2-492</i>                                                                     | Not applicable.                                                                                                                                            | The Applicant proposes that the site development regulations applicable to the Property be as shown on the Land Use Plan                                                                                                                                                                                                                                                                                                                                                                                                           |
| 5. <i>Site Development Regulations, 25-2-492 and Height, 25-1-21(47)</i>                                             | City staff interprets a parking level to be a “story” for the purposes of determining compliance with site development regulations.                        | “In determining compliance with the applicable height limitations, a parking level shall not be and is not considered a ‘story’.”                                                                                                                                                                                                                                                                                                                                                                                                  |
| 6. <i>Visual Screening, 25-2-1006</i>                                                                                | 25-2-1006 Visual Screening of certain features                                                                                                             | “Section 25-2-1006 (A) shall not apply to any water quality and/ or storm water drainage facility that serves as an amenity or to any Green Storm Water Quality Infrastructure as defined in the Environmental Criteria Manual, except that any green infrastructure hardened outfalls and control structures should still be buffered from public ROW. Section 25-2-1006 (C) shall not apply between uses or sites that are both located within the PUD boundaries. This section shall still apply at the boundaries of the PUD.” |
| 7. <i>Planned Unit Development Regulations, Chapter 25-2, Subchapter B, Article 2, Division 5, Section 3.2.3.D.1</i> | “D. the minimum front yard and street side yard setbacks, which must be not less than the greater of:                                                      | “Chapter 25-2, Subchapter B, Article 2, Division 5, Section 3.2.3.D.1 shall not apply to the PUD. Notwithstanding the foregoing the remainder of that section                                                                                                                                                                                                                                                                                                                                                                      |

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|                                                                                                                                                                                                                                                                                                                                                                      | 1. 25 feet for a front yard, and 15 feet for a street side yard; or”                                                                                                                                                                                                                                                                                                                                                                                                                                                                         | shall apply to the PUD.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| <p>8. <i>Compatibility Standards, Chapter 25-2, Article 10</i></p> <p><b><i>NOTE: This Code modification only applies where the triggering property is located within the PUD. This Code modification does not apply where the triggering property is located outside the PUD. This Code modification is identical to the one granted in the Mueller PUD</i></b></p> | Chapter 25-2, Article 10, Compatibility Standards applied to triggering property within the PUD only                                                                                                                                                                                                                                                                                                                                                                                                                                         | “Chapter 25-2, Article 10 (Compatibility Standards) does not apply only where development within the PUD triggers such compatibility standards. Notwithstanding the foregoing, Chapter 25-2, Article 10 (Compatibility Standards) shall apply, except as provided herein, where development outside of the PUD triggers such compatibility standards.”                                                                                                                                                                                                                                                                                                                     |
| 9. <i>Compatibility Standards, 25-2-1063(C)(2)and (3)</i>                                                                                                                                                                                                                                                                                                            | <p>25-2-1063(C) “(2) three stories and 40 feet, if the structure is more than 50 feet and not more than 100 feet from property:</p> <p>(a) in an SF-5 or more restrictive zoning district; or (b) on which a use permitted in an SF-5 or more restrictive zoning district is located;</p> <p>(3) for a structure more than 100 feet but not more than 300 feet from property zoned SF-5 or more restrictive, 40 feet plus one foot for each 10 feet of distance in excess of 100 feet from the property zoned SF-5 or more restrictive;”</p> | “In the rectangular area of land in Tract B that is bounded by (i) the property line adjacent to Bull Creek Road on the west, (ii) a line 240 feet east from the property line adjacent to Bull Creek Road on the east, (iii) a line that is 200 feet south of the northern property line on the north, and (iv) a line that is 630 feet south of the northern property line on the south, Section 25-2-1063(C) (2) of the Austin City Code shall not apply, and Section 25-2-1063(C)(3) is modified to read to provide that for a structure more than 50 feet but not more than 300 feet from the property zoned SF-5 or more restrictive, height may is limited to 60’.” |
| 10. <i>Compatibility Standards, 25-2-1067(G) and (H)</i>                                                                                                                                                                                                                                                                                                             | 25-2-1067 “(G) Unless a parking area or driveway is on a site that is less than 125 feet wide, a parking area or driveway may not be constructed 25 feet or less from a                                                                                                                                                                                                                                                                                                                                                                      | “Section 25-2-1067(G) and (H) of the Austin City Code shall not apply to Tract A only, with respect to the construction of an alley, public road, trails and/or sidewalks.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

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|                                                                    | lot that is: (1) in an SF-5 or more restrictive zoning district; or (2) on which a use permitted in an SF-5 or more restrictive zoning district is located.”                                                                                     |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| 11. <i>Commercial Design Standards, Subchapter E, Chapter 25-2</i> | Chapter 25-2, Subchapter E, Design Standards and Mixed Use                                                                                                                                                                                       | “The Grove at Shoal Creek Design Guidelines generally address the physical relationship between commercial and other nonresidential development and adjacent properties, public streets, neighborhoods, and the natural environment, in order to implement the City Council's vision for a more attractive, efficient, and livable community. The requirements of Chapter 25-2, Subchapter E of the Austin City Code shall not apply to the property. All requirements in the Austin City Code that reference Chapter 25-2, Subchapter E shall be modified to refer to such Design Guidelines.” |
| <b>CHAPTER 25-4 MODIFICATIONS</b>                                  |                                                                                                                                                                                                                                                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| <b>CODE SECTIONS TO BE MODIFIED</b>                                | <b>CURRENT CODE LANGUAGE</b>                                                                                                                                                                                                                     | <b>PROPOSED MODIFICATION FOR THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| 12. <i>Alleys, 25-4-132(B)</i>                                     | 25-4-132 “(B) Off-street loading and unloading facilities shall be provided on all commercial and industrial lots, except in the area described in Subsection (C). The subdivider shall note this requirement on a preliminary plan and a plat.” | “Off-street loading and unloading shall be provided on all commercial lots, except that loading and unloading may also occur in any alley that also serves as a fire lane. The subdivider shall note this requirement on a preliminary plan and a plat.”                                                                                                                                                                                                                                                                                                                                        |
| 13. <i>Block Length, 25-4-153</i>                                  | 25-4-153 Block Length requirements                                                                                                                                                                                                               | “Section 25-4-153 of the Austin City Code shall not apply to the property.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |
| 14. <i>Secondary Street Access, 25-4-157</i>                       | Section 25-4-157 – Subdivision Access Streets                                                                                                                                                                                                    | “Section 25-4-157 of the Austin City Code shall not apply to the property.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                     |

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| 15. <i>Lots on Private Streets, 25-4-171(A)</i>                                                                               | “(A) Each lot in a subdivision shall abut a dedicated public street.”                                                                                                                                                                                                                                                             | “(A) Each lot in a subdivision shall abut a public street, private street or private drive subject to a permanent access easement.”                                                                                                                                       |
| 16. <i>Parkland Requirements, Article 14, Chapter 25-1 and 25-4-211</i><br><br><i>[NOTE: this is the same as No. 1 above]</i> | 25-4-211 “The platting requirement for parkland dedication is governed by Chapter 25-1, Article 14 (Parkland Dedication).”                                                                                                                                                                                                        | “The platting requirement for parkland dedication is modified to provide that such requirement is governed by the terms of The Grove at Shoal Creek Planned Unit Parks Plan and Parkland Improvement Agreement attached as exhibits to Development Ordinance No. _____. ” |
| 17. <i>Public Street Alignment, 25-4-151</i>                                                                                  | 25-4-151 “Streets of a new subdivision shall be aligned with and connect to existing streets on adjoining property unless the Land Use Commission determines that the Comprehensive Plan, topography, requirements of traffic circulation, or other considerations make it desirable to depart from the alignment or connection.” | “Notwithstanding Section 25-4-151 of the Austin City Code, the private drives and/ or private streets within the property may be aligned with and connect to existing or future streets on adjoining property.”                                                           |
| 18. <i>Dead-End Streets, 25-4-152(A)</i>                                                                                      | 25-4-152 “(A) A street may terminate in a cul-de-sac if the director determines that the most desirable plan requires laying out a dead-end street.”                                                                                                                                                                              | “A street may terminate in a cul-de-sac if the director determines that the most desirable plan requires laying out a dead-end street, or may terminate in a connection with the private drives and/ or private streets within the property.”                             |
| <b>CHAPTER 25-6 MODIFICATIONS</b>                                                                                             |                                                                                                                                                                                                                                                                                                                                   |                                                                                                                                                                                                                                                                           |
| <b>CODE SECTIONS TO BE MODIFIED</b>                                                                                           | <b>CURRENT CODE LANGUAGE</b>                                                                                                                                                                                                                                                                                                      | <b>PROPOSED MODIFICATION FOR THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                             |
| 19. <i>Street Design, 25-6-171(A)</i>                                                                                         | “(A) Except as provided in Subsections (B) and (C), a roadway, street, or alley must be designed and constructed in accordance with the Transportation                                                                                                                                                                            | “A roadway, private drive, street or alley must be designed and constructed in accordance with The Grove at Shoal Creek Design Guidelines. The Transportation                                                                                                             |

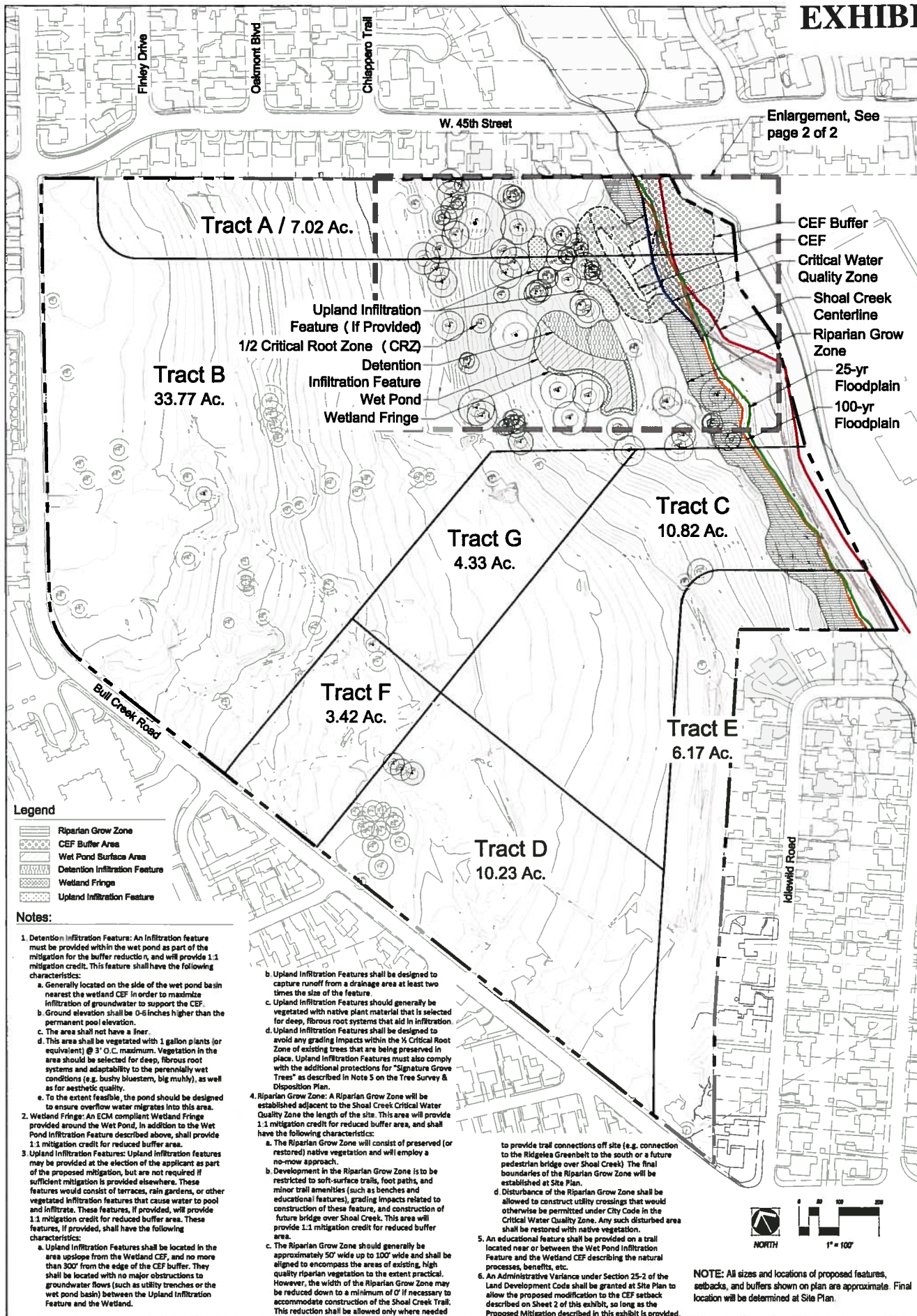
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|                                        | Criteria Manual and City of Austin Standards and Standard Specifications.                                                                                                                            | Criteria Manual and City of Austin Standards and Standard Specifications shall apply to the extent they do not conflict with The Grove at Shoal Creek Design Guidelines.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <b>CHAPTER 25-8 MODIFICATIONS</b>      |                                                                                                                                                                                                      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>CODE SECTIONS TO BE MODIFIED</b>    | <b>CURRENT CODE LANGUAGE</b>                                                                                                                                                                         | <b>PROPOSED MODIFICATION FOR THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| 20. <i>Heritage Trees, 25-8-641(B)</i> | “(B) A permit to remove a heritage tree may be issued only if a variance is approved under Section 25-8-642 ( <i>Administrative Variance</i> ) or 25-8-643 ( <i>Land Use Commission Variance</i> ).” | <p>“A permit to remove a heritage tree may be issued only if:</p> <p>(1) a variance is approved under Section 25-8-642 (<i>Administrative Variance</i>) or (25-8-643) <i>Land Use Commission Variance</i>, or</p> <p>(2) the tree is indicated as "Trees that May Be Removed" on The Grove at Shoal Creek Tree Survey and Disposition Plan as attached to The Grove at Shoal Creek Planned Unit Development Ordinance No. _____. Sections 25-8-642 and 25-8-643 shall not apply to the trees indicated as "Trees that May Be Removed" on The Grove at Shoal Creek Tree Survey and Disposition Plan. Specifically, the Heritage Trees that may be removed under this paragraph are identified as tag numbers 3076, 3077, 3078, 3079, 3080, 3201, 3202, 3203, 3204, 3207, and 3232.</p> <p>A permit issued under 25-8-642 (A) (2) shall require mitigation at the rates prescribed on The Grove at Shoal Creek</p> |

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|                                                                     |                                                          | <p>Tree Survey and Disposition Plan.</p> <p>(3) Administrative variances under 25-8-642 for trees indicated to be saved on The Grove at Shoal Creek Tree Survey and Disposition Plan may be granted only for trees that are dead, diseased, or hazardous under paragraph (A) of that section. Variances for removal under Paragraph (C) for reasonable use shall not be allowed for these trees.”</p> |
| <b>CHAPTER 25-10 MODIFICATIONS</b>                                  |                                                          |                                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>CODE SECTIONS TO BE MODIFIED</b>                                 | <b>CURRENT CODE LANGUAGE</b>                             | <b>PROPOSED MODIFICATION FOR THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                                                                                                                                                         |
| 21. 25-10-1 - <i>Applicability</i>                                  | 25-10-1 – Applicability                                  | “(D) To the extent they are in conflict, the signage standards set forth in the Design Guidelines for The Grove at Shoal Creek shall supersede this chapter.”                                                                                                                                                                                                                                         |
| 22. 25-10-103 – <i>Signs Prohibited in the Public Right-of-Way.</i> | 25-10-103 – Signs Prohibited in the Public Right-of-Way. | “Section 25-10-103 of the Austin City Code shall not apply to the public Right-of-Way dedicated for the Jackson Avenue Extension within the boundaries of The Grove at Shoal Creek PUD as identified on the Roadway Framework Plan.”                                                                                                                                                                  |
| 23. 25-10-191 – <i>Sign Setback Requirements.</i>                   | 25-10-191 – Sign Setback Requirements.                   | “Section 25-10-191 of the Austin City Code shall not apply for setbacks from the public Right-of-Way dedicated for the Jackson Avenue Extension within the boundaries of The Grove at Shoal Creek PUD as identified on the Roadway Framework Plan.”                                                                                                                                                   |
| <b>DRAINAGE CRITERIA MANUAL MODIFICATIONS</b>                       |                                                          |                                                                                                                                                                                                                                                                                                                                                                                                       |

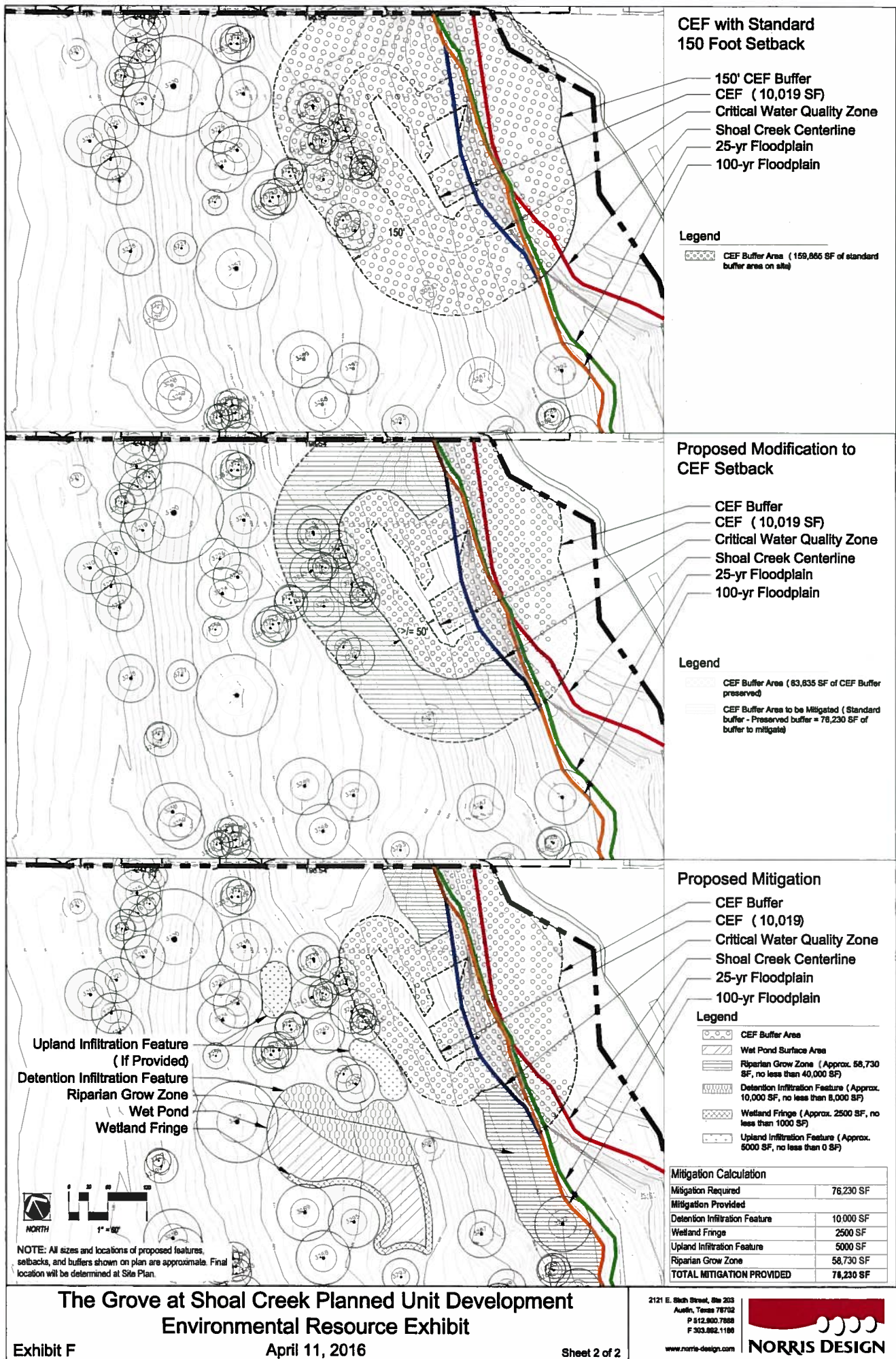
| DCM SECTIONS TO BE MODIFIED                                                                     | CURRENT DCM LANGUAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PROPOSED MODIFICATION FOR<br>THE GROVE AT SHOAL CREEK PUD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
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| 24. <i>Fencing Requirements for Drainage Facilities, Section 1.2.4.E.1(a)</i>                   | DCM Section 1.2.4.E “1. (a) Where a portion of the stormwater facility either has an interior slope or wall steeper than three (3) feet horizontal to one (1) foot vertical with a height exceeding one (1) foot, or, an exterior slope or wall steeper than three (3) feet horizontal to one (1) foot vertical with a height exceeding three (3) feet above adjacent ground, barrier-type fences at least six (6) feet high, and/or steel grating are required for all single-family or duplex residential development, City maintained stormwater facilities, and/or for any privately maintained stormwater facilities located within 500 feet of a residential structure. Barrier type fences include, but are not limited to chain link, solid wood, masonry, stone or wrought iron.” | “1. (a) Where a portion of the stormwater facility either has an interior slope or wall steeper than three (3) feet horizontal to one (1) foot vertical with a height exceeding one (1) foot, or, an exterior slope or wall steeper than three (3) feet horizontal to one (1) foot vertical with a height exceeding three (3) feet above adjacent ground, steel grating is required for all single-family or duplex residential development, City maintained stormwater facilities, and/or for any privately maintained stormwater facilities located within 500 feet of a residential structure. |
| <b>ENVIRONMENTAL CRITERIA<br/>MANUAL MODIFICATIONS</b>                                          |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| ECM SECTIONS TO BE MODIFIED                                                                     | CURRENT ECM LANGUAGE                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       | PROPOSED MODIFICATION FOR<br>THE GROVE AT SHOAL CREEK PUD                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| 25. <i>Maintenance Responsibilities for Water Quality Control Facilities, Section 1.6.3.A.4</i> | 4. obtain final warranty release approval from the Watershed Protection Department.<br>The City will also maintain water                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | “4. obtain final warranty release approval from the Watershed Protection Department. Water quality control facilities at The Grove at Shoal Creek                                                                                                                                                                                                                                                                                                                                                                                                                                                 |

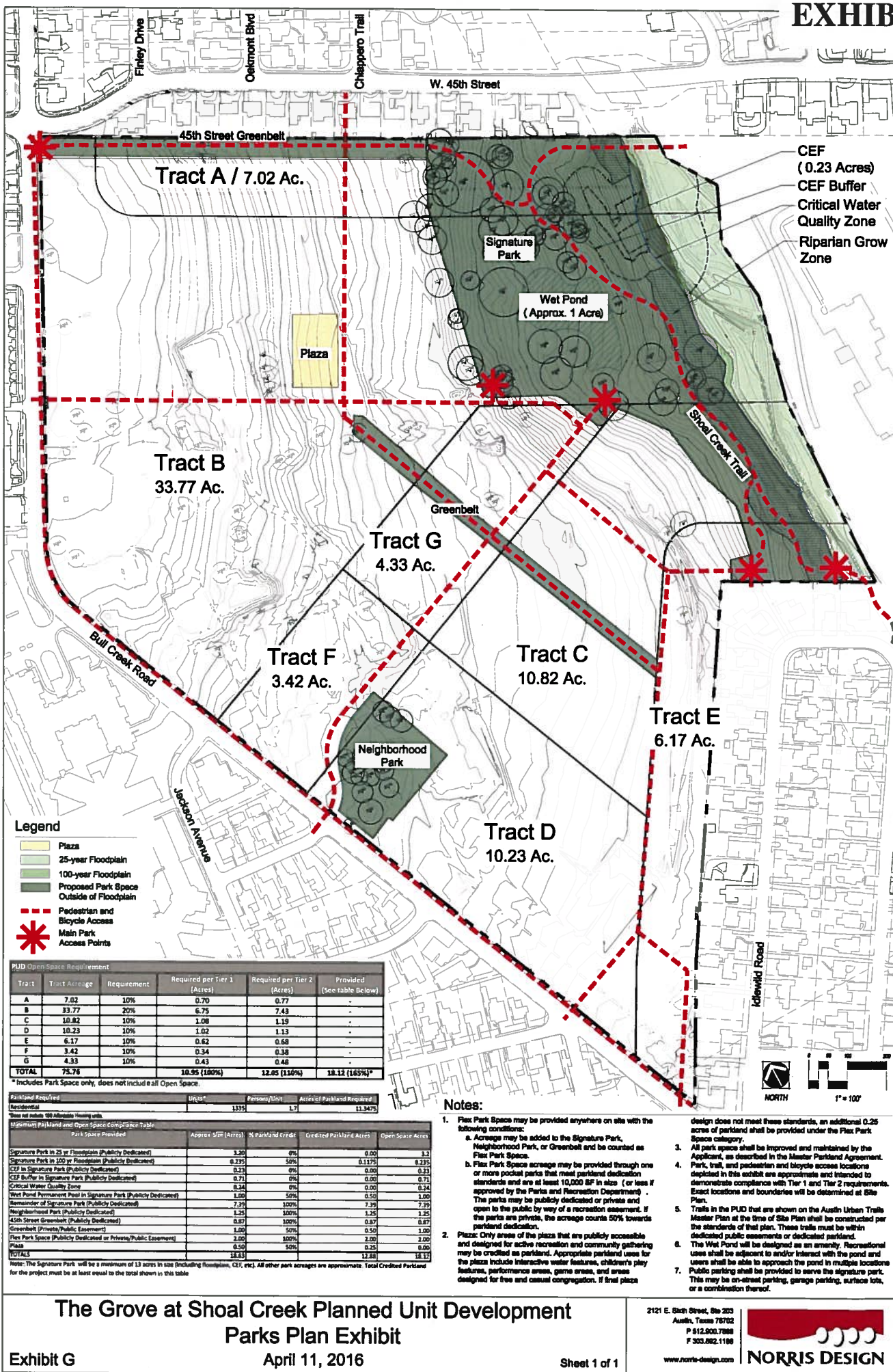
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|                                                              | quality control facilities designed to service primarily publicly owned roads and facilities. These water quality control facilities must be designed and built according to the appropriate city standards.                                                                                                                                                                                                                                                                                                                                                                       | PUD that treat publicly owned roads and facilities within and adjacent to The Grove at Shoal Creek PUD may be privately maintained.”                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| <b>TRANSPORTATION CRITERIA<br/>MANUAL MODIFICATIONS</b>      |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <b>TCM SECTIONS TO BE MODIFIED</b>                           | <b>CURRENT TCM LANGUAGE</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <b>PROPOSED MODIFICATION FOR<br/>THE GROVE AT SHOAL CREEK PUD</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <i>26. Classification Design Criteria, Section 1.3.2.B.2</i> | <p>2. Collector, Neighborhood.</p> <p>A neighborhood collector street is characterized by serving several districts or subdivisions. Neighborhood collector streets provide limited access to abutting property and may provide on-street parking, except where bus routes can be expected. Typically multifamily developments, schools, local retail developments and public facilities are located adjacent to neighborhood collectors. Direct driveway access for detached houses should be discouraged (see Figure 1-28 in Appendix H of this manual for design criteria).</p> | <p>2. Collector, Neighborhood.</p> <p>The Extension of Jackson Avenue in The Grove at Shoal Creek PUD as identified on the Roadway Framework Plan shall be considered a Neighborhood Collector and shall be designed per The Grove at Shoal Creek Design Guidelines. The cross section and any other design information contained in those design guidelines shall supersede any requirements of the Transportation Criteria Manual. All other circulation routes within The Grove including internal circulation routes and alleys shall be considered as private driveways and intersections with these driveways shall be subject to the 50’ minimum spacing for Neighborhood Collectors.</p> |
| <i>27. Classification Design Criteria, Section 1.3.2.F</i>   | F. Single Outlet Streets                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           | “The Jackson Avenue Extension shall not be considered a Single Outlet Street upon                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |

|  |  |                                                                                                                                                                              |
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|  |  | the construction of any publicly accessible private street, drive, or internal circulation route that is open to the public and connects Jackson Avenue to Bull Creek Road.” |
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## The Grove at Shoal Creek Planned Unit Development Environmental Resource Exhibit





## The Grove at Shoal Creek Planned Unit Development Parks Plan Exhibit

Exhibit G

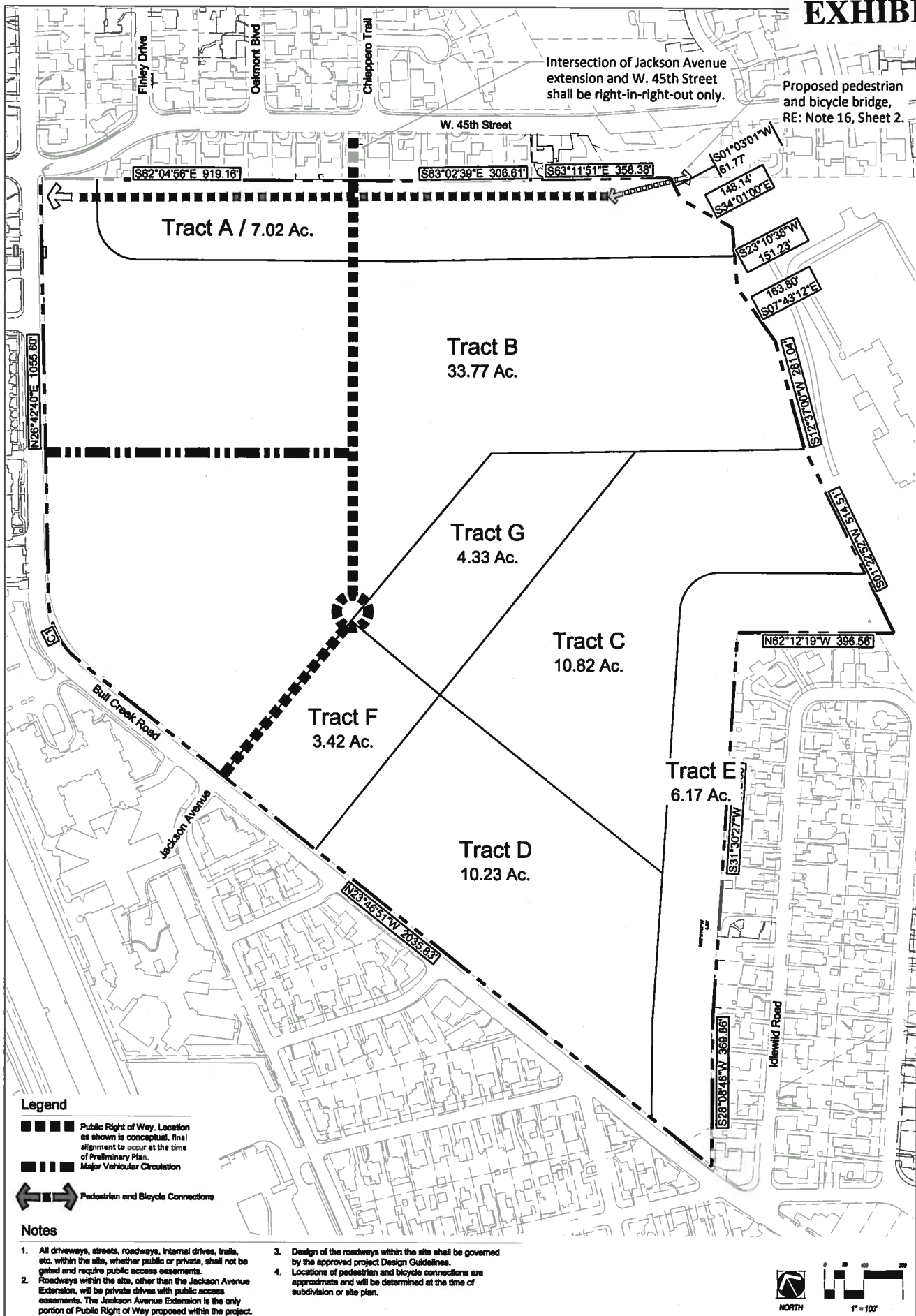
April 11, 2016

Sheet 1 of 1

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**NORRIS DESIGN**



## The Grove at Shoal Creek Planned Unit Development Roadway Framework Plan

Exhibit H

April 11, 2016

Sheet 1 of 1

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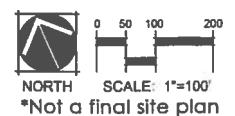


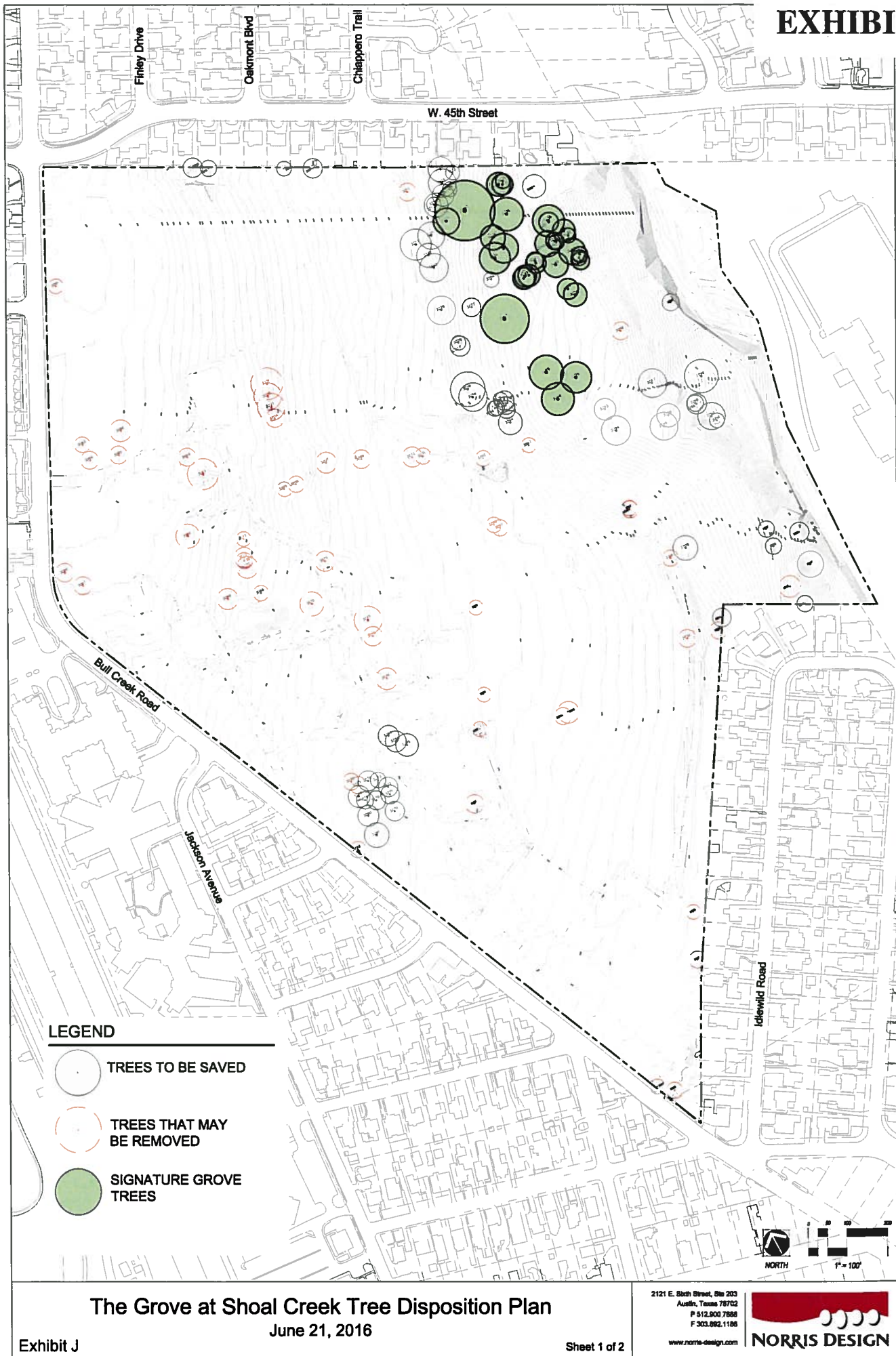


# The Grove at Shoal Creek

Austin, Texas

Exhibit I





## THE GROVE AT SHOAL CREEK TREE SURVEY

[illegible]

|                                              |       |                           |
|----------------------------------------------|-------|---------------------------|
| TOTAL APPENDIX F TREE INCHES SURVEYED:       | 3,581 |                           |
| TOTAL APPENDIX F TREE INCHES SAVED:          | 2,744 | 77% OF TOTAL INCHES SAVED |
| TOTAL APPENDIX F TREE INCHES MAY BE REMOVED: | 837   | 23% OF TOTAL INCHES SAVED |

**Notes:**

1. Arborist rating 2 = poor. Trees #3080, 3202, 3207 & 3232 were rated poor by the applicant's arborist and reviewed in the field by City Arborist Michael Embesi.
2. Applicant is committing to save a minimum of 75% of Appendix F (Native) Protected size trees as shown in this table. Trees shown as saved may be removed if a similar size, similar condition tree noted for removal is substituted at Site Plan review.
3. A mitigation rate of 100% shall be required for trees #3080, 3202, 3207 & 3232 (note that mitigation is typically not required for trees in this condition, but a 100% mitigation rate is offered as an element of superiority). A mitigation rate of 300% shall be required for any other Heritage Trees that are removed. All other trees shall be mitigated per the Environmental Criteria Manual.
4. The applicant shall provide a tree care plan for all preserved protected and heritage trees on site. The applicant shall allot a minimum of \$100 toward this plan for each inch of heritage trees removed from the site. This shall be above and beyond any mitigation required for these trees. The tree care plan shall prioritize remediation of construction impacts through air spading, root pruning, deep root fertilizing, and/or other practices as recommended by a certified arborist. Basic watering, mulching, and fencing during construction are assumed to be provided as best practices and would not count toward fulfillment of the tree care plan.
5. For protected and heritage trees identified on the plan as "Signature Grove Trees", cut in the  $\frac{3}{4}$  Critical Root Zone (CRZ) shall not exceed 4". This requirement may be administratively reduced to the  $\frac{1}{2}$  CRZ if a minimum of 75% of the total area of the full CRZ is preserved and a tree care plan in the amount of \$100 per caliper inch is provided for the tree in question.
  - a. Any cuts within the  $\frac{3}{4}$  CRZ of these trees shall made with an airspade or air knife and hand pruning prior to machine excavation.
  - b. Stormwater pipes to and from the water quality pond shall not be permitted to impact the full CRZ of Heritage Trees in the Signature Grove.
  - c. Where high intensity, hardscape uses are planned around heritage trees located in the signature grove, the use areas should be constructed with decks, sand bridging, or other root bridging constructions to avoid heavy disturbance or compaction of the  $\frac{1}{2}$  CRZ of these trees.
6. Full tree mitigation in the form of tree plantings shall be provided within the site plan proposing the tree removal. Under no circumstances will the required tree mitigation be planted on one site plan to address the tree mitigation owed on a different site plan. Payment into the tree fund is not an acceptable form of mitigation for the trees indicated on this Plan. Regardless of maximum entitled impervious cover, applicant may need to reduce impervious cover, increase caliper of proposed trees, or provide other measures as necessary to facilitate full on site tree mitigation planting within a given site plan.

**H = Heritage Tree; S = Trees in the Signature Grove ( See Note 5 )**



**The Grove at Shoal Creek Tree Survey**  
June 07, 2016

Sheet 1 of 2

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1. This Tree Survey includes all trees on the site that are 8" DBH and greater. For more detail on the Protected and Heritage trees, please reference the Tree Disposition Plan and Tables. Trees not shown on the Tree Disposition Plan (those under 19" DBH and/or not of protected species) shall be addressed per the applicable Code and will be reviewed at the time of Site Plan.

## EDUCATIONAL IMPACT STATEMENT

Prepared for the City of Austin

Austin Independent  
School DistrictPROJECT NAME: The Grove at Shoal Creek (Scenario #1—1,315 total units)ADDRESS/LOCATION: 4205 Bull Creek RoadCASE #: C814-2015-0074

- ☒ NEW SINGLE FAMILY  
☒ NEW MULTIFAMILY

- ☐ DEMOLITION OF MULTIFAMILY  
☐ TAX CREDIT

|                         |     |                              |       |                |       |              |       |
|-------------------------|-----|------------------------------|-------|----------------|-------|--------------|-------|
| # SF UNITS:             | 395 | STUDENTS PER UNIT ASSUMPTION |       |                |       |              |       |
| SF Detached             |     | Elementary School:           | 0.117 | Middle School: | 0.034 | High School: | 0.067 |
| SF Attached (Townhomes) |     | Elementary School:           | 0.038 | Middle School: | 0.011 | High School: | 0.022 |
|                         |     |                              |       |                |       |              |       |
| # MF UNITS:             | 920 | STUDENTS PER UNIT ASSUMPTION |       |                |       |              |       |
| Apartments              |     | Elementary School:           | 0.124 | Middle School: | 0.035 | High School: | 0.071 |
| MF Attached (Condos)    |     | Elementary School:           | 0.038 | Middle School: | 0.011 | High School: | 0.022 |

Two scenarios were presented to AISD by the developer for this application. Scenario #1 reflects 1,315 total units (220 students), including a mix of single-family, multifamily, townhouse and condominiums. Scenario #2 reflects 1,515 total units (211 students) including a mix of multifamily, townhouse and condominiums (no single-family detached). Please see attached table for specific information on unit types and students per unit assumptions.

This Educational Impact Statement (EIS) uses Scenario #1 which reports the higher number of estimated students (due to the inclusion of single-family detached).

This EIS was prepared using information presented by the developer on September 10, 2015. As the development parameters are refined, a revised subsequent EIS may be prepared for the Planning Commission. The Planning Commission date is pending.

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**IMPACT ON SCHOOLS**


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Because the proposed development is not typical of most residential developments within the district, the staff consulted with the district's demographer, Davis Demographics & Planning to calculate the student yield. Based on an analysis of the information provided by the developer, the number of students per unit from a Planned Unit Development (PUD) with similar residential patterns within the district was used as the basis for estimating the number of students for this proposed project.

The mixed use development with 1,315 residential units is projected to add approximately 220 students across all grade levels to the projected student population. It is estimated that of the 220 students, 118 will be assigned to Bryker Woods Elementary School, 34 to O. Henry Middle School, and 68 at Austin High School.

# EDUCATIONAL IMPACT STATEMENT

*Prepared for the City of Austin*

Austin Independent  
School District



The percent of permanent capacity by enrollment for SY 2019-20, including the additional students projected with this development, would be within the target range of 75-115% for all three schools (Bryker Woods at 115%; O. Henry at 109% and Austin at 101%), assuming the mobility rates remain the same.

In the event that enrollment should exceed 115% of permanent capacity at any of the schools, the administration would closely monitor enrollment and possibly discuss intervention strategies with the school community to address overcrowding.

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## TRANSPORTATION IMPACT

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Bryker Woods Elementary School is located within 2 miles of the proposed development; therefore students would not qualify for transportation unless a hazardous route condition was identified. Students within the proposed development attending O. Henry Middle School and Austin High School will qualify for transportation due to the distance from the proposed development to the schools. Due to the relatively high number of students anticipated from the development, one new bus at each secondary school will most likely be needed to accommodate the additional bus riders.

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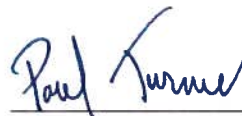
## SAFETY IMPACT

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There are no known safety impacts at this time.

Date Prepared: 10/05/2015

Director's Signature: \_\_\_\_\_



# EDUCATIONAL IMPACT STATEMENT

Prepared for the City of Austin

Austin Independent  
School District



## DATA ANALYSIS WORKSHEET

**ELEMENTARY SCHOOL:** Bryker Woods

**RATING:** Met Standard

**ADDRESS:** 3309 Kerbey Lane

**PERMANENT CAPACITY:** 418

**% QUALIFIED FOR FREE/REDUCED LUNCH:** 10.18%

**MOBILITY RATE:** +19.3%

### POPULATION (without mobility rate)

| ELEMENTARY<br>SCHOOL STUDENTS | 2014-15<br>Population | 5- Year Projected Population<br>(without proposed development) | 5-Year Projected Population<br>(with proposed development) |
|-------------------------------|-----------------------|----------------------------------------------------------------|------------------------------------------------------------|
| Number                        | 331                   | 303                                                            | 421                                                        |
| % of Permanent<br>Capacity    | 79%                   | 72%                                                            | 101%                                                       |

### ENROLLMENT (with mobility rate)

| ELEMENTARY<br>SCHOOL STUDENTS | 2014-15<br>Enrollment | 5- Year Projected Enrollment*<br>(without proposed development) | 5-Year Projected Enrollment*<br>(with proposed development) |
|-------------------------------|-----------------------|-----------------------------------------------------------------|-------------------------------------------------------------|
| Number                        | 395                   | 362                                                             | 480                                                         |
| % of Permanent<br>Capacity    | 94%                   | 87%                                                             | 115%                                                        |

**MIDDLE SCHOOL:** O. Henry

**RATING:** Met Standard

**ADDRESS:** 2610 West 10<sup>th</sup> Street

**PERMANENT CAPACITY:** 945

**% QUALIFIED FOR FREE/REDUCED LUNCH:** 29.74%

**MOBILITY RATE:** +2.2%

### POPULATION (without mobility rate)

| MIDDLE SCHOOL<br>STUDENTS  | 2014-15<br>Population | 5- Year Projected Population<br>(without proposed development) | 5-Year Projected Population<br>(with proposed development) |
|----------------------------|-----------------------|----------------------------------------------------------------|------------------------------------------------------------|
| Number                     | 871                   | 976                                                            | 1,010                                                      |
| % of Permanent<br>Capacity | 92%                   | 103%                                                           | 107%                                                       |

### ENROLLMENT (with mobility rate)

| MIDDLE SCHOOL<br>STUDENTS  | 2014-15<br>Enrollment | 5- Year Projected Enrollment*<br>(without proposed development) | 5-Year Projected Enrollment*<br>(with proposed development) |
|----------------------------|-----------------------|-----------------------------------------------------------------|-------------------------------------------------------------|
| Number                     | 890                   | 997                                                             | 1,031                                                       |
| % of Permanent<br>Capacity | 94%                   | 106%                                                            | 109%                                                        |

# EDUCATIONAL IMPACT STATEMENT

Prepared for the City of Austin

Austin Independent  
School District



|                                                   |                                  |
|---------------------------------------------------|----------------------------------|
| <b>HIGH SCHOOL:</b> Austin                        | <b>RATING:</b> Met Standard      |
| <b>ADDRESS:</b> 1715 W. Cesar Chavez              | <b>PERMANENT CAPACITY:</b> 2,205 |
| <b>% QUALIFIED FOR FREE/REDUCED LUNCH:</b> 28.74% | <b>MOBILITY RATE:</b> +6.4%      |

| <b>POPULATION (without mobility rate)</b> |                           |                                                                    |                                                                |
|-------------------------------------------|---------------------------|--------------------------------------------------------------------|----------------------------------------------------------------|
| <b>HIGH SCHOOL STUDENTS</b>               | <b>2014-15 Population</b> | <b>5- Year Projected Population (without proposed development)</b> | <b>5-Year Projected Population (with proposed development)</b> |
| <b>Number</b>                             | 1,962                     | 2,036                                                              | 2,104                                                          |
| <b>% of Permanent Capacity</b>            | 89%                       | 92%                                                                | 95%                                                            |

| <b>ENROLLMENT (with mobility rate)</b> |                           |                                                                     |                                                                 |
|----------------------------------------|---------------------------|---------------------------------------------------------------------|-----------------------------------------------------------------|
| <b>HIGH SCHOOL STUDENTS</b>            | <b>2014-15 Enrollment</b> | <b>5- Year Projected Enrollment* (without proposed development)</b> | <b>5-Year Projected Enrollment* (with proposed development)</b> |
| <b>Number</b>                          | 2,087                     | 2,166                                                               | 2,234                                                           |
| <b>% of Permanent Capacity</b>         | 95%                       | 98%                                                                 | 101%                                                            |

\*The 5-Year Projected Enrollment (with and without the proposed development) is an estimate calculated with the assumption that the stated mobility rates (transfers in and out of the school) remain the same over the 5-year period. These estimates are for the sole purpose of the Educational Impact Statement and should not be used for any other purposes.

The Grove at Shoal Creek  
C814-2015-0074  
Educational Impact Statement Attachment

| Scenario 1<br>1,315 Total Units | Total<br>Students<br>Projected<br><br>219.245 | ES               |                | MS               |                | HS               |                |
|---------------------------------|-----------------------------------------------|------------------|----------------|------------------|----------------|------------------|----------------|
|                                 |                                               | Student<br>Yield | ES<br>Students | Student<br>Yield | MS<br>Students | Student<br>Yield | HS<br>Students |
| <b>Market Rate</b>              |                                               |                  |                |                  |                |                  |                |
| 110 Single Family (SFD)         |                                               | 0.117            | 12.87          | 0.034            | 3.74           | 0.067            | 7.37           |
| 600 Apartments (APT)            |                                               | 0.124            | 74.4           | 0.035            | 21             | 0.071            | 42.6           |
| 140 Condo (MFA)                 |                                               | 0.038            | 5.32           | 0.011            | 1.54           | 0.022            | 3.08           |
| 285 Townhome (SFA)              |                                               | 0.038            | 10.83          | 0.011            | 3.135          | 0.022            | 6.27           |
| 1,135 Units                     |                                               |                  |                |                  |                |                  |                |
| <b>Affordable</b>               |                                               |                  |                |                  |                |                  |                |
| 90 Apartments (APT)             |                                               | 0.124            | 11.16          | 0.035            | 3.15           | 0.071            | 6.39           |
| 90 Condo (MFA)                  |                                               | 0.038            | 3.42           | 0.011            | 0.99           | 0.022            | 1.98           |
| 180 Units                       |                                               |                  | 118            |                  | 33.555         |                  | 67.69          |

| Scenario 2<br>1,515 Total Units | Total<br>Students<br>Projected<br><br>210.915 | ES               |                | MS               |                | HS               |                |
|---------------------------------|-----------------------------------------------|------------------|----------------|------------------|----------------|------------------|----------------|
|                                 |                                               | Student<br>Yield | ES<br>Students | Student<br>Yield | MS<br>Students | Student<br>Yield | HS<br>Students |
| <b>Market Rate</b>              |                                               |                  |                |                  |                |                  |                |
| 560 Apartments (APT)            |                                               | 0.124            | 69.44          | 0.035            | 19.6           | 0.071            | 39.76          |
| 195 Condo (MFA)                 |                                               | 0.038            | 7.41           | 0.011            | 2.145          | 0.022            | 4.29           |
| 580 Townhome (SFA)              |                                               | 0.038            | 22.04          | 0.011            | 6.38           | 0.022            | 12.76          |
| 1,335 Units                     |                                               |                  |                |                  |                |                  |                |
| <b>Affordable</b>               |                                               |                  |                |                  |                |                  |                |
| 90 Apartments (APT)             |                                               | 0.124            | 11.16          | 0.035            | 3.15           | 0.071            | 6.39           |
| 90 Condo (MFA)                  |                                               | 0.038            | 3.42           | 0.011            | 0.99           | 0.022            | 1.98           |
| 180 Units                       |                                               |                  | 113.47         |                  | 32.265         |                  | 65.18          |



**Tree Mitigation Example**  
**The Grove at Shoal Creek**  
**March 25, 2016**

## EXHIBIT L

Tree Mitigation Example

The Grove at Shoal Creek | 3.25.16

| Overall Site Mitigation                | Inches | Notes                    |
|----------------------------------------|--------|--------------------------|
| Mitigation Inches Required             | 1135   |                          |
| Mitigation Provided by 3" Street Trees | 927    | 1.5" per tree, 618 trees |
| Mitigation Provided by 4" Street Trees | 1545   | 2.5" per tree, 618 trees |

| Site Plan Study                           | Inches | Notes                                                                   |
|-------------------------------------------|--------|-------------------------------------------------------------------------|
| Mitigation Inches Required                | 248    |                                                                         |
| Mitigation Provided by 4" Street Trees    | 75     |                                                                         |
| Mitigation Provided by 6" Street Trees    | 108    | Along retail main street                                                |
| Total Mitigation Provided by Street Trees | 183    |                                                                         |
| Mitigation Req'd via Additional Trees     | 65     | Plaza, parking bumpouts, courtyards, etc. (approx. 16 additional trees) |

**MEMORANDUM**

**TO:** Sherri Sirwaitis, Case Manager  
Planning and Zoning Department

**CC:** Members of the Zoning and Platting Commission  
Jeff Howard, McLean & Howard, LLP

**FROM:** Andrew Linseisen, P.E.  
Acting Assistant Director,  
Development Services Department

Gordon Derr, P.E.  
Assistant Director,  
Austin Transportation Department

**DATE:** July 11, 2016

**SUBJECT:** Traffic Impact Analysis for Bull Creek Parcel  
Zoning Case No. CD – 2015 - 0009

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Section 25-6-113 of the Land Development Code requires that a traffic impact analysis be conducted for a project proposed with a zoning application if the project is anticipated to generate more than 2,000 daily trips. The project site of 75.59 acres is located east of Bull Creek Road and south of West 45<sup>th</sup> Street. The project is proposed to be built in two phases, the first to be completed in 2018, with full build out of Phase 2 in 2024.

The traffic impact analysis was to determine the likely consequences of the site development with respect to the following five components: data collection, trip generation, trip distribution, trip assignment and operational analysis.

A traffic model (using Synchro™ software) was developed to evaluate the intersection levels of service (LOS) and estimate congestion conflicts and queuing related to peak hour traffic accessing the site. Both existing and future conditions were studied.

As shown in the analysis, existing, future and site traffic will combine to support finding need for roadway improvements, including traffic signal improvements to serve future traffic volumes. Detailed analysis of the traffic model and resulting improvements will be continued at the time of site development permit plan review. All traffic operational analysis and resulting design elements are to be reviewed and approved by the Austin Transportation Department as part of the ongoing review

process in coordination with the Development Services Department. This memorandum will summarize the preliminary findings of the TIA and identify the agreed upon necessary mitigation measures. Further analysis at the time of site development permit plan review will result in more detailed elements of the proposed infrastructure improvements.

### **Summary of Project**

The proposed development, called “The Grove at Shoal Creek” will be a mixed-use, urban infill redevelopment to be completed by 2024 and will include residential, retail and office uses. A detailed breakdown of the proposed land uses and intensities is shown in Table 1.

Access will come from five (5) proposed connections to Bull Creek Road, including one (1) public roadway (Jackson Avenue) which will cross the project site and connect to West 45<sup>th</sup> Street. Operationally, the points of access are as follows:

- Driveway 1 – located approximately 800 feet south of West 45<sup>th</sup> Street. Outbound left turns onto Bull Creek Road will not be permitted and a second northbound lane will facilitate outbound right turns when Phase 2 is complete.
- Driveway 2/Jackson Avenue – located across from Jackson Avenue and will be a public street, offering thru connection to West 45<sup>th</sup> Street (built as part of Phase 2).
- Driveway 3 – located across from 41<sup>st</sup> Street on Bull Creek Road.
- Driveway 4 – located across from 40<sup>th</sup> Street on Bull Creek, restricted to right in/right out operation only.
- Driveway 5 – located across from 42<sup>nd</sup> Street on Bull Creek.

### ***Additional Analysis – Access to 45<sup>th</sup> Street***

Vehicular access to West 45<sup>th</sup> Street was included in the TIA (as an extension of Jackson Avenue). The extension of Jackson Avenue is proposed to operate as a right-in/right-out connection. The analysis assigns 150 of the estimated 279 right turning site traffic vehicles from the intersection of Bull Creek Road/West 45<sup>th</sup> Street to the eastern connection, assuming they will travel through the intersection and use the new access point. The analysis also assumes that 100 of the estimated 151 right turning site traffic vehicles from northbound Bull Creek to eastbound 45<sup>th</sup> will exit the new access point. Additional detailed analysis of the crossing traffic from Bull Creek Road (or West 35<sup>th</sup> Street & Jackson Avenue) has not been included in this memorandum.

### **Surrounding network of roadways**

MoPac is currently a major six lane divided freeway in the vicinity of the site with a posted speed limit of sixty-five miles per hour (65 MPH). The frontage roads offer connection to West 35<sup>th</sup> and West 45<sup>th</sup> Street respectively.

West 45<sup>th</sup> Street is a four lane undivided minor arterial roadway in the vicinity of the site with a posted speed limit of thirty-five miles per hour (35 MPH). There is sidewalk along the north side of West 45<sup>th</sup> Street in the vicinity of the site.

Bull Creek Road is a two lane undivided collector roadway with a posted speed limit of thirty-five miles per hour (35 MPH). There are bicycle lanes and sidewalk along both sides of the roadway in the vicinity of the site.

Jackson Avenue is a two lane undivided collector roadway with a posted speed limit of thirty miles per hour (30 MPH). Sidewalk is installed along the west side of the roadway.

Shoal Creek Boulevard is a two lane undivided roadway in the vicinity of the site. The posted speed limit is thirty miles per hour (30 MPH). Sidewalk is installed along both sides of the roadway.

Jefferson Street is a two lane divided roadway with a continuous center left turn lane between Bull Creek Road and West 35<sup>th</sup> Street. The posted speed limit is 30 MPH.

West 35<sup>th</sup> Street is a four lane undivided major arterial roadway with a posted speed limit of thirty-five miles per hour (35 MPH).

### **Trip Generation and Traffic Analysis**

The proposed development will be mixed use, and include up to 110 single family dwelling units, 600 apartments, 425 condominium/townhouse units, 600 congregate care units, 25,000 SF of medical office, 200,000 SF of general office space, 55,000 SF of retail (shopping center) and 35,000 SF of supermarket land uses, plus pharmacy, bank, and other retail and commercial land uses. According to the 9<sup>th</sup> Edition of the ITE Trip Generation Manual, the total number of estimated daily trips (unadjusted) for this development is 23,969. A detailed table of the proposed land uses and intensities is presented in Table 1 below:

Table 1 provides the estimated daily trip generation rates for the proposed development.

| <b>Table 1 – Unadjusted Trip Generation</b> |             |                              |
|---------------------------------------------|-------------|------------------------------|
| <b>Land Use</b>                             | <b>Size</b> | <b>Estimated Daily Trips</b> |
| Single Family (210)                         | 110 du      | 1146                         |
| Apartment (220)                             | 600 du      | 3760                         |
| Residential Condo (230)                     | 425 du      | 2265                         |
| Congregate Care (253)                       | 600 du      | 1212                         |
| Health/Fitness Club (492)                   | 7500 SF     | 247                          |
| General Office (710)                        | 200,000 SF  | 2223                         |
| Medical Office (720)                        | 25,000 SF   | 807                          |
| Specialty Retail (826)                      | 55,000 SF   | 2438                         |
| Supermarket (850)                           | 35,000 SF   | 3578                         |
| Pharmacy/Drugstore w/o DT (880)             | 8,500 SF    | 766                          |
| Walk-in Bank (911)                          | 3,000 SF    | 364                          |
| Drinking Place (925)                        | 8,000 SF    | 907                          |
| Quality Restaurant (931)                    | 15,000 SF   | 1349                         |
| High Turnover Restaurant (932)              | 9,000       | 1144                         |
| Coffee/Donut shop w/o DT (936)              | 2,000 SF    | 1762                         |
| <b>Totals</b>                               |             | <b>23,969</b>                |

The scoping document allowed for the following trip reduction credits: Internal Capture: 10% for PM peak for office, residential, shopping center and supermarket land uses only, with a 5% AM peak reduction for Coffee shop. In addition, a transit reduction of 5% was allowed, with the understanding that negotiations with CapMetro are necessary to facilitate access to the site.

Current Capital Metro bus service (Routes #491 and #19) along Bull Creek Road is infrequent. Route #491 is run hourly three days a week during non-peak hours: Route #19 is run daily (every 35 to 40 minutes in each direction). To support the 5% transit reduction, approximately 73 trips during the AM Peak and approximately 102 trips during the PM Peak would use transit. Maintaining the current 35-40 minute headways offers transit access between four and five buses per peak hour (counting both directions). The TIA estimates future ridership demand (of approximately 20 to 26 riders per bus) would be met by current service levels, subject to CapMetro's assessment after build out. In addition, the applicant was granted the following trip reduction credits for non-motorized travel modes:

| <b>Table 2 – Non-motorized trip credits by land use</b> |                     |                     |
|---------------------------------------------------------|---------------------|---------------------|
| <b>Land Use</b>                                         | <b>AM reduction</b> | <b>PM reduction</b> |
| Office (ITE code 710)                                   | 4 %                 | 4 %                 |
| Shopping Center/Retail (ITE codes 826/880)              | 3 %                 | 3 %                 |
| Restaurant (ITE codes 925/931/932/936)                  | 3 %                 | 3 %                 |

Staff also agreed that for certain identified land uses, additional trip reduction percentages would apply:

| <b>Table 3 – Pass by reduction rates (by land use)</b> |                     |                     |
|--------------------------------------------------------|---------------------|---------------------|
| <b>Land Use</b>                                        | <b>AM reduction</b> | <b>PM reduction</b> |
| Shopping Center (ITE codes 826)                        | 0 %                 | 34 %                |
| Supermarket (ITE code 850)                             | 0 %                 | 36 %                |
| Pharmacy w/o Drive-thru (ITE code 880)                 | 0 %                 | 34 %                |
| Restaurant (ITE codes 925/931/932)                     | 0 %                 | 20%/34%/34%         |
| Coffee shop w/o Drive-thru (ITE code 936)              | 20 %                | 34 %                |

As a result, the overall estimated daily trips are reduced from 23,969 to 19,442 daily trips as shown in Table 4 below.

| <b>Table 4 – Trip Generation (Adjusted)</b> |             |                                       |
|---------------------------------------------|-------------|---------------------------------------|
| <b>Land Use</b>                             | <b>Size</b> | <b>Adjusted Estimated Daily Trips</b> |
| Single Family (210)                         | 110 du      | 1032                                  |
| Apartment (220)                             | 600 du      | 3384                                  |
| Residential Condo (230)                     | 425 du      | 2038                                  |
| Congregate Care (253)                       | 600 du      | 1151                                  |
| Health/Fitness Club (492)                   | 7500 SF     | 235                                   |
| General Office (710)                        | 200,000 SF  | 1912                                  |
| Medical Office (720)                        | 25,000 SF   | 727                                   |
| Specialty Retail (826)                      | 55,000 SF   | 1706                                  |
| Supermarket (850)                           | 35,000 SF   | 2576                                  |
| Pharmacy/Drugstore w/o DT (880)             | 8,500 SF    | 574                                   |
| Walk-in Bank (911)                          | 3,000 SF    | 355                                   |
| Drinking Place (925)                        | 8,000 SF    | 780                                   |
| Quality Restaurant (932)                    | 15,000 SF   | 1012                                  |
| High Turnover Restaurant (932)              | 9,000       | 858                                   |
| Coffee/Donut shop w/o DT (936)              | 2,000 SF    | 1101                                  |
| <b>Total adjusted daily trips</b>           |             | <b>19,442</b>                         |

Due to the nature of the surrounding roadway network, and in combination with the proposed mix of land uses, the distribution of site related traffic was developed assuming approximately 50% of the site traffic will come from Mo-Pac. The other access routes are shown in Table 5, and were used to assign site traffic within the TIA analysis:

| <b>Table 5 – Trip Distribution</b>              |             |             |
|-------------------------------------------------|-------------|-------------|
| <b>Street Name</b>                              | <b>AM</b>   | <b>PM</b>   |
| Mo-Pac/45 <sup>th</sup> Street (from the north) | 20%         | 18%         |
| Mo-Pac (from the south)                         | 21%         | 17%         |
| Mo-Pac/35 <sup>th</sup> Street (from the south) | 12%         | 13%         |
| Bull Creek Road (from the north)                | 4%          | 5%          |
| Shoal Creek Blvd (from the north)               | 4%          | 6%          |
| 45 <sup>th</sup> Street (from the east)         | 17%         | 16%         |
| 35 <sup>th</sup> Street (from the west)         | 7%          | 9%          |
| Jefferson Street (from the south)               | 5%          | 6%          |
| Bull Creek Road (from the south)                | 10%         | 10%         |
| <b>Totals</b>                                   | <b>100%</b> | <b>100%</b> |

Turning movement count data was collected at the following locations and times:

| <b>Table 6 – Peak Hour Turning Movement Traffic Counts</b>                 |                   |
|----------------------------------------------------------------------------|-------------------|
| <b>Location</b>                                                            | <b>Date</b>       |
| Mo-Pac southbound frontage road & West 45 <sup>th</sup> Street             | December 10, 2014 |
| Mo-Pac northbound frontage road & West 45 <sup>th</sup> Street             | December 10, 2014 |
| West 45 <sup>th</sup> Street & Bull Creek Road                             | December 10, 2014 |
| West 45 <sup>th</sup> Street & Shoal Creek Blvd                            | December 10, 2014 |
| Mo-Pac/Jackson Street & West 35 <sup>th</sup> Street                       | December 10, 2014 |
| Jefferson Street & Bull Creek Road                                         | December 10, 2014 |
| West 35 <sup>th</sup> Street & Jefferson Street                            | December 10, 2014 |
| Bull Creek Road & Jackson Avenue                                           | January 22, 2015  |
| Mo-Pac southbound frontage & West 45 <sup>th</sup> Street/Highland Terrace | March 24, 2015    |

In addition, 24 hour daily volume traffic counts were conducted on the following streets:

| <b>Table 7 – 24 hour travel count data for residential streets</b> |                            |
|--------------------------------------------------------------------|----------------------------|
| Jackson Avenue                                                     | Week of March 24, 2015     |
| Oakmont Street                                                     | Week of March 24, 2015     |
| West 39 <sup>th</sup> Street                                       | Week of March 24, 2015     |
| West 40 <sup>th</sup> Street                                       | Week of March 24, 2015     |
| West 41 <sup>st</sup> Street                                       | Week of March 24, 2015     |
| West 42 <sup>nd</sup> Street                                       | Week of March 24, 2015     |
| West 44 <sup>th</sup> Street                                       | Week of March 24, 2015     |
| Lawton Avenue                                                      | Week of September 29, 2015 |

No background developments were identified and an annual growth rate of 1% was applied as determined from historic traffic volume data provided by TxDOT. The intersections identified for analysis were evaluated using the Highway Capacity Manual (HCM) method for capacity analysis. The results of the analysis are shown in the following tables:

- Table 8 – 2014 Existing Conditions
- Table 9 – 2018 No Build Conditions (no development)
- Table 10 – 2018 Build Conditions (Phase 1 of development)
- Table 11 – 2024 No Build Conditions (no development)
- Table 12 – 2024 Build Conditions (Phases 1 & 2 of development)

### **Analysis methodology and results**

Operational analyses were performed for each intersection (AM and PM peak hour), to identify the capacity and congestion anticipated. The procedure follows the methodology set forth in the 5<sup>th</sup> Edition of the Transportation Research Board of the Highway Capacity Manual (HCM) 2010. All of the various scenarios, including existing and proposed conditions for this study area were analyzed using this methodology, which determines the intersection delay as the average control delay per vehicle for the signalized intersection. LOS refers to the perception by motorists of the

**TABLE 8**  
**ANALYSIS RESULTS FOR 2014 EXISTING CONDITONS**

| Intersection                         | Traffic Control Type | 2014 EXISTING CONDITION   |          |            |                         |            |      |                           |          |            |                         |            |      |
|--------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|------|---------------------------|----------|------------|-------------------------|------------|------|
|                                      |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |      | PM Peak Hour <sup>3</sup> |          |            |                         |            |      |
|                                      |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  |
| <b>MoPac SBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>25.5</b>               | <b>C</b> |            |                         |            |      | <b>17.2</b>               | <b>B</b> |            |                         |            |      |
| Westbound left                       |                      | 42.1                      | D        | 517        | 635                     | 315        | 0.84 | 19.9                      | B        | 228        | 176                     | 315        | 0.49 |
| Southbound left                      |                      | 20.5                      | C        | 115        | 153                     | N/A        | 0.3  | 23.1                      | C        | 200        | 253                     | N/A        | 0.47 |
| Southbound right                     |                      | 3.1                       | A        | 0          | 47                      | N/A        | 0.32 | 7.1                       | A        | 39         | 102                     | N/A        | 0.39 |
| <b>MoPac NBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>42.2</b>               | <b>D</b> |            |                         |            |      | <b>41.0</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left                       |                      | 23.1                      | C        | 8          | 15                      | 340        | 0.1  | 29.8                      | C        | 60         | 61                      | 340        | 0.67 |
| Eastbound through                    |                      | 33                        | C        | 58         | 62                      | 340        | 0.71 | 26.3                      | C        | 64         | 58                      | 340        | 0.68 |
| Westbound                            |                      | 4.1                       | A        | 22         | 22                      | N/A        | 0.57 | 14.1                      | B        | 151        | 523                     | N/A        | 0.71 |
| Northbound                           |                      | 118.9                     | F        | 367        | 591                     | 900        | 1.16 | 171.9                     | F        | 300        | 489                     | 900        | 1.23 |
| Southbound left                      |                      | 47                        | D        | 1          | 6                       | N/A        | 0.02 | 52.0                      | D        | 1          | 10                      | N/A        | 0.03 |
| Southbound right                     |                      | 1.8                       | A        | 0          | 0                       | N/A        | 1.8  | 0.4                       | A        | 0          | 0                       | N/A        | 0.05 |
| <b>Bull Creek at 45th</b>            | <b>Signal</b>        | <b>67.9</b>               | <b>E</b> |            |                         |            |      | <b>68.2</b>               | <b>E</b> |            |                         |            |      |
| Eastbound                            |                      | 35.2                      | D        | 192        | 205                     | 480        | 0.79 | 89.5                      | F        | 267        | 334                     | 480        | 1.00 |
| Westbound                            |                      | 107                       | F        | 391        | 522                     | N/A        | 1.1  | 48.8                      | D        | 308        | 390                     | N/A        | 0.83 |
| Northbound left                      |                      | 46                        | D        | 72         | 123                     | 130        | 0.58 | 78.5                      | E        | 323        | 523                     | 130        | 0.96 |
| Northbound through/right             |                      | 36.6                      | D        | 69         | 131                     | N/A        | 0.33 | 60.6                      | E        | 277        | 447                     | N/A        | 0.86 |
| Southbound left                      |                      | 33.1                      | C        | 14         | 191                     | 130        | 0.08 | 51.0                      | D        | 14         | 39                      | 130        | 0.12 |
| Southbound through/right             |                      | 88.5                      | F        | 36         | 358                     | N/A        | 0.94 | 77.0                      | E        | 99         | 207                     | N/A        | 0.81 |
| <b>MoPac NBFR at 35th/Jackson</b>    | <b>Signal</b>        | <b>280.3</b>              | <b>F</b> |            |                         |            |      | <b>65.7</b>               | <b>E</b> |            |                         |            |      |
| Eastbound left/through               |                      | 37.2                      | D        | 335        | 411                     | N/A        | 0.68 | 78.0                      | E        | 323        | 429                     | N/A        | 0.92 |
| Eastbound right                      |                      | 4.9                       | A        | 0          | 43                      | N/A        | 0.2  | 9.8                       | A        | 3          | 90                      | N/A        | 0.56 |
| Westbound                            |                      | 49.6                      | D        | 426        | 554                     | N/A        | 0.94 | 35.8                      | D        | 774        | 813                     | N/A        | 0.83 |
| Northbound                           |                      | 813.3                     | F        | 1355       | 1614                    | 1050       | 2.75 | 255.1                     | F        | 370        | 569                     | 1050       | 1.44 |
| Southbound left                      |                      | 49.5                      | D        | 9          | 30                      | 80         | 0.18 | 76.8                      | E        | 25         | 63                      | 80         | 0.42 |
| Southbound through/right             |                      | 12.9                      | B        | 13         | 68                      | N/A        | 0.3  | 39.8                      | D        | 110        | 201                     | N/A        | 0.59 |
| <b>Bull Creek at Jefferson</b>       | <b>Signal</b>        | <b>9.6</b>                | <b>A</b> |            |                         |            |      | <b>17.8</b>               | <b>B</b> |            |                         |            |      |
| Eastbound left/through               |                      | 8.8                       | A        | 8          | 16                      | N/A        | 0.1  | 15.0                      | B        | 15         | 41                      | N/A        | 0.10 |
| Eastbound right                      |                      | 3.2                       | A        | 0          | 26                      | 130        | 0.14 | 4.3                       | A        | 0          | 36                      | 130        | 0.28 |
| Westbound                            |                      | 8.3                       | A        | 6          | 37                      | N/A        | 0.08 | 18.3                      | B        | 74         | 150                     | N/A        | 0.45 |
| Northbound left                      |                      | 18.5                      | B        | 8          | 33                      | 130        | 0.17 | 27.4                      | C        | 83         | 155                     | 130        | 0.67 |
| Northbound through/right             |                      | 12                        | B        | 6          | 37                      | N/A        | 0.27 | 11.8                      | B        | 8          | 31                      | N/A        | 0.13 |
| Southbound left                      |                      | 17.5                      | B        | 2          | 15                      | 100        | 0.05 | 20.7                      | C        | 3          | 14                      | 100        | 0.04 |
| Southbound through/right             |                      | 17.7                      | B        | 7          | 32                      | N/A        | 0.16 | 20.0                      | B        | 24         | 61                      | N/A        | 0.40 |

**TABLE 8**  
**ANALYSIS RESULTS FOR 2014 EXISTING CONDITIONS**

| Intersection                                          | Traffic Control Type | 2014 EXISTING CONDITION   |          |            |                         |            |       |                           |          |            |                         |            |       |
|-------------------------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|-------|---------------------------|----------|------------|-------------------------|------------|-------|
|                                                       |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |       | PM Peak Hour <sup>3</sup> |          |            |                         |            |       |
|                                                       |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   |
| <b>35<sup>th</sup> at Jefferson</b>                   | <b>Signal</b>        | <b>14.9</b>               | <b>B</b> |            |                         |            |       | <b>25.6</b>               | <b>C</b> |            |                         |            |       |
| Eastbound left                                        |                      | 11.1                      | B        | 3          | 22                      | 180        | 0.27  | 5.7                       | A        | 2          | 6                       | 180        | 5.70  |
| Eastbound through/right                               |                      | 6.2                       | A        | 20         | 195                     | N/A        | 0.45  | 3.7                       | A        | 13         | 52                      | N/A        | 3.70  |
| Westbound left                                        |                      | 11.6                      | B        | 29         | 55                      | 110        | 0.27  | 18.3                      | B        | 58         | 95                      | 110        | 18.30 |
| Westbound through/right                               |                      | 15.5                      | B        | 393        | 500                     | N/A        | 0.62  | 25.4                      | C        | 510        | 605                     | N/A        | 25.40 |
| Northbound left                                       |                      | 44.1                      | D        | 35         | 71                      | 215        | 0.21  | 44.9                      | D        | 83         | 139                     | 215        | 44.90 |
| Northbound through                                    |                      | 66.5                      | E        | 44         | 85                      | N/A        | 0.41  | 84.1                      | F        | 219        | 341                     | N/A        | 84.10 |
| Northbound right                                      |                      | 9                         | A        | 0          | 39                      | 215        | 0.28  | 7.4                       | A        | 0          | 61                      | 215        | 7.40  |
| Southbound left                                       |                      | 57.4                      | E        | 86         | 129                     | 150        | 0.5   | 55.3                      | E        | 108        | 173                     | 150        | 55.30 |
| Southbound through                                    |                      | 55.8                      | E        | 10         | 30                      | N/A        | 0.09  | 60.5                      | E        | 110        | 180                     | N/A        | 60.50 |
| Southbound right                                      |                      | 0.4                       | A        | 0          | 0                       | 160        | 0.06  | 7.2                       | A        | 2          | 44                      | 160        | 7.20  |
| <b>Bull Creek at Jackson</b>                          | <b>Two-Way Stop</b>  | <b>0.7</b>                | <b>A</b> |            |                         |            |       | <b>6.9</b>                | <b>A</b> |            |                         |            |       |
| Eastbound                                             | Stop                 | 11.3                      | B        | N/A        | 0.2                     | N/A        | 0.051 | 29.2                      | D        | N/A        | 4.1                     | N/A        | 0.628 |
| Northbound left                                       | Free                 | 8.2                       | A        | N/A        | 0                       | N/A        | 0.002 | 7.6                       | A        | N/A        | 0.0                     | N/A        | 0.002 |
| <b>45<sup>th</sup>/Highland Terrace at MoPac Ramp</b> | <b>Two-Way Stop</b>  | <b>8.6</b>                | <b>A</b> |            |                         |            |       | <b>126.8</b>              | <b>F</b> |            |                         |            |       |
| Eastbound                                             | Stop                 | 0                         | A        | N/A        | 0                       | 50         | 0     | 10.7                      | B        | N/A        | 1.5                     | 50         | 0.343 |
| Westbound left                                        | Stop                 | 17.6                      | C        | N/A        | 3.9                     | 1200       | 0.591 | 230.8                     | F        | N/A        | 36.0                    | 1200       | 1.440 |
| Westbound right                                       | Stop                 | 8.5                       | A        | N/A        | 0                       | 175        | 0.004 | 8.8                       | A        | N/A        | 0.2                     | 175        | 0.061 |
| <b>Sheal Creek at 45th</b>                            | <b>All-Way Stop</b>  | <b>52.3</b>               | <b>F</b> |            |                         |            |       | <b>55.8</b>               | <b>F</b> |            |                         |            |       |
| Eastbound inside lane                                 | Stop                 | 41.8                      | E        | N/A        | 7.9                     | N/A        | 0.306 | 38.9                      | E        | N/A        | 6.6                     | N/A        | 0.782 |
| Eastbound outside lane                                | Stop                 | 47.4                      | E        | N/A        | 8.9                     | N/A        | 0.067 | 37.3                      | E        | N/A        | 6.4                     | N/A        | 0.762 |
| Westbound inside lane                                 | Stop                 | 61.9                      | F        | N/A        | 11                      | N/A        | 0.828 | 77.5                      | F        | N/A        | 11.9                    | N/A        | 1.021 |
| Westbound outside lane                                | Stop                 | 49.3                      | E        | N/A        | 9.3                     | N/A        | 0.869 | 76.8                      | F        | N/A        | 12.0                    | N/A        | 1.100 |
| Northbound left/through                               | Stop                 | 17.4                      | C        | N/A        | 1.3                     | N/A        | 0.944 | 64.2                      | F        | N/A        | 10.1                    | N/A        | 0.934 |
| Northbound right                                      | Stop                 | 12.7                      | B        | N/A        | 0.2                     | 100        | 0.878 | 13.8                      | B        | N/A        | 0.7                     | 100        | 0.198 |
| Southbound left/through                               | Stop                 | 76.9                      | F        | N/A        | 12                      | N/A        | 1.041 | 39.2                      | E        | N/A        | 6.2                     | N/A        | 0.761 |
| Southbound right                                      | Stop                 | 12.6                      | B        | N/A        | 0.5                     | 100        | 0.146 | 13.2                      | B        | N/A        | 0.4                     | 100        | 0.121 |

1. MOE is seconds delay per vehicle.

2. 7:30 AM – 8:30 AM

3. 4:30 PM – 5:30 PM

4. 95<sup>th</sup> Queue for signalized intersection measured in feet and for non-signalized intersection measured in vehicles

**TABLE 9**  
**ANALYSIS RESULTS FOR 2018 NO BUILD CONDITONS**

| Intersection                         | Traffic Control Type | 2018 NO BUILD CONDITIONS  |          |            |                         |            |      |                           |          |            |                         |            |      |
|--------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|------|---------------------------|----------|------------|-------------------------|------------|------|
|                                      |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |      | PM Peak Hour <sup>3</sup> |          |            |                         |            |      |
|                                      |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  |
| <b>MoPac SBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>20.3</b>               | <b>C</b> |            |                         |            |      | <b>13.9</b>               | <b>B</b> |            |                         |            |      |
| Westbound left                       |                      | 39.2                      | D        | 502        | 707                     | 315        | 0.88 | 20.3                      | C        | 216        | 200                     | 315        | 0.51 |
| Southbound left                      |                      | 9.2                       | A        | 53         | 67                      | N/A        | 0.31 | 16.9                      | B        | 127        | 190                     | N/A        | 0.49 |
| Southbound right                     |                      | 1                         | A        | 0          | 0                       | N/A        | 0.33 | 4.7                       | A        | 8          | 75                      | N/A        | 0.40 |
| <b>MoPac NBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>13.6</b>               | <b>B</b> |            |                         |            |      | <b>27.7</b>               | <b>C</b> |            |                         |            |      |
| Eastbound left                       |                      | 24.1                      | C        | 8          | 17                      | 340        | 0.1  | 43.6                      | D        | 99         | 85                      | 340        | 0.67 |
| Eastbound through                    |                      | 32.9                      | C        | 58         | 72                      | 340        | 0.71 | 40.8                      | D        | 104        | 80                      | 340        | 0.68 |
| Westbound                            |                      | 4.8                       | A        | 23         | 23                      | N/A        | 0.6  | 16.8                      | B        | 486        | 543                     | N/A        | 0.86 |
| Northbound left/through              |                      | 44.3                      | D        | 54         | 101                     | 900        | 0.25 | 63.1                      | E        | 131        | 220                     | 900        | 0.68 |
| Northbound right                     |                      | 10.4                      | B        | 0          | 108                     | 550        | 0.73 | 11.2                      | B        | 0          | 64                      | 550        | 0.47 |
| Southbound left                      |                      | 46                        | D        | 1          | 6                       | N/A        | 0.01 | 52.0                      | D        | 1          | 10                      | N/A        | 0.03 |
| Southbound right                     |                      | 1.9                       | A        | 0          | 0                       | N/A        | 0.26 | 0.4                       | A        | 0          | 0                       | N/A        | 0.06 |
| <b>Bull Creek at 45th</b>            | <b>Signal</b>        | <b>79.3</b>               | <b>E</b> |            |                         |            |      | <b>73.7</b>               | <b>E</b> |            |                         |            |      |
| Eastbound                            |                      | 48                        | D        | 315        | 397                     | 480        | 0.83 | 96.6                      | F        | 288        | 414                     | 480        | 1.04 |
| Westbound                            |                      | 122.5                     | F        | 420        | 552                     | N/A        | 1.15 | 55.4                      | E        | 325        | 435                     | N/A        | 0.88 |
| Northbound left                      |                      | 47.6                      | D        | 74         | 128                     | 130        | 0.61 | 83.2                      | F        | 342        | 556                     | 130        | 0.98 |
| Northbound through/right             |                      | 37                        | D        | 73         | 137                     | N/A        | 0.34 | 63.0                      | E        | 294        | 478                     | N/A        | 0.88 |
| Southbound left                      |                      | 33.1                      | C        | 14         | 37                      | 130        | 0.09 | 51.1                      | D        | 15         | 41                      | 130        | 0.12 |
| Southbound through/right             |                      | 92.3                      | F        | 200        | 376                     | N/A        | 0.96 | 80.5                      | F        | 104        | 218                     | N/A        | 0.83 |
| <b>MoPac NBFR at 35th/Jackson</b>    | <b>Signal</b>        | <b>52.9</b>               | <b>D</b> |            |                         |            |      | <b>42.2</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left/through               |                      | 38.1                      | D        | 354        | 433                     | N/A        | 0.71 | 80.9                      | F        | 338        | 458                     | N/A        | 0.94 |
| Eastbound right                      |                      | 5.2                       | A        | 2          | 45                      | N/A        | 0.21 | 11.1                      | B        | 13         | 106                     | N/A        | 0.58 |
| Westbound                            |                      | 55.1                      | E        | 451        | 583                     | N/A        | 0.98 | 33.5                      | C        | 804        | 858                     | N/A        | 0.86 |
| Northbound left/through              |                      | 140                       | F        | 270        | 450                     | 1050       | 1.12 | 85.1                      | F        | 103        | 203                     | 1050       | 0.72 |
| Northbound right                     |                      | 52.6                      | D        | 267        | 537                     | 700        | 1.01 | 10.1                      | B        | 0          | 75                      | 700        | 0.48 |
| Southbound left                      |                      | 45.2                      | D        | 9          | 29                      | 80         | 0.12 | 55.0                      | E        | 24         | 57                      | 80         | 0.15 |
| Southbound through/right             |                      | 13                        | B        | 14         | 69                      | N/A        | 0.31 | 41.7                      | D        | 120        | 214                     | N/A        | 0.61 |
| <b>Bull Creek at Jefferson</b>       | <b>Signal</b>        | <b>11.5</b>               | <b>B</b> |            |                         |            |      | <b>18.3</b>               | <b>B</b> |            |                         |            |      |
| Eastbound left/through               |                      | 10.5                      | B        | 18         | 50                      | N/A        | 0.12 | 15.3                      | B        | 16         | 42                      | N/A        | 0.11 |
| Eastbound right                      |                      | 7.8                       | A        | 0          | 36                      | 130        | 0.38 | 5.6                       | A        | 0          | 38                      | 130        | 0.38 |
| Westbound                            |                      | 9.7                       | A        | 13         | 40                      | N/A        | 0.09 | 19.4                      | B        | 83         | 157                     | N/A        | 0.49 |
| Northbound left                      |                      | 18.7                      | B        | 11         | 34                      | 130        | 0.17 | 27.0                      | C        | 87         | 163                     | 130        | 0.67 |
| Northbound through/right             |                      | 12.1                      | B        | 8          | 37                      | N/A        | 0.27 | 11.8                      | B        | 8          | 32                      | N/A        | 0.13 |
| Southbound left                      |                      | 18.4                      | B        | 3          | 15                      | 100        | 0.05 | 20.8                      | C        | 3          | 14                      | 100        | 0.04 |
| Southbound through/right             |                      | 18.5                      | B        | 10         | 34                      | N/A        | 0.17 | 20.2                      | C        | 26         | 63                      | N/A        | 0.40 |

**TABLE 9**  
**ANALYSIS RESULTS FOR 2018 NO BUILD CONDITONS**

| Intersection                                          | Traffic Control Type | 2018 NO BUILD CONDITIONS  |          |            |                         |            |       |                           |          |            |                         |            |       |
|-------------------------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|-------|---------------------------|----------|------------|-------------------------|------------|-------|
|                                                       |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |       | PM Peak Hour <sup>3</sup> |          |            |                         |            |       |
|                                                       |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   |
| <b>35<sup>th</sup> at Jefferson</b>                   | <b>Signal</b>        | <b>15.7</b>               | <b>B</b> |            |                         |            |       | <b>27.1</b>               | <b>C</b> |            |                         |            |       |
| Eastbound left                                        |                      | 12.6                      | B        | 7          | 19                      | 180        | 0.29  | 12.9                      | B        | 13         | 18                      | 180        | 0.31  |
| Eastbound through/right                               |                      | 6.7                       | A        | 74         | 232                     | N/A        | 0.47  | 5.8                       | A        | 88         | 124                     | N/A        | 0.40  |
| Westbound left                                        |                      | 12.1                      | B        | 31         | 57                      | 110        | 0.29  | 19.2                      | B        | 98         | 58                      | 110        | 0.38  |
| Westbound through/right                               |                      | 16.5                      | B        | 431        | 536                     | N/A        | 0.65  | 27.1                      | C        | 637        | 969                     | N/A        | 0.73  |
| Northbound left                                       |                      | 44.5                      | D        | 36         | 74                      | 215        | 0.21  | 44.5                      | D        | 145        | 83                      | 215        | 0.38  |
| Northbound through                                    |                      | 66.7                      | E        | 45         | 88                      | N/A        | 0.42  | 84.6                      | F        | 365        | 204                     | N/A        | 0.83  |
| Northbound right                                      |                      | 9.6                       | A        | 0          | 44                      | 215        | 0.29  | 7.4                       | A        | 62         | 17                      | 215        | 0.35  |
| Southbound left                                       |                      | 58.6                      | E        | 90         | 136                     | 150        | 0.52  | 56.3                      | E        | 186        | 108                     | 150        | 0.65  |
| Southbound through                                    |                      | 55.5                      | E        | 10         | 30                      | N/A        | 0.09  | 60.1                      | E        | 190        | 108                     | N/A        | 0.42  |
| Southbound right                                      |                      | 0.4                       | A        | 0          | 0                       | 160        | 0.06  | 9.0                       | A        | 52         | 19                      | 160        | 0.28  |
| <b>Bull Creek at Jackson</b>                          | <b>Two-Way Stop</b>  | <b>0.7</b>                | <b>A</b> |            |                         |            |       | <b>8.0</b>                | <b>A</b> |            |                         |            |       |
| Eastbound                                             | Stop                 | 11.5                      | B        | N/A        | 0.2                     | N/A        | 0.054 | 33.6                      | D        | N/A        | 4.8                     | N/A        | 0.681 |
| Northbound left                                       | Free                 | 8.2                       | A        | N/A        | 0.0                     | N/A        | 0.002 | 7.6                       | A        | N/A        | 0.0                     | N/A        | 0.002 |
| <b>45<sup>th</sup>/Highland Terrace at MoPac Ramp</b> | <b>Signal</b>        | <b>27.9</b>               | <b>C</b> |            |                         |            |       | <b>19.0</b>               | <b>B</b> |            |                         |            |       |
| Eastbound                                             |                      | 0.0                       | A        | 0          | 0                       | 50         | 0     | 1.8                       | A        | 4          | 29                      | 50         | 0.33  |
| Westbound left                                        |                      | 51.1                      | D        | 156        | 196                     | 1200       | 0.72  | 26.2                      | C        | 232        | 197                     | 1200       | 0.77  |
| Westbound right                                       |                      | 0.0                       | A        | 0          | 1                       | 175        | 0.01  | 1.8                       | A        | 0          | 13                      | 175        | 0.07  |
| Northbound left                                       |                      | 0.0                       | A        | 0          | 0                       | 130        | 0     | 23.5                      | C        | 1          | 7                       | 130        | 0.00  |
| Northbound                                            |                      | 4.0                       | A        | 6          | 13                      | N/A        | 0.04  | 17.8                      | B        | 15         | 47                      | N/A        | 0.08  |
| Southbound                                            |                      | 6.5                       | A        | 41         | 72                      | N/A        | 0.14  | 29.0                      | C        | 38         | 80                      | N/A        | 0.11  |
| <b>Shoal Creek at 45th</b>                            | <b>All-Way Stop</b>  | <b>57.2</b>               | <b>F</b> |            |                         |            |       | <b>60.6</b>               | <b>F</b> |            |                         |            |       |
| Eastbound inside lane                                 | Stop                 | 46.3                      | E        | N/A        | 8.6                     | N/A        | 0.863 | 45.3                      | E        | N/A        | 7.5                     | N/A        | 0.826 |
| Eastbound outside lane                                | Stop                 | 53.4                      | F        | N/A        | 9.8                     | N/A        | 0.911 | 42.4                      | E        | N/A        | 7.2                     | N/A        | 0.805 |
| Westbound inside lane                                 | Stop                 | 71.0                      | F        | N/A        | 12.1                    | N/A        | 0.99  | 78.5                      | F        | N/A        | 11.8                    | N/A        | 1.074 |
| Westbound outside lane                                | Stop                 | 55.8                      | F        | N/A        | 10.2                    | N/A        | 0.925 | 77.8                      | F        | N/A        | 11.9                    | N/A        | 1.165 |
| Northbound left/through                               | Stop                 | 17.8                      | C        | N/A        | 1.4                     | N/A        | 0.32  | 77.6                      | F        | N/A        | 11.5                    | N/A        | 0.979 |
| Northbound right                                      | Stop                 | 12.8                      | B        | N/A        | 0.2                     | 100        | 0.07  | 14.1                      | B        | N/A        | 0.8                     | 100        | 0.209 |
| Southbound left/through                               | Stop                 | 77.6                      | F        | N/A        | 11.9                    | N/A        | 1.098 | 44.8                      | E        | N/A        | 7.0                     | N/A        | 0.808 |
| Southbound right                                      | Stop                 | 12.9                      | B        | N/A        | 0.5                     | 100        | 0.155 | 13.5                      | B        | N/A        | 0.4                     | 100        | 0.128 |

1. MOE is seconds delay per vehicle.

2. 7:30 AM – 8:30 AM

3. 4:30 PM – 5:30 PM

4. 95<sup>th</sup> Queue for signalized intersection measured in feet and for non-signalized intersection measured in vehicles

**TABLE 10**  
**ANALYSIS RESULTS FOR 2018 BUILD CONDITONS**

| Intersection                         | Traffic Control Type | 2018 BUILD CONDITIONS     |          |            |                         |            |      |                           |          |            |                         |            |      |
|--------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|------|---------------------------|----------|------------|-------------------------|------------|------|
|                                      |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |      | PM Peak Hour <sup>3</sup> |          |            |                         |            |      |
|                                      |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  |
| <b>MoPac SBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>25.7</b>               | <b>C</b> |            |                         |            |      | <b>14.4</b>               | <b>B</b> |            |                         |            |      |
| Westbound left                       |                      | 50.6                      | D        | 494        | 770                     | 315        | 0.92 | 20.3                      | C        | 214        | 198                     | 315        | 0.51 |
| Southbound left                      |                      | 9.1                       | A        | 52         | 66                      | N/A        | 0.31 | 17.6                      | B        | 138        | 204                     | N/A        | 0.51 |
| Southbound right                     |                      | 1.0                       | A        | 0          | 0                       | N/A        | 0.33 | 5.3                       | A        | 10         | 84                      | N/A        | 0.40 |
| <b>MoPac NBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>15.2</b>               | <b>B</b> |            |                         |            |      | <b>28.5</b>               | <b>C</b> |            |                         |            |      |
| Eastbound left                       |                      | 24.7                      | C        | 8          | 17                      | 340        | 0.1  | 40.3                      | D        | 94         | 79                      | 340        | 0.65 |
| Eastbound through                    |                      | 33.1                      | C        | 58         | 72                      | 340        | 0.71 | 39.6                      | D        | 105        | 79                      | 340        | 0.70 |
| Westbound                            |                      | 8.6                       | A        | 57         | 73                      | N/A        | 0.64 | 19.9                      | B        | 290        | 332                     | N/A        | 0.87 |
| Northbound left/through              |                      | 44.3                      | D        | 54         | 101                     | 900        | 0.25 | 63.1                      | E        | 131        | 220                     | 900        | 0.68 |
| Northbound right                     |                      | 10.3                      | B        | 0          | 107                     | 550        | 0.73 | 11.2                      | B        | 0          | 69                      | 550        | 0.51 |
| Southbound left                      |                      | 46.0                      | D        | 1          | 6                       | N/A        | 0.01 | 52.0                      | D        | 1          | 10                      | N/A        | 0.03 |
| Southbound right                     |                      | 1.9                       | A        | 0          | 0                       | N/A        | 0.26 | 0.4                       | A        | 0          | 0                       | N/A        | 0.06 |
| <b>Bull Creek at 45th</b>            | <b>Signal</b>        | <b>61.5</b>               | <b>E</b> |            |                         |            |      | <b>58.7</b>               | <b>E</b> |            |                         |            |      |
| Eastbound                            |                      | 31.1                      | C        | 180        | 478                     | 480        | 0.9  | 85.3                      | F        | 323        | 452                     | 480        | 1.09 |
| Westbound                            |                      | 92.2                      | F        | 390        | 521                     | N/A        | 1.06 | 42.6                      | D        | 325        | 469                     | N/A        | 0.78 |
| Northbound dual lefts                |                      | 59.7                      | E        | 76         | 115                     | 400        | 0.6  | 55.3                      | E        | 170        | 217                     | 400        | 0.75 |
| Northbound through/right             |                      | 38.0                      | D        | 101        | 168                     | N/A        | 0.46 | 49.3                      | D        | 258        | 450                     | N/A        | 0.78 |
| Southbound left                      |                      | 46.5                      | D        | 17         | 44                      | 130        | 0.11 | 48.5                      | D        | 15         | 40                      | 130        | 0.13 |
| Southbound through/right             |                      | 90.0                      | F        | 199        | 385                     | N/A        | 0.95 | 63.5                      | E        | 108        | 196                     | N/A        | 0.73 |
| <b>MoPac NBFR at 35th/Jackson</b>    | <b>Signal</b>        | <b>54</b>                 | <b>D</b> |            |                         |            |      | <b>42.9</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left/through               |                      | 39.2                      | D        | 357        | 437                     | N/A        | 0.72 | 78.9                      | E        | 346        | 465                     | N/A        | 0.93 |
| Eastbound right                      |                      | 5.5                       | A        | 2          | 46                      | N/A        | 0.22 | 11.5                      | B        | 18         | 112                     | N/A        | 0.57 |
| Westbound                            |                      | 55.3                      | E        | 451        | 583                     | N/A        | 0.98 | 35.4                      | D        | 831        | 860                     | N/A        | 0.90 |
| Northbound left/through              |                      | 166.3                     | F        | 280        | 458                     | 1050       | 1.20 | 81.4                      | F        | 126        | 231                     | 1050       | 0.74 |
| Northbound right                     |                      | 48.4                      | D        | 246        | 528                     | 700        | 1.00 | 9.6                       | A        | 0          | 74                      | 700        | 0.46 |
| Southbound left                      |                      | 43.8                      | D        | 9          | 29                      | 80         | 0.11 | 53.6                      | D        | 24         | 56                      | 80         | 0.15 |
| Southbound through/right             |                      | 11.6                      | B        | 14         | 47                      | N/A        | 0.36 | 38.8                      | D        | 118        | 212                     | N/A        | 0.58 |
| <b>Bull Creek at Jefferson</b>       | <b>Signal</b>        | <b>11.4</b>               | <b>B</b> |            |                         |            |      | <b>18.6</b>               | <b>B</b> |            |                         |            |      |
| Eastbound left/through               |                      | 10.6                      | B        | 21         | 57                      | N/A        | 0.13 | 16.0                      | B        | 17         | 45                      | N/A        | 0.12 |
| Eastbound right                      |                      | 7.8                       | A        | 0          | 36                      | 130        | 0.40 | 5.3                       | A        | 0          | 38                      | 130        | 0.37 |
| Westbound                            |                      | 9.7                       | A        | 12         | 39                      | N/A        | 0.09 | 21.4                      | C        | 89         | 173                     | N/A        | 0.55 |
| Northbound left                      |                      | 18.6                      | B        | 11         | 33                      | 130        | 0.16 | 25.9                      | C        | 89         | 165                     | 130        | 0.66 |
| Northbound through/right             |                      | 12.0                      | B        | 8          | 37                      | N/A        | 0.27 | 11.3                      | B        | 8          | 31                      | N/A        | 0.13 |
| Southbound left                      |                      | 18.4                      | B        | 3          | 15                      | 100        | 0.05 | 20.7                      | C        | 3          | 14                      | 100        | 0.04 |
| Southbound through/right             |                      | 18.5                      | B        | 10         | 34                      | N/A        | 0.17 | 20.0                      | B        | 25         | 63                      | N/A        | 0.39 |

**TABLE 10**  
**ANALYSIS RESULTS FOR 2018 BUILD CONDITONS**

| Intersection                                          | Traffic Control Type | 2018 BUILD CONDITIONS     |          |            |                         |            |       |                           |          |            |                         |            |       |
|-------------------------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|-------|---------------------------|----------|------------|-------------------------|------------|-------|
|                                                       |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |       | PM Peak Hour <sup>3</sup> |          |            |                         |            |       |
|                                                       |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   |
| <b>35<sup>th</sup> at Jefferson</b>                   | <b>Signal</b>        | <b>15.5</b>               | <b>B</b> |            |                         |            |       | <b>27.6</b>               | <b>C</b> |            |                         |            |       |
| Eastbound left                                        |                      | 11.9                      | B        | 7          | 18                      | 180        | 0.28  | 13.2                      | B        | 8          | 14                      | 180        | 0.31  |
| Eastbound through/right                               |                      | 6.6                       | A        | 65         | 219                     | N/A        | 0.46  | 5.7                       | A        | 54         | 89                      | N/A        | 0.40  |
| Westbound left                                        |                      | 12.0                      | B        | 30         | 57                      | 110        | 0.29  | 19.4                      | B        | 65         | 98                      | 110        | 0.38  |
| Westbound through/right                               |                      | 16.3                      | B        | 417        | 537                     | N/A        | 0.67  | 27.4                      | C        | 575        | 637                     | N/A        | 0.73  |
| Northbound left                                       |                      | 45.1                      | D        | 36         | 74                      | 215        | 0.23  | 44.2                      | D        | 84         | 145                     | 215        | 0.37  |
| Northbound through                                    |                      | 66.5                      | E        | 44         | 87                      | N/A        | 0.42  | 86.8                      | F        | 237        | 389                     | N/A        | 0.85  |
| Northbound right                                      |                      | 9.6                       | A        | 0          | 44                      | 215        | 0.29  | 7.4                       | A        | 0          | 62                      | 215        | 0.35  |
| Southbound left                                       |                      | 54.4                      | D        | 80         | 136                     | 150        | 0.48  | 56.5                      | E        | 110        | 192                     | 150        | 0.66  |
| Southbound through                                    |                      | 55.9                      | E        | 17         | 45                      | N/A        | 0.14  | 59.6                      | E        | 114        | 190                     | N/A        | 0.42  |
| Southbound right                                      |                      | 0.4                       | A        | 0          | 0                       | 160        | 0.05  | 9.0                       | A        | 8          | 52                      | 160        | 0.27  |
| <b>Bull Creek at Jackson</b>                          | <b>Two-Way Stop</b>  | <b>0.6</b>                | <b>A</b> |            |                         |            |       | <b>5.3</b>                | <b>A</b> |            |                         |            |       |
| Eastbound                                             | Stop                 | 12.8                      | B        | N/A        | 0.2                     | N/A        | 0.064 | 25.3                      | D        | N/A        | 3.7                     | N/A        | 0.591 |
| Northbound left                                       | Free                 | 8.3                       | A        | N/A        | 0.0                     | N/A        | 0.002 | 7.9                       | A        | N/A        | 0.0                     | N/A        | 0.003 |
| <b>45<sup>th</sup>/Highland Terrace at MoPac Ramp</b> | <b>Signal</b>        | <b>28.0</b>               | <b>C</b> |            |                         |            |       | <b>18.4</b>               | <b>B</b> |            |                         |            |       |
| Eastbound                                             |                      | 0.0                       | A        | 0          | 0                       | 50         | 0     | 1.7                       | A        | 4          | 26                      | 50         | 0.33  |
| Westbound left                                        |                      | 51.4                      | D        | 155        | 195                     | 1200       | 0.73  | 24.3                      | C        | 230        | 187                     | 1200       | 0.76  |
| Westbound right                                       |                      | 0.0                       | A        | 0          | 1                       | 175        | 0.01  | 1.6                       | A        | 0          | 12                      | 175        | 0.07  |
| Northbound left                                       |                      | 0.0                       | A        | 0          | 0                       | 130        | 0     | 27.5                      | C        | 1          | 7                       | 130        | 0.00  |
| Northbound                                            |                      | 7.4                       | A        | 11         | 24                      | N/A        | 0.04  | 22.1                      | C        | 20         | 51                      | N/A        | 0.09  |
| Southbound                                            |                      | 6.4                       | A        | 40         | 71                      | N/A        | 0.14  | 30.9                      | C        | 41         | 84                      | N/A        | 0.12  |
| <b>Sheol Creek at 45th</b>                            | <b>All-Way Stop</b>  | <b>60.0</b>               | <b>F</b> |            |                         |            |       | <b>61.3</b>               | <b>F</b> |            |                         |            |       |
| Eastbound inside lane                                 | Stop                 | 55.9                      | F        | N/A        | 10.1                    | N/A        | 0.917 | 46.8                      | E        | N/A        | 7.8                     | N/A        | 0.834 |
| Eastbound outside lane                                | Stop                 | 60.7                      | F        | N/A        | 10.9                    | N/A        | 0.944 | 43.4                      | E        | N/A        | 7.3                     | N/A        | 0.815 |
| Westbound inside lane                                 | Stop                 | 70.6                      | F        | N/A        | 12.1                    | N/A        | 0.981 | 78.7                      | F        | N/A        | 11.8                    | N/A        | 1.123 |
| Westbound outside lane                                | Stop                 | 55.6                      | F        | N/A        | 10.2                    | N/A        | 0.916 | 78.0                      | F        | N/A        | 11.9                    | N/A        | 1.204 |
| Northbound left/through                               | Stop                 | 17.9                      | C        | N/A        | 1.4                     | N/A        | 0.321 | 79.1                      | F        | N/A        | 11.7                    | N/A        | 0.989 |
| Northbound right                                      | Stop                 | 12.9                      | B        | N/A        | 0.2                     | 100        | 0.071 | 14.2                      | B        | N/A        | 0.8                     | 100        | 0.210 |
| Southbound left/through                               | Stop                 | 77.9                      | F        | N/A        | 11.9                    | N/A        | 1.113 | 45.2                      | E        | N/A        | 7.0                     | N/A        | 0.808 |
| Southbound right                                      | Stop                 | 12.9                      | B        | N/A        | 0.5                     | 100        | 0.151 | 13.8                      | B        | N/A        | 0.5                     | 100        | 0.154 |
| <b>Bull Creek at Driveway 3</b>                       | <b>Two-Way Stop</b>  | <b>4.1</b>                | <b>A</b> |            |                         |            |       | <b>4.6</b>                | <b>A</b> |            |                         |            |       |
| Eastbound                                             | Stop                 | 11.1                      | B        | N/A        | 0.0                     | N/A        | 0.015 | 31.3                      | D        | N/A        | 1.0                     | N/A        | 0.264 |
| Westbound left/throughs                               | Stop                 | 12.8                      | B        | N/A        | 0.4                     | N/A        | 0.124 | 29.8                      | D        | N/A        | 0.8                     | N/A        | 0.213 |
| Westbound rights                                      | Stop                 | 9.4                       | A        | N/A        | 0.5                     | N/A        | 0.136 | 13.2                      | B        | N/A        | 0.4                     | N/A        | 0.127 |
| Southbound lefts                                      | Free                 | 7.5                       | A        | N/A        | 0.1                     | N/A        | 0.021 | 9.3                       | A        | N/A        | 0.4                     | N/A        | 0.128 |
| Northbound lefts                                      | Free                 | 7.7                       | A        | N/A        | 0.0                     | N/A        | 0.003 | 7.5                       | A        | N/A        | 0.0                     | N/A        | 0.007 |

1. MOE is seconds delay per vehicle.

2. 7:30 AM – 8:30 AM

3. 4:30 PM – 5:30 PM

4. 95<sup>th</sup> Queue for signalized intersection measured in feet and for non-signalized intersection measured in vehicles

**TABLE 11**  
**ANALYSIS RESULTS FOR 2024 NO BUILD CONDITONS**

| Intersection                         | Traffic Control Type | 2024 NO BUILD CONDITIONS  |          |            |                         |            |      |                           |          |            |                         |            |      |
|--------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|------|---------------------------|----------|------------|-------------------------|------------|------|
|                                      |                      | AM Peak Hour <sup>1</sup> |          |            |                         |            |      | PM Peak Hour <sup>3</sup> |          |            |                         |            |      |
|                                      |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  |
| <b>MoPac SBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>27.6</b>               | <b>C</b> |            |                         |            |      | <b>13.5</b>               | <b>B</b> |            |                         |            |      |
| Westbound left                       |                      | 56                        | E        | 538        | 782                     | 315        | 0.93 | 20.2                      | C        | 209        | 182                     | 315        | 0.54 |
| Southbound left                      |                      | 9.3                       | A        | 56         | 71                      | N/A        | 0.33 | 18.2                      | B        | 149        | 212                     | N/A        | 0.52 |
| Southbound right                     |                      | 0.3                       | A        | 0          | 0                       | N/A        | 0.20 | 0.3                       | A        | 0          | 0                       | N/A        | 0.23 |
| <b>MoPac NBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>14.2</b>               | <b>B</b> |            |                         |            |      | <b>30.5</b>               | <b>C</b> |            |                         |            |      |
| Eastbound left                       |                      | 24                        | C        | 8          | 18                      | 340        | 0.10 | 39.8                      | D        | 96         | 78                      | 340        | 0.68 |
| Eastbound through                    |                      | 32.8                      | C        | 63         | 77                      | 340        | 0.73 | 37.2                      | D        | 101        | 74                      | 340        | 0.69 |
| Westbound                            |                      | 5.8                       | A        | 41         | 23                      | N/A        | 0.65 | 24.0                      | C        | 533        | 554                     | N/A        | 0.94 |
| Northbound left/through              |                      | 44.5                      | D        | 56         | 105                     | 900        | 0.26 | 66.0                      | E        | 140        | 241                     | 900        | 0.72 |
| Northbound right                     |                      | 10.7                      | B        | 0          | 114                     | 550        | 0.75 | 11.1                      | B        | 0          | 65                      | 550        | 0.48 |
| Southbound left                      |                      | 46                        | D        | 1          | 6                       | N/A        | 0.01 | 52.0                      | D        | 1          | 10                      | N/A        | 0.03 |
| Southbound right                     |                      | 2.3                       | A        | 0          | 3                       | N/A        | 0.27 | 0.4                       | A        | 0          | 0                       | N/A        | 0.06 |
| <b>Bull Creek at 45th</b>            | <b>Signal</b>        | <b>92.3</b>               | <b>F</b> |            |                         |            |      | <b>95.7</b>               | <b>F</b> |            |                         |            |      |
| Eastbound                            |                      | 51.7                      | D        | 345        | 427                     | 480        | 0.88 | 114.3                     | F        | 323        | 449                     | 480        | 1.10 |
| Westbound                            |                      | 148.7                     | F        | 466        | 600                     | N/A        | 1.22 | 93.1                      | F        | 352        | 480                     | N/A        | 0.93 |
| Northbound left                      |                      | 51.6                      | D        | 80         | 141                     | 130        | 0.66 | 99.3                      | F        | 395        | 601                     | 130        | 1.05 |
| Northbound through/right             |                      | 37.8                      | D        | 78         | 145                     | N/A        | 0.35 | 72.9                      | E        | 318        | 522                     | N/A        | 0.94 |
| Southbound left                      |                      | 33.2                      | C        | 15         | 38                      | 130        | 0.09 | 51.2                      | D        | 16         | 43                      | 130        | 0.13 |
| Southbound through/right             |                      | 107.6                     | F        | 229        | 408                     | N/A        | 1.03 | 86.9                      | F        | 113        | 240                     | N/A        | 0.87 |
| <b>MoPac NBFR at 35th/Jackson</b>    | <b>Signal</b>        | <b>66.1</b>               | <b>E</b> |            |                         |            |      | <b>45.8</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left/through               |                      | 39.7                      | D        | 384        | 467                     | N/A        | 0.75 | 92.8                      | F        | 365        | 504                     | N/A        | 1.00 |
| Eastbound right                      |                      | 6                         | A        | 6          | 52                      | N/A        | 0.23 | 13.5                      | B        | 29         | 132                     | N/A        | 0.61 |
| Westbound                            |                      | 69.4                      | E        | 520        | 644                     | N/A        | 1.04 | 33.3                      | C        | 901        | 950                     | N/A        | 0.92 |
| Northbound left/through              |                      | 177.8                     | F        | 309        | 491                     | 1050       | 1.23 | 106.8                     | F        | 114        | 236                     | 1050       | 0.86 |
| Northbound right                     |                      | 74.7                      | E        | 378        | 627                     | 700        | 1.08 | 10.1                      | B        | 0          | 77                      | 700        | 0.50 |
| Southbound left                      |                      | 46.8                      | D        | 10         | 30                      | 80         | 0.15 | 55.5                      | E        | 26         | 59                      | 80         | 0.16 |
| Southbound through/right             |                      | 13                        | B        | 15         | 72                      | N/A        | 0.33 | 44.3                      | D        | 132        | 230                     | N/A        | 0.65 |
| <b>Bull Creek at Jefferson</b>       | <b>Signal</b>        | <b>11.6</b>               | <b>B</b> |            |                         |            |      | <b>19.0</b>               | <b>B</b> |            |                         |            |      |
| Eastbound left/through               |                      | 10.6                      | B        | 19         | 53                      | N/A        | 0.12 | 16.0                      | B        | 18         | 45                      | N/A        | 0.14 |
| Eastbound right                      |                      | 7.8                       | A        | 0          | 37                      | 130        | 0.39 | 4.9                       | A        | 0          | 38                      | 130        | 0.36 |
| Westbound                            |                      | 9.8                       | A        | 14         | 43                      | N/A        | 0.10 | 24.0                      | C        | 89         | 170                     | N/A        | 0.65 |
| Northbound left                      |                      | 18.7                      | B        | 12         | 35                      | 130        | 0.17 | 25.5                      | C        | 87         | 179                     | 130        | 0.64 |
| Northbound through/right             |                      | 12                        | B        | 8          | 38                      | N/A        | 0.28 | 11.7                      | B        | 8          | 34                      | N/A        | 0.13 |
| Southbound left                      |                      | 18.5                      | B        | 3          | 16                      | 100        | 0.05 | 20.5                      | C        | 4          | 15                      | 100        | 0.04 |
| Southbound through/right             |                      | 18.6                      | B        | 11         | 36                      | N/A        | 0.17 | 19.3                      | B        | 26         | 67                      | N/A        | 0.38 |

**TABLE 11**  
**ANALYSIS RESULTS FOR 2024 NO BUILD CONDITONS**

| Intersection                                          | Traffic Control Type | 2024 NO BUILD CONDITIONS  |          |            |                         |            |       |                           |          |            |                         |            |       |
|-------------------------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|-------|---------------------------|----------|------------|-------------------------|------------|-------|
|                                                       |                      | AM Peak Hour <sup>2</sup> |          |            |                         |            |       | PM Peak Hour <sup>3</sup> |          |            |                         |            |       |
|                                                       |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   |
| <b>35<sup>th</sup> at Jefferson</b>                   | <b>Signal</b>        | <b>16.4</b>               | <b>B</b> |            |                         |            |       | <b>29.0</b>               | <b>C</b> |            |                         |            |       |
| Eastbound left                                        |                      | 18.2                      | B        | 10         | 19                      | 180        | 0.35  | 18.0                      | B        | 11         | 21                      | 180        | 0.35  |
| Eastbound through/right                               |                      | 7.3                       | A        | 117        | 234                     | N/A        | 0.49  | 5.3                       | A        | 74         | 88                      | N/A        | 0.42  |
| Westbound left                                        |                      | 12.2                      | B        | 34         | 53                      | 110        | 0.33  | 20.0                      | B        | 71         | 104                     | 110        | 0.43  |
| Westbound through/right                               |                      | 16.9                      | B        | 494        | 523                     | N/A        | 0.69  | 29.0                      | C        | 657        | 705                     | N/A        | 0.78  |
| Northbound left                                       |                      | 45.4                      | D        | 38         | 78                      | 215        | 0.23  | 45.9                      | D        | 89         | 154                     | 215        | 0.41  |
| Northbound through                                    |                      | 66.9                      | E        | 48         | 93                      | N/A        | 0.44  | 89.4                      | F        | 240        | 395                     | N/A        | 0.87  |
| Northbound right                                      |                      | 10.1                      | B        | 0          | 48                      | 215        | 0.30  | 11.2                      | B        | 19         | 90                      | 215        | 0.38  |
| Southbound left                                       |                      | 61.8                      | E        | 95         | 145                     | 150        | 0.57  | 63.1                      | E        | 116        | 208                     | 150        | 0.73  |
| Southbound through                                    |                      | 55.8                      | E        | 11         | 32                      | N/A        | 0.10  | 61.2                      | E        | 119        | 198                     | N/A        | 0.45  |
| Southbound right                                      |                      | 0.4                       | A        | 0          | 0                       | 160        | 0.06  | 12.5                      | B        | 20         | 68                      | 160        | 0.30  |
| <b>Bull Creek at Jackson</b>                          | <b>Two-Way Stop</b>  | <b>0.7</b>                | <b>A</b> |            |                         |            |       | <b>10.2</b>               | <b>B</b> |            |                         |            |       |
| Eastbound                                             | Stop                 | 11.7                      | B        | N/A        | 0.2                     | N/A        | 0.059 | 43.2                      | E        | N/A        | 6.2                     | N/A        | 0.769 |
| Northbound left                                       | Free                 | 8.3                       | A        | N/A        | 0.0                     | N/A        | 0.002 | 7.6                       | A        | N/A        | 0.0                     | N/A        | 0.002 |
| <b>45<sup>th</sup>/Highland Terrace at MoPac Ramp</b> | <b>Signal</b>        | <b>27.8</b>               | <b>C</b> |            |                         |            |       | <b>17.3</b>               | <b>B</b> |            |                         |            |       |
| Eastbound                                             |                      | 0.0                       | A        | 0          | 0                       | 50         | 0.00  | 1.5                       | A        | 4          | 26                      | 50         | 0.33  |
| Westbound left                                        |                      | 50.1                      | D        | 166        | 205                     | 1200       | 0.73  | 22.1                      | C        | 224        | 189                     | 1200       | 0.75  |
| Westbound right                                       |                      | 0.0                       | A        | 0          | 1                       | 175        | 0.01  | 1.4                       | A        | 0          | 11                      | 175        | 0.07  |
| Northbound left                                       |                      | 0.0                       | A        | 0          | 0                       | 130        | 0.00  | 26.5                      | C        | 1          | 7                       | 130        | 0.01  |
| Northbound                                            |                      | 4.7                       | A        | 6          | 16                      | N/A        | 0.04  | 20.8                      | C        | 20         | 54                      | N/A        | 0.10  |
| Southbound                                            |                      | 7.1                       | A        | 46         | 80                      | N/A        | 0.15  | 33.0                      | C        | 45         | 88                      | N/A        | 0.14  |
| <b>Shoal Creek at 45th</b>                            | <b>All-Way Stop</b>  | <b>65.5</b>               | <b>F</b> |            |                         |            |       | <b>64.7</b>               | <b>F</b> |            |                         |            |       |
| Eastbound inside lane                                 | Stop                 | 58.5                      | F        | N/A        | 10.4                    | N/A        | 0.926 | 55.0                      | F        | N/A        | 8.9                     | N/A        | 0.893 |
| Eastbound outside lane                                | Stop                 | 68.8                      | F        | N/A        | 11.9                    | N/A        | 0.972 | 50.7                      | F        | N/A        | 8.4                     | N/A        | 0.871 |
| Westbound inside lane                                 | Stop                 | 74.2                      | F        | N/A        | 12.4                    | N/A        | 1.052 | 78.2                      | F        | N/A        | 11.8                    | N/A        | 1.136 |
| Westbound outside lane                                | Stop                 | 72.3                      | F        | N/A        | 12.4                    | N/A        | 0.988 | 77.5                      | F        | N/A        | 11.9                    | N/A        | 1.219 |
| Northbound left/through                               | Stop                 | 18.5                      | C        | N/A        | 1.5                     | N/A        | 0.343 | 79.9                      | F        | N/A        | 11.6                    | N/A        | 1.066 |
| Northbound right                                      | Stop                 | 13.0                      | B        | N/A        | 0.2                     | 100        | 0.077 | 14.6                      | B        | N/A        | 0.9                     | 100        | 0.225 |
| Southbound left/through                               | Stop                 | 77.6                      | F        | N/A        | 11.9                    | N/A        | 1.161 | 54.9                      | F        | N/A        | 8.3                     | N/A        | 0.861 |
| Southbound right                                      | Stop                 | 13.1                      | B        | N/A        | 0.6                     | 100        | 0.165 | 13.7                      | B        | N/A        | 0.5                     | 100        | 0.137 |

1. MOE is seconds delay per vehicle.

2. 7:30 AM – 8:30 AM

3. 4:30 PM – 5:30 PM

4. 95<sup>th</sup> Queue for signalized intersection measured in feet and for non-signalized intersection measured in vehicles

**TABLE 12**  
**ANALYSIS RESULTS FOR 2024 BUILD CONDITIONS**

| Intersection                         | Traffic Control Type | 2024 BUILD CONDITIONS     |          |            |                         |            |      |                           |          |            |                         |            |      |
|--------------------------------------|----------------------|---------------------------|----------|------------|-------------------------|------------|------|---------------------------|----------|------------|-------------------------|------------|------|
|                                      |                      | AM Peak Hour <sup>3</sup> |          |            |                         |            |      | PM Peak Hour <sup>3</sup> |          |            |                         |            |      |
|                                      |                      | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  | MOE <sup>1</sup>          | LOS      | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C  |
| <b>MePac SBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>32.6</b>               | <b>C</b> |            |                         |            |      | <b>16.0</b>               | <b>B</b> |            |                         |            |      |
| Westbound left                       |                      | 58                        | E        | 695        | 893                     | 315        | 0.98 | 15.9                      | B        | 120        | 95                      | 315        | 0.64 |
| Southbound left                      |                      | 21.4                      | C        | 207        | 244                     | N/A        | 0.49 | 25.2                      | C        | 248        | 336                     | N/A        | 0.67 |
| Southbound right                     |                      | 0.3                       | A        | 0          | 0                       | N/A        | 0.2  | 0.3                       | A        | 0          | 0                       | N/A        | 0.23 |
| <b>MePac NBFR at 45<sup>th</sup></b> | <b>Signal</b>        | <b>28.6</b>               | <b>C</b> |            |                         |            |      | <b>37.3</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left                       |                      | 6.3                       | A        | 2          | 3                       | 340        | 0.08 | 21.5                      | C        | 47         | 53                      | 340        | 0.59 |
| Eastbound through                    |                      | 13.1                      | B        | 22         | 19                      | 340        | 0.76 | 23.0                      | C        | 64         | 62                      | 340        | 0.76 |
| Westbound                            |                      | 23.4                      | C        | 358        | 652                     | N/A        | 0.88 | 46.7                      | D        | 369        | 784                     | N/A        | 1.08 |
| Northbound left/through              |                      | 45.6                      | D        | 57         | 106                     | 900        | 0.27 | 78.8                      | E        | 143        | 265                     | 900        | 0.82 |
| Northbound right                     |                      | 20.9                      | C        | 45         | 282                     | 550        | 0.87 | 12.9                      | B        | 0          | 90                      | 550        | 0.68 |
| Southbound left                      |                      | 48.0                      | D        | 1          | 6                       | N/A        | 0.01 | 54.5                      | D        | 2          | 11                      | N/A        | 0.03 |
| Southbound right                     |                      | 9.7                       | A        | 0          | 36                      | N/A        | 0.34 | 0.5                       | A        | 0          | 0                       | N/A        | 0.06 |
| <b>Bail Creek at 45th</b>            | <b>Signal</b>        | <b>45.8</b>               | <b>D</b> |            |                         |            |      | <b>36.2</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left                       |                      | 8.2                       | A        | 13         | 17                      | 100        | 0.27 | 13.7                      | B        | 11         | 19                      | 100        | 0.24 |
| Eastbound through/right              |                      | 35.7                      | D        | 483        | 628                     | 480        | 0.99 | 23.7                      | C        | 334        | 449                     | 480        | 0.92 |
| Westbound left                       |                      | 64.0                      | E        | 133        | 286                     | 250        | 0.90 | 42.2                      | D        | 135        | 251                     | 250        | 0.74 |
| Westbound through/right              |                      | 27.9                      | C        | 254        | 320                     | N/A        | 0.59 | 29.2                      | C        | 255        | 322                     | N/A        | 0.60 |
| Northbound dual lefts                |                      | 92.1                      | F        | 170        | 254                     | 400        | 0.86 | 57.9                      | E        | 275        | 379                     | 400        | 0.89 |
| Northbound through                   |                      | 40.1                      | D        | 57         | 138                     | N/A        | 0.23 | 35.7                      | D        | 186        | 323                     | N/A        | 0.54 |
| Northbound right                     |                      | 6.3                       | A        | 17         | 55                      | 250        | 0.32 | 5.7                       | A        | 36         | 75                      | 250        | 0.33 |
| Southbound left                      |                      | 39.6                      | D        | 16         | 43                      | 130        | 0.08 | 48.2                      | D        | 15         | 41                      | 130        | 0.11 |
| Southbound through/right             |                      | 94.2                      | F        | 237        | 427                     | N/A        | 0.99 | 86.0                      | F        | 147        | 288                     | N/A        | 0.90 |
| <b>MePac NBFR at 35th/Jackson</b>    | <b>Signal</b>        | <b>64.7</b>               | <b>E</b> |            |                         |            |      | <b>48.7</b>               | <b>D</b> |            |                         |            |      |
| Eastbound left/through               |                      | 41.4                      | D        | 411        | 499                     | N/A        | 0.79 | 100.7                     | F        | 432        | 566                     | N/A        | 1.04 |
| Eastbound right                      |                      | 6.7                       | A        | 10         | 56                      | N/A        | 0.23 | 0.3                       | A        | 0          | 0                       | N/A        | 0.22 |
| Westbound                            |                      | 69.8                      | E        | 521        | 644                     | N/A        | 1.04 | 22.5                      | C        | 763        | 657                     | N/A        | 0.92 |
| Northbound left/through              |                      | 157.4                     | F        | 384        | 584                     | 1050       | 1.19 | 91.1                      | F        | 221        | 371                     | 1050       | 0.87 |
| Northbound right                     |                      | 74.7                      | E        | 378        | 627                     | 700        | 1.08 | 10.7                      | B        | 0          | 79                      | 700        | 0.52 |
| Southbound left/through              |                      | 45.5                      | D        | 25         | 58                      | 80         | 0.18 | 75.1                      | E        | 81         | 146                     | 80         | 0.58 |
| Southbound right                     |                      | 8.4                       | A        | 0          | 73                      | N/A        | 0.49 | 11.0                      | B        | 0          | 94                      | N/A        | 0.63 |
| <b>Bail Creek at Jefferson</b>       | <b>Signal</b>        | <b>11.9</b>               | <b>B</b> |            |                         |            |      | <b>22.1</b>               | <b>C</b> |            |                         |            |      |
| Eastbound left/through               |                      | 11.7                      | B        | 33         | 85                      | N/A        | 0.20 | 17.2                      | B        | 39         | 82                      | N/A        | 0.26 |
| Eastbound right                      |                      | 7.0                       | A        | 0          | 40                      | 130        | 0.42 | 4.7                       | A        | 0          | 41                      | 130        | 0.39 |
| Westbound                            |                      | 11.3                      | B        | 27         | 73                      | N/A        | 0.17 | 29.7                      | C        | 125        | 264                     | N/A        | 0.76 |
| Northbound left                      |                      | 19.1                      | B        | 21         | 51                      | 130        | 0.26 | 30.6                      | C        | 115        | 241                     | 130        | 0.73 |
| Northbound through/right             |                      | 11.2                      | B        | 8          | 38                      | N/A        | 0.26 | 11.8                      | B        | 9          | 34                      | N/A        | 0.13 |
| Southbound left                      |                      | 19.3                      | B        | 3          | 16                      | 100        | 0.05 | 20.7                      | C        | 4          | 15                      | 100        | 0.05 |
| Southbound through/right             |                      | 19.3                      | B        | 11         | 37                      | N/A        | 0.17 | 20.6                      | C        | 29         | 67                      | N/A        | 0.41 |
| <b>35<sup>th</sup> at Jefferson</b>  | <b>Signal</b>        | <b>19.3</b>               | <b>B</b> |            |                         |            |      | <b>32.5</b>               | <b>C</b> |            |                         |            |      |
| Eastbound left                       |                      | 23.4                      | C        | 14         | 24                      | 180        | 0.36 | 30.7                      | C        | 23         | 37                      | 180        | 0.39 |
| Eastbound through/right              |                      | 11.5                      | B        | 147        | 424                     | N/A        | 0.52 | 8.2                       | A        | 72         | 91                      | N/A        | 0.45 |
| Westbound left                       |                      | 13.1                      | B        | 34         | 57                      | 110        | 0.34 | 21.9                      | C        | 69         | 104                     | 110        | 0.46 |
| Westbound through/right              |                      | 18.6                      | B        | 495        | 563                     | N/A        | 0.71 | 32.5                      | C        | 636        | 705                     | N/A        | 0.82 |
| Northbound left                      |                      | 44.2                      | D        | 37         | 76                      | 215        | 0.24 | 44.4                      | D        | 91         | 154                     | 215        | 0.41 |
| Northbound through                   |                      | 68.3                      | E        | 76         | 129                     | N/A        | 0.55 | 87.3                      | F        | 308        | 515                     | N/A        | 0.90 |
| Northbound right                     |                      | 9.9                       | A        | 0          | 45                      | 215        | 0.31 | 12.4                      | B        | 25         | 95                      | 215        | 0.39 |
| Southbound left                      |                      | 51.7                      | D        | 81         | 139                     | 150        | 0.49 | 62.5                      | E        | 119        | 231                     | 150        | 0.74 |
| Southbound through                   |                      | 54.7                      | D        | 38         | 78                      | N/A        | 0.22 | 60.9                      | E        | 165        | 256                     | N/A        | 0.50 |
| Southbound right                     |                      | 0.2                       | A        | 0          | 0                       | 160        | 0.04 | 13.0                      | B        | 23         | 71                      | 160        | 0.28 |

**TABLE 12**  
**ANALYSIS RESULTS FOR 2024 BUILD CONDITIONS**

| Intersection                                     | Traffic Control Type | 2024 BUILD CONDITIONS     |     |            |                         |            |       |                           |     |            |                         |            |       |
|--------------------------------------------------|----------------------|---------------------------|-----|------------|-------------------------|------------|-------|---------------------------|-----|------------|-------------------------|------------|-------|
|                                                  |                      | AM Peak Hour <sup>3</sup> |     |            |                         |            |       | PM Peak Hour <sup>3</sup> |     |            |                         |            |       |
|                                                  |                      | MOE <sup>1</sup>          | LOS | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   | MOE <sup>1</sup>          | LOS | 50th Queue | 95th Queue <sup>4</sup> | Bay Length | V/C   |
| Ball Creek at Jackson/Driveway 2                 | Signal               | 16.3                      | B   |            |                         |            |       | 38.0                      | D   |            |                         |            |       |
| Eastbound left                                   |                      | 17.2                      | B   | 19         | 55                      | 100        | 0.19  | 53.8                      | D   | 158        | 278                     | 100        | 0.86  |
| Eastbound through/right                          |                      | 26.4                      | C   | 23         | 68                      | N/A        | 0.19  | 36.4                      | D   | 47         | 93                      | N/A        | 0.27  |
| Westbound left                                   |                      | 17.2                      | B   | 18         | 54                      | 100        | 0.19  | 29.9                      | C   | 37         | 74                      | 100        | 0.36  |
| Westbound through                                |                      | 30.1                      | C   | 31         | 85                      | 100        | 0.32  | 82.6                      | F   | 73         | 176                     | 100        | 0.84  |
| Westbound right                                  |                      | 9.5                       | A   | 0          | 49                      | 100        | 0.40  | 13.7                      | B   | 0          | 55                      | 100        | 0.60  |
| Northbound left                                  |                      | 9.5                       | A   | 0          | 4                       | 150        | 0.00  | 7.3                       | A   | 1          | 4                       | 150        | 0.01  |
| Northbound through                               |                      | 21.2                      | C   | 110        | 209                     | N/A        | 0.42  | 46.1                      | D   | 408        | 657                     | N/A        | 0.95  |
| Northbound right                                 |                      | 0.2                       | A   | 0          | 0                       | 150        | 0.07  | 0.1                       | A   | 0          | 0                       | 150        | 0.04  |
| Southbound left                                  |                      | 10.7                      | B   | 32         | 72                      | 300        | 0.29  | 38.4                      | D   | 51         | 159                     | 300        | 0.78  |
| Southbound through/right                         |                      | 14.4                      | B   | 120        | 316                     | N/A        | 0.53  | 11.2                      | B   | 94         | 186                     | N/A        | 0.36  |
| 45 <sup>th</sup> /Highland Terrace at MoPac Ramp | Signal               | 27.8                      | C   |            |                         |            |       | 17.8                      | B   |            |                         |            |       |
| Eastbound                                        |                      | 0.0                       | A   | 0          | 0                       | 50         | 0.00  | 1.8                       | A   | 10         | 38                      | 50         | 0.35  |
| Westbound left                                   |                      | 47.5                      | D   | 192        | 229                     | 1200       | 0.75  | 19.2                      | B   | 203        | 267                     | 1200       | 0.77  |
| Westbound right                                  |                      | 0.0                       | A   | 0          | 1                       | 175        | 0.01  | 1.4                       | A   | 0          | 13                      | 175        | 0.06  |
| Northbound left                                  |                      | 0.0                       | A   | 0          | 0                       | 130        | 0.00  | 37.0                      | D   | 1          | 6                       | 130        | 0.01  |
| Northbound                                       |                      | 14.9                      | B   | 35         | 73                      | N/A        | 0.06  | 34.7                      | C   | 42         | 68                      | N/A        | 0.18  |
| Southbound                                       |                      | 8.8                       | A   | 62         | 105                     | N/A        | 0.19  | 37.2                      | D   | 59         | 93                      | N/A        | 0.19  |
| Sheal Creek at 45th                              | All-Way Stop         | 69.7                      | F   |            |                         |            |       | 72.5                      | F   |            |                         |            |       |
| Eastbound inside lane                            | Stop                 | 74.6                      | F   | N/A        | 12.4                    | N/A        | 1.149 | 79.3                      | F   | N/A        | 11.7                    | N/A        | 1.099 |
| Eastbound outside lane                           | Stop                 | 74.2                      | F   | N/A        | 12.4                    | N/A        | 1.124 | 78.6                      | F   | N/A        | 11.8                    | N/A        | 0.234 |
| Westbound inside lane                            | Stop                 | 74.7                      | F   | N/A        | 12.3                    | N/A        | 1.207 | 79.0                      | F   | N/A        | 11.7                    | N/A        | 1.164 |
| Westbound outside lane                           | Stop                 | 74.2                      | F   | N/A        | 12.4                    | N/A        | 1.135 | 78.4                      | F   | N/A        | 11.8                    | N/A        | 1.032 |
| Northbound left/through                          | Stop                 | 18.9                      | C   | N/A        | 1.5                     | N/A        | 0.349 | 81.4                      | F   | N/A        | 11.4                    | N/A        | 1.332 |
| Northbound right                                 | Stop                 | 13.2                      | B   | N/A        | 0.3                     | 100        | 0.078 | 15.2                      | C   | N/A        | 0.9                     | 100        | 1.426 |
| Southbound left/through                          | Stop                 | 78.1                      | F   | N/A        | 11.8                    | N/A        | 1.176 | 57.7                      | F   | N/A        | 8.5                     | N/A        | 0.876 |
| Southbound right                                 | Stop                 | 14.2                      | B   | N/A        | 0.9                     | 100        | 0.235 | 15.9                      | C   | N/A        | 1.1                     | 100        | 0.270 |
| Ball Creek at Driveway 1                         | Two-Way Stop         | 1.5                       | A   |            |                         |            |       | 1.6                       | A   |            |                         |            |       |
| Westbound right                                  | Stop                 | 0.0                       | A   | N/A        | 0.0                     | 210        | 0.000 | 0.0                       | A   | N/A        | 0.0                     | 210        | 0.000 |
| Southbound lefts                                 | Free                 | 9.6                       | A   | N/A        | 0.9                     | N/A        | 0.231 | 15.1                      | C   | N/A        | 1.8                     | N/A        | 0.385 |
| Ball Creek at Driveway 3/41st                    | Two-Way Stop         | 2.4                       | A   |            |                         |            |       | 6.2                       | A   |            |                         |            |       |
| Eastbound                                        | Stop                 | 15.2                      | C   | N/A        | 0.1                     | N/A        | 0.047 | 52.5                      | F   | N/A        | 1.9                     | N/A        | 0.440 |
| Westbound left/through                           | Stop                 | 17.5                      | C   | N/A        | 0.4                     | 90         | 0.120 | 51.3                      | F   | N/A        | 1.9                     | 90         | 0.433 |
| Westbound right                                  | Stop                 | 10.1                      | B   | N/A        | 0.2                     | 90         | 0.066 | 14.9                      | B   | N/A        | 0.5                     | 90         | 0.132 |
| Northbound lefts                                 | Free                 | 8.0                       | A   | N/A        | 0.0                     | N/A        | 0.004 | 7.7                       | A   | N/A        | 0.0                     | N/A        | 0.008 |
| Southbound lefts                                 | Free                 | 7.9                       | A   | N/A        | 0.1                     | N/A        | 0.037 | 9.7                       | A   | N/A        | 0.4                     | N/A        | 0.120 |
| Ball Creek at Driveway 4                         | Two-Way Stop         | 1.1                       | A   |            |                         |            |       | 0.8                       | A   |            |                         |            |       |
| Westbound right                                  | Stop                 | 9.8                       | A   | N/A        | 0.3                     | 85         | 0.090 | 14.9                      | B   | N/A        | 0.5                     | 85         | 0.132 |
| Ball Creek at Driveway 5/42nd                    | Two-Way Stop         | 2.4                       | A   |            |                         |            |       | 8.9                       | A   |            |                         |            |       |
| Eastbound                                        | Stop                 | 14.9                      | B   | N/A        | 0.1                     | N/A        | 0.026 | 76.1                      | F   | N/A        | 2.5                     | N/A        | 0.543 |
| Westbound left/through                           | Stop                 | 17.6                      | C   | N/A        | 0.5                     | 190        | 0.152 | 97.2                      | F   | N/A        | 3.4                     | 190        | 0.681 |
| Westbound right                                  | Stop                 | 10.6                      | B   | N/A        | 0.3                     | 190        | 0.103 | 15.0                      | C   | N/A        | 0.2                     | 190        | 0.070 |
| Northbound lefts                                 | Free                 | 8.0                       | A   | N/A        | 0.0                     | N/A        | 0.001 | 7.9                       | A   | N/A        | 0.0                     | N/A        | 0.008 |
| Southbound lefts                                 | Free                 | 8.0                       | A   | N/A        | 0.1                     | N/A        | 0.019 | 10.1                      | B   | N/A        | 0.5                     | N/A        | 0.145 |

1. MOE is seconds delay per vehicle.
2. 7:30 AM - 8:30 AM
3. 4:30 PM - 5:30 PM
4. 95<sup>th</sup> Queue for signalized intersection measured in feet and for non-signalized intersection measured in vehicles

delay, freedom to maneuver, existing traffic congestion, and sense of comfort, convenience and perceived safety. Presented below is a summary table for the six LOS capacity conditions designated from "A" to "F" for both unsignalized and signalized intersections.

**TABLE 13 – Definitions of Level of Service (LOS) Criteria**

| <b>Level of Service</b> | <b>Delay Range for Unsignalized Intersections (sec/veh)</b> | <b>Delay Range for Signalized Intersections (sec/veh)</b> | <b>Description</b>                                                                      |
|-------------------------|-------------------------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------|
| A                       | $\leq 10$                                                   | $\leq 10$                                                 | Very low delays, nearly free traffic flow                                               |
| B                       | $> 10$ and $\leq 15$                                        | $> 10$ and $\leq 20$                                      | Good traffic flow, more vehicles stop than LOS A                                        |
| C                       | $> 15$ and $\leq 25$                                        | $> 20$ and $\leq 35$                                      | Stable traffic flow, significant number of vehicles stop                                |
| D                       | $> 25$ and $\leq 35$                                        | $> 35$ and $\leq 55$                                      | Noticeable traffic congestion, longer delays and queue lengths                          |
| E                       | $> 35$ and $\leq 50$                                        | $> 55$ and $\leq 80$                                      | Unstable traffic flow, significant congestion, traffic near roadway capacity            |
| F                       | $> 50$                                                      | $> 80$                                                    | Unacceptable delay, extremely unstable flow, heavy congestion, traffic exceeds capacity |

### **Neighborhood Traffic Analysis**

Section 25-6-116 of the Land Development Code (LDC) specifies the desirable operating levels for streets with various pavement widths. Based on LDC, 25-6-116, a residential collector with a pavement width of 30' should not exceed 1,800 vehicles per day (vpd) to continue to operate at a desirable level. Several residential streets were reviewed as a part of this TIA to determine if the existing or projected daily volumes of traffic will exceed the thresholds set forth in the LDC. Table 14 below summarizes the evaluation of neighborhood streets performed for this project.

**TABLE 14 – Neighborhood Traffic Analysis**

| Roadway                   | Width (ft) | Threshold Volume (vpd) | Existing Volume (vpd) | Site Volume (vpd) | Total Volume (vpd) | % Site Traffic |
|---------------------------|------------|------------------------|-----------------------|-------------------|--------------------|----------------|
| West 44 <sup>th</sup> St. | 27         | 1,200                  | 268                   | 0                 | 268                | 0%             |
| Jackson Ave.              | 27         | 1,200                  | 2,333                 | 2,746             | 5,079              | 54.1%          |
| West 42 <sup>nd</sup> St. | 27         | 1,200                  | 293                   | 587               | 880                | 66.7%          |
| West 41 <sup>st</sup> St. | 27         | 1,200                  | 428                   | 536               | 964                | 55.6%          |
| West 40 <sup>th</sup> St. | 27         | 1,200                  | 422                   | 0                 | 422                | 0%             |
| Oakmont St.               | 27         | 1,200                  | 551                   | 0                 | 551                | 0%             |
| West 39 <sup>th</sup> St. | 27         | 1,200                  | 354                   | 0                 | 354                | 0%             |
| Lawton St.                | 27         | 1,200                  | 574                   | 0                 | 574                | 0%             |

Development of the project is proposed in two phases:

For Phase 1, only residential land uses are proposed:

**TABLE 15**  
**Adjusted Trip Generation – Phase 1**

| Land Use                | Size   |       | 24-Hour | AM Peak Hour of Adjacent Street One Hour Between |       |      | PM Peak Hour of Adjacent Street One Hour Between |       |      |
|-------------------------|--------|-------|---------|--------------------------------------------------|-------|------|--------------------------------------------------|-------|------|
|                         |        |       |         | 7 and 9 am                                       |       |      | 4 and 6 pm                                       |       |      |
|                         | Amount | Units |         | Total                                            | Enter | Exit | Total                                            | Enter | Exit |
| Single Family (210)     | 110    | DU    | 1,089   | 82                                               | 21    | 62   | 109                                              | 69    | 40   |
| Residential Condo (230) | 375    | DU    | 1,929   | 141                                              | 24    | 117  | 169                                              | 113   | 56   |
| TxDOT Office            |        |       |         | -88                                              | -74   | -14  | -90                                              | -10   | -80  |
| Total                   |        |       | 3,019   | 136                                              | -29   | 165  | 188                                              | 172   | 16   |

Phase 2 includes the remaining land uses (full buildout) and will reflect all the land uses described previously in Table 2.

**TABLE 16**  
**Adjusted Trip Generation – Full Buildout (Phase 2)**

| Land Use                          | Size    |       | 24-Hour | AM Peak Hour of Adjacent Street One Hour Between |       |      | PM Peak Hour of Adjacent Street One Hour Between |       |      |
|-----------------------------------|---------|-------|---------|--------------------------------------------------|-------|------|--------------------------------------------------|-------|------|
|                                   |         |       |         | 7 and 9 am                                       |       |      | 4 and 6 pm                                       |       |      |
|                                   | Amount  | Units |         | Total                                            | Enter | Exit | Total                                            | Enter | Exit |
| Single Family (210)               | 110     | DU    | 1,032   | 82                                               | 21    | 62   | 97                                               | 61    | 36   |
| Apartment (220)                   | 600     | DU    | 3,384   | 283                                              | 57    | 226  | 296                                              | 192   | 103  |
| Residential Condo (230)           | 425     | DU    | 2,038   | 156                                              | 27    | 130  | 167                                              | 112   | 55   |
| Congregate Care Facility (253)    | 600     | DU    | 1,151   | 34                                               | 20    | 14   | 97                                               | 53    | 44   |
| Health/Fitness Club (492)         | 7,500   | SF    | 235     | 10                                               | 5     | 5    | 25                                               | 14    | 11   |
| Office (710)                      | 200,000 | SF    | 1,912   | 303                                              | 267   | 36   | 241                                              | 41    | 200  |
| Medical Office (720)              | 25,000  | SF    | 727     | 57                                               | 45    | 12   | 71                                               | 20    | 51   |
| Specialty Retail (826)*           | 55,000  | SF    | 1,706   | 100                                              | 62    | 38   | 83                                               | 37    | 47   |
| Supermarket (850)                 | 35,000  | SF    | 2,576   | 113                                              | 70    | 43   | 180                                              | 92    | 88   |
| Pharmacy/Drugstore w/o DT (880)   | 8,500   | SF    | 574     | 10                                               | 7     | 4    | 43                                               | 21    | 22   |
| Walk-in Bank (911)**              | 3,000   | SF    | 355     | 0                                                | 0     | 0    | 35                                               | 15    | 19   |
| Drinking Place (925)**            | 8,000   | SF    | 780     | 0                                                | 0     | 0    | 67                                               | 44    | 23   |
| Quality Restaurant (931)          | 15,000  | SF    | 1,012   | 11                                               | 9     | 2    | 68                                               | 46    | 23   |
| High Turnover Restaurant (932)    | 9,000   | SF    | 858     | 90                                               | 49    | 40   | 54                                               | 32    | 22   |
| Coffee/donut shop w/o DT (936)*** | 2,000   | SF    | 1,101   | 151                                              | 77    | 74   | 49                                               | 25    | 25   |
| TxDOT Office                      |         |       |         | -88                                              | -74   | -14  | -90                                              | -10   | -80  |
| Total                             |         |       | 19,442  | 1,312                                            | 640   | 672  | 1,485                                            | 796   | 689  |

#### **Applicant Proposed Improvements and Recommendations from the TIA**

The analysis presented in the TIA assumes the following infrastructure improvements prior to the 2018 completion of Phase 1:

- Installation of a traffic signal at the 45<sup>th</sup> Street/Highland Terrace and Mo-Pac southbound exit ramp intersection to provide dual lefts prior to 2018 (by others).
- Construction of a second northbound lane at both West 35<sup>th</sup> and West 45<sup>th</sup> exit ramps for serving Mo-Pac traffic (by TxDOT).
- Construction of a northbound approach lane on Bull Creek Road to serve left turn movements at the intersection of West 45<sup>th</sup> Street. This improvement is to be constructed 100% by the developer.
- Construction of Driveway 3 on Bull Creek Road (across from 41<sup>st</sup> Street).

The analysis was not updated to reflect the construction of the 2024 improvements in the 2018 analysis. The AM and PM peak hour results for the 2024 Build Conditions indicate the following additional improvements are required (beyond those listed previously):

- Construct Driveway 2 across from Jackson Street.
- Stripe 150 feet of northbound and 300' southbound left turn lanes on Bull Creek.
- Construct 150 feet of right turn lane on northbound Bull Creek at Driveway 2.

- Restripe Jackson Avenue to provide a left turn lane and shared through/right turn lane.
- Install a traffic signal at Jackson Avenue/Bull Creek Road when warranted per Texas MUTCD.
- Construct Driveway 1 with 350 feet of southbound left turn bay on Bull Creek Road.
- Restripe and sign the southbound Jackson Avenue approach to West 35<sup>th</sup> Street to provide a shared left/through lane and right turn only lane.
- Reconstruct 45<sup>th</sup> Street to provide 100 feet of eastbound and 250 feet of westbound left turn bays at Bull Creek and
- Add a 250 feet northbound right turn lane on Bull Creek at 45<sup>th</sup>.
- Reconfigure traffic signal to remove split phasing at 45<sup>th</sup> and Bull Creek.
- Construct Driveway 4 across from West 40<sup>th</sup> Street (right-in/right-out).
- Construct Driveway 5 on Bull Creek Road across from West 42<sup>nd</sup> Street.

### **Conclusions of staff review**

Staff evaluation of the TIA has determined that there are details related to the traffic operations and geometric elements of the proposed improvements that are as yet unresolved. The TIA assumed certain improvements, if those improvements cannot be completed then a revised TIA will have to be submitted or the development will be limited less than 2,000 trips per day. Specifically, the need for additional right-of-way at the intersections identified for signal upgrades and/or installation (West 45<sup>th</sup> Street/Bull Creek Road and Jackson Avenue/Bull Creek Road) and right-of-way required along Bull Creek Road to accommodate the improvements proposed, and the specific design details of the connection of Jackson Avenue to 45<sup>th</sup> Street.

Assuming all of the proposed improvements are constructed, staff finds this proposed development will adequately mitigate the anticipated traffic impact as determined in the TIA document, however, staff reserves the right to request further detailed analysis during the subdivision and site plan review process. Further, all traffic operations and design elements and transportation related improvements will be subject to review and approval by the Austin Transportation Department as part of the site development review process in coordination with DSD.

### **Staff Recommendations**

1. Prior to the permitting of any portions of the development that exceed the Phase 1 trip limit of 2,000 daily vehicle trips, the dedication of the right-of-way or easements at the southeast and northwest corners of the Bull Creek/45<sup>th</sup> Street intersection, and the dedication of the right-of-way along Bull Creek Road sufficient to allow construction of the proposed improvements.
2. All the improvements listed in Table 17 below as being constructed by the developer must be constructed when EITHER the 110 single-family homes and 188 residential condominium units OR when 375 residential condominiums units are complete. No certificate of occupancies on-site will occur beyond these unit thresholds until all the developer constructed improvements identified as being constructed by the developer in 2018 – Phase 1 are complete.

3. Prior to 3<sup>rd</sup> reading at Council, fiscal surety in the amount of \$750,000 shall be paid to the City of Austin for construction of a pedestrian/bicycle bridge across Shoal Creek. The applicant shall be responsible for the full cost of construction of said bridge crossing, if the City of Austin secures the required easement to complete extension to Shoal Creek Boulevard. Should the City be unable to secure the necessary easement within seven (7) years of the date of PUD approval, the fiscal dedication shall become a non-refundable contribution and will satisfy the applicant's obligation for this pedestrian/bicycle improvement.
4. The multi-use trail along Bull Creek Road shall be within a public access easement for its entirety.
5. Prior to 3<sup>rd</sup> reading at Council, fiscal surety for all other TIA improvements shall be paid to the City of Austin as listed in Table 17 below:

| <b>Table 17 – List of improvements for Site Development</b> |                                                                                                                                                                                                                    |                                |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| <b>Intersection</b>                                         | <b>Proposed Improvements</b>                                                                                                                                                                                       | <b>Developer Share</b>         |
| <b>Initial Improvements</b>                                 |                                                                                                                                                                                                                    |                                |
| Bull Creek Road Trail                                       | <ul style="list-style-type: none"> <li>Dedicate an easement for the 12' shared use path from 45<sup>th</sup> to south end of development</li> </ul>                                                                | 100%                           |
| Jackson Ave to 45 <sup>th</sup> Street                      | <ul style="list-style-type: none"> <li>Dedicate and construct Jackson Avenue extension from Bull Creek to West 45th Street</li> </ul>                                                                              | 100%<br>(*Note 1)              |
| Bull Creek from Driveway 5 to 45 <sup>th</sup>              | <ul style="list-style-type: none"> <li>Dedicate Right-of-way to accommodate the improvements per the TIA</li> </ul>                                                                                                | 100%                           |
| <b>2018 – Built as part of Phase 1</b>                      |                                                                                                                                                                                                                    |                                |
| West 45th Street at Bull Creek Road                         | <ul style="list-style-type: none"> <li>Construct additional northbound left turn lane on Bull Creek to westbound 45th</li> <li>Restripe northbound approach as dual lefts and shared through/right lane</li> </ul> | 100%<br>\$259,000<br>(*Note 2) |
| Highland Terrace /45 <sup>th</sup> /MoPac Exit Ramp         | <ul style="list-style-type: none"> <li>Install Traffic Signal when/if warranted</li> <li>Restripe to provide westbound dual lefts when signal installed</li> </ul>                                                 | 12.2%<br>\$30,388              |
| Shoal Creek Trail                                           | <ul style="list-style-type: none"> <li>Construct from south end of park to Idlewild Road</li> </ul>                                                                                                                | 100%<br>\$30,000<br>(*Note 2)  |
| Bull Creek Road Trail                                       | <ul style="list-style-type: none"> <li>Construct 12' shared use path from 45<sup>th</sup> to south end of development</li> </ul>                                                                                   | 100%<br>\$5,000<br>(*Note 2)   |
| MoPac at West 45 <sup>th</sup>                              | <ul style="list-style-type: none"> <li>Update signal timing</li> </ul>                                                                                                                                             | 100%<br>\$5,000                |

|                                                     |                                                                                                                                                                                                        |                                |
|-----------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------|
| West 45 <sup>th</sup> Street at Bull Creek Road     | <ul style="list-style-type: none"> <li>Reconstruct intersection to provide turn bays on 45<sup>th</sup> Street and a turn lane on Bull Creek</li> <li>Modify signal to remove split phasing</li> </ul> | 100%<br>\$770,000<br>(*Note 2) |
| Bull Creek from Driveway 1 to 45 <sup>th</sup>      | <ul style="list-style-type: none"> <li>Construct 2<sup>nd</sup> north bound lane</li> </ul>                                                                                                            | 100%<br>\$253,000<br>(*Note 2) |
| Bull Creek from Driveway 1 to Driveway 2            | <ul style="list-style-type: none"> <li>Construct 2<sup>nd</sup> north bound lane</li> </ul>                                                                                                            | 100%<br>\$253,000<br>(*Note 2) |
| Pedestrian Hybrid Beacon                            | <ul style="list-style-type: none"> <li>Across Bull Creek Road adjacent to Driveway 4</li> </ul>                                                                                                        | 100%<br>\$250,000              |
| Jackson Ave between 35 <sup>th</sup> and Bull Creek | <ul style="list-style-type: none"> <li>Complete Study of potential mitigation improvements as part of the warrant study for the Jackson / Bull Creek signal</li> </ul>                                 | 100%                           |
| Pedestrian Hybrid Beacon                            | <ul style="list-style-type: none"> <li>Across Bull Creek Road adjacent to Driveway 1</li> </ul>                                                                                                        | 100%<br>\$250,000              |
| Shoal Creek bikeway                                 | <ul style="list-style-type: none"> <li>Construction of pedestrian/bicycle bridge across Shoal Creek</li> </ul>                                                                                         | 100%<br>\$750,000<br>(*Note 3) |
|                                                     | <b>Total cost estimate Phase 1 Improvements</b>                                                                                                                                                        | <b>\$2,855,388</b>             |
| <b>2024 – Built as part of Phase 2</b>              |                                                                                                                                                                                                        |                                |
| Jackson Ave at 35 <sup>th</sup>                     | <ul style="list-style-type: none"> <li>Restripe approach of Jackson Avenue at 35<sup>th</sup> Street</li> </ul>                                                                                        | 100%<br>\$3,500                |
| Jackson Ave between 35 <sup>th</sup> and Bull Creek | <ul style="list-style-type: none"> <li>Implement mitigation recommendations of study of Jackson Ave.</li> </ul>                                                                                        | 100%                           |
| Jackson Avenue/Bull Creek Road                      | <ul style="list-style-type: none"> <li>Install a traffic signal at Jackson Avenue/Bull Creek Road when warranted per Texas MUTCD.</li> </ul>                                                           | 100%<br>\$330,000<br>(*Note 2) |
|                                                     | <b>Total cost estimate Phase 2 Improvements</b>                                                                                                                                                        | <b>\$333,500</b>               |

Note 1 Final design of the extension of Jackson Street to 45<sup>th</sup> Street will be completed as part of the subdivision infrastructure improvements internal to the development. The applicant is responsible for 100% of this construction cost as part of the subdivision infrastructure to serve the development.

Note 2 Construction costs shown are based on engineer's estimates of probable cost provided by the applicant's engineer. Applicant's cost contribution is not limited to this estimated amount and the applicant is responsible for the full construction of these improvements.

Note 3 Construction cost shown is based on engineer's estimates of probable cost provided by the applicant's engineer. Applicant's cost contribution is not limited to this estimated amount and the applicant is responsible for full the construction cost of these improvements provided the City of Austin secures the required easement to complete extension to Shoal Creek Boulevard. Should the City be unable to secure the necessary easement within seven (7) years of the date of PUD approval, the fiscal dedication shall become a non-refundable contribution to be used bicycle and pedestrian improvements in the adjacent area and will satisfy the applicant's obligation for this pedestrian/bicycle improvement.

- A signal warrant study is to be conducted by the developer for the intersection of Jackson Avenue and Bull Creek Road once the extension of Jackson Avenue from Bull Creek Road to West 45<sup>th</sup> Street is complete.

7. The developer will also study Jackson Avenue to determine appropriateness of additional mitigation to address traffic impacts from the development prior to the start of construction on Phase 2 of the development.
8. Right-of-way for the proposed Jackson Avenue extension shall be dedicated with the first subdivision plat for the project. The final detailed design of the connection at Jackson Avenue will be completed as part of the review of the subdivision construction plan application(s).
9. As recommended in the TIA, the site driveways and all internal streets/ private drives shall meet City of Austin geometric street design criteria and shall be located in accordance with City of Austin standards. Cross sections may reflect approved Grove Design Guidelines as provided by the PUD.
10. No later than five (5) years after approval, the TIA shall be revised by the developer and/or updated to reflect current conditions. Upon completion of the revised analyses, copies of the TIA revisions shall be submitted to the City of Austin for review and approval.
11. Based on the proposed PUD land use plan, outlets for additional street access may be required at the time of subdivision application.
12. Development of this property should be limited to uses and intensities which do not exceed or vary from the from the projected traffic conditions assumed in the TIA, including peak hour trip generation, traffic distribution, roadway conditions, and other traffic related characteristics.

**PART XX. The Grove at Bull Creek PUD Affordable Housing Program.**

A. In order to meet the City's affordable housing goals and to ensure long-term affordability, the Landowner and the Landowner's successors and assigns (collectively referred to as the "Landowner") agree to the following:

1. Ten percent of the total number of multifamily rental housing units located within the Grove at Bull Creek PUD will be set aside for occupancy by households with incomes at 60 percent of or below the median family income (each an "Affordable Rental Unit," collective "Affordable Rental Units") in the Austin metropolitan statistical area for a rental affordability period of forty years (collectively, the "Rental Affordability Requirement") from the date of a certificate of occupancy. In addition the Landowner agrees to comply with the following:

- a) The Rental Affordability Requirement period for each multifamily development with Affordable Rental Units (the "Affordable Development") begins on the date a final certificate of occupancy is issued for each Affordable Development.
- b) Affordable Rental Units must contain a product unit mix of studio, one, two and three bedroom units in accordance with Fair Housing Laws.
- c) Each lot or site sold or developed for use as an Affordable Development shall be subject to a restrictive covenant using the form shown in Exhibit XX (subject to revision) or agreed upon by the Director of Neighborhood Housing and Community Development (NHCD) and Landowner at the time of the sale or development and recorded in the official public records of the county where the Affordable Development is located.

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B. At least 5 percent of the total number of units sold as owner-occupied residential housing units located within the Grove at Bull Creek PUD will, through a mechanism agreed upon by the City and Landowner, be made permanently available at a price affordable to households with incomes at 80 percent of or below the median family income (each an "Affordable Ownership Unit," collective "Affordable Ownership Units") in the Austin metropolitan statistical area (collectively, the "Ownership Affordability Requirement").

1. The Affordable Ownership Units constructed on any site shall have substantially similar architectural design and restrictions as other residential units offered for sale to the general public on such site.
2. The Affordable Ownership Units must contain a product unit mix of studio, one, two and three bedroom units deemed feasible by Developer; provided that, however, no fewer than 50% of the Affordable Ownership Units shall have at least 2 bedrooms.

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3. Affordable Ownership units must:

- a) Be sold to an income eligible household at 80 percent of or below median family income;
  - b) Include resale restrictions that require that resale of the affordable unit must be to a household at 80 percent of or below median family income; and
  - c) Contain restrictions that will cap the equity gain to the homeowner that can be realized upon resale of the affordable unit. The resale formula will be set by the director of the Neighborhood Housing and Community Development Department, and may change from time to time; and
  - d) Contain a Right of First Refusal to the Austin Housing Finance Corporation (AHFC) or other entity designated by the City that is assignable to an income-qualified buyer, to ensure long term affordability.
- C. The Landowner agrees to enter into an agreement with the City of Austin that ensures compliance with Part XX of this PUD ordinance.
- D. Income limits for the Affordable Housing Requirements shall be established annually as determined by the United States Department of Housing and Urban Development.
- E. The Landowner shall file a written report with the Director on the number and location of each Affordable Ownership Unit and Affordable Rental Unit meeting the Affordable Housing Requirements within the Grove at Bull Creek PUD (the "Affordability Report"). The initial Affordability Report shall be filed within 15 calendar days following the March 31 or September 30 next following the date of recordation of a plat or site plan within the Grove at Bull Creek PUD and be continuously filed on a semi-annual basis until the project is fully built out and sold.
- F. Compliance with the Affordable Housing Requirements will be monitored by the City's Neighborhood Housing and Community Development Department through an annual audit of the sale and rental of Affordable Ownership Units and Affordable Rental Units within the Grove at Bull Creek PUD. Income qualifications, rents and sales price of the ownership units must comply with NHCD compliance guidelines.
- G. Compliance with this Part XX of this PUD Ordinance satisfies the requirements of Section 25-1-704(B)(2)(a) of the Austin City Code so that development within The Grove at Shoal Creek PUD shall be eligible for a waiver of 100% of the development fees, including capital recovery fees, described in Section 25-1-704 and Section 25-9-397 of the Austin City Code as allowed by and in accordance with the City's SMART Housing Program.



# MEMORANDUM REVISED

To: Jeff Howard  
McLean & Howard, LLP

Date: June 28, 2016

Project: The Grove At Shoal  
Creek

CC: Andrew Linseisen, P.E.  
Development Services Department

Sherri Serwaitis  
Planning and Zoning Department

From: Austin Transportation Department

Re: Review Comments

The Austin Transportation Department has reviewed the March 28, 2016 (received June 16, 2016) traffic report regarding the *"The Grove at Shoal Creek, Traffic Impact Analysis"*, prepared by R-K Traffic Engineering, LLC. The proposal calls for constructing 110 Single Family Homes, a 600 unit apartment building, 425 condo/townhouse dwelling units, a 600 room congregate care facility, 225,000 SF of office, 55,000 SF of shopping center, a 35,000 SF supermarket, plus additional uses. The development would be constructed between Bull Creek Road, Shoal Creek and 45<sup>th</sup> street. The following comments summarize our review findings:

## **Unresolved Traffic Impact Analysis (TIA) Comments**

### **Analysis Comments**

1. The 2018 analysis, as presented in the TIA, does not include the following:
  - Full build out of the Bull Creek Road and West 45th Street intersection
  - The improvements at the Bull Creek Road/Driveway 1 intersection
  - The improvements at the Bull Creek Road/Jackson Avenue intersection
  - The improvements at the Mopac/45<sup>th</sup> Street intersection
  - The improvements at driveways 2 through 5 along Bull Creek Road

This analysis was however included in the 2024 analysis. Based on the information provided in the current revision of the TIA, ATD understands that these intersection improvements will be fully built out prior to completion of Phase 1 of the development (see other comments below). Please clarify if otherwise.

2. **Repeat Comment ATD7 from March 2016:** It appears from the information provided in the TIA that 14% of the site generated volumes will use Jackson



Avenue. This site generated traffic will significantly increase traffic volume on Jackson Avenue. However, mitigation has not been proposed along Jackson Avenue to address this increase in traffic. We recommend that when a signal warrant study is conducted by the Applicant for the signal at Jackson Avenue and Bull Creek Road, the Applicant also study Jackson Avenue to determine whether mitigation is needed address the increase in traffic.

### **Geometric Comments**

The Applicant will include design plans addressing these geometric comments, and those addressed by the ATD memorandum dated March 28, 2016 as part of the site plans:

#### **Bull Creek Road/West 45th Street Intersection Plan – Preferred Option 2:**

1. ATD had conceptually accepted the concept plan (Option 2) at the intersection of 45 Street/ Bull Creek Road, submitted by the Applicant, dated December 15, 2015 (as per Transmittal, dated March 25, 2016).

ATD recommends that acquisition of all necessary ROW (as proposed in the Plan – Option 2 submitted by the Applicant) and construction of the intersection at 45 Street / Bull Creek Road according to the plan be one of the conditions of approval of the PUD.

ATD also recommends that the Applicant provide documentation that this, and all other ROW, has been obtained to allow construction of the proposed improvements at this location as proposed.

2. The northbound right turn is too narrow to allow for a WB-50 design vehicle to make the turn. The lane should be widened by shifting the outermost curb and not the island curb line.
3. The northern curb face of the pork-chop island must be offset by two (2) feet from the travel lane for eastbound traffic.
4. On the eastbound approach, the 100 feet approach taper is insufficient in length. The taper should be lengthened by narrowing the painted island.
5. The concept plan shows four (4) feet wide sidewalk on the northwest of the intersection along 45<sup>th</sup> Street. All sidewalks must be minimum five (5) feet wide.

#### **Bull Creek Road Improvements Plan (comments start at the north and head south):**

1. It is unclear at this time if sufficient ROW will be obtained for the proposed improvements along Bull Creek Road. In addition, since there are a number of comments regarding the proposed design along Bull Creek Road, it is unclear if



the total ROW needed has been adequately identified, particularly at the PHB locations and the traffic signal at Jackson Avenue. If this ROW is not obtained there is concern that the proposed improvements along Bull Creek Road will not be able to be constructed.

ATD requests that the Applicant provide verification that the required ROW along Bull Creek Road, has been dedicated/obtained to allow construction of the proposed improvements at this location as proposed.

2. Tapers shown between the back-to-back turn lanes are insufficient in length. A single taper between the two turn lanes should be provided.
3. The PHB, crosswalks and landings are not shown at Driveway 1. Please show this information.
4. The 185 feet taper on the northbound left turn approach to Jackson Avenue is insufficient in length. Lengthen the taper and narrow the painted island.
5. The traffic signal, crosswalks and landings are not shown at Driveway 2/Jackson Avenue. In addition, no information is presented on Jackson Avenue related to length of turn lanes and tapers. Please present this information.
6. Between Driveway 5 and Driveway 4, the Applicant is proposing a 10-foot wide southbound lane, 11-foot wide lane northbound with a 9-foot wide shoulder. ATD recommends that the Applicant provide 10-foot wide travel lanes including a center two-way left-turn lane.
7. The pedestrian refuge island shown at Driveway 4 does not appear to have offsets to the travel lanes as provided. We recommend that one foot (1') minimum offsets be provided.
8. The PHB, crosswalks and landings are not presented at Driveway 4 in the concept plan. Please present this information.
9. The 167' lane taper south of Driveway 4 appears to be too short. In addition, it is unclear how the improvements south of Driveway 4 will match the existing conditions, including how the existing northbound bicycle lane will transition onto the multi-use path. Please present this information.
10. It is unclear from the information contained in the TIA as to when the concrete safety barrier for the bicycle lane will be constructed along Bull Creek Road. The Applicant has indicated in conversations with ATD that the barrier will be installed when Bull Creek Road is reconstructed to provide the other proposed improvements listed in the TIA. The Applicant will include design plans of this barrier installation with the site plans for the development.



### **Vehicular Connection to 45<sup>th</sup> Street from Jackson Avenue Extension**

1. The Applicant provided traffic analysis for this proposed connection and included it in Appendix J of the TIA. However, the applicant didn't model full connection of Jackson Avenue from Bull Creek Road to 45<sup>th</sup> Street in Synchro. Also the TIA did not document how the diversion of the site trips and additional diverted trips (if any) were determined. We recommend that the Applicant review and provide justification of the diverted site trips and any additional diverted trips.
2. The site plan must include the proposed layout and cross section for the Jackson Avenue Extension from Bull Creek Road to West 45<sup>th</sup> Street. At the connection to West 45<sup>th</sup> Street, the cross section of Jackson Avenue should be wide enough to accommodate emergency vehicles. Bicycles and pedestrians should be accommodated as part of the complete streets policy.
3. Since no internal plans have been provided for the Jackson Avenue Extension from Bull Creek Road to 45<sup>th</sup> Street, we recommend that as part of the site plans for the development this roadway (called a driveway in the TIA) be designed such that a consistent cross-section, with bike lanes and sidewalks is provided between Bull Creek Road and 45<sup>th</sup> Street. In addition, we recommend that the design speed of this new roadway connection be 30 mph.
4. It is Austin Transportation Department's understanding that the Jackson Avenue Extension connection from Bull Creek Road to 45<sup>th</sup> Street shall be fully funded by the Applicant, including the PHB, as part of the improvements during the implementation of the 2018 improvements.
5. The Austin Transportation Department understands that the Applicant has purchased 2627 45<sup>th</sup> Street for ROW and additional ROW is being pursued along 45<sup>th</sup> Street which will be provided for this connection. Austin Transportation Department also understands that movements at this "new" intersection will be restricted to right in/right out only. Plans will need to show how turning movements will be restricted and which design vehicles can be accommodated. ATD requests that the applicant submit plans presenting these details at this proposed connection. If the additional ROW is not obtained we recommend that this access be limited to right-out only.



6. Advisory Comment: ATD had significant comments on the preliminary plan(s) previously submitted for this proposed new access (please submit plans as per comments 2, 3, and 4 above). The comments on the previously submitted plans are as follow:
  - a. The proposed splitter island is shown as 20.5' along 45<sup>th</sup> Street. This distance is insufficient to prevent vehicles from making an illegal left into the site or an illegal through movement from the site to Chiappero Trail. We recommend that the island be enlarged to prevent these movements.
  - b. The proposed splitter island is proposed to be constructed with type 1 mountable curb. We recommend that the island be constructed with non-mountable curb to prevent illegal movements.
  - c. The lanes on either side of the splitter island appear to be approximately 12'. We recommend that these lanes be widened to accommodate, at a minimum, a fire truck.
  - d. The Pedestrian Hybrid Beacon Signal on the west side of the proposed driveway is too close to the stop bar. This needs to be a minimum of 40' from the stop bar to allow for sight distance. We recommend that the design be modified to meet proper sight distance.

#### **Development Phasing Comments**

1. Based on the analysis presented in the TIA, all the improvements need to be constructed in 2018. The Applicant is requesting that these improvements be constructed when Phase 1 development reaches 2,000 vehicle trips per day. These improvements must be constructed when either the 110 single-family homes and half of the residential condominiums (188 units) or when all the residential condominiums (375 units) are complete. These intensities equate to the approximately 2,000 vehicle trips per day requested. It is our understanding that no construction on-site will occur beyond these units until all the improvements identified in the TIA for 2018 are complete. We recommend that these thresholds and restrictions be included in the Final TIA memorandum prepared by DSD and be one of the conditions of approval of the PUD.

Staff will conduct further review of the subject application with regard to geometric constraints that may arise due to inadequate or unavailable right-of-way that may affect the operational objectives of proposed infrastructure improvements. These elements may affect site plan review and approval as they are considered integral to the viability of the subject development as proposed.

