

**DATE:** March 21, 2023  
**TO:** Honorable Mayor & City Council  
**FROM:** Planning & Zoning Commission  
**VIA:** Eric Hill, AICP, Assistant Director of Planning acting as Secretary of the Planning & Zoning Commission  
Christina D. Day, AICP, Director of Planning  
**SUBJECT:** Results of Planning & Zoning Commission Meeting of March 20, 2023

**AGENDA ITEM NO. 1A - ZONING CASE 2022-018**  
**PETITIONER(S): JAN MARTIN, GRAPELAND PROPERTIES, LLC, S.H. LUCAS INVESTMENTS, LLC, NUMERO UNO, LTD., AND SMITH-LISLE HOLDINGS, LTD.**

Request to rezone 5.2 acres located on the west side of J Place, 111 feet north of State Highway 190, from Light Commercial to Planned Development-Corridor Commercial and to rescind Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer. Zoned Light Commercial with Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer and located within the 190 Tollway/Plano Parkway Overlay District. Project #ZC2022-018.

**APPROVED:** 4-1-1

Speaker Card(s) Received	Support:	<u>5</u>	Oppose:	<u>0</u>	Neutral:	<u>0</u>
Letters Received Within 200' Notice Area:	Support:	<u>0</u>	Oppose:	<u>0</u>	Neutral:	<u>0</u>
Petition Signatures Received:	Support:	<u>0</u>	Oppose:	<u>0</u>	Neutral:	<u>0</u>
Other Responses:	Support:	<u>2</u>	Oppose:	<u>2</u>	Neutral:	<u>0</u>

**RESULTS:**

The Commission approved the item with the following stipulations:

The permitted uses and standards shall be in accordance with the Corridor Commercial (CC) zoning district unless otherwise specified herein.

Multifamily Residential Development Standards

1. Multifamily residence is an additional permitted use.
2. Maximum Floor to Area Ratio (excluding parking garage square footage): 1.75:1
3. Special Regulations for Multifamily Residences
  - a. Minimum Floor Area per Dwelling Unit:

Unit Type	Minimum Floor Area
Efficiency	400 square feet
One-bedroom	475 square feet
Two-bedroom	625 square feet
Each additional bedroom	150 square feet

- b. A minimum of 20% of units must be two bedrooms or more; and
  - c. The average unit size will be a minimum of 700 square feet.
4. Required Parking:
- a. One Bedroom or fewer: One space per unit
  - b. Two Bedrooms: 1.5 spaces per unit
  - c. Three Bedrooms or more: 2 spaces per unit
5. Maximum of 325 multifamily dwelling units

Multifamily Residential Design Standards

In lieu of the supplemental regulations of Section 15.800 (Multifamily Residence) the following will be met:

1. Streetscape along J Place:
- a. On-street parking spaces will be provided along J Place
  - b. A sidewalk with a minimum width of 7 feet
  - c. Street trees are required at the rate of one three-inch caliper shade tree per 40 linear feet of street frontage. Trees shall be placed in planting beds or tree grates within five feet of the back of the street curb.
2. Building Design:
- a. A parking structure must be constructed between all residential units and the frontage road of S.H. 190; however, one residential unit on each floor of the eastern and western building facades may be exposed to the frontage road.
  - b. Maximum Front Yard Setback: Building must be constructed such that a minimum of 60% of the facade falls within 15 feet of the right-of-way line. Where easements are present, a minimum of 60% of each facade must be built to the easement line.
  - c. Minimum Setback from Northern Property Line: 50 feet
  - d. Building Articulation: All facades must meet the following minimum standards for articulation:
    - i. No building facade shall exceed a length of 100 feet without a horizontal and vertical break in the facade. The vertical break shall be a minimum depth/height of 3 feet for a minimum length of 10 feet, and facades shall contain repeating patterns of contrasting materials, material colors, and material textures that visually break up the horizontal and vertical expanse of the facade.

- ii. Pitched roofs are not an allowed design except as may be approved on a facade plan at the discretion of the Planning & Zoning Commission.
  - iii. 30% of all units must have a true balcony, with a minimum 7-foot depth and 8-foot width to create outdoor living space. In lieu of balconies, outdoor common areas within the building (distinct from required public open space as listed in the following Section 3.d) may be provided at a rate of 100 square feet per unit where a balcony is required but not constructed.
- 3. Landscaping, Sidewalks, and Open Space: Landscaping will be provided per Article 17 (Landscaping and Tree Preservation) and Section 11.400 (190 Tollway/Plano Parkway Overlay District) except as follows:
  - a. Along the north and south property lines, a minimum 10-foot landscape buffer and 8-foot ornamental fence are required. Within these landscape edges, an irrigated evergreen, full-to-ground, solid landscape screen must be installed and maintained. Two staggered rows of evergreen shrubs used for a landscape screen must be installed so as to create at least a 6-foot-tall solid screen at the time of installation. All landscaping shall be irrigated within an automatic sprinkler system and maintained in a healthy and growing condition.
  - b. Along the eastern property line, a minimum 5-foot landscape edge shall be provided between all parking lots and public streets. Within this landscape edge, 10 shrubs (5-gallon minimum) shall be planted per 500 square feet. The number of required shrubs shall be calculated solely on the area of the required landscape edge.
  - c. Along the western property line, a minimum 6-foot sidewalk is required to connect to the trail along the DART right-of-way at a feasible location. Along the western property line, streetscape landscaping shall be provided.
  - d. Interior Landscape Requirements: Parking termini at the end of every parking row and parking lot island per every eleven spaces are required. The minimum total area of such islands shall be approximately 180 square feet with minimum dimensions of 9 feet by 20 feet but may be designed so that the radii help to facilitate traffic maneuverability. Such islands shall contain at least one large canopy tree. The remainder of the island space shall be landscaped with shrubs, turf, and living ground cover not to exceed three feet in height.
  - e. Open Space: 10% to 20% active open space must be provided. Examples include plazas, playgrounds, public art, water features, benches, courtyards, dog parks, and other pedestrian amenities.
- 4. Site Amenities: The following amenities are required:
  - a. Indoor exercise facility,
  - b. Meeting room,
  - c. Dog run and dog waste stations, and
  - d. Swimming pool.
- 5. EHA Mitigation Measures
  - a. Intake openings for outdoor air, as defined in the adopted International Mechanical Code, as amended, must not be on the southern face of the south building unless the parking garage is positioned between intake opening and expressway.
  - b. Pollution Mitigation Measures – The following standards must be used during initial construction and must be added as notes to the site plan. The Building Official or

designee may substitute equivalent or superior construction methods upon replacement or reconstruction, consistent with building code requirements.

- i. Mechanical ventilation must exceed the building code as follows:
  - a) All ventilation units will be “outdoor-air sourced.”
  - b) Units will be installed on the roof of the building with air intakes not “ducted” to the southern face of the south building unless the parking garage is positioned between intake opening and expressway.
- ii. Air Filtration:
  - a) Each “outdoor-air sourced” mechanical ventilation unit must contain a filter box on its air-intake side.
  - b) These filter boxes must contain a filter (or combination of filters in “series”), capable of filtering outdoor airborne “particulates” to the MERV 8 standard or greater, based on American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) ratings.
- iii. Noise Mitigation Measures – The following standards must be used during initial construction and must be added as notes to the site plan. The Building Official or designee may substitute equivalent or superior construction methods upon replacement or reconstruction, consistent with building code requirements.
  - a) Construction documents sealed by an architect must be provided as part of the building construction plan set that details mitigation of the interior noise at each unit to a maximum level of 45 dBA. The engineer of record will be responsible for testing the interior noise and providing a noise study for all units to the Building Inspections Department prior to final building inspection.
  - b) No balconies will be within 300 feet of southern property line except if there is a building facing the easement dedicated to North Texas Municipal Water District (NTMWD) crossing east-west approximately midway through the property.

To view the hearing, please click on the provided link:

<https://planotx.new.swagit.com/videos/222359?ts=124>

RP/kob

[Google Link](#)

cc: Eric Hill, Assistant Director of Planning  
Christina Sebastian, Land Records Planning Manager  
Melissa Kleineck, Lead Planner  
Cassidy Exum, GIS Technician  
Jeanna Scott, Building Inspections Manager  
Dorothy Alatorre, Sr. Administrative Assistant - Neighborhood Services

**MEETING DATE**    **MEETING ID**                      **ZONING CASE**  
March 20, 2023      PZ 03.20.23                      ZC2022-018

**RESULTS**

I, J. Michael Brownoff Commissioner, after review of the written information and listening to the hearing participants, voted in **SUPPORT** to this case, finding the following:

1. The request is consistent with the overall Guiding Principles of the Comprehensive Plan because:

*IT redevelops the Expressway Corridor and the Southern Gateway, and provides transit-oriented development with respect to the Dallas Bus Rapid Transit Station*

2. The request is substantially beneficial to the immediate neighbors, surrounding community, and general public interest because:

*IT clears up the parcel with a more attractive use, and provides business for the downtown corridor businesses*

3. The request is consistent with other policies, actions, maps:

- Bicycle Transportation Plan Map
- Downtown Vision & Strategy Update (2019)
- Future Land Use Map & Dashboards - Character Defining Elements
- Future Land Use Map and Dashboards - Description & Priorities
- Parks Master Plan Map
- Thoroughfare Plan Map & Cross-Sections
- Transit-Oriented Development Policy
- Other

\_\_\_\_\_

4. Comments on any of the above which further explain my position:

\_\_\_\_\_

*J. Michael Brownoff*  
Signature

*3/20/2023*  
Date

MEETING DATE	MEETING ID	ZONING CASE
March 20, 2023	PZ 03.20.23	ZC2022-018

**RESULTS**

David Davis, Commissioner, after review of the written information and listening to the hearing participants, voted in **SUPPORT** to this case, finding the following:

1. The request is consistent with the overall Guiding Principles of the Comprehensive Plan because:

**IT MEETS A NEED THAT WHEN ADDRESSED PROVIDES A BENEFIT TO THE COMMUNITY AS A WHOLE & PARTICULARLY TO NEIGHBORING BUSINESSES & RESIDENTS!**

2. The request is substantially beneficial to the immediate neighbors, surrounding community, and general public interest because:

**THE HIGHER DENSITY WILL HELP ATTRACT ADDITIONAL RETAIL & SERVICES BENEFICIAL TO RESIDENTS.**

3. The request is consistent with other policies, actions, maps:

- Bicycle Transportation Plan Map
- Downtown Vision & Strategy Update (2019)
- Future Land Use Map & Dashboards - Character Defining Elements
- Future Land Use Map and Dashboards - Description & Priorities
- Parks Master Plan Map
- Thoroughfare Plan Map & Cross-Sections
- Transit-Oriented Development Policy
- Other

4. Comments on any of the above which further explain my position:

David Davis

3/20/23

Signature

Date

MEETING DATE	MEETING ID	ZONING CASE
March 20, 2023	PZ 03.20.23	ZC2022-018

**RESULTS**

I, Bennett Rattliff, Commissioner, after review of the written information and listening to the hearing participants, voted in **SUPPORT** to this case, finding the following:

1. The request is consistent with the overall Guiding Principles of the Comprehensive Plan because:

*Provides Substantial Benefit to Neighbors and the General Public*

and

2. The request is substantially beneficial to the immediate neighbors, surrounding community, and general public interest because:

*Meets TOD Housing Needs*

and

3. The request is consistent with other policies, actions, maps:

Bicycle Transportation Plan Map

Downtown Vision & Strategy Update (2019)

Future Land Use Map & Dashboards - Character Defining Elements

Future Land Use Map and Dashboards - Description & Priorities

Parks Master Plan Map

Thoroughfare Plan Map & Cross-Sections

Transit-Oriented Development Policy

Other

4. Comments on any of the above which further explain my position:

*This site is ideally suited for TOD development*

Signature

Date

*3/20/23*

MEETING DATE	MEETING ID	ZONING CASE
March 20, 2023	PZ 03.20.23	ZC2022-018

**RESULTS**

I, Gary Cary, Commissioner, after review of the written information and listening to the hearing participants, voted in **SUPPORT** to this case, finding the following:

1. The request is consistent with the overall Guiding Principles of the Comprehensive Plan because:

It fits the T.O.D and with PGMI will benefit the surrounding and community

2. The request is substantially beneficial to the immediate neighbors, surrounding community, and general public interest because:

It will benefit the surrounding businesses in Downtown Plano and the immediate neighbors and general public interest

3. The request is consistent with other policies, actions, maps:

- Bicycle Transportation Plan Map
- Downtown Vision & Strategy Update (2019)
- Future Land Use Map & Dashboards - Character Defining Elements
- Future Land Use Map and Dashboards - Description & Priorities
- Parks Master Plan Map
- Thoroughfare Plan Map & Cross-Sections
- Transit-Oriented Development Policy
- Other

4. Comments on any of the above which further explain my position:

Gary Cary  
Signature

3/20/23  
Date

MEETING DATE	MEETING ID	ZONING CASE
March 20, 2023	PZ 03.20.23	ZC2022-018

**RESULTS**

I, DOYAN OLLEY, Commissioner, after review of the written information and listening to the hearing participants, voted in **OPPOSITION** to this case, finding the following:

I agree with the conclusions in the preliminary report provided by staff because:

THE ZONING DOES NOT COMPLY WITH EHA 2 SENSITIVE LAND USE

or

The project is incompatible with the Future Land Use Map Dashboard of the Comprehensive Plan because:

The request is inconsistent with the overall Guiding Principles of the Comprehensive Plan because:

The request is not substantially beneficial to the immediate neighbors, surrounding community, and general public interest because:

The request is inconsistent with other policies, actions, maps:

- Downtown Vision & Strategy Update (2019)
- Expressway Corridor Environmental Health Map & Guidelines
- Future Land Use Map & Dashboards - Character Defining Elements
- Future Land Use Map & Dashboards - Mix of Uses
- Redevelopment & Growth Management Policy - Action 1 (RGM1)
- Redevelopment & Growth Management Policy - Action 8 (RGM8)
- Redevelopment of Regional Transportation Corridors Policy
- Transit-Oriented Development Policy
- Other

Comments on any of the above which further explain my position:



Signature

3/20/23

Date

**Agenda Item No. 1A**

**Public Hearing:** Zoning Case 2022-018

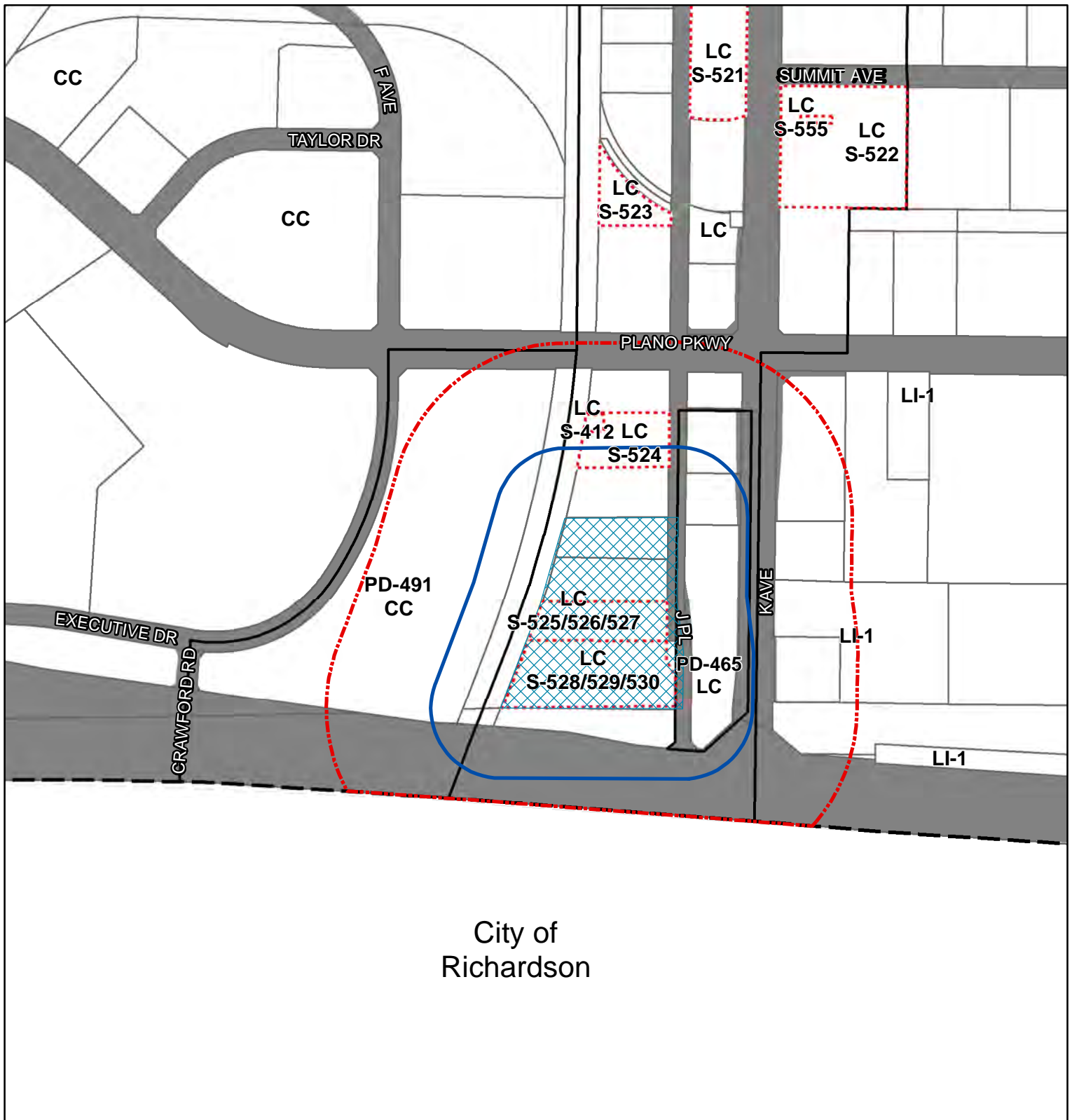
**Petitioner:** Jan Martin, Grapeland Properties, LLC, S.H. Lucas Investments, LLC, Numero Uno Ltd., and Smith-Lisle Holdings, Ltd.

**DESCRIPTION:**

Request to rezone 5.2 acres located on the west side of J Place, 111 feet north of State Highway 190 **from** Light Commercial **to** Planned Development-Corridor Commercial and to rescind Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer. Zoned Light Commercial with Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer and located within the 190 Tollway/Plano Parkway Overlay District. Project #ZC2022-018.

**SUMMARY:**









The applicant is requesting to rezone the subject property from Light Commercial to Planned Development-Corridor Commercial, and rescind Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer to allow multifamily residential uses with modified development standards. This request has substantial policy benefits, in that it would aid in the city's goal of redevelopment in the downtown corridor, removing uses that do not enhance the location as a gateway to the city. Transit Oriented Developments (TOD) mix residential, retail, office, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car. The Commission should weigh whether this site should be considered for TOD based on the city's land use policies. Guidance supports design that proposes new residential in well-integrated and thoughtful pedestrian-oriented neighborhoods and minimizes or eliminates the impacts of the adjacent expressways for residents. While the PD language proposes extensive mitigation, the location is in an area where residential use is generally inappropriate. The design mitigates impacts to the extent practical but is unable to achieve the EHA policy goals for sensitive land uses on this site. While redevelopment is beneficial in this location, residential uses may not be desirable due to noise and air quality from both the expressway and adjacent land uses. Approval will require findings due to conflicts with the Comprehensive Plan's policy guidance for Redevelopment and Growth Management.

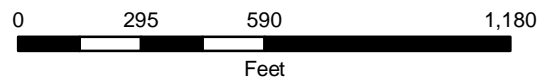
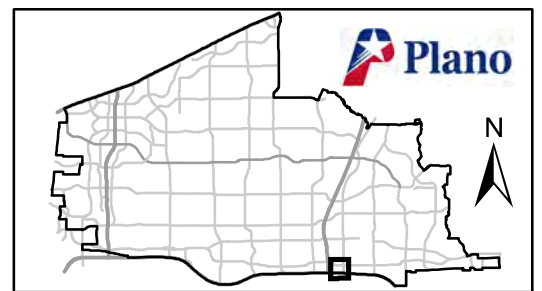


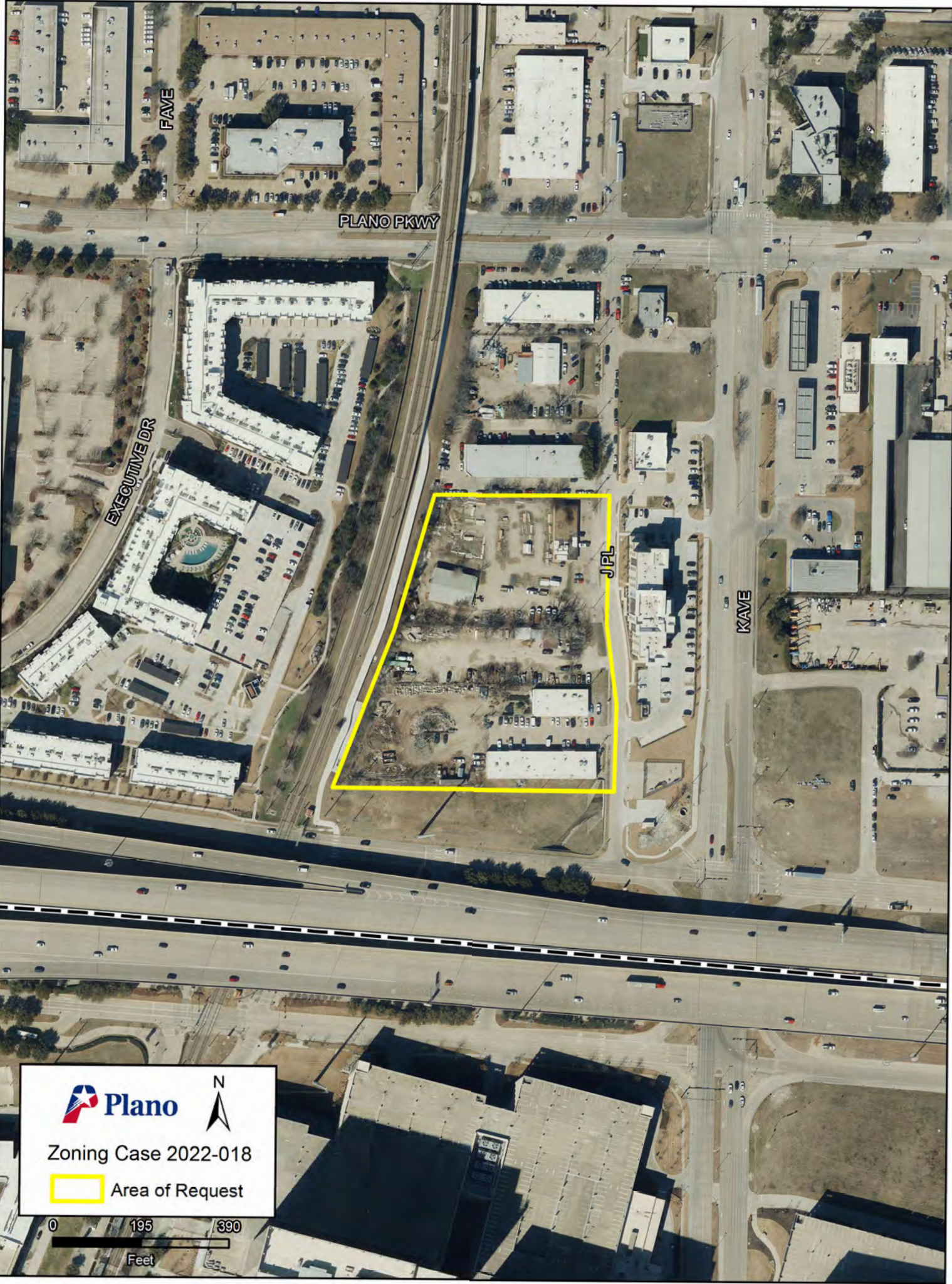
Zoning Case: 2022-018

**Existing Zoning:** Light Commercial with Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer and located within the 190 Tollway/Plano Parkway Overlay District

**Proposed Zoning:** Planned Development-Corridor Commercial (PD-CC)

- |   |  |   |
|---|--|---|
|  500' Courtesy Notification Buffer |  Streets                    |  Zoning Boundary     |
|  200' Notification Buffer          |  Municipal Boundaries       |  Specific Use Permit |
|  Subject Property                  |  Zoning Boundary Change/SUP |   |





FAVE

PLANO PKWY

EXECUTIVE DR

JPL

KAVE



Zoning Case 2022-018



Area of Request

0 195 390

Feet



## STAFF PRELIMINARY REPORT - INTRODUCTORY REMARKS

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The applicant is requesting to rezone the subject property from Light Commercial to Planned Development-Corridor Commercial and rescind Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer to allow residential uses with modified development standards. The subject property is zoned Light Commercial (LC) with Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer and is located within the 190 Tollway/Plano Parkway Overlay District. The LC district is intended to provide for a wide array of retail, office, and service uses to meet the needs of residents and businesses. Some vehicle-related uses and limited assembly, which address local service and employment opportunities are also included in LC districts. A planned development district provides the ability to amend use, height, setback, and other development standards at the time of zoning to promote innovative design and better development controls appropriate to both off- and onsite conditions.

A concept plan, TRG J Place Addition, is attached as agenda item 1B.

### History

A similar zoning case, [ZC2021-027](#), was submitted under the interim comprehensive plan but was later withdrawn by the applicant.

In 2003, the property was part of a city-initiated rezoning of 66.4 acres between the Red Line and Silver Line DART right-of-way, K Avenue, and State Highway 190. The case was part of a series of rezoning requests along the K Avenue corridor to better align the zoning with the land use recommendations of the comprehensive plan. Prior to that case (ZC2003-53), this property was zoned Light Industrial-1. The SUPs currently attached to the property (Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer) were approved with the rezoning so that existing uses under the LI-1 zoning retained a conforming use status under the new Light Commercial zoning designation.

### Surrounding Land Use and Zoning

North	The properties are zoned Light Commercial (LC) and are developed as minor vehicle repair and service contractor.
East	Across J Place, the property is zoned Light Commercial (LC) and is developed as hotel.
South	The property is zoned Light Commercial (LC), and is vacant. Beyond that State Highway 190 is elevated, and there is parking for the CityLine/Bush DART station under the highway. Across State Highway 190, the properties are located within the City of Richardson and are professional/general administrative offices.
West	Across DART right-of-way, the property is zoned Planned Development-491-Corridor Commercial (PD-491-CC) and is developed as multifamily residences.

### Proposed Planned Development Stipulations

The proposed planned development language is as follows:

The permitted uses and standards shall be in accordance with the Corridor Commercial (CC) zoning district unless otherwise specified herein.

### Multifamily Residential Development Standards

1. Multifamily residence is an additional permitted use.
2. Maximum Floor to Area Ratio (excluding parking garage square footage): 1.75:1
3. Special Regulations for Multifamily Residences
  - a. Minimum Floor Area per Dwelling Unit:

Unit Type	Minimum Floor Area
Efficiency	400 square feet
One-bedroom	475 square feet
Two-bedroom	625 square feet
Each additional bedroom	150 square feet

- b. A minimum of 20% of units must be two bedrooms or more; and
  - c. The average unit size will be a minimum of 700 square feet.
4. Required Parking:
  - a. One Bedroom or fewer: One space per unit
  - b. Two Bedrooms: 1.5 spaces per unit
  - c. Three Bedrooms or more: 2 spaces per unit
5. Maximum of 325 multifamily dwelling units

### Multifamily Residential Design Standards

In lieu of the supplemental regulations of Section 15.800 (Multifamily Residence) the following will be met:

1. Streetscape along J Place:
  - a. On-street parking spaces will be provided along J Place
  - b. A sidewalk with a minimum width of 7 feet
  - c. Street trees are required at the rate of one three-inch caliper shade tree per 40 linear feet of street frontage. Trees shall be placed in planting beds or tree grates within five feet of the back of the street curb.
2. Building Design:
  - a. A parking structure must be constructed between all residential units and the frontage road of S.H. 190; however, one residential unit on each floor of the eastern and western building facades may be exposed to the frontage road.

- b. **Maximum Front Yard Setback:** Building must be constructed such that a minimum of 60% of the facade falls within 15 feet of the right-of-way line. Where easements are present, a minimum of 60% of each facade must be built to the easement line.
  - c. **Minimum Setback from Northern Property Line:** 50 feet
  - d. **Building Articulation:** All facades must meet the following minimum standards for articulation:
    - i. No building facade shall exceed a length of 100 feet without a horizontal and vertical break in the facade. The vertical break shall be a minimum depth/height of 3 feet for a minimum length of 10 feet, and facades shall contain repeating patterns of contrasting materials, material colors, and material textures that visually break up the horizontal and vertical expanse of the facade.
    - ii. Pitched roofs are not an allowed design except as may be approved on a facade plan at the discretion of the Planning & Zoning Commission.
    - iii. 30% of all units must have a true balcony, with a minimum 7-foot depth and 8-foot width to create outdoor living space. In lieu of balconies, outdoor common areas within the building (distinct from required public open space as listed in the following Section 3.d) may be provided at a rate of 100 square feet per unit where a balcony is required but not constructed.
3. **Landscaping, Sidewalks, and Open Space:** Landscaping will be provided per Article 17 (Landscaping and Tree Preservation) and Section 11.400 (190 Tollway/Plano Parkway Overlay District) except as follows:
- a. Along the north and south property lines, a minimum 10-foot landscape buffer and 8-foot ornamental fence are required. Within these landscape edges, an irrigated evergreen, full-to-ground, solid landscape screen must be installed and maintained. Two staggered rows of evergreen shrubs used for a landscape screen must be installed so as to create at least a 6-foot-tall solid screen at the time of installation. All landscaping shall be irrigated within an automatic sprinkler system and maintained in a healthy and growing condition.
  - b. Along the eastern property line, a minimum 5-foot landscape edge shall be provided between all parking lots and public streets. Within this landscape edge, 10 shrubs (5-gallon minimum) shall be planted per 500 square feet. The number of required shrubs shall be calculated solely on the area of the required landscape edge.
  - c. Along the western property line, a minimum 6-foot sidewalk is required to connect to the trail along the DART right-of-way at a feasible location. Along the western property line, streetscape landscaping shall be provided.
  - d. **Interior Landscape Requirements:** Parking termini at the end of every parking row and parking lot island per every eleven spaces are required. The minimum total area of such islands shall be approximately 180 square feet with minimum dimensions of 9 feet by 20 feet but may be designed so that the radii help to facilitate traffic maneuverability. Such islands shall contain at least one large canopy tree. The remainder of the island space shall be landscaped with shrubs, turf, and living ground cover not to exceed three feet in height.
  - e. **Open Space:** 10% to 20% active open space must be provided. Examples include plazas, playgrounds, public art, water features, benches, courtyards, dog parks, and other pedestrian amenities.

4. Site Amenities: The following amenities are required:

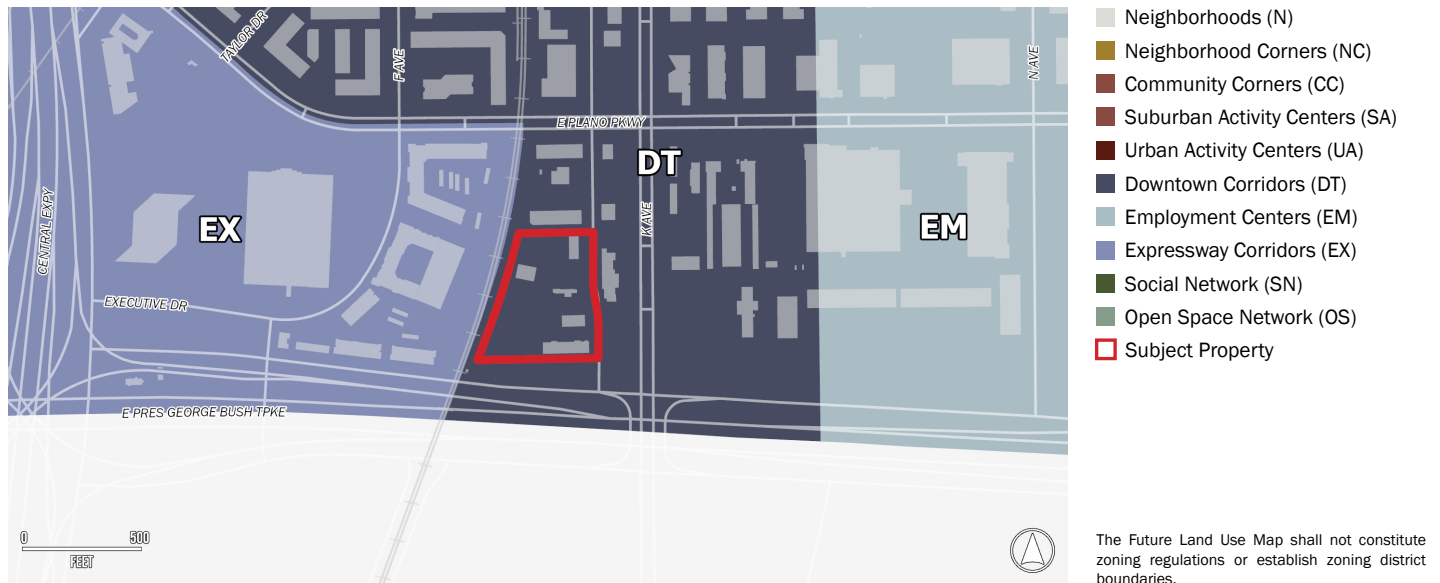
- a. Indoor exercise facility,
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5. EHA Mitigation Measures

- a. Intake openings for outdoor air, as defined in the adopted International Mechanical Code, as amended, must not be on the southern face of the south building unless the parking garage is positioned between intake opening and expressway.
- b. Pollution Mitigation Measures – The following standards must be used during initial construction and must be added as notes to the site plan. The Building Official or designee may substitute equivalent or superior construction methods upon replacement or reconstruction, consistent with building code requirements.
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    - a) Construction documents sealed by an architect must be provided as part of the building construction plan set that details mitigation of the interior noise at each unit to a maximum level of 45 dBA. The engineer of record will be responsible for testing the interior noise and providing a noise study for all units to the Building Inspections Department prior to final building inspection.
    - b) No balconies will be within 300 feet of southern property line except if there is a building facing the easement dedicated to North Texas Municipal Water District (NTMWD) crossing east-west approximately midway through the property.

VISION: "Plano is a global leader, excelling in exceptional education, abounding with world class businesses and vibrant neighborhoods"  
GUIDING PRINCIPLES: Plano Today. Plano 2050. Plano Together.

## 1 | Future Land Use Map



### Downtown Corridors (DT)

### PRIORITIES

The Downtown Corridors future land use category applies to historic Downtown Plano and the K Avenue and 14th Street corridors. Located along former State Highway 5, FM 544, and the Houston & Texas Central and Cotton Belt Railroads (now the DART Red/Orange and Silver Line), these areas have long served as major gateways to Downtown for both car and rail. The Downtown Corridors category is intended to create attractive gateways and support the continued transformation of historic Downtown Plano into the civic and cultural heart of the city.

*Transit-Oriented Development (TOD) Areas* - The principles of transit-oriented development will be used at planned stations along both rail lines, with residential, employment, retail, and civic uses located within one-quarter mile of a rail transit stop. Development elsewhere in the corridors should be oriented towards the rail as secondary frontage, especially where elevated, to improve aesthetics and create welcoming gateways into the community.

*Corridor Revitalization & Redevelopment* - As some of the oldest parts of the city, development along the K Avenue and 14th Street corridors reflects many decades of growth, infill, and transition, resulting in an eclectic mix of warehouses, commercial centers, and neighborhoods. These corridors will redevelop to serve as gateways to Downtown Plano and transit nodes with street, bike, trail, and sidewalk improvements emphasized to create a more accessible, walkable, and unified corridor. Parking structures should be provided to reduce surface parking and encourage efficient use of land.

*Historic Preservation* - Development projects should respect the historic character of Downtown and surrounding neighborhoods. Creative opportunities should be supported which both allow Plano's heritage resources to remain in active and productive use and protect them from the pressures of growth and redevelopment.

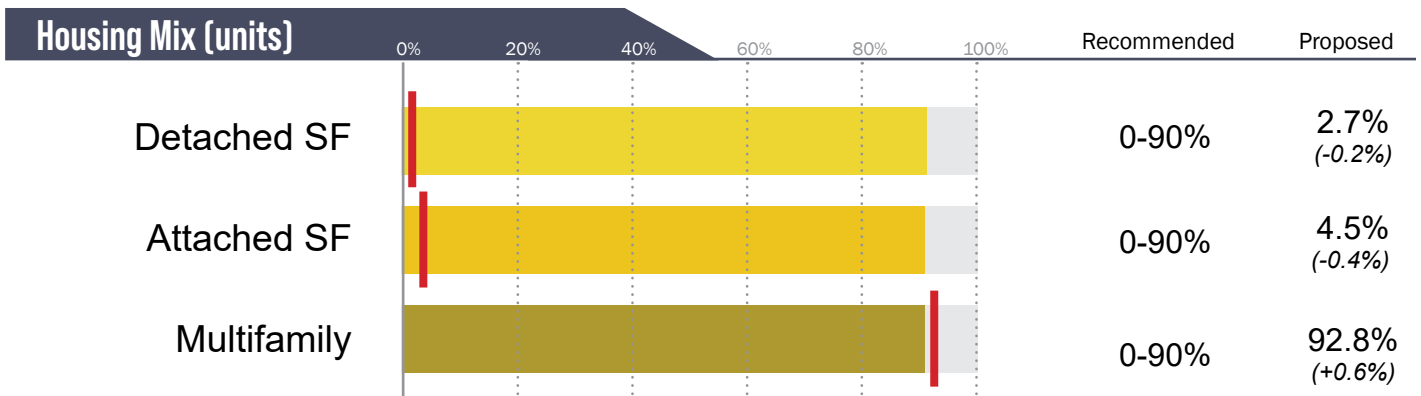
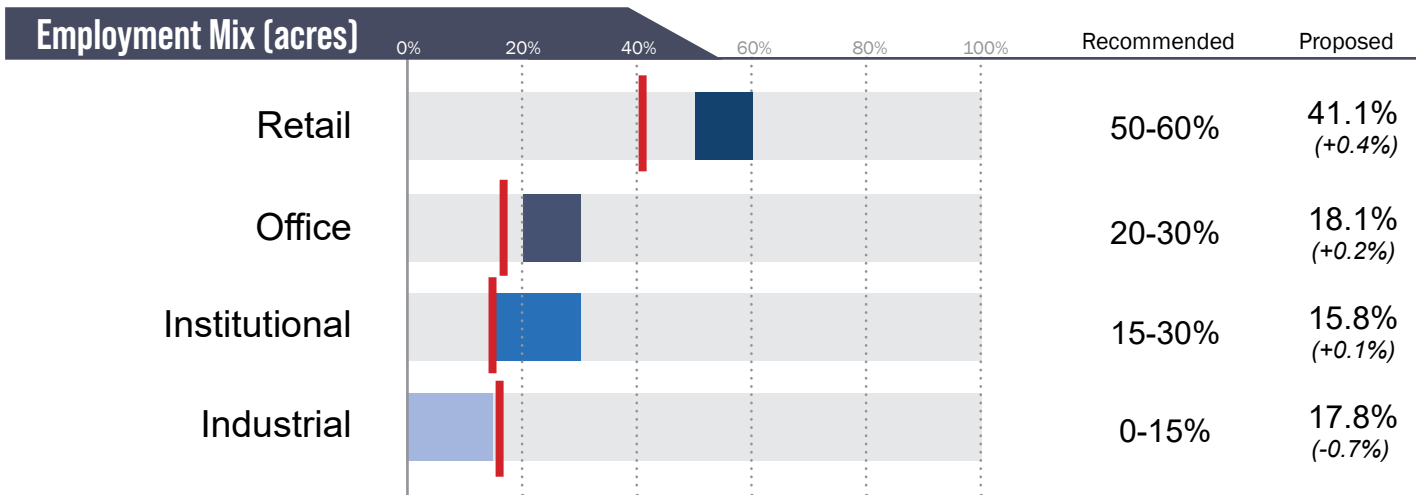
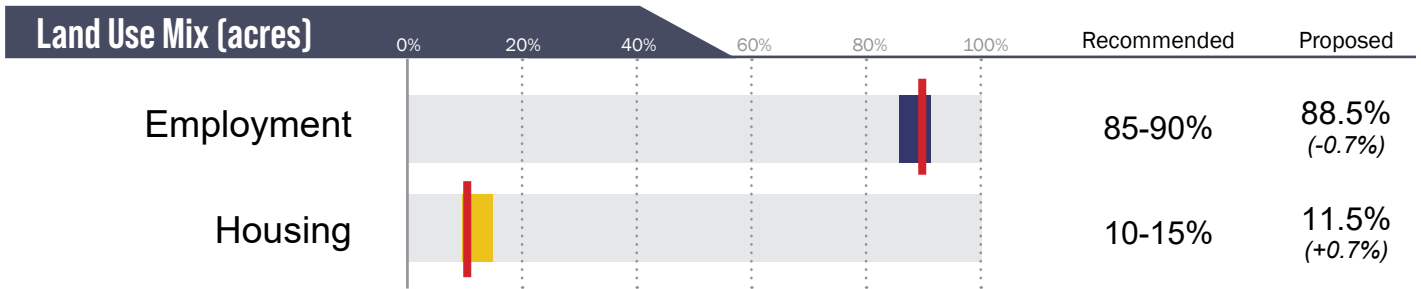
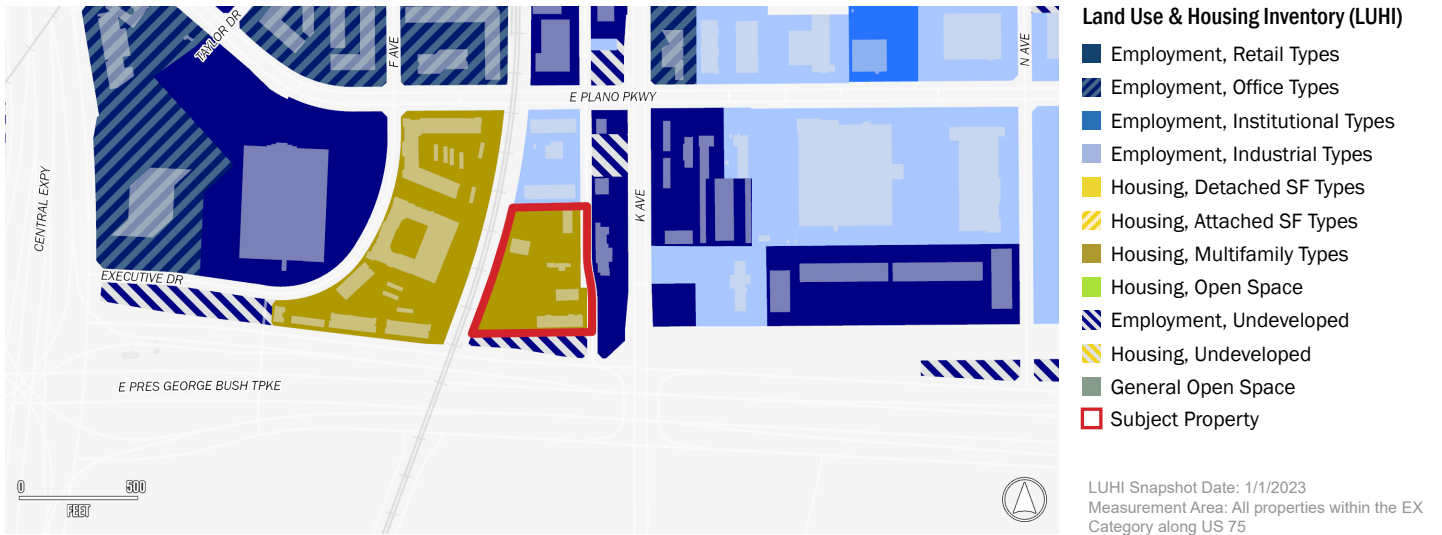
1. Enhancing bicycle and pedestrian connections
2. Improving mobility connections between Downtown and Collin Creek area
3. Focusing density in Downtown core and within 1/4 mile walking distance of rail stations

 [Click here to view the Downtown Corridors Dashboard](#)

## 2 | Mix of Uses

[Click here for "How to Read The Dashboards"](#)

If approved, the request would result in the following Mix of Uses:

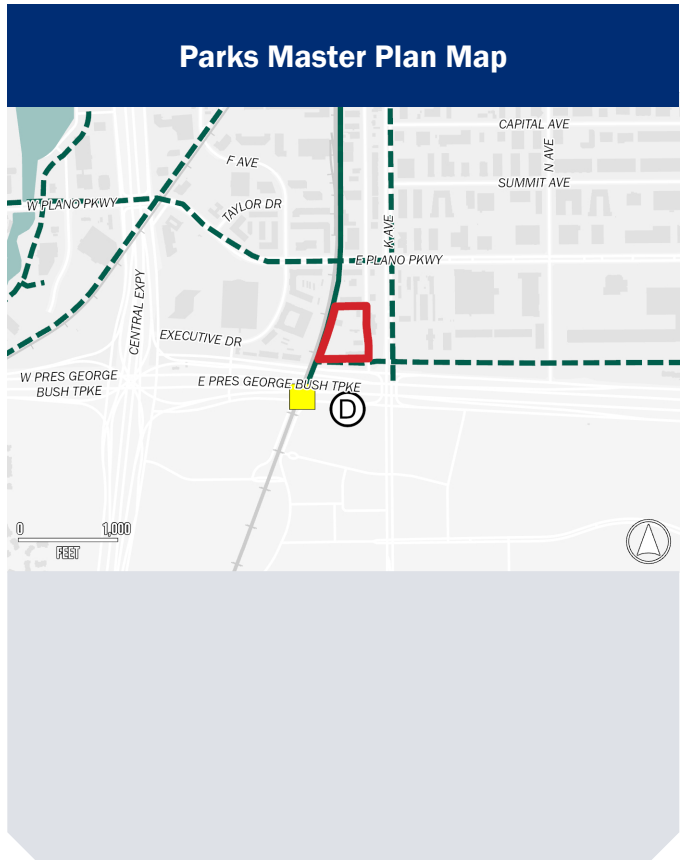
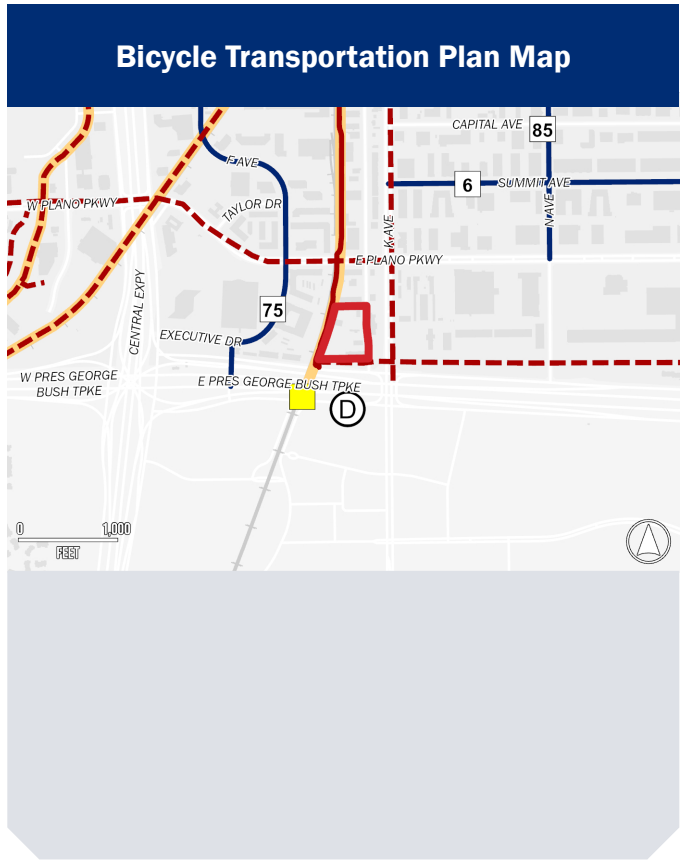
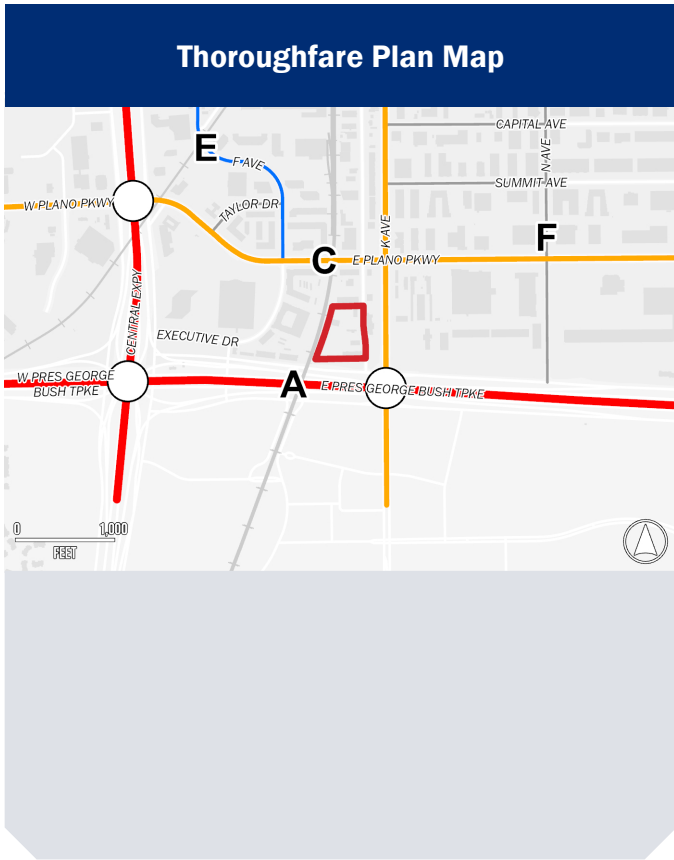


### 3 | Desirable Character Defining Elements

 [Click here for "How to Read The Dashboards"](#)

DESIRABLE CHARACTER DEFINING ELEMENT	RECOMMENDED BY COMPREHENSIVE PLAN	APPLICANT PROPOSAL
Building Heights	1 to 5 stories	
Density	<b>Non-TOD Areas -</b> SF: 4 to 22 DUA MF: 10 to 50 DUA <b>TOD Areas -</b> SF: 4 to 40 DUA MF: 10 to 100 DUA	
Intensity	Moderate (50 to 75% Lot Coverage)	
Open Space	TOD Areas: 5 to 10% Other: 10 to 20% Active Open Space	
Parking Orientation	Mix of garages, structured, on-street, surface lots, and valet	
Block Pattern & Streetscape	Short block grid Urban Streets	
<b>Multimodal Access</b>		
1. Automobiles	MEDIUM: May require short walk to destination	
2. Transit	HIGH: Served by rail and bus stations	
3. Micromobility	HIGH: Connected to trails and bike routes	
4. Pedestrians	HIGH: Highly walkable	

# 4 | Other Comprehensive Plan Maps



## 5 | Comprehensive Plan Policies & Actions

**CORE POLICIES:** The following policies are applicable to all zoning cases. No specific analysis of these policies are provided in the staff report as these serve as the fundamental basis for all staff recommendations.



**Land Use:** Plano will support a system of organized land use to provide housing and employment choices aligned with the market, where new and redevelopment areas respect the viability and quality of life for existing neighborhoods, businesses, and institutions.



**Redevelopment & Growth Management:** Plano will protect and preserve the well-established built environment of Plano and prevent overcrowding by requiring new growth and redevelopment to respect the unique development patterns, suburban character, housing needs, infrastructure capacity considerations, and fiscal constraints of our community.

**LAND USE-RELATED POLICIES:** The following policies are applicable on a case-by-case basis depending upon the type, location, and general nature of the request. Refer to the staff report for analysis of these policies with the respect to the proposed zoning change, where applicable.



**Redevelopment of Regional Transportation Corridors:** Plano will encourage reinvestment and redevelopment of identified regional transportation corridors to create cohesive developments that incorporate well-designed commercial, retail, and housing opportunities, where those uses are appropriate according to the Future Land Use Map and other related Comprehensive Plan standards.

Applicable  
Not Applicable



**Revitalization of Retail Shopping Centers:** Plano will encourage reinvestment, revitalization, and redevelopment of underperforming neighborhood retail corners to accommodate a viable combination of local commercial, retail, and entertainment uses. Where appropriate transitions can be maintained, redevelopment may present opportunities to introduce residential uses and improve access.

Applicable  
Not Applicable



**Special Housing Needs:** Plano will support the special housing needs of residents including seniors, people with disabilities, and low- to moderate-income households through inclusive regulations and programs and actions furthering the goals stated in the Consolidated Plan. Proposed locations for special housing needs should be afforded the same health and safety considerations as other housing.

Applicable  
Not Applicable



**Transit-Oriented Development:** Plano will proactively encourage development within walking distance of existing and planned transit stations to create an integrated mix of uses including residential, employment, retail, and civic spaces.

<p>Applicable Not Applicable Pending P&amp;Z Direction</p>
--



**Undeveloped Land:** Plano will reserve its remaining undeveloped land for high quality development with distinctive character, prioritizing businesses offering skilled employment. New housing in these areas will only be considered appropriate where it is consistent with the Future Land Use Map and other related Comprehensive Plan standards.

Applicable  
Not Applicable

**OTHER POLICIES/DOCUMENTS:** Additional policies may apply where applicable:

- Envision Oak Point (2018)
- Downtown Vision & Strategy Update (2019)
- Spring Creekwalk Master Plan (1990)

**FOR RESIDENTIAL AND MIXED-USE DEVELOPMENTS ONLY:** The following actions from the Redevelopment & Growth Management (RGM) Policy are applicable to requests for mixed-use developments:

- RGM5:** Ensure that any rezoning requests for multiuse development include:
- A) No more than 50% square footage for residential uses. Requests should also conform with other identifying elements (density, building heights, etc.) in the applicable Dashboard descriptions. Applicable
  - B) Phasing requirements that prevent the disproportionate completion of residential uses prior to nonresidential uses within the development. Nonresidential square footage must constitute a minimum of 33% of all square footage approved for occupancy during development (e.g., every 2 square feet of residential development requires at least 1 square foot of nonresidential development; and Not Applicable
  - C) Key design features provided prior to, or concurrent with, the construction of any residential uses. These include elements of the development supporting the long-term value to the overall community, and specifically any new residents, such as open/green space, amenities, street enhancements, and trails.

**RGM8:** Limit new residential development to areas that are appropriate based on individual site considerations and consistency with the Future Land Use Map and Dashboards. Multifamily developments should also meet a housing diversification or economic development need of the city, including transit-oriented development, special housing needs (as defined by the city’s Consolated Plan), or be constructed as part of a high-rise 10 stories or greater. Applicable

Not Applicable

## 6 | Findings Policy

### **RGM1: Mix of Uses, Density, & Building Height**

In accordance with the Redevelopment and Growth Management (RGM) Policy Action 1, zoning change requests that do not conform to the mix of uses, density, and building heights as described in the Dashboards are **disfavored**. Requests that do not conform to these criteria may be occasionally allowed when found:

- ▶ Consistent with the Guiding Principles of the Comprehensive Plan; and
- ▶ Substantially beneficial to the immediate neighbors, surrounding community, and general public interest.

### **RGM5: Mixed-Use Developments**

In addition, the Redevelopment and Growth Management (RGM) Policy Action 2 requires findings when approving a mixed-use development that exceeds 50% square footage for residential uses and/or does not conform to other identifying elements (density, height, etc.) in the applicable Dashboard.

## Are Findings Required?

Yes, because the request does not comply with the Mix of Uses of the associated Dashboard.

Yes, because the request does not comply with the Building Heights of the associated Dashboard.

Yes, because the request does not comply with the Maximum Density of the associated Dashboard.

Yes, because the request is inconsistent with Action RGM5 (for mixed-use developments).

No, findings are not required.

**Pending P&Z  
Direction**

## STAFF PRELIMINARY REPORT - CONFORMANCE TO THE COMPREHENSIVE PLAN

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The proposed request has been reviewed for conformance with the Comprehensive Plan 2021. Major factors included in the analysis are provided below, but the Comprehensive Plan Fact Sheet has more specific details about the request.

### Comprehensive Plan

[Guiding Principles](#) – This set of Guiding Principles to the Comprehensive Plan establishes overarching themes that apply to all policies and actions and express values for Plano Today, Plano 2050, and Plano Together. Since the principles do not stand alone but are used in concert with one another and carry across the Plan as a whole, each principle must be judged through a lens that incorporates all of the other principles to be fully and accurately understood. As such, the Commission is encouraged to review the full list of Guiding Principles and judge zoning requests through the lens of all principles.

[Transit-Oriented Development Policy](#) and [Downtown Vision & Strategy Update](#) – The comprehensive plan supports the development of transit-oriented development (TOD) to create an integrated mix of uses within walking distance of light rail stations. The plan defines downtown corridor TOD as a mixed-use community within an average 1/4-mile (1,320-foot-radius) walking distance of a transit stop and core commercial area. TODs mix residential, retail, office, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car.

The CityLine/Bush DART station (located in Richardson) is not included on the Future Land Use Map. The omission was intentional to prioritize TOD in and around stations within the city of Plano. Supporting the CityLine/Bush DART Station, there are approximately 2,900 TOD multifamily units in Richardson and 386 in Plano. By comparison, there are approximately 1,850 TOD multifamily units in Plano supporting both Downtown and 12th Street stations. However, the intent to focus TOD on Plano stations is not stated explicitly in the plan, which leaves ambiguity as to whether this policy support applies to DART stations not shown on the Future Land Use Map.

The subject property is located within 1/4 mile of the CityLine/Bush DART Station in the City of Richardson but is approximately 1/2 mile from the DART Silver Line 12th Street Station. Although separated from the station by State Highway 190, the expressway is elevated at this location, and there are at-grade trails and signalized crosswalks planned along the rail line to allow bicycle and pedestrian connectivity between Plano and Richardson. The proximity to the CityLine DART station would likely be an attractive feature of the proposed development to future residents and businesses, generally consistent with the goals of the TOD Policy.

The [Downtown Vision and Strategy Update \(2019\)](#) includes CityLine as one of the four stations in its study area (CityLine Station, 12th Street Station, Downtown Plano Station, Parker Road Station). It states:

*“The CityLine/Bush Station serves Richardson and Plano. While the platform is in Richardson on the south side of the Bush Turnpike, it is within walking distance of new multifamily housing and underdeveloped property south of Plano Parkway. The CityLine, Raytheon, and other developments in Richardson bring thousands of employees to the area. Properties in Plano are suitable for mixed-use development. Commercial uses may find market support from heavy commuter traffic. Successful residential use in this area requires imaginative design and amenities.”*

The request meets the general vision for mixed-use development in the area south of Plano Parkway near the CityLine station. Furthermore, under the “Continuing the Momentum” section, it states:

*“Develop 1,000 units of housing within ½ mile of the Downtown Plano Station and 2,000 units within the Plano DART Corridor. Promote a variety of housing and price points.”*

The subject property is located more than ½ mile from the Downtown Plano Station but is within the Plano DART Corridor. Approximately 3,000 total units have been built or are pending construction in the DART corridor since this policy was adopted in 1999. However, this document has not been updated since the comprehensive plan's adoption. These housing targets may be considered obsolete due to implementing the new Future Land Use Dashboards and Land Use and Housing Inventory (LUHI). As stated previously, the number of units requested is inconsistent with the DT Dashboard for this area.

The request has the potential to support the general goals of the TOD policy and the Downtown Vision & Strategy Update; yet, it is uncertain whether the more recently adopted Comprehensive Plan 2021 continues to emphasize TOD for the CityLine/Bush transit station. If the Commission and City Council find that the TOD Policy should be applied in these situations, the request should be considered consistent with the Transit-Oriented Development Policy and the Downtown Vision and Strategy Update.

### Future Land Use Map Category & Dashboard

Future Land Use Category – The subject property is located in the Downtown Corridors (DT) category of the Future Land Use Map (FLUM). Staff finds the request to be generally consistent with the intent of the category, allowing redevelopment of aging commercial and light industrial properties and improving aesthetics along a key Downtown gateway. The proposal also includes structured parking and direct connections to a hike-and-bike trail along the property’s western boundary.

However, careful consideration is needed to ensure that the proposed site design provides sufficient amenities and quality-of-life protections for future residents and meets the city’s definition of TOD. Those issues, including analysis of the sufficiency of EHA mitigation, are addressed more specifically in other sections of this report.

FLUM – DT Description and Priorities		
Description		Meets
Priorities	Enhancing bicycle and pedestrian connections	Meets
	Improving mobility connections between Downtown and Collin Creek area	Not Applicable
	Focusing density in Downtown core and within 1/4 mile walking distance of rail stations	Pending Commission Direction on Applicability

Mix of Uses – The request would provide *Multifamily Types*, as defined by the Comprehensive Plan. Additional Housing Types are supported in the DT area; however, these would need to be in the form of *Detached* or *Attached Single-Family Types* as the existing amount of *Multifamily Types* (92.2%) exceeds the recommended maximum (90%). As proposed in the associated Concept Plan, the request

would further increase the amount of *Multifamily Types* above the recommended amount to 92.8%. Additional multifamily is not supported.

FLUM – DT Mix of Uses	
Land Use Mix	Meets
Employment Mix	Meets
Housing Mix	Does Not Meet

[Desirable Character Defining Elements](#) – The request complies with many of the Character Defining Elements of the DT Dashboard, with the possible exception of Density. At 64.6 dwelling units per acre (DUA), the proposed density exceeds the recommended maximum density of 50 DUA for *Multifamily Types* for properties outside of Transit-Oriented Development (TOD) areas. For TOD areas, those located within 1/4 mile of transit stations, the DT Dashboard recommends up to 100 DUA. The subject property is located within 1/4 mile of the DART CityLine station in the City of Richardson; however, as was discussed in the TOD Policy section, there is ambiguity as to whether the higher density allowance should be applied for stations outside of Plano. Direction from the Commission is sought regarding the applicability of the TOD allowances of the DT Dashboard and the TOD Policy to this site. If deemed a TOD area, the proposed density would comply with the density recommendations of DT Dashboard. However, it should be noted that if deemed a TOD area, the proposed 13.7% active open space would exceed the maximum 10% recommended for TOD areas by the DT Dashboard.

FLUM – DT Desirable Character Defining Elements			
Building Height	Meets	Multimodal Access • Automobiles • Transit • Micromobility • Pedestrians	Meets Meets Meets Meets
Maximum Density	Pending Commission Direction on Applicability		
Intensity	Meets		
Open Space	Meets		
Parking Orientation	Meets		
Block Pattern & Streetscape	Meets		

### Other Comprehensive Plan Maps

[Thoroughfare Plan](#) – Development of the site will include widening and improvements to J Place, a Type G Local Street. The concept plan includes the provision of parallel, on-street parking spaces and a 7-foot sidewalk along J Avenue.

[Bicycle Transportation Plan](#), and [Parks Master Plan](#) Maps – The associated concept includes a connection to DART Hike-and-Bike trail to the west of the subject site.

[Expressway Corridor Environmental Health Map](#) – The property falls entirely within the EHA-2 boundary. Sensitive land uses, including multifamily housing, are not appropriate within EHA-2. Mitigation is permissible in the EHA-1 area but is not, by policy, permissible in EHA-2. However, the proposal includes mitigation to aid their request.

Other Comprehensive Plan Maps	
Thoroughfare Plan Map	Meets
Bicycle Transportation Plan Map	Meets
Parks Master Plan Map	Meets
Expressway Corridor Environmental Health Map	Does Not Meet

**Policies & Actions of the Comprehensive Plan and Other Studies**

[Redevelopment of Regional Transportation Corridors Policy](#) – Although this request would provide much needed reinvestment into the site, it would also introduce sensitive-land uses where they are not appropriate according to the Expressway Corridor Environmental Health Map. For this reason, staff finds the request inconsistent with the Redevelopment of Regional Transportation Corridors Policy.

[Redevelopment and Growth Management Policy: Action 1 \(RGM1\)](#) – This action recommends that zoning requests conform to the recommended mix of uses, density, and buildings heights described in the DT dashboard. According to the provided concept plan, this request does not conform to the DT Housing Mix and Density recommendations. As the request is inconsistent with RGM1, findings will be required by the Commission to approve the request.

[Redevelopment and Growth Management Policy: Action 8 \(RGM8\)](#) – This action recommends residential uses be limited to areas appropriate based on individual site considerations and the FLUM Dashboards. Furthermore, it recommends multifamily uses should further the city’s housing diversity or economic development goals. The proposal does improve the area by removing uses that are inappropriate for a gateway to the city. The applicant’s Planned Development language improves the conditions on site for residential. There is no doubt that redevelopment is beneficial, but substantial questions remain as to whether residential use is appropriate in this location. Due primarily to the inconsistency of the Dashboard Mix of Uses and the site location within EHA-2, staff finds the request is inconsistent with RGM8.

Comprehensive Plan Policies and Actions/Other Studies	
Redevelopment of Regional Transportation Corridors Policy	Does Not Meet
Transit-Oriented Development Policy	Pending Commission Direction on Applicability
Downtown Vision & Strategy Update	Pending Commission Direction on Applicability
Redevelopment & Growth Management Policy – Action 1	Does Not Meet
Redevelopment & Growth Management Policy – Action 8	Does Not Meet

[Findings Policy](#) – Findings are required to recommend approval of this item due to inconsistency with action RGM1, which recommends rezoning requests conform to the mix of uses, density, and building heights as described in the associated Dashboard.

**Comprehensive Plan Summary**

The request meets the general description and priorities of the DT Dashboard. It is inconsistent with the recommended Housing Mix of the DT Dashboard and may exceed the density standard depending on how the TOD policy is considered. Additionally, it would introduce sensitive land uses in an area where they are inappropriate according to the Expressway Corridor Environmental Health Map. It may

meet the Transit-Oriented Development goals of the city, pending Commission direction on the applicability of the TOD Policy for the CityLine/Bush DART station. Due to inconsistency with Action RGM1, approval of the request will require Findings by the Commission and City Council. The Findings Forms have been attached to this staff report for review.

**Comprehensive Plan Policy Summary**

<b>Policy or Study</b>	<b>Analysis</b>
Future Land Use Map and Dashboards <ul style="list-style-type: none"> <li>• Description &amp; Priorities</li> <li>• Mix of Uses</li> <li>• Character Defining Elements</li> </ul>	Meets Does Not Meet Partially Meets, May Meet Fully Pending Commission Direction on Applicability of TOD Regarding Density
Thoroughfare Plan Map Bicycle Transportation Plan Map Parks Master Plan Map Expressway Corridor Environmental Health Map	Meets Meets Meets Does Not Meet
Redevelopment of Regional Transportation Corridors Policy	Does Not Meet
Transit-Oriented Development Policy	Pending Commission Direction on Applicability
Redevelopment & Growth Management Policy <ul style="list-style-type: none"> <li>• RGM – Action 1</li> <li>• RGM – Action 8</li> </ul>	Does Not Meet (Triggers Findings Policy) Does Not Meet
Downtown Vision & Strategy Update	Pending the Planning & Zoning Commission

Adequacy of Public Facilities

Wastewater Demand Summary – Analyzing the city’s existing gravity wastewater mains, the increase in sewer demand with the proposed land use may prompt additional off-site wastewater improvements necessary to meet the demand flows required for future development.

Water Demand Summary – Observing the city’s existing water distribution system, the proposed development can be supported with nearby water mains. The developer is responsible for determining if on- or off-site improvements are necessary to meet fire flow demands.

Traffic Impact Analysis (TIA) – A TIA is not required for this rezoning request based on current thoroughfare standards. Staff has compared the proposed mix of uses on Tract 1, including the introduction of 325 multifamily residential units, with the existing lumber yard and auto shop using the average Institute of Traffic Engineers (ITE) trip generation rates.

The table below shows the estimated traffic generation during daily and peak hours (7:00-9:00 a.m. and 4:00-6:00 p.m.):

	<b>Building Area or Unit Total</b>	<b>AM</b>	<b>PM</b>	<b>Daily</b>
<b>Existing Development</b>				
	4300 SF Lumber Yard Store (storage yard not included in calculation)	10	11	73
	9900 SF Auto Care Center	28	35	235
	Total	38	46	308
<b>Proposed Development</b>				
	325 Multifamily Residential units	114	127	1500

School Capacity – Plano Independent School District has provided a letter regarding school capacity, which staff has included.



**P L A N O**  
Independent School District

March 15, 2023

Raha Pouladi  
Lead Planner  
1520 K Avenue, 2nd Floor  
Suite 250, Plano, Texas 75074

RE: Property located on the west side of J Place 111 feet north of State Highway 190

Dear Raha,

You have inquired as to the capacities and enrollment projections for the schools impacted by a potential development property located on the west side of J Place 111 feet north of State Highway 190, Plano.

The following table provides both enrollment and capacity figures.

School	2022/23 Enrollment	2023/24 Enrollment (Projected)	2024/25 Enrollment (Projected)	2025/26 Enrollment (Projected)	2026/27 Enrollment (Projected)	Functional Capacity	Program Capacity
Forman ES	549	568	553	581	583	765	900
Armstrong MS	611	590	599	557	583	1,178	1,385
McMillen HS	1,172	1,092	1,042	1,025	960	1,629	1,916
Plano East Senior HS	3,083	3,142	3,089	2,958	2,859	3,374	3,494

The enrollment figures are derived from our most recent demographer's report. The 2022/2023 column represents actual enrollment as of October 2022. All other enrollment figures are projected and are based on City zoning as it existed in the Fall of 2022. The impact of any zoning changes since that time (including this requested rezoning) are not yet factored into the projections.

Program capacity figures are based on current building floor plans, and the application of the District's maximum class size to every standard classroom. 22 students max for Kindergarten and Grades 1 through 4, 26 max for Grade 5, and 28 max at the Secondary level.

Functional capacity figures recognize there will always be inherent/uncontrollable inefficiencies in classroom utilization. For instance, as mentioned above, the District limits class sizes in kindergarten through grade 4 to a maximum of 22 students. If a building has three first grade classrooms, it can accommodate up to 66 students (Program Capacity). However, if only 54 students are enrolled in first grade, each class will actually only serve 18 students. The additional capacity of 12 students (66-54) is not utilized as it is not available to other grades or other campuses. In recognition of this variable, the functional capacity is calculated at 85% of the program capacity.

Sincerely,

  
Johnny Hill  
Deputy Superintendent of Business and Employee Services  
Plano ISD

Public Safety Response Time – Based upon existing personnel, equipment, and facilities, fire emergency response times will be sufficient to serve the site. Residential units in this area will increase EMS and fire calls for service and may impact future staffing levels and the type of equipment assigned to area fire stations.

Access to and Availability of Amenities and Services – The subject property is located within Park Fee Service Area 2. Private open space will be provided to serve residents within the subject property, per the proposed planned development standards.

The subject property is located within the Harrington Library's service area and service to future residents would be possible with the current library resources.

## STAFF PRELIMINARY REPORT - ANALYSIS & RECOMMENDATION

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### Redevelopment

The history of zoning on this property shows there are uses located here that, while allowed by SUP, have not been in alignment with the city's land use goals for at least 20 years. The DT future land use category envisions redevelopment of the area to provide a welcoming, attractive gateway to Downtown that supports the transformation of the larger area into the civic and cultural heart of the city. The PD standards provide for transportation improvements creating a more accessible, walkable, and unified corridor. Structured parking is proposed to encourage efficient use of land. Removal of those uses and associated site improvements are consistent with the development goals of the city.

### Multifamily Residential Use

The applicant is proposing a maximum of 325 multifamily residential units.

There are some significant challenges posed by multifamily residential development within the subject property:

1. **Comprehensive Plan:** The requested use, as proposed in the associated PD district, is not in conformance with significant portions of the Comprehensive Plan as detailed in the analysis above.
2. **Surrounding Zoning and Land Use:** The surrounding zoning on the north, east, and south sides is Light Commercial (LC) which allows uses that may be incompatible with residential living. Land use to the north includes major vehicle repair, and the building has seven service bays with doors facing the subject property. Major Vehicle Repair use is subject to residential adjacency standards. Vehicle service bays may not face a residential district within 150 feet, and no use, including outdoor vehicular repair, servicing, or testing, is permitted within 150 feet of a residential district. Photos of the site indicate outdoor servicing may be occurring on the property immediately north of this request. The PD has commercial base zoning, but standard multifamily (MF-1, MF-2, and MF-3) zoning districts are protected by the zoning ordinance from this development condition.
3. **Commercial Use of the Property:** The subject property is a prime location for future economic development. It has high visibility from DART and the State Highway 190 service road and good access to the surrounding thoroughfares. The existing LC zoning allows a wide variety of nonresidential uses, and commercial development here would benefit from existing residential development and zoning in Plano in the general area, as well as in the CityLine development in Richardson.
4. In the general area, there are 2,638 multifamily units either pending or with plans under review, including 2,300 units at Collin Creek Mall and 338 at Heritage Creekside.

To further expound on this last issue, with the initial rezoning request to create the zoning for the redevelopment of Collin Creek Mall (UMU-3), the city and the applicant partnered together and hired RCLCO Real Estate Advisors to provide a residential analysis. This analysis is attached to this report

and analyzed the area shown in the adjacent map. This analysis aimed to promote a diverse mix of housing options to respond to the region's evolving demographics and housing preferences.

This firm specializes in real estate strategy development related to master-planned mixed-use communities. RCLCO's analysis identified the target market audiences for the proposed redevelopment and how the reimagined site could provide the products, lifestyle, amenities, and design elements that residents seek. The analysis was completed in 2018 and recommended a total of 1,900 multifamily rental units for the Collin Creek Mall property, and stated this number was a 10-year demand projection. The demand for these units will be met with the construction of the Collin Creek Mall redevelopment. As this study is aging, the city has hired AECOM to perform an updated study which is currently underway.

Due to the issues above, the subject property is not appropriate for multifamily residential use.

### Access to DART

The proposed development is north of the CityLine station in Richardson. Using routes along the sidewalks as shown on the concept plan and/or via the trail adjacent to the DART line, the walking distance to the Bush DART station is approximately 1,000 feet (0.2 miles).

There are currently sidewalks along the west side of J Place that could accommodate pedestrians, but there are no sidewalks along the State Highway 190 service road. Future residents would be able to access the pedestrian connection/crosswalk along State Highway 190 located at the trail adjacent to the DART line, which provides a pedestrian connection to the north and south in this area, by a proposed trail connection, which is required from this development. However, they are required to cross the three-lane westbound service road, proceed under State Highway 190, and cross the three-lane eastbound service road to access the Bush DART station.

### NTMWD Sanitary Sewer Easement

An existing 20-foot permanent sanitary sewer easement to North Texas Municipal Water District (NTMWD) is situated between the two proposed five-story structures. The developer has engaged in discussions with NTMWD to preserve the integrity of the existing 36-inch force main throughout construction and continuously provide access for maintenance to the existing easement. NTMWD has requested to install an Odor Control Unit and Enclosure on the property not to be disturbed during construction as part of the force main improvements prompted by the DART Silver Line project.

### Residential Uses in Expressway Corridors

The city's long-range planning policies have focused on limiting residential development in expressway corridors for the dual purposes of preserving land for economic development and maintaining safety and quality of life for residents. In 2018, the Planning Department hired Harris Miller Miller & Hanson, Inc. (HMMH). This firm specializes in acoustical and air quality analysis, performing a noise and air pollution study, and developing more refined policies or regulations based on the results of the analysis. As part of the study, HMMH examined the science and best practices of associated quality-of-life issues to aid decision-makers in considering development patterns when applying setback policy and considering potential exceptions to that policy.

Research provided by HMMH shows that noise and air pollution impact public health, particularly for extended durations of exposure and sleeping at night. Based on the study results, the city modified the policy in the Comprehensive Plan and adopted zoning regulations that pertain to specific sensitive land uses. The Comprehensive Plan map designates two areas, Expressway Corridor Environmental Health Area One (EHA-1) and Expressway Corridor Environmental Health Area Two (EHA-2).

Land uses are designated which are particularly impacted by noise and air quality factors from the expressways, including residential uses. Developing residential uses in EHA-2 areas is designated as inappropriate land use; noise levels are at or greater than 75 dBA Ldn in those areas. EHA-1 is the portion further from the expressways, where outdoor noise levels are greater than or equal to 65 dBA Ldn and less than 75 dBA Ldn. Sensitive land uses are appropriate in EHA-1 if satisfactory mitigation is achieved based on the results of an EHA Site Analysis. The EHA Site Analysis must be prepared by a recognized expert in the field, document existing site conditions and noise levels, estimate exterior noise levels at all floors of the buildings containing SLUs, propose air quality and noise mitigation strategies, and evaluate the effectiveness of the proposed mitigation strategies in achieving a target maximum outdoor noise level of 65 dBA Ldn.

The city's buffer standard is intended to offer a higher quality of life to residents by abating sound for open spaces and allowing residents to open windows for ventilation and enjoy private patio or porch spaces. While the Expressway Corridor Environmental Health Areas focus on mitigating outdoor noise levels where specific land uses are proposed, the applicant has required that the residential buildings be constructed to achieve interior noise levels of 45 dBA Ldn or less. This standard will help ensure interior noise levels are sufficient for health and safety concerns related to sleep disturbance, which is consistent with the intent of the regulation.

The land use impacts of highway air pollution are also intended to be addressed through the EHA-1 and EHA-2 designations in the city's policy. The Expressway Corridor Environmental Health Study notes that particulate matter concentration is significantly higher within 330 feet of major highways and concentrations of some air pollutants decrease by over 50% within the first 100 to 150 meters (330 to 490 feet) from the edge of the roadway. Consistent with these findings, the EHA-2 area is intended to protect residents from the potential health impacts of living in a location with higher risks. The southern edge of the property under consideration is within 140 and 210 feet of the edge of State Highway 190.

The subject site is located within Expressway Corridor Environmental Health Area Two (EHA-2). The request is for two 5-story multifamily residential buildings, which are a sensitive land use. The site does not contain existing sensitive land uses. The applicant has provided an EHA Site Analysis to support the request, which will be attached to the staff report.

The associated concept plan shows a parking structure between the expressway and the two residential buildings to act as a noise barrier, resulting in an outdoor noise level of up to 74 dBA Ldn for the south building and up to 65 dBA Ldn for the north building. The planned development stipulations include a requirement for improved building materials to achieve maximum indoor noise levels of 45 dBA Ldn. This indoor target is consistent with the intent of the guidelines, but the mitigation does not achieve the target for outdoor noise levels contained in Comprehensive Plan 2021. The EHA Site Analysis confirms that there is no reasonably feasible mitigation that could achieve the target maximum outdoor noise level of 65 dBA Ldn for the south building. For these reasons, staff finds the request not wholly in compliance with the EHA Guidelines.

## Planned Development Stipulations

The applicant is proposing planned development standards related to site and building design, which are intended to support multifamily residential living on the subject property.

These standards include:

1. Open Space: The proposed planned development stipulations include a requirement for a minimum of 10% to 20% active open space within the property.
2. Residential Standards:
  - a. All residential units must be constructed to achieve interior noise levels of 45 dBA Ldn or less.
  - b. No balconies will be within 300 feet of the southern property line unless inside a courtyard with garage positioned between balcony and expressway or on the north face of the southern building facing opposite the expressway.
3. Setbacks and Landscape Edges: The request includes reduced setbacks to allow flexibility for multifamily residential buildings. The applicant has also included a minimum 10-foot landscape buffer and 8-foot ornamental fence along the north and south property lines to protect future residents from existing vehicle repair use on the north and State Highway 190 to the south. Within these landscape edges, an irrigated evergreen, full-to-ground, solid landscape screen will be installed and maintained.
4. Building Facades:
  - a. The applicant is placing restrictions on facade lengths to break up the building faces.
  - b. The proposed design of the building and reduced setback is intended to allow a minimum of 60% of the facade fall within 15 feet of the right-of-way line to promote an urban feel.
  - c. Pitched roof is prohibited for this development.
  - d. A true balcony will be provided for at least 30% of all units.
5. Street Trees: The applicant is proposing to provide one 3-inch caliper shade tree per 40 linear feet of street frontage.

Overall, the PD district is designed to include standards that will allow for multifamily residential development to occur consistent with the companion concept plan. They meet numerous Comprehensive Plan objectives, such as modifying the building design to mitigate the noise and air pollution, where possible, applying the proposed street section along J place, and providing trail connection, as noted in the Planned Development Stipulation.

**SUMMARY:**

The applicant is requesting to rezone the subject property from Light Commercial to Planned Development-Corridor Commercial, and rescind Specific Use Permits No. 525 and 529 for Contract Construction; No. 526 and 528 for Auto Storage; and No. 527 and 530 for Used Car Dealer to allow multifamily residential uses with modified development standards. This request has substantial policy benefits, in that it would aid in the city's goal of redevelopment in the downtown corridor, removing uses that do not enhance the location as a gateway to the city. Transit Oriented Developments (TOD) mix residential, retail, office, and public uses in a walkable environment, making it convenient for residents and employees to travel by transit, bicycle, foot, or car. The Commission should weigh whether this site should be considered for TOD based on the city's land use policies. Guidance supports design that proposes new residential in well-integrated and thoughtful pedestrian-oriented neighborhoods and minimizes or eliminates the impacts of the adjacent expressways for residents. While the PD language proposes extensive mitigation, the location is in an area where residential use is generally inappropriate. The design mitigates impacts to the extent practical but is unable to achieve the EHA policy goals for sensitive land uses on this site. While redevelopment is beneficial in this location, residential uses may not be desirable due to noise and air quality from both the expressway and adjacent land uses. Approval will require findings due to conflicts with the Comprehensive Plan's policy guidance for Redevelopment and Growth Management..

**RECOMMENDATION:**

Due to the lack of conformance with the RGM1, this request is disfavored under the Comprehensive Plan and will require a justification of findings by the Planning & Zoning Commission. The Planning & Zoning Commission may occasionally allow proposals that do not strictly conform to the standard above, as noted in the Findings Form.



February 14, 2023

Connor Osburn  
**Trinsic Residential Group**  
8235 Douglas Ave  
Dallas, TX 75225

[cosburn@trinsicres.com](mailto:cosburn@trinsicres.com)

Re: Environmental Noise Study  
**521 J Place Apartments**  
Plano, TX

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## TECHNICAL MEMORANDUM

### 1. INTRODUCTION

This Technical Memorandum presents the results of an EHA (Environmental Health Area) Site Analysis for a proposed apartments project located on four parcels of land including the parcel at 521 J Place in Plano, TX. The site is located to the north of the President George Bush Turnpike (TX 190) in an EHA-2 area, indicating the outdoor noise levels are greater than or equal to 75 dBA  $L_{dn}$ . Per the EHA Site Analysis Checklist, “Sensitive Land Uses are generally inappropriate in EHA-2 but may be appropriate if satisfactory mitigation is achieved.” The purpose of the analysis is to document and quantify expected exterior and interior noise levels due to environmental noise, specifically from vehicle traffic on TX 190, and propose mitigation to meet the project sound level goals. Results of the site analysis and recommendations are given herein.

### 2. SOUND LEVEL GOALS

Sensitive Land Uses (SLUs), such as outdoor amenities (pool court, garden court, dog park, etc.) and patios / balconies, have a sound level goal of 65 dBA  $L_{dn}$  or lower. This is based on the following text from the EHA Site Analysis Checklist:

“Locations that are below 65 dBA  $L_{dn}$  are considered acceptable for Sensitive Land Use (SLU) development within a noise and air quality impact context.”

Also:

“The amount of frequently used outdoor areas in locations where [the] noise level exceeds 65 dBA  $L_{dn}$  [should] be limited (For example: balconies do not face the expressway.)”

The day-night average sound level ( $L_{dn}$  or DNL) is an average of sound levels over a 24-hour period where for the hours between 10:00 p.m. and 7:00 a.m. ten decibels are added to the levels. The  $L_{dn}$  may be thought of as a 24-hour time average with a nighttime penalty of 10 dB(A) added to account for the increased sensitivity to noise of an average listener during the evening and night.

There are no known building code requirements or goals relating to the maximum interior sound levels applicable to this development. The U.S. Department of Housing and Urban Development

(HUD) guidelines<sup>1</sup> are based on a goal of a 45 dBA  $L_{dn}$  inside the living unit and are an appropriate criterion level for this project. While the HUD guidelines are not applicable to this project, they represent a common industry goal and will therefore be used as a standard for comparison.

### 3. SOUND LEVEL MEASUREMENTS

#### General

Sound level measurements were taken at the project site over a 24-hour period starting on September 6, 2022. The purpose of the measurements was to document and quantify environmental noise in the project area. Primarily, the study focused on vehicle traffic on TX 190 to the south and light rail traffic on the DART rail line to west. Measurements were performed by Adam Young of SLR.

#### Measurement Locations

Long-term sound level measurements were taken at two locations. The first monitor was placed just south of the southernmost project parcel close to the intersection of the DART rail line and the TX 190 access road (SW Monitor). The second monitor was placed along the north property line of the northernmost parcel, currently occupied by Miller Lumber (N Monitor). **Map 1**, showing the project site (outlined in red) and the monitor locations, is attached. **Figures 1 and 2** show photos of the SW and N monitors, respectively, in position.

#### Measurement Instrumentation

Two Larson Davis Model 831 Type 1 sound level meters were used (s/n 2443 & s/n 1737) to collect the sound level data. The meters measured 1/3-octave band and 1/1-octave band sound levels as well as statistical parameters. The meters collected levels in terms of ten-second sound level averages and recorded statistical parameters on a fifteen-minute basis. The meters hold factory calibration certification traceable to NIST standards. The meters were field calibrated before and after the measurement period using a Larson Davis CAL200 pure tone calibrator (s/n 16644). Microphone windscreens were used for all measurements. Calibration certificates are attached.

#### Weather

Weather during the measurement survey was generally favorable for measurements at the site. The temperature ranged from 75° to 95°F. The skies varied from fair to partly cloudy. Wind speed ranged from 0 to 9 mph and was mainly from the south and southeast. The relative humidity ranged from approximately 37% to 85%. The ground conditions at the site were dry.

#### Measurement Results

The fifteen-minute sound level averages measured at each position were used to calculate the  $L_{dn}$  for each location. **Table 1** presents a summary of the sound measurements in the format directed by the EHA Site Analysis Checklist. Traffic counts were not made during the time of the measurements.

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<sup>1</sup> 24 CFR Section 51.102 (HUD).

**Table 1 – Summary of Sound Measurements**

	Measurement at Location 1	Measurement at Location 2
I.D. on Noise Measurement Map (Figure 1)	SW Monitor	N Monitor
Duration	24 hours	
Date/Time	9/6 3:45 PM to 9/7 3:45 PM	9/6 2:55 PM to 9/7 2:55 PM
Temperature	75° to 95°F	
Cloud Coverage	Fair to partly cloudy	
Wind Speed/Direction	0 to 9 mph / S to SE	
Precipitation	None	
Highway Pavement (wet or dry)	Dry	
Traffic Types	N/A	
Traffic Speeds		
Traffic Counts		
Height of microphone above ground	Approx. 5 feet	
Existing Measured $L_{dn}$ , Current	70.7 dBA	64.3 dBA
Existing Modeled, $L_{dn}$ , Current	73.2 dBA	66.3 dBA
Difference between measured and modeled	-2.5 dBA	-2.0 dBA

The attached **Graphs 1 and 2** show the A-weighted sound levels during the measurement period for the two sound monitors. All levels are A-weighted, or dB(A). The bottom portions of the graphs show the frequency information from the monitors which assist in determination of noise sources. Sound levels at both locations were dominated by traffic on TX 190 and the DART rail line.

#### 4. MODELED OUTDOOR NOISE LEVELS

The EHA Site Analysis should estimate existing and future cumulative noise at ground level and for all proposed floors of the buildings and compare those noise levels to the adopted standards of the Expressway Corridor Environmental Health Guidelines.

A 3D computer-based noise model was created to help determine the noise impact on the proposed apartment complex. Incorporating the architectural concept site plan, an acoustical model was developed using Cadna/A, version 2022 (32 Bit) (build: 189.5221), a commercial noise modeling package developed by DataKustik GmbH. The software takes into account spreading losses, ground and atmospheric effects, shielding from barriers and surrounding buildings, reflections from surfaces, and is based on published engineering standards. ISO standard 9613<sup>2</sup> was used for air absorption and other noise propagation calculations. Traffic and road noise followed the RLS-90<sup>3</sup> road and traffic noise pollution guidelines.

Traffic counts were not able to be recorded during the time of the measurement period. In lieu of measurement period traffic counts, 2022 traffic volumes were calculated from available TxDOT Statewide Planning Map<sup>4</sup> data. The model was then “calibrated” by comparing the model results

<sup>2</sup> ISO 9613, “Acoustics – Attenuation of sound during propagation outdoors,” 1996.

<sup>3</sup> RLS 90 “Traffic Noise – Noise Protection Guidelines – RLS-90,” 1990.

<sup>4</sup> Statewide Planning Map. TxDOT. Accessed September 12,2022

utilizing the 2022 traffic count data for the surrounding road sources and the sound level measurements taken on the project site. Traffic volumes for the future scenario were based on projected 2040 traffic included in Table 1 (Daily Volumes) and Table 2 (Hourly Distribution) on Pages 5 and 6 in the EHA Site Analysis Checklist.

**Figure 3**, attached, presents the existing  $L_{dn}$  noise contours based on 2022 traffic volumes overlaid on the existing parcel site map. The contours are calculated at 5 ft above the ground.

**Figure 4**, attached, presents the existing  $L_{dn}$  noise contours based on 2022 traffic volumes overlaid on the proposed concept site map. The contours are calculated at 5 ft above the ground.

**Figure 5**, attached, presents the predicted future  $L_{dn}$  noise contours based on 2040 traffic volumes overlaid on the proposed concept site map. The contours are calculated at 5 ft above the ground.

**Figure 6 and 7**, attached, present 3D model views of the predicted future numerical  $L_{dn}$  façade noise levels for each floor on the north and west facades of Buildings 1 and 2.

As shown in **Figure 4**, the concept site plan consists of two apartment buildings, both of which are planned to be five stories tall. Building 1 (to the south) is a "U"-shaped building encompassing a garden courtyard. Building 2 (to the north) is a "U"-shaped building consisting of apartments and amenities that surrounds a pool courtyard. A parking garage is located just to the south of the garden courtyard, providing shielding of noise from TX-190 to many of the south-facing Building 1 units. The parking garage and Building 1 provide shielding of noise from TX 190 for Building 2. **Table 2** presents the predicted future  $L_{dn}$  noise levels (without mitigation) at the outdoor amenities and at the different levels of the building facades.

**Table 2 – Predicted Future  $L_{dn}$  Noise Levels without Mitigation**

Location		Predicted Future $L_{dn}$ , dBA
Garden Court		60
Pool Court		60
Building 1 S. Facades	Level 1	71-72
	Level 2	72-73
	Level 3	72-74
	Level 4	74-75
Building 1 E. and W. Facades	Level 1	62-69
	Level 2	62-71
	Level 3	61-71
	Level 4	66-72
Building 1 N. Façade and Facades facing Garden Courtyard		All Levels < 65
Building 2 All Facades		All Levels ≤ 65

[https://www.txdot.gov/apps/statewide\\_mapping/StatewidePlanningMap.html](https://www.txdot.gov/apps/statewide_mapping/StatewidePlanningMap.html)

## 5. NOISE MITIGATION RECOMMENDATIONS

Section 5 of the EHA Site Analysis Checklist gives mitigation options that should be considered, if appropriate, based on the analysis results, including barriers and enhanced building design using improved façade elements (see “Building Façades” section below). Some mitigation options (such as locating the SLUs outside the EHA and utilizing berms or topographic features in lieu of buildings or noise barriers) are not applicable for this project.

Utilizing the noise model, a 40-foot-tall noise barrier was considered for the south property line that turned and extended north along portions of the east and west property lines. The façade sound level results from implementing this mitigation measure were given in Rev 1 of this technical memorandum (dated November 2, 2022) but have been left out of this revision. Calculations indicate that a noise barrier to the south of the property will 1) not fully reduce outdoor sound levels to below the EHA-1 noise goal of 65 dBA  $L_{dn}$  and 2) may not be economically feasible or aesthetically pleasing given the resultant minimal improvement to the outdoor noise levels. .

### Outdoor Amenities

As shown in **Table 2**, the amenity outdoor areas that are shielded by the buildings (i.e., the Garden Courtyard and Pool) will be below the 65 dBA  $L_{dn}$  goal without any mitigation.

### Building Facades

As shown in **Table 2**, all units in Building 2 will have façade noise levels that meet the 65 dBA  $L_{dn}$  goal. Units in Building 1 adjacent to the north and west facades will also meet the goal. Therefore, standard façade construction elements are appropriate for these facades.

Units in Building 1 along the east façade have façade noise levels that range from 65 to 71 dBA  $L_{dn}$ , which exceed the exterior sound level goal of 65 dBA  $L_{dn}$ . However, with satisfactory mitigation (i.e., construction modifications that ensure an interior sound level goal of 45 dBA  $L_{dn}$  is achieved) these levels can be appropriate for SLUs. This will be discussed later in this section.

Units in Building 1 along the south façade that face the TX 190 expressway have façade noise levels that range from 71 to 75 dBA  $L_{dn}$ . As mentioned previously, the EHA Site Analysis Checklist says, “Sensitive Land Uses are generally inappropriate in EHA-2 (i.e., where outdoor noise levels are greater than or equal to 75 dBA  $L_{dn}$ ) but may be appropriate if satisfactory mitigation is achieved.”

The following noise mitigation should be implemented:

- For units in Building 1 along the south façade:
  - If patios / balconies are designed, the noise levels would range from 71-75 dBA and therefore patios / balconies should be limited per Section 5.7 of the EHA checklist.
  - High-STC patio / balcony doors (if planned) and windows should be installed. A preliminary analysis suggests that STC 33 or better windows will be required for these units in order to meet the interior sound level goal of 45 dBA  $L_{dn}$ , though we recommend an additional façade construction analysis once more detailed drawings are produced.

- For units in Building 1 along the south half of the east façade:
  - If patios / balconies are designed, the noise levels would range from 65-71 dBA and therefore patios / balconies should be limited per Section 5.7 of the EHA checklist.
  - High-STC patio / balcony doors (if planned) and windows should be installed. A preliminary analysis suggests that STC 31 or better doors and windows will be required.

For all units in Building 1 along the south and east facades, an additional façade construction analysis should be conducted once more detailed drawings are available to ensure appropriate construction elements are implemented to satisfy the interior sound level goal of 45 dBA  $L_{dn}$ .

## 6. CONCLUSION

Sound level measurements were measured at the project site of the proposed 521 J Place apartments project in Plano, TX, located in an EHA-2 area just north of the TX 190 expressway. The existing measured day-night average sound levels were determined to be  $L_{dn}$  70.7 dBA and 64.3 dBA at the SW and N Monitor locations, respectively. A 3D computer-based noise model was created and the existing modeled sound levels based on current traffic volumes at the SW and N Monitor locations were  $L_{dn}$  73.2 dBA and 66.3 dBA, respectively, which are within  $\pm 3$  dBA of the measured values.

The noise model also predicted future sound levels based on future traffic volumes. The results are shown in **Table 2**.

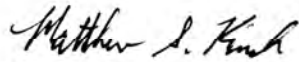
Calculations indicate that a noise barrier to the south of the property will 1) not fully reduce outdoor sound levels to below the EHA-1 noise goal of 65 dBA  $L_{dn}$  and 2) may not be economically feasible or aesthetically pleasing given the resultant minimal improvement to the outdoor noise levels. There are no other reasonably feasible noise controls for traffic noise from the Dallas North Tollway that would enable outdoor areas on the south façade of Building 1 to meet the EHA-1 noise goal of 65 dBA  $L_{dn}$ .

The mitigation recommendations are presented in Section 5 of this Technical Memorandum. Key recommendations are:

- For units in Building 1 along the south façade:
  - High-STC (STC 33 or better) patio / balcony doors (if planned) and windows should be installed.
- For units in Building 1 along the south half of the east façade:
  - High-STC (STC 31 or better) patio / balcony doors (if planned) and windows should be installed.
- An additional façade construction analysis should be conducted (once more detailed drawings are available) to ensure appropriate construction elements are implemented to satisfy the interior sound level goal of 45 dBA  $L_{dn}$ .

This concludes our Technical Memorandum. Please contact us if you have any questions.

Sincerely,  
**SLR International Corporation**



Matthew S. Kinch, P.E.  
Senior Engineer



Adam S. Young  
Senior Acoustician

MSK/ASY

SLR Technical Memo - Trinsic Residential - 521 J PI Environmental Study - 02-14-2023\_Rev3.docx

Enc MSK and ASY Resumes  
Map 1  
Graphs 1-2  
Figures 1-7  
Calibration Certificates  
EHA Site Analysis Checklist

## **ABOUT SLR, MATTHEW S. KINCH, P.E., AND ADAM S. YOUNG**

SLR is an international environmental consulting, remediation, and engineering firm. For the past twenty-five years, SLR personnel have been known for providing clients with cutting-edge, creative business solutions. Our multidisciplinary consultancy provides worldwide expertise in both environmental sciences and engineering from our network of offices in the United States, United Kingdom, Canada, Australia, and South Africa. We are focused on delivering superior technical services to our clients in order to add value, reduce environmental uncertainties, and minimize environmental-related expenditures. SLR has over 100 acoustical engineers worldwide including 10 consultants in Houston.

**Matthew S. Kinch, P.E.** has over 25 years of experience as an acoustical consultant specializing in multi-family code compliance, architectural acoustics, industrial noise control, mechanical noise control, environmental noise control, employee noise exposure, interior room acoustics, and acoustical modeling for clients throughout the United States and the world. Mr. Kinch has been very involved in architectural acoustic projects requiring room acoustics, mechanical (HVAC and plumbing) noise analysis, and vibration control. Mr. Kinch has extensive experience with environmental noise surveys and related analyses, noise predictions, noise contours, and development of noise mitigation designs as needed to meet local, state, and federal noise limits. Mr. Kinch is a registered Professional Engineer (acoustical) in the State of Oregon and a registered Professional Engineer (mechanical) in the State of Texas. Resume attached.

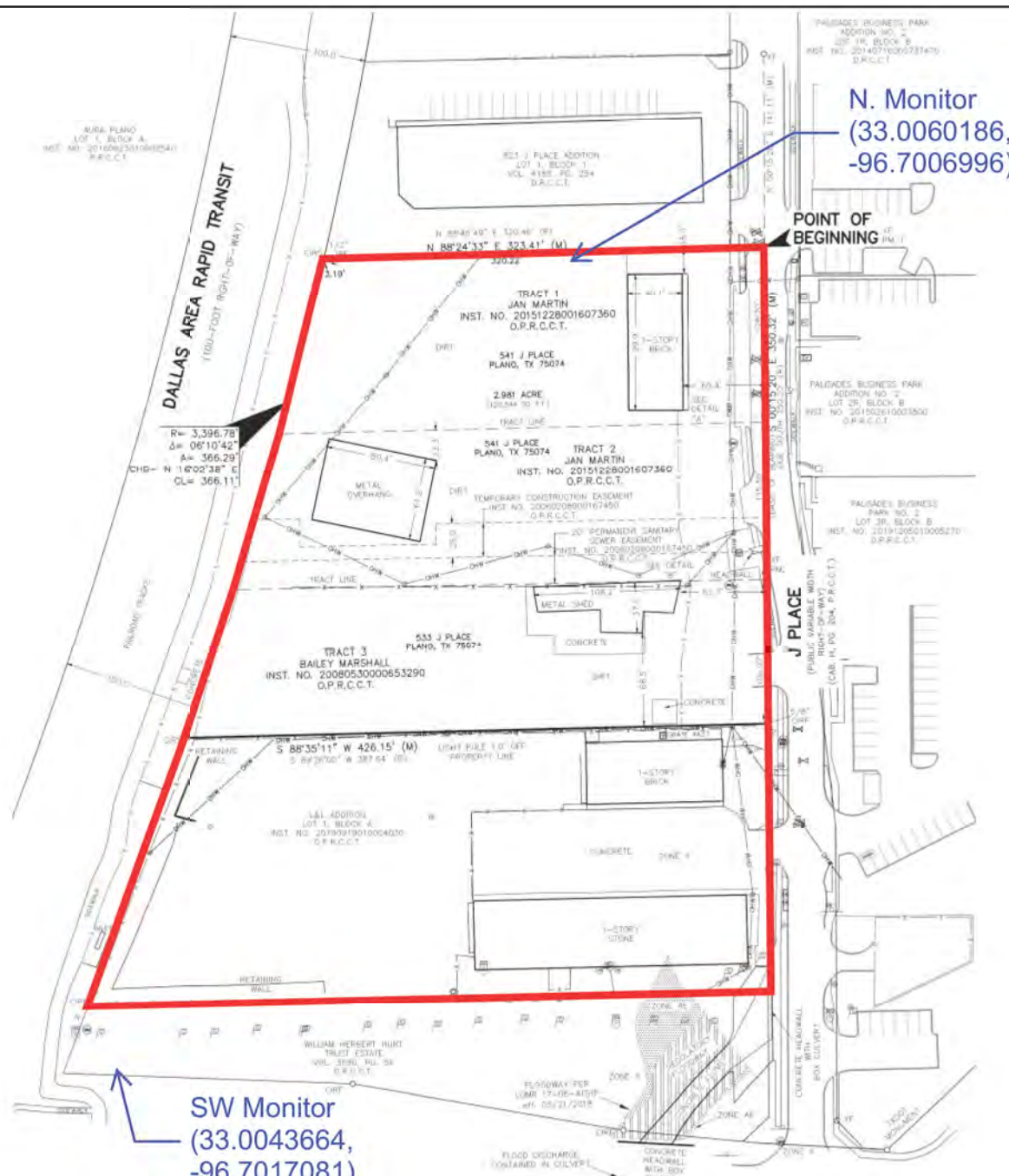
**Adam S. Young** has over ten years of experience working as an acoustical consultant. During that time, he has worked on a variety of architectural and industrial projects including HUD-funded multi-family projects, traffic noise studies, building acoustics testing, power plants, petrochemical plants, compressor stations, pump stations, and equipment assembly plants. He is experienced at conducting detailed sound level measurements in industrial and environmental settings, data analysis, creating complex noise models, assessing noise impacts, developing noise control, and presenting results in clear and concise reports. He has assessed environmental sound levels where federal, state, county, and local regulations have been applicable. In addition, he has attended township meetings to discuss sound level impacts on residents.

## **LIMITATIONS**

The services described in this work product were performed in accordance with generally accepted professional consulting principles and practices. No other representations or warranties, expressed or implied, are made. These services were performed consistent with our agreement with our client. This work product is intended solely for the use and information of our clients unless otherwise noted. Any reliance on this work product by a third party is at such party's sole risk.

Opinions and recommendations contained in this work product are based on conditions that existed at the time the services were performed and are intended only for the client, purposes, locations, time frames, and project parameters indicated. The data reported and the findings, observations, and conclusions expressed are limited by the scope of work. We are not responsible for the impacts of any changes in environmental standards, practices, or regulations subsequent to performance of services. We do not warrant the accuracy of information supplied by others, or the use of segregated portions of this work product.

This work product presents professional opinions and findings of a scientific and technical nature. The work product shall not be construed to offer legal opinion or representations as to the requirements of, nor the compliance with, environmental laws, rules, regulations, or policies of federal, state, or local governmental agencies.



N. Monitor  
(33.0060186,  
-96.7006996)

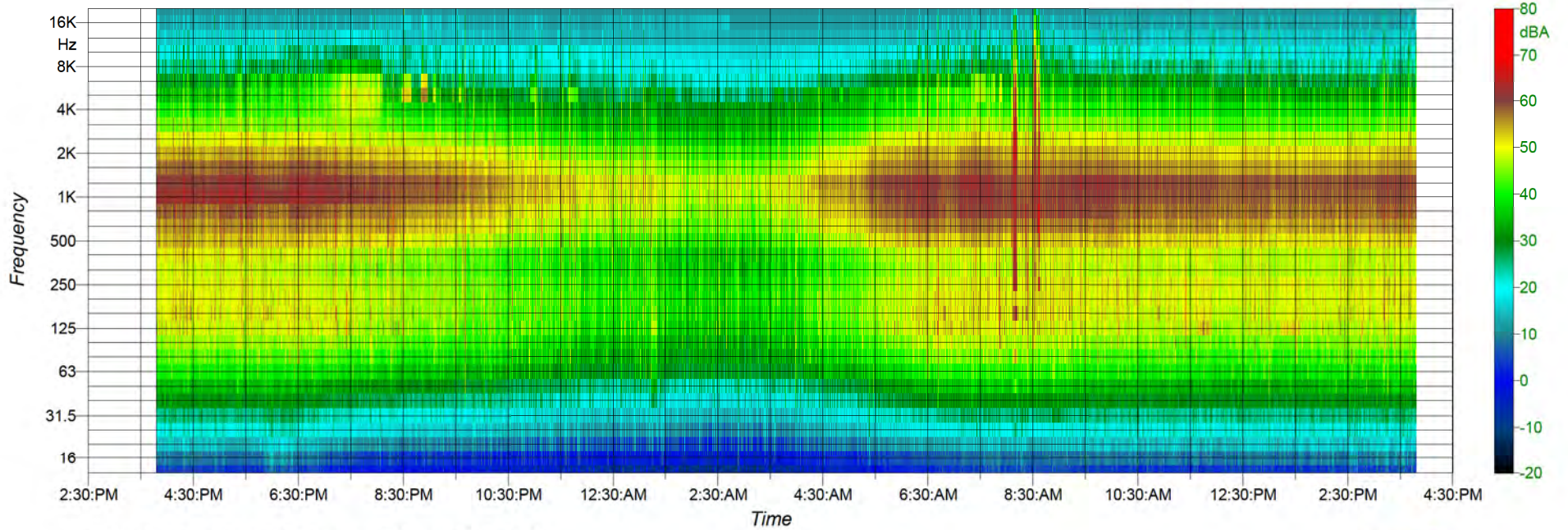
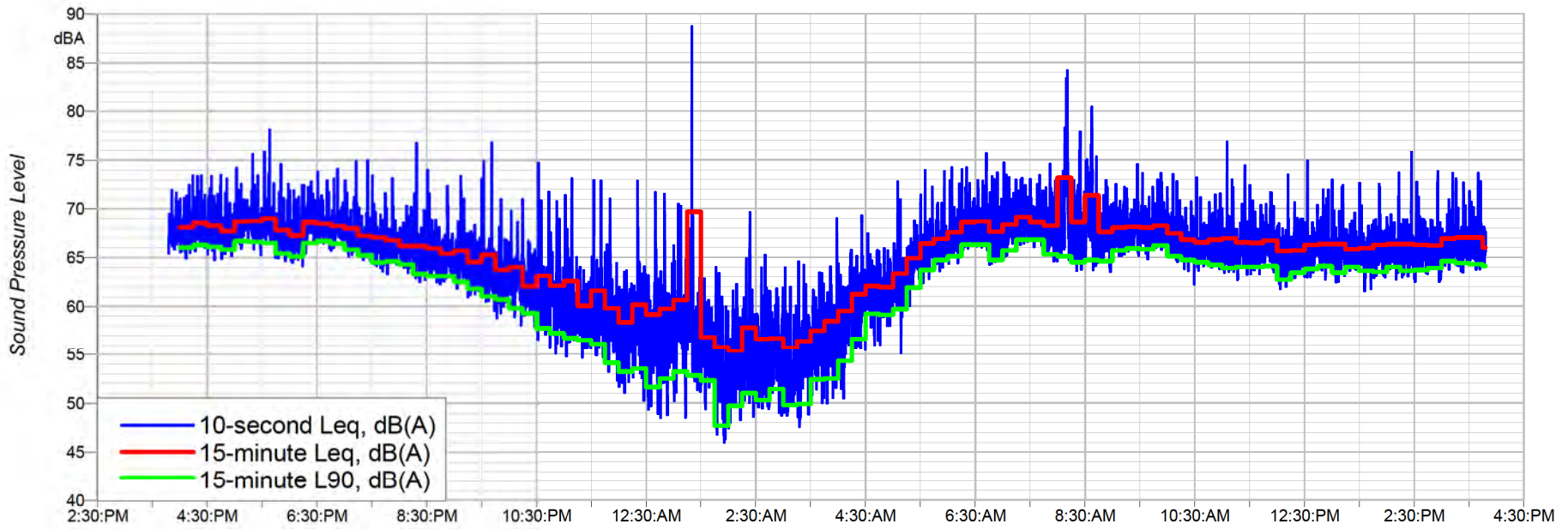
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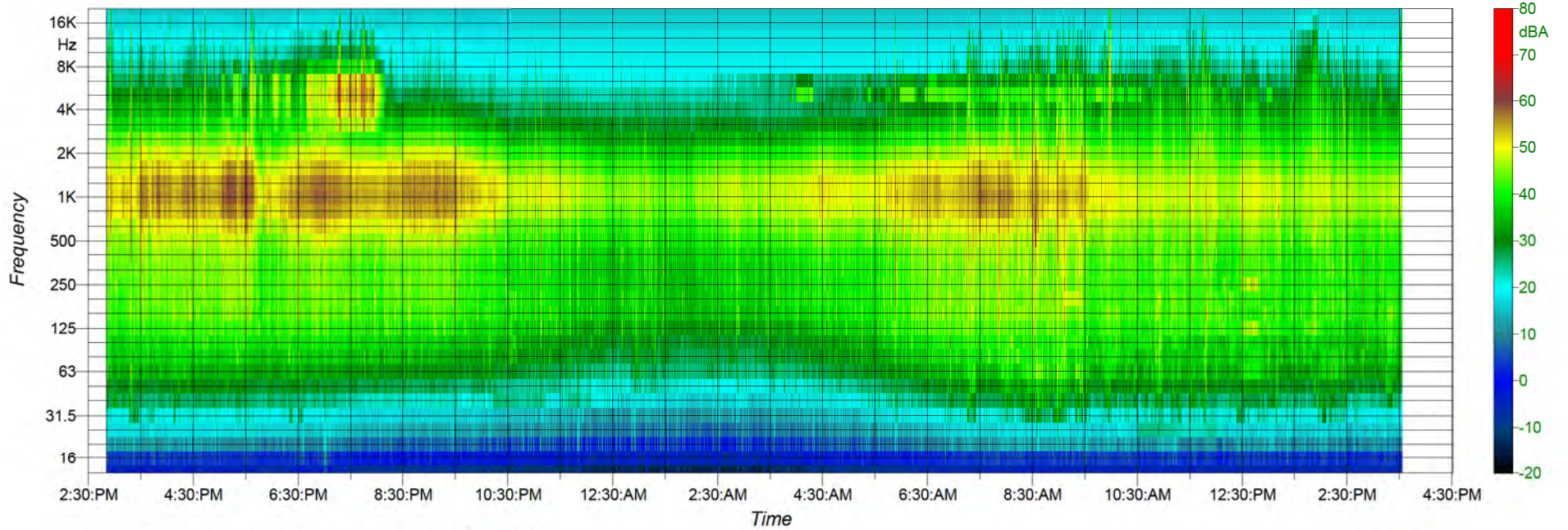
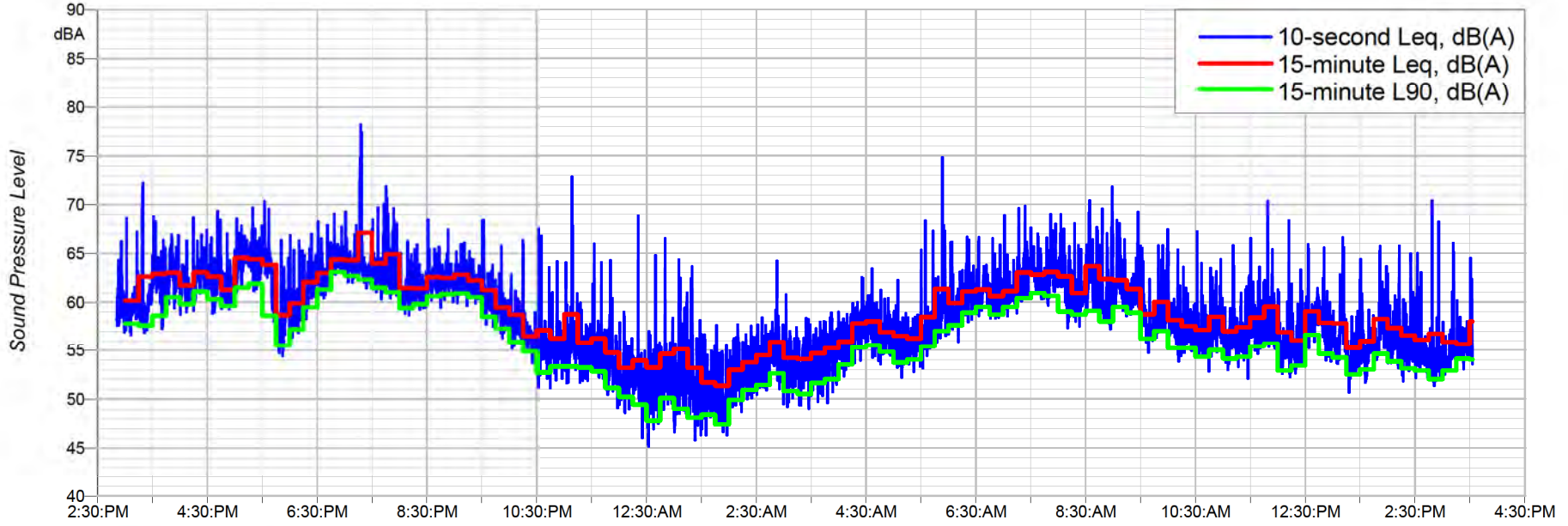
SLR INTERNATIONAL CORP  
6001 Savoy Drive, Suite 215  
Houston, Texas 77036-3322  
713-789-9400 Tel 713-789-5493 Fax

<b>Project Number:</b>	<b>Scale:</b> NTS	<b>Date:</b> November 2, 2022
<b>Description:</b> Noise Measurement Site Map	<b>By:</b> ASY	
<b>Project Name:</b> 521 J Place Apartments	<b>Sheet:</b> Map 1	

# Graph 1: SW Monitor - Sound Levels Over Time



**Graph 2: N Monitor - Sound Levels Over Time**





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6001 Savoy Drive, Suite 215  
Houston, Texas 77036-3322  
713-789-9400 Tel 713-789-5493 Fax

**Project Number:**

**Scale:** NTS

**Date:** November 2, 2022

**Description:** Photo of SW Monitor in Position

**By:** ASY

**Project Name:** 521 J Place Apartments

**Sheet:** Figure 1



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6001 Savoy Drive, Suite 215  
Houston, Texas 77036-3322  
713-789-9400 Tel 713-789-5493 Fax

**Project Number:**

**Scale:** NTS

**Date:** November 2, 2022

**Description:** Photo of N Monitor in Position

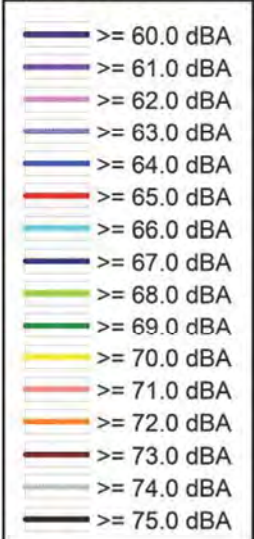
**By:** ASY

**Project Name:** 521 J Place Apartments

**Sheet:** Figure 2



Note: Contours calculated at height of 5 feet AFF



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6001 Savoy Drive, Suite 215  
Houston, Texas 77036-3322  
713-789-9400 Tel 713-789-5493 Fax

Project Number:

Description: Existing: Modeled Outdoor Ldn Noise Site Map - Existing Site Conditions

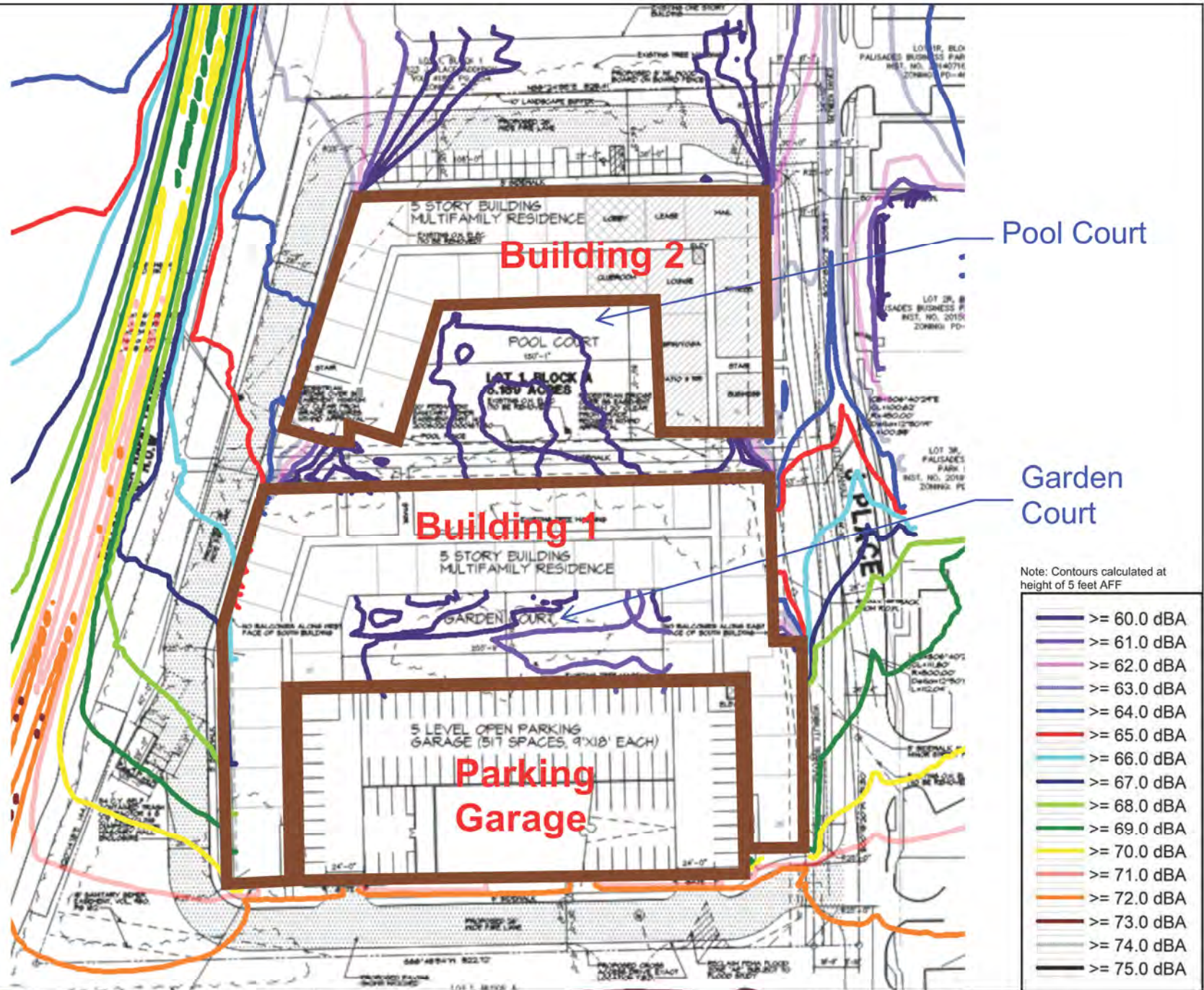
Project Name: 521 J Place Apartments

Scale: NTS

Date: November 2, 2022

By: JCB

Sheet: Figure 3



Note: Contours calculated at height of 5 feet AFF

- >= 60.0 dBA
- >= 61.0 dBA
- >= 62.0 dBA
- >= 63.0 dBA
- >= 64.0 dBA
- >= 65.0 dBA
- >= 66.0 dBA
- >= 67.0 dBA
- >= 68.0 dBA
- >= 69.0 dBA
- >= 70.0 dBA
- >= 71.0 dBA
- >= 72.0 dBA
- >= 73.0 dBA
- >= 74.0 dBA
- >= 75.0 dBA

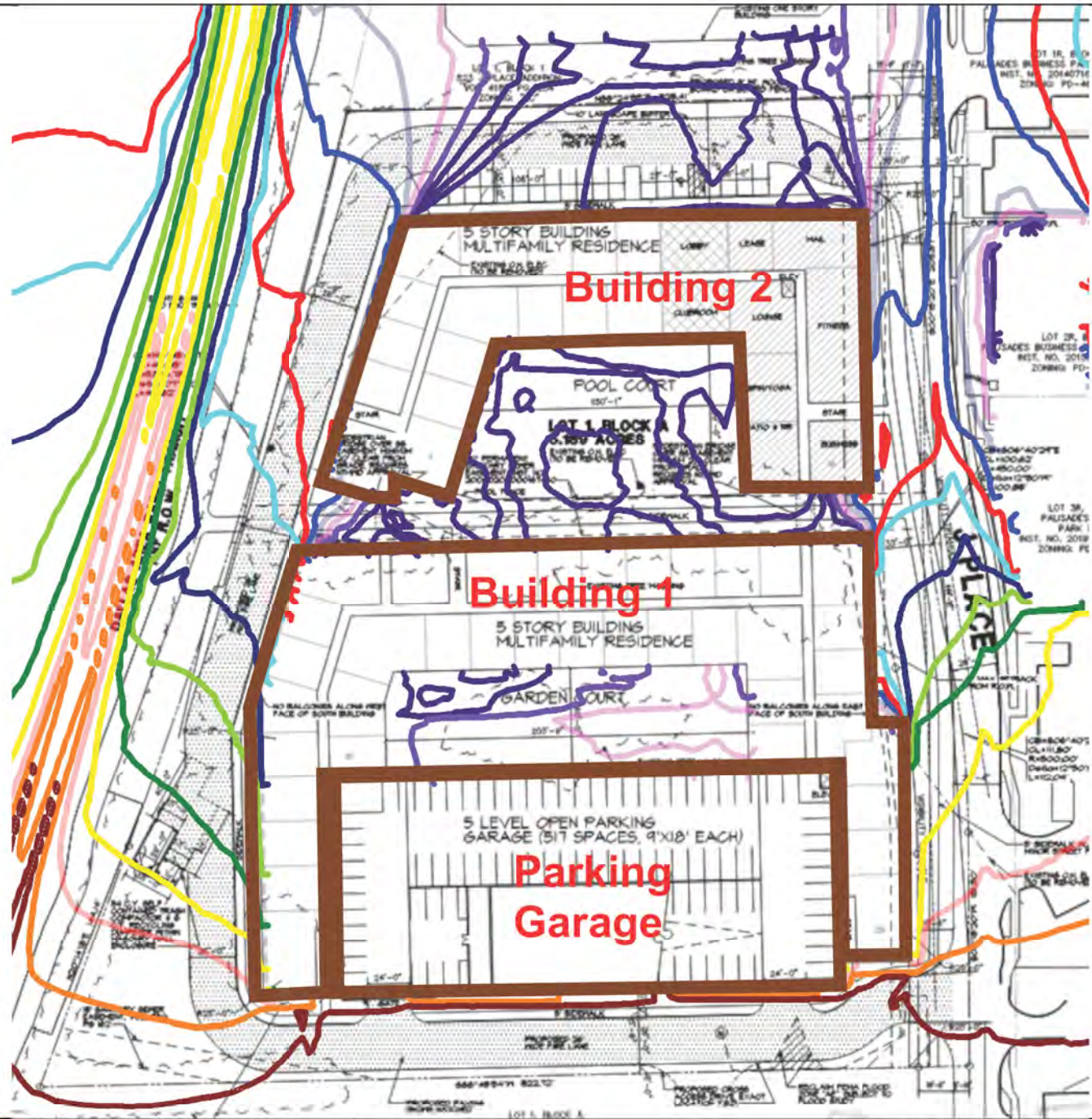


SLR INTERNATIONAL CORP.  
 6001 Savoy Drive, Suite 215  
 Houston, Texas 77036-3322  
 713-789-9400 Tel 713-789-5493 Fax

Project Number:  
 Description: Future Site: Modeled Outdoor L<sub>n</sub> Noise Map - Existing Site Conditions  
 Project Name: 521 J Place Apartments

Scale: NTS

Date: February 14, 2023  
 By: JCB  
 Sheet: Figure 4



Note: Contours calculated at height of 5 feet AFF

- >= 60.0 dBA
- >= 61.0 dBA
- >= 62.0 dBA
- >= 63.0 dBA
- >= 64.0 dBA
- >= 65.0 dBA
- >= 66.0 dBA
- >= 67.0 dBA
- >= 68.0 dBA
- >= 69.0 dBA
- >= 70.0 dBA
- >= 71.0 dBA
- >= 72.0 dBA
- >= 73.0 dBA
- >= 74.0 dBA
- >= 75.0 dBA



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 6001 Savoy Drive, Suite 215  
 Houston, Texas 77036-3322  
 713-789-9400 Tel 713-789-5493 Fax

**Project Number:**

**Scale:** NTS

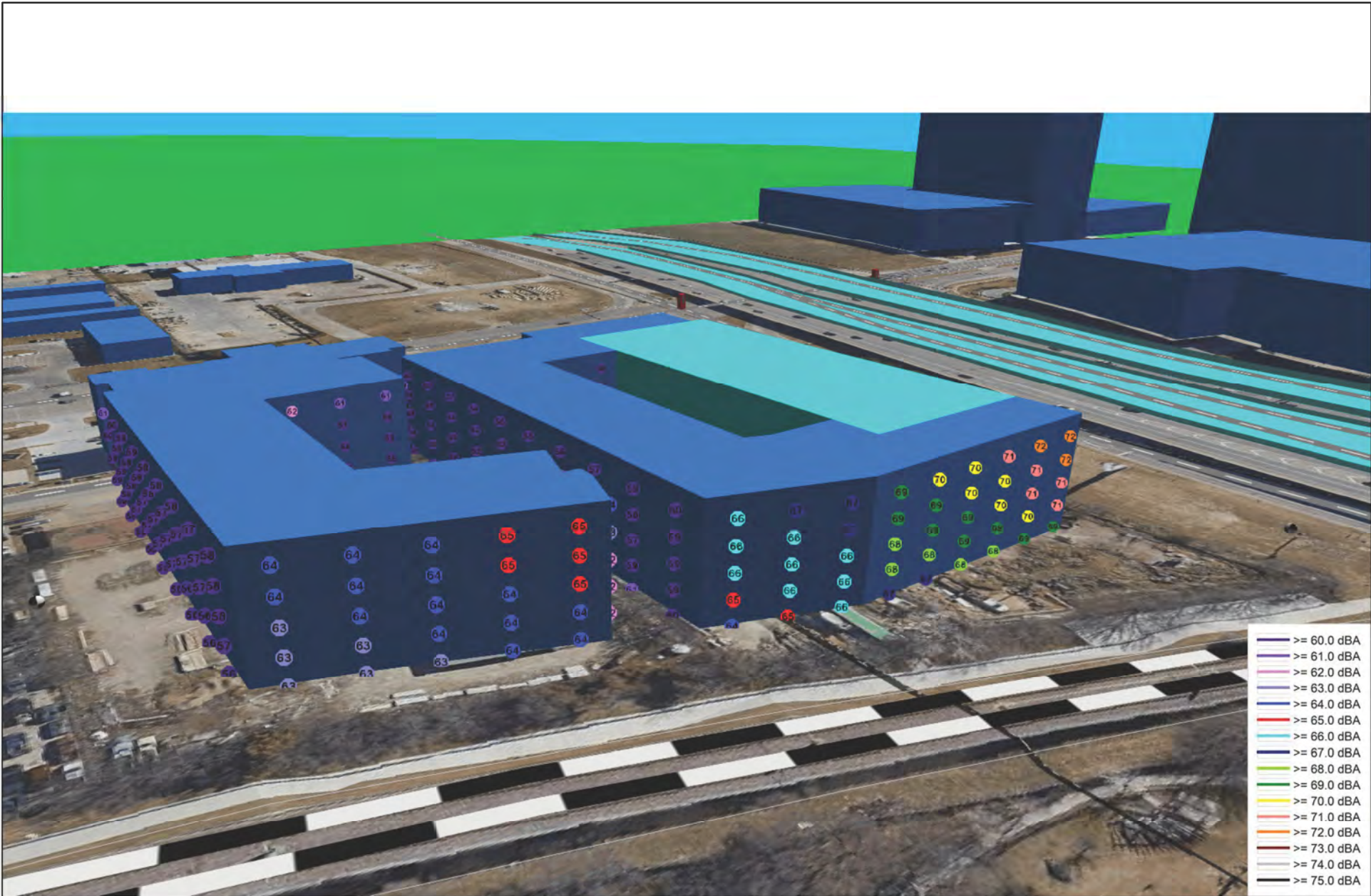
**Date:** February 14, 2023

**Description:** Future: Projected (2040) Modeled Outdoor L<sub>w</sub> Noise Map - Proposed Site without Mitigation

**By:** JCB

**Project Name:** 521 J Place Apartments

**Sheet:** Figure 5

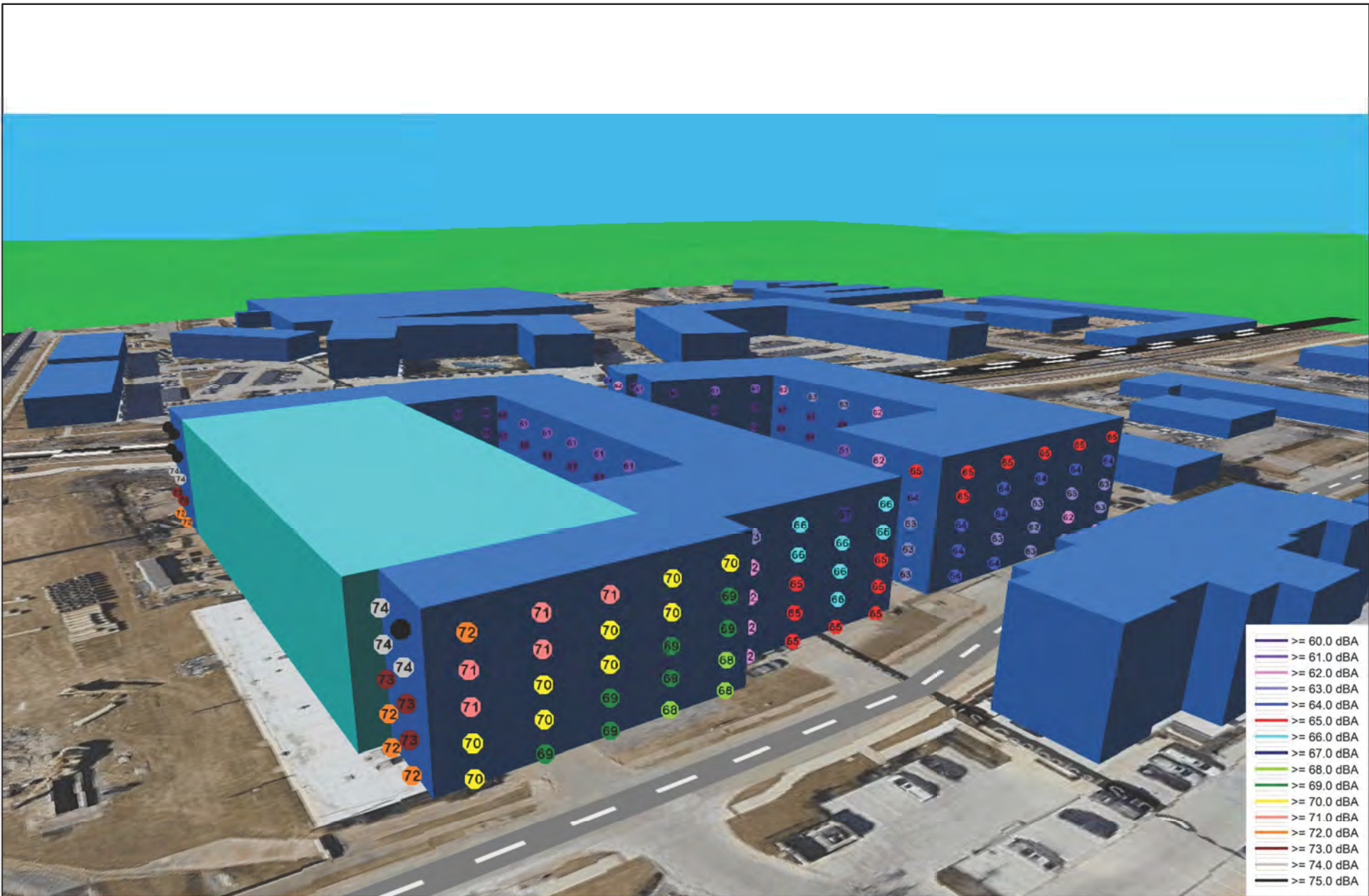


- >= 60.0 dBA
- >= 61.0 dBA
- >= 62.0 dBA
- >= 63.0 dBA
- >= 64.0 dBA
- >= 65.0 dBA
- >= 66.0 dBA
- >= 67.0 dBA
- >= 68.0 dBA
- >= 69.0 dBA
- >= 70.0 dBA
- >= 71.0 dBA
- >= 72.0 dBA
- >= 73.0 dBA
- >= 74.0 dBA
- >= 75.0 dBA



**SLR INTERNATIONAL CORP**  
 6001 Savoy Drive, Suite 215  
 Houston, Texas 77036-3322  
 713-789-9400 Tel 713-789-5493 Fax

<b>Project Number:</b>	<b>Scale:</b> NTS	<b>Date:</b> February 10, 2023
<b>Description:</b> (2040) Modeled Outdoor L <sub>in</sub> Building Facade Noise Levels - Looking from Northwest - No Mitigation		<b>By:</b> JCB
<b>Project Name:</b> 521 J Place Apartments		<b>Sheet:</b> Figure 6



SLR INTERNATIONAL CORP  
 6001 Savoy Drive, Suite 215  
 Houston, Texas 77036-3322  
 713-789-9400 Tel 713-789-5493 Fax

Project Number:

Scale: NTS

Date: February 10, 2023

Description: (2040) Modeled Outdoor Leq Building Facade Noise Levels - Looking from Southeast - No Mitigation

By: JCB

Project Name: 521 J Place Apartments

Sheet: Figure 7

# Calibration Certificate

Certificate Number 2022000641

**Customer:**

SLR International Corporation  
6001 Savoy Drive  
Houston, TX 77036, United States

<b>Model Number</b>	831	<b>Procedure Number</b>	D0001.8384
<b>Serial Number</b>	0001737	<b>Technician</b>	Ron Harris
<b>Test Results</b>	<b>Pass</b>	<b>Calibration Date</b>	18 Jan 2022
<b>Initial Condition</b>	AS RECEIVED same as shipped	<b>Calibration Due</b>	18 Jan 2024
<b>Description</b>	Larson Davis Model 831 Class 1 Sound Level Meter Firmware Revision: 2.403	<b>Temperature</b>	23.54 °C ± 0.25 °C
		<b>Humidity</b>	50.8 %RH ± 2.0 %RH
		<b>Static Pressure</b>	86.05 kPa ± 0.13 kPa

**Evaluation Method**      **Tested with:**      **Data reported in dB re 20 µPa.**

Larson Davis CAL291. S/N 0108  
Larson Davis CAL200. S/N 9079  
PCB 377B02. S/N 314556  
Larson Davis PRM831. S/N 058584

**Compliance Standards**      Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017.

**Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Correction data from Larson Davis Model 831 Sound Level Meter Manual, I831.01 Rev O, 2016-09-19

For 1/4" microphones, the Larson Davis ADP024 1/4" to 1/2" adaptor is used with the calibrators and the Larson Davis ADP043 1/4" to

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Provo, UT 84601, United States  
716-684-0001



1/2" adaptor is used with the preamplifier.

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa; Reference Range: 0 dB gain

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part3.

Pattern approval for IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 successfully completed by Physikalisch-Technische Bundesanstalt (PTB) on 2016-02-24 certificate number DE-15-M-PTB-0056.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organization responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013 / ANSI/ASA S1.4-2014/Part 2, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1; the sound level meter submitted for testing conforms to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1.

**Standards Used**

Description	Cal Date	Cal Due	Cal Standard
Larson Davis CAL291 Residual Intensity Calibrator	2021-09-10	2022-09-10	001250
Hart Scientific 2626-H Temperature Probe	2021-02-04	2022-08-04	006767
Larson Davis CAL200 Acoustic Calibrator	2021-07-21	2022-07-21	007027
Larson Davis Model 831	2021-03-02	2022-03-02	007182
PCB 377A13 1/2 inch Prepolarized Pressure Microphone	2021-03-03	2022-03-03	007185
SRS DS360 Ultra Low Distortion Generator	2021-04-13	2022-04-13	007635
Larson Davis 1/2" Preamplifier for Model 831 Type I	2021-09-28	2022-09-28	PCB0004783

**Acoustic Calibration**

Measured according to IEC 61672-3:2013 10 and ANSI S1.4-2014 Part 3: 10

Measurement	Test Result [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
1000 Hz	114.01	113.80	114.20	0.14	Pass

As Received Level: 113.99

Adjusted Level: 114.01

-- End of measurement results--

**Loaded Circuit Sensitivity**

Measurement	Test Result [dB re 1 V / Pa]	Lower Limit [dB re 1 V / Pa]	Upper Limit [dB re 1 V / Pa]	Expanded Uncertainty [dB]	Result
1000 Hz	-26.20	-27.84	-24.74	0.14	Pass

-- End of measurement results--



### Acoustic Signal Tests, C-weighting

Measured according to IEC 61672-3:2013 12 and ANSI S1.4-2014 Part 3: 12 using a comparison coupler with Unit Under Test (UUT) and reference SLM using slow time-weighted sound level for compliance to IEC 61672-1:2013 5.5; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Expected [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
125	-0.18	-0.20	-1.20	0.80	0.23	Pass
1000	0.14	0.00	-0.70	0.70	0.23	Pass
8000	-3.23	-3.00	-5.50	-1.50	0.32	Pass

-- End of measurement results--

### Self-generated Noise

Measured according to IEC 61672-3:2013 11.1 and ANSI S1.4-2014 Part 3: 11.1

Measurement	Test Result [dB]
A-weighted, 20 dB gain	40.36

-- End of measurement results--

-- End of Report--

Signatory: Ron Harris



# Calibration Certificate

Certificate Number 2022000642

**Customer:**

SLR International Corporation  
6001 Savoy Drive  
Houston, TX 77036, United States

<b>Model Number</b>	831	<b>Procedure Number</b>	D0001.8384
<b>Serial Number</b>	0002443	<b>Technician</b>	Ron Harris
<b>Test Results</b>	<b>Pass</b>	<b>Calibration Date</b>	18 Jan 2022
<b>Initial Condition</b>	AS RECEIVED same as shipped	<b>Calibration Due</b>	18 Jan 2024
<b>Description</b>	Larson Davis Model 831 Class 1 Sound Level Meter Firmware Revision: 2.403	<b>Temperature</b>	23.54 °C ± 0.25 °C
		<b>Humidity</b>	53 %RH ± 2.0 %RH
		<b>Static Pressure</b>	86.04 kPa ± 0.13 kPa

**Evaluation Method**      **Tested with:**      **Data reported in dB re 20 µPa.**

Larson Davis CAL291, S/N 0108  
Larson Davis CAL200, S/N 9079  
Larson Davis PRM831, S/N 023948  
PCB 377B02, S/N 141554

**Compliance Standards**      Compliant to Manufacturer Specifications and the following standards when combined with Calibration Certificate from procedure D0001.8378:

IEC 60651:2001 Type 1	ANSI S1.4-2014 Class 1
IEC 60804:2000 Type 1	ANSI S1.4 (R2006) Type 1
IEC 61252:2002	ANSI S1.11 (R2009) Class 1
IEC 61260:2001 Class 1	ANSI S1.25 (R2007)
IEC 61672:2013 Class 1	ANSI S1.43 (R2007) Type 1

Issuing lab certifies that the instrument described above meets or exceeds all specifications as stated in the referenced procedure (unless otherwise noted). It has been calibrated using measurement standards traceable to the International System of Units (SI) through the National Institute of Standards and Technology (NIST), or other national measurement institutes, and meets the requirements of ISO/IEC 17025:2017.

**Test points marked with a ‡ in the uncertainties column do not fall within this laboratory's scope of accreditation.**

The quality system is registered to ISO 9001:2015.

This calibration is a direct comparison of the unit under test to the listed reference standards and did not involve any sampling plans to complete. No allowance has been made for the instability of the test device due to use, time, etc. Such allowances would be made by the customer as needed.

The uncertainties were computed in accordance with the ISO Guide to the Expression of Uncertainty in Measurement (GUM). A coverage factor of approximately 2 sigma (k=2) has been applied to the standard uncertainty to express the expanded uncertainty at approximately 95% confidence level.

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Correction data from Larson Davis Model 831 Sound Level Meter Manual, I831.01 Rev O, 2016-09-19

For 1/4" microphones, the Larson Davis ADP024 1/4" to 1/2" adaptor is used with the calibrators and the Larson Davis ADP043 1/4" to

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1681 West 820 North  
Provo, UT 84601, United States  
716-684-0001



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A PCB DIVISION

1/2" adaptor is used with the preamplifier.

Calibration Check Frequency: 1000 Hz; Reference Sound Pressure Level: 114 dB re 20 µPa; Reference Range: 0 dB gain

Periodic tests were performed in accordance with procedures from IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part3.

Pattern approval for IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1 successfully completed by Physikalisch-Technische Bundesanstalt (PTB) on 2016-02-24 certificate number DE-15-M-PTB-0056.

The sound level meter submitted for testing successfully completed the periodic tests of IEC 61672-3:2013 / ANSI/ASA S1.4-2014/Part 3, for the environmental conditions under which the tests were performed. As evidence was publicly available, from an independent testing organization responsible for approving the results of pattern-evaluation tests performed in accordance with IEC 61672-2:2013 / ANSI/ASA S1.4-2014/Part 2, to demonstrate that the model of sound level meter fully conformed to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1; the sound level meter submitted for testing conforms to the class 1 specifications in IEC 61672-1:2013 / ANSI/ASA S1.4-2014/Part 1.

**Standards Used**

Description	Cal Date	Cal Due	Cal Standard
Larson Davis CAL291 Residual Intensity Calibrator	2021-09-10	2022-09-10	001250
Hart Scientific 2626-H Temperature Probe	2021-02-04	2022-08-04	006767
Larson Davis CAL200 Acoustic Calibrator	2021-07-21	2022-07-21	007027
Larson Davis Model 831	2021-03-02	2022-03-02	007182
PCB 377A13 1/2 inch Prepolarized Pressure Microphone	2021-03-03	2022-03-03	007185
SRS DS360 Ultra Low Distortion Generator	2021-04-13	2022-04-13	007635
Larson Davis 1/2" Preamplifier for Model 831 Type I	2021-09-28	2022-09-28	PCB0004783

**Acoustic Calibration**

Measured according to IEC 61672-3:2013 10 and ANSI S1.4-2014 Part 3: 10

Measurement	Test Result [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
1000 Hz	114.00	113.80	114.20	0.14	Pass

As Received Level: 114.68  
Adjusted Level: 114.00

-- End of measurement results--

**Loaded Circuit Sensitivity**

Measurement	Test Result [dB re 1 V / Pa]	Lower Limit [dB re 1 V / Pa]	Upper Limit [dB re 1 V / Pa]	Expanded Uncertainty [dB]	Result
1000 Hz	-25.88	-27.84	-24.74	0.14	Pass

-- End of measurement results--



### Acoustic Signal Tests, C-weighting

Measured according to IEC 61672-3:2013 12 and ANSI S1.4-2014 Part 3: 12 using a comparison coupler with Unit Under Test (UUT) and reference SLM using slow time-weighted sound level for compliance to IEC 61672-1:2013 5.5; ANSI S1.4-2014 Part 1: 5.5

Frequency [Hz]	Test Result [dB]	Expected [dB]	Lower Limit [dB]	Upper Limit [dB]	Expanded Uncertainty [dB]	Result
125	-0.17	-0.20	-1.20	0.80	0.23	Pass
1000	0.12	0.00	-0.70	0.70	0.23	Pass
8000	-3.42	-3.00	-5.50	-1.50	0.32	Pass

-- End of measurement results--

### Self-generated Noise

Measured according to IEC 61672-3:2013 11.1 and ANSI S1.4-2014 Part 3: 11.1

Measurement	Test Result [dB]
A-weighted, 20 dB gain	40.42

-- End of measurement results--

-- End of Report--

Signatory: Ron Harris





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--



# EHA Site Analysis Checklist

The following is a partial listing of requirements for EHA Site Analyses, required for zoning petition requests for Sensitive Land Uses (SLUs), per the City of Plano [Expressway Corridor Environmental Health Map & Guidelines](#). A completed checklist must be submitted with each EHA Site Analysis. Applicants shall indicate compliance with standards by checking the box adjacent to the standard.

The checklist below supplements the City of Expressway Corridor Environmental Health Map & Guidelines. The map denotes two areas, Expressway Corridor Environmental Health Area One (EHA-1) and Expressway Corridor Environmental Health Area Two (EHA-2):

**EHA-2** identifies areas where outdoor noise levels are greater than or equal to 75 dBA  $L_{dn}$ . Sensitive Land Uses are generally inappropriate in EHA-2, but may be appropriate if satisfactory mitigation is achieved.

**EHA-1** identifies areas where outdoor noise levels are greater than or equal to 65 dBA  $L_{dn}$  and less than 75 dBA  $L_{dn}$ . Sensitive Land Uses are appropriate in EHA-1 if satisfactory mitigation is achieved.

Locations that are below 65 dBA  $L_{dn}$  are considered acceptable for Sensitive Land Use (SLU) development within a noise and air quality impact context.

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## Section 1 – Site Information

Subject Property: Lot 1, Block A, TRG 'J' Place Addition  
*Subdivision Name(s), Block(s), Lot(s)*

Subject property is within (check all that apply):  EHA-1  EHA-2

Sensitive Land Uses (SLUs) proposed at the subject property (check all that apply):

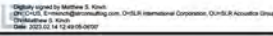
- |  |   |   |
|--|---|---|
| <input type="checkbox"/> Assisted Living Facility    | <input type="checkbox"/> Household Care Institution       | <input type="checkbox"/> Rehabilitation Care Facility       |
| <input type="checkbox"/> Boarding/Rooming House      | <input type="checkbox"/> Independent Living Facility      | <input type="checkbox"/> Rehabilitation Care Institution    |
| <input type="checkbox"/> Continuing Care Facility    | <input type="checkbox"/> Live-Work (Business Loft)        | <input type="checkbox"/> Single-Family Residence (Attached) |
| <input type="checkbox"/> Day Care Center             | <input checked="" type="checkbox"/> Mid-Rise Residential  | <input type="checkbox"/> Single-Family Residence (Detached) |
| <input type="checkbox"/> Day Care Center (Accessory) | <input type="checkbox"/> Mobile Home/Trailer Park         | <input type="checkbox"/> Studio Residence                   |
| <input type="checkbox"/> Day Care Center (Adult)     | <input checked="" type="checkbox"/> Multifamily Residence | <input type="checkbox"/> Two-Family Residence               |
| <input type="checkbox"/> Day Care (In-Home)          | <input type="checkbox"/> Park/Playground                  | <input type="checkbox"/> Two-Family Residence (Attached)    |
| <input type="checkbox"/> Household Care Facility     | <input type="checkbox"/> Private School                   |   |

**Section 2 – Preparer Requirements**

When proposing a zoning change for Sensitive Land Uses (SLU) within an EHA, a completed checklist and EHA Site Analysis must be completed by a qualified individual:

- Analysis was prepared by a recognized expert experienced in the fields of environmental noise, air quality, and/or architectural acoustics, as noted and described below:
  - Pre-Qualified in Traffic Noise Analysis by a State DOT  
State DOT: \_\_\_\_\_
  - Pre-Qualified in Air Quality Analysis by a State DOT  
State DOT: \_\_\_\_\_
  - INCE Full Member  
Member Type: Full Member
  - Similar professional certification  
Describe: \_\_\_\_\_

*I hereby certify that I am the preparer of this EHA Site Analysis, responsible for the professional quality, technical accuracy, and coordination of the services, and further certify that the information provided in this EHA Site Analysis Application is true and complete.*

Preparer Signature: Matthew S. Kinch   
 Preparer Name: Matthew S. Kinch, P.E.  
 Date: 02/14/2023

**Section 3 – Noise Measurements** *(all information is required; indicate N/A and explain if not applicable)*

An EHA Site Analysis should include representative noise level measurements with sufficient sampling periods and locations to adequately describe local conditions and predominant noise sources on the project site:

- 3.1  A minimum of one 24-hour (long-term) measurement was taken on the site.
  - The data from this 24-hour measurement can be used to confirm the reasonableness of the  $L_{dn}$  values calculated on the site. 24-hour measurements near highways and rail lines can be used to discern which transportation source dominates the acoustic environment.
- 3.2  Short-term measurements of 30 minutes may supplement the long-term measurement(s). The total number of measurements will depend upon the size of the site and the homogeneity of the site. Short-term measurements must also be taken in areas where the noise environment may differ due to site conditions (existing buildings, topography, etc). **N/A**
- 3.3  Measurements were conducted within the past year. If significant roadway work or development has occurred in the vicinity, more recent measurements may be appropriate.
- 3.4  An ANSI Type I or Type II integrating sound level meter was used to take the measurements.
- 3.5  The sound level meter was calibrated before and after measurements.
- 3.6  Sound level meters were fitted with appropriate wind screens.
- 3.7  Measurements were not conducted when the highway pavement was wet, when sustained winds exceeded 10 mph, or when animal noise (insects or birds) was high.
- 3.8  Instructions and considerations for taking highway noise field measurements were followed, as detailed in the Federal Highway Administration’s Noise Measurement Handbook.

- 3.9  Measurements were taken when traffic was in a “typical” operating conditions (i.e. no added congestion or slowed speeds due to crashes or construction, no nearby truck detours.)
- 3.10  Traffic counts and speed measurements were taken during the measurement period for accurate input to validate the model. **N/A**
  - Short-term noise measurements should include vehicle counts, what types of vehicles were present (i.e., passenger vehicles [cars/pickup trucks], medium trucks [2-axle and 6-tires], and heavy trucks [anything with more than 2-axes and 6-tires]), and vehicle speeds.
  - Compare traffic count data with other sources such as [NCTCOG](#), [City of Plano Traffic data](#), or [FHWA HPMS data](#)
- 3.11  Traffic volumes for the future scenarios are based on projected 2040 traffic included in Table 1 (Daily Volumes) and Table 2 (Hourly Distribution) on Pages 5 and 6 in the EHA Site Analysis Checklist.
- 3.12  The noise modeling software marked below was used:
  - FHWA Traffic Noise Model 2.5                       SoundPLAN
  - FHWA Traffic Noise Model 3.0                       CadnaA

Other: \_\_\_\_\_

*Only the above noise models are currently recognized. Documentation of quality for any other noise models must be provided. Not acceptable: Two-dimensional based models that do not integrate topographic conditions, such as the HUD Day/Night Noise Level Calculator.*
- 3.13  Measured  $L_{eq}$  is within  $\pm 3$  dB of the modeled  $L_{eq}$  for each measurement location.\* If discrepancies are greater than 3 dB, then the model is not valid or, a valid explanation should be provided as to why the conditions at a particular location are not possible to replicate in a model. **\*Measured DNL was within 3 dB of the modeled DNL for each measurement location.**
- 3.14  Provide noise measurements in the following table format:

	Measurement at Location 1	Measurement at Location 2	(Add columns as needed)
I.D. on Noise Measurement Site Map (see 3.20 and 3.21 below)			
Duration	24-hour (min. 1 required)		
Date/Time			
Temperature			
Cloud Coverage			
Wind Speed/ Direction			
Precipitation			
Highway Pavement (wet or dry)			
Traffic Types			
Traffic Speeds			
Traffic Counts			
Height of microphone above finished floor			
Existing Measured $L_{eq}$ , Current			
Existing Modeled $L_{eq}$ , Current			
Difference between measured and modeled			

### Noise Measurement Site Map

- 3.15  Use the proposed or approved Concept or Site Plan as a base sheet.
- 3.16  Title block shall be in the lower, right-hand corner of the map. The title block shall contain: site map type; project name (subdivision name, lot and block designations); and date of preparation. **N/A**
- 3.17  Label company name, preparer name, address, and phone number of plan preparer (e.g., surveyor, engineer, architect, landscape architect, etc.) in the vicinity of the title block.
- 3.18  Provide a legend, if needed.
- 3.19  Show and label features that may influence the measured noise levels (such as berms, walls, buildings, topography, other non-transportation sources such as backup power generators, pumping stations, and other sources that may influence the acoustic environment, as necessary).
- 3.20  Identify and label the location of any/all 24-hour noise measurement(s). Include coordinates (in decimal degrees).
- 3.21  Identify and label the location of any/all 30-minute noise measurement(s). Include coordinates (in decimal degrees). **N/A**  
All measurement locations:
- 3.22  Are generally representative of any/all proposed SLU locations (i.e., residential unit locations and outdoor use areas) and have the same general view of the expressway as the proposed SLU(s). However, SLU locations do not have to be exactly represented.
- Example: measurement locations where a building from an adjacent parcel blocks the view of the expressway should be avoided, unless this will be the same condition for the proposed SLUs. Measurement locations that have a clear view of the expressway lanes are most appropriate.
  - Chapter 3 of the FHWA Noise Measurement Handbook can be used as a reference for additional detail on locations of typical noise measurements.
- 3.23  Are in areas where the noise environment may differ due to site conditions (existing buildings, topography, or expressway alignments). **N/A**
- 3.24  Account for other non-transportation sources such as backup power generators, pumping stations, and other sources that may influence the acoustic environment, as necessary. **N/A**

### Section 4 – Estimated Noise *(check if provided; indicate N/A if not applicable)*

An EHA Site Analysis should estimate existing, future, and projected cumulative noise at ground level and for all proposed floors of the building, and compare those noise levels to the adopted standards of the Expressway Corridor Environmental Health Guidelines:

#### Existing: Modeled Outdoor Noise Site Map – Existing Site Conditions

- 4.1  Use the proposed or approved Concept or Site Plan as a base sheet.
- 4.2  Title block shall be in the lower, right-hand corner of the map. The title block shall contain: site map type; project name (subdivision name, lot and block designations); and date of preparation. **N/A**
- 4.3  Label company name, preparer name, address, and phone number of plan preparer (e.g., surveyor, engineer, architect, landscape architect, etc.) in the vicinity of the title block.
- 4.4  Provide a legend, if needed.
- 4.5  Show and label features that may influence the measured noise levels (such as berms, walls, buildings, topography, other non-transportation sources such as backup power generators, pumping stations, and other sources that may influence the acoustic environment, as necessary).

- 4.6  Show  $L_{dn}$  (Day-Night Average) maximum noise level contours for the existing site with current traffic levels.
- 4.7  Label contours in 1 dBA increments.
- 4.8  Note approximate height of contours (i.e. 5 feet AFF).
- 4.9  Show and label the location and extent of any existing outdoor use areas.
- 4.10  Show and label the location and extent of any existing sensitive land uses.

#### Future: Projected (2040) Modeled Outdoor Noise Site Map – Proposed Site Conditions without Mitigation

- 4.11  Use the proposed or approved Concept or Site Plan as a base sheet.
- 4.12  Title block shall be in the lower, right-hand corner of the map. The title block shall contain: site map type; project name (subdivision name, lot and block designations); and date of preparation.
- 4.13  Label company name, preparer name, address, and phone number of plan preparer (e.g., surveyor, engineer, architect, landscape architect, etc.) in the vicinity of the title block.
- 4.14  Provide a legend, if needed.
- 4.15  Show and label features that may influence the measured noise levels (such as berms, walls, buildings, topography, other non-transportation sources such as backup power generators, pumping stations, and other sources that may influence the acoustic environment, as necessary).
- 4.16  Show  $L_{dn}$  (Day-Night Average) maximum noise level contours for the existing site with 2040 traffic projections.
- 4.17  Label contours in 1 dBA increments.
- 4.18  Note approximate height of contours (i.e. 5 feet AFF).
- 4.19  Show and label the location and extent of any/all outdoor use areas.
- 4.20  Show and label the location and extent of any/all sensitive land uses.
- 4.21  Use this map to compare the existing noise levels to the proposed noise levels and thus evaluate the impact of the proposed site conditions on noise levels.

#### Section 5 – Recommended Mitigation Options *(check if provided; indicate N/A if not applicable)*

An EHA Site Analysis should recommend appropriate mitigation options:

The following mitigation measures should be utilized wherever possible and are listed in order of preference/effectiveness:

- 5.1  SLU(s) are located outside the EHAs. **N/A**
- 5.2  SLU(s) are located as far as possible from the noise source(s).
- 5.3  SLU(s) are shielded from noise by other on-site structures (such as parking structures or taller commercial buildings) that block the line of sight from the SLU to the noise source, when the shielding structure is built prior to or concurrent with construction of the SLU.

The following additional mitigation measures should be utilized where appropriate based on site conditions and the amount of mitigation required:

- 5.4  The building floor plan is configured so that SLU(s) are located as far as possible from the EHAs and/or face away from the EHAs or noise source.
- 5.5  SLU(s) on first and second floors are shielded from noise by 20-foot-high sound barriers that extend perpendicular to the noise source and are four times as long as distance between the sound barrier and the SLU location. Additionally, the noise barriers do not contain gaps to allow passage of driveways or pathways. If gaps are required (to allow

for utilities or drainage, for example), the design includes two overlapping barriers that continue parallel to the expressway. The overlap length is at least 4 times the width of the gap. **N/A**

- 5.6  SLU(s) are shielded from noise by berms or topographic features significant enough to provide shielding similar to sound barriers. Vegetative buffers that are proposed for noise mitigation are 30 to 100 feet wide (thick) and made of dense evergreen vegetation. **N/A**
- 5.7  The amount of frequently used outdoor areas in locations where noise level exceed 65 dBA  $L_{dn}$  is limited (For example: balconies do not face the expressway.).
- 5.8  All outdoor use areas should be located so that a structure (either a building, structure, or noise barrier) provides complete shielding between the expressway and the use area.
- 5.9  Air intake vents are located on the side of the building facing away from expressway so the building itself provides shielding from air pollution.
- 5.10  The proposed air quality filtration system(s) for buildings containing SLU(s) reduces at least 90% of particulate matter (PM10) emissions. A Minimum Efficiency Reporting Value (MERV) 12 rated air filtration system or higher is appropriate for air quality concerns. MERV rating of air filtration system for building(s) containing SLU(s): \_\_\_\_\_

## Section 6 – Resulting Noise Exposure *(check if provided; indicate N/A if not applicable)*

An EHA Site Analysis should estimate resulting noise exposure after the mitigation measures have been implemented:

- 6.1  Include an assessment narrative, up to one page, including:
- description of proposed project,
  - recommended mitigation measures, and
  - explanation of how the proposed project meets the goals of the Expressway Corridor Environmental Health Policy.

### Environmental Quality Map **N/A**

- 6.2  Use the proposed or approved Concept or Site Plan as a base sheet.
- 6.3  Title block shall be in the lower, right-hand corner of the map. The title block shall contain: site map type; project name (subdivision name, lot and block designations); and date of preparation.
- 6.4  Label company name, preparer name, address, and phone number of plan preparer (e.g., surveyor, engineer, architect, landscape architect, etc.) in the vicinity of the title block.
- 6.5  Provide a legend, if needed.
- 6.6  Show and label the location of any/all air intake vents. Note whether they are existing or proposed.
- 6.7  Show and label features that may influence the air quality in an area (including vegetative buffers proposed to reduce expressway related air pollutants).
- 6.8  Show and label the width of vegetative buffers proposed to reduce expressway related air pollutants. Include type, spacing, and size of plant materials, focused on dense planting from ground level upward, including a rich mix of evergreens.

### Projected (2040) Modeled Outdoor Noise Site Map – Proposed Site Conditions with Mitigation

- 6.9  Use the proposed or approved Concept or Site Plan as a base sheet.
- 6.10  Title block shall be in the lower, right-hand corner of the map. The title block shall contain: site map type; project name (subdivision name, lot and block designations); and date of preparation.

- 6.11  Label company name, preparer name, address, and phone number of plan preparer (e.g., surveyor, engineer, architect, landscape architect, etc.) in the vicinity of the title block.
- 6.12  Provide a legend, if needed.
- 6.13  Show and label features that may influence the measured noise levels (such as berms, walls, buildings, topography, other non-transportation sources such as backup power generators, pumping stations, and other sources that may influence the acoustic environment, as necessary).
- 6.14  Show  $L_{dn}$  (Day-Night Average) maximum noise level contours for the proposed site design with 2040 traffic projections.
- 6.15  Label contours in 1 dBA increments.
- 6.16  Show and label the location and extent of any/all outdoor use areas. Note whether they are existing or proposed.
- 6.17  Show and label the location and extent of any/all sensitive land uses. Note whether they are existing or proposed.
- 6.18  Provide, in a table or labeled on the graphic, the modeled noise level for each residential unit planned on the site, even ones that do not have an associated outdoor use area. Where possible, calculations should be made at outdoor use area locations such as balconies, patios, or other area associated with the unit identified as a “quiet outdoor space.” Exterior noise levels shall be developed for the ground floor and every floor of the proposed building where sensitive land uses are proposed.

Example:

I.D. on Site Map	Building Floor	Unit Number	Modeled Noise Level in $L_{dn}$ (dBA)
	Ground/1		
	2		
	3		
	[add more rows as necessary]		

- 6.19  Show and label all recommended mitigation measures that achieve the modeled noise levels.
- 6.20  With proposed mitigation, maximum exterior future noise levels are less than 65 dBA  $L_{dn}$  where sensitive land uses and/or outdoor use areas are proposed. **not feasible (see report)**

**Section 7 – Additional Attachments** *(check if provided; indicate N/A if not applicable)*

- 7.1  Photographs of microphone location(s) and site and surrounding conditions.
- 7.2  Certificates documenting sound meters were calibrated within the past year.

## Section 8 – Terms & Information

- 8.1 ANSI Type I or Type II** [integrating sound level meter]: American National Standards Institute type or class, designating accuracy specifications for noise measurements. [www.osha.gov/otm/section-3-health-hazards/chapter-5#appendixa](http://www.osha.gov/otm/section-3-health-hazards/chapter-5#appendixa)
- 8.2 CadnaA** (Computer Aided Noise Abatement): a brand of computer noise modeling software published by DataKustik. [www.datakustik.com/products/cadnaa/cadnaa](http://www.datakustik.com/products/cadnaa/cadnaa)
- 8.3 Expressway Corridor Environmental Health Map, Interactive**: a layer can be turned on under the “Zoning” layer at: [share.plano.gov/ZoningMap](http://share.plano.gov/ZoningMap)
- 8.4 Expressway Corridor Environmental Health Study**: available at: [www.planocompplan.org/DocumentCenter/View/1237](http://www.planocompplan.org/DocumentCenter/View/1237)
- 8.5 Federal Highway Administration (FHWA) Noise Measurement Handbook**: Federal Highway Administration, US Department of Transportation. FHWA’s Noise Measurement Handbook. Publication. No. FHWA-HEP-18-065. July 2018. Note: This FHWA handbook is focused on supporting highway noise evaluation studies. Some of the detail related to measurement metrics and other highway specific assessments are not applicable when conducting measurements for EHA Site Analyses: [www.fhwa.dot.gov/ENVIRONMENT/noise/measurement/handbook.cfm](http://www.fhwa.dot.gov/ENVIRONMENT/noise/measurement/handbook.cfm)
- 8.6 FHWA Traffic Noise Model 2.5**: a computer noise model software published by the Federal Highway Administration: [www.fhwa.dot.gov/environment/noise/traffic\\_noise\\_model/tnm\\_v25](http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v25)
- 8.7 FHWA Traffic Noise Model 3.0**: a computer noise model software published by the Federal Highway Administration: [www.fhwa.dot.gov/environment/noise/traffic\\_noise\\_model/tnm\\_v30](http://www.fhwa.dot.gov/environment/noise/traffic_noise_model/tnm_v30)
- 8.8 Institute of Noise Control Engineering (INCE)**: [portal.inceusa.org/INCE/INCE\\_USA\\_Directory/Guest\\_Directory.aspx](http://portal.inceusa.org/INCE/INCE_USA_Directory/Guest_Directory.aspx)
- 8.9  $L_{eq}$  (Equivalent Sound Level)**: see the Expressway Corridor Environmental Health Study, page 15
- 8.10  $L_{dn}$  (Day-Night Average Sound Level)**: see the Expressway Corridor Environmental Health Study, page 16
- 8.11 Measurement Types**:
- **Existing** (existing site conditions based on traffic volumes at the time of measurement)
  - **Future** (proposed site improvements without mitigation based on 2040 traffic volumes)
  - **Projected** (proposed site improvements with mitigation based on 2040 traffic volumes)
  - **Measured** ( $L_{eq}$  results from the sound level meter measurement) vs **Modeled** ( $L_{eq}$  results from the noise model that is being utilized)
- 8.12 Minimum Efficiency Reporting Value (MERV)**: system to report an air filter’s ability to capture larger particles between 0.3 and 10 microns ( $\mu\text{m}$ ): [www.epa.gov/indoor-air-quality-iaq/what-merv-rating-1](http://www.epa.gov/indoor-air-quality-iaq/what-merv-rating-1)
- 8.13 Outdoor Use Area**: any area where frequent human activity is planned to occur, such as patios, balconies, active recreation, or passive (seating) recreation areas. Examples of outdoor use areas identified by the TXDOT policy guidance include evidence of frequent outdoor human activity, such as an area for barbecue grilling, picnic tables or other seating, playgrounds, a swimming pool, children’s play area, or gazebos. Outdoor areas where prolonged use is not anticipated, such as parking lots and walkways, do not need to be evaluated.
- 8.14 Sensitive Land Use (SLU)**: as listed in the Expressway Corridor Environmental Health Map & Guidelines: [www.planocompplan.org/301/Expressway-Corridor-Environmental-Health](http://www.planocompplan.org/301/Expressway-Corridor-Environmental-Health)
- 8.15 SoundPLAN**: a brand of computer noise model software developed by Braunstein + Berndt GmbH: [www.soundplan.eu/en](http://www.soundplan.eu/en)
- 8.16 TxDOT Highway Noise Policy Implementation Guidance**: resource highway noise measurements and analysis: <https://ftp.txdot.gov/pub/txdot-info/env/toolkit/730-05-gui.pdf>

**8.17 TxDOT Precertification: Traffic Noise Analysis (2.1.1) and Air Quality Analysis (2.2.1):**  
[www.dot.state.tx.us/des/precert/precrt1.htm](http://www.dot.state.tx.us/des/precert/precrt1.htm)

**Section 9 – Noise Measurement Basics**

- 9.1** Noise levels, when compared, generally follow the inverse square law (for each doubling of distance from the noise source, which in this case is the roadway edge, the sound pressure level decreases by approximately 3 decibels (dB)).
- Example: If at 50' away the noise is 90 dBA, then at 100' feet away, the level should be around 87 dBA.
- 9.2** As the current year traffic volumes are expected to be lower than projected future year traffic volumes, the existing noise levels along the mapped contour line will generally result in slightly lower noise levels than represented by the EHA-1 (65 dBA L<sub>dn</sub>) and EHA-2 (75 dBA L<sub>dn</sub>) contour lines, which are based off future traffic conditions. (Use Noise Measurement Table with site map to evaluate.)
- 9.3** The degree of acceptability of the noise environment at a site is determined by the sound levels external to buildings or other facilities containing SLUs. The standards shall usually apply at a location 2 meters (6.5 feet) from the building housing SLUs in the direction of the predominant noise source.

**Table 1 – 2040 Traffic: used in Plano Expressway Corridor Environmental Health Map**

	2040 AADT	Speed (mph)	Histogram Used
<b>Dallas North Tollway</b>			
Mainline*	177,039	70	Plano DNT
Dallas Parkway NB ( <i>Frontage Road</i> )	20,867	45	Plano DNT
Dallas Parkway SB ( <i>Frontage Road</i> )	22,133	45	Plano DNT
<b>President George Bush Turnpike</b>			
Mainline*	167,978	70	Plano DNT
President George Bush Hwy (TX 190) EB ( <i>Frontage Road</i> )	16,062	55	Plano DNT
President George Bush Hwy (TX 190) WB ( <i>Frontage Road</i> )	16,253	55	Plano DNT
<b>Sam Rayburn Tollway</b>			
Mainline*	141,311	70	Plano DNT
TX 121 EB ( <i>Frontage Road</i> )	44,506	55	Plano DNT
TX 121 WB ( <i>Frontage Road</i> )	50,241	55	Plano DNT
<b>US 75</b>			
Mainline*	248,563	70	Plano US 75
Central Expressway NB ( <i>Frontage Road</i> )	39,871	50	Plano DNT
Central Expressway SB ( <i>Frontage Road</i> )	33,605	50	Plano DNT
<b>Ramps</b>			
Sam Rayburn to Dallas North Tollway	11,658	50	Plano DNT
Dallas North Tollway to Sam Rayburn	14,606	50	Plano DNT
US 75 to President George Bush Turnpike	10,253	50	Plano US 75
President George Bush Turnpike to US 75	13,858	50	Plano US 75

\* Assume 50/50 split per direction on mainlines

**Table 2 – Average Hourly Histogram for 2040**

Average Hourly Histogram									
Plano DNT					Plano US 75				
Hour	Cars	Medium Trucks	Heavy Trucks	Total	Hour	Cars	Medium Trucks	Heavy Trucks	Total
0-1h	1.43%	0.04%	0.03%	1.50%	0-1h	0.65%	0.02%	0.03%	0.71%
1-2h	1.43%	0.04%	0.03%	1.50%	1-2h	0.33%	0.01%	0.02%	0.36%
2-3h	1.43%	0.04%	0.03%	1.50%	2-3h	0.22%	0.01%	0.01%	0.23%
3-4h	1.43%	0.04%	0.03%	1.50%	3-4h	0.19%	0.01%	0.01%	0.21%
4-5h	1.43%	0.04%	0.03%	1.50%	4-5h	0.22%	0.01%	0.01%	0.23%
5-6h	1.43%	0.04%	0.03%	1.50%	5-6h	0.68%	0.02%	0.04%	0.74%
6-7h	4.77%	0.14%	0.09%	5.00%	6-7h	2.16%	0.07%	0.11%	2.34%
7-8h	8.59%	0.25%	0.16%	9.00%	7-8h	5.85%	0.19%	0.30%	6.34%
8-9h	7.63%	0.23%	0.14%	8.00%	8-9h	6.73%	0.22%	0.35%	7.30%
9-10h	4.77%	0.14%	0.09%	5.00%	9-10h	4.32%	0.14%	0.23%	4.69%
10-11h	2.86%	0.08%	0.05%	2.99%	10-11h	4.19%	0.14%	0.22%	4.54%
11-12h	4.77%	0.14%	0.09%	5.00%	11-12h	5.13%	0.17%	0.27%	5.57%
12-13h	6.68%	0.20%	0.12%	7.00%	12-13h	6.34%	0.21%	0.33%	6.88%
13-14h	4.77%	0.14%	0.09%	5.00%	13-14h	6.03%	0.20%	0.31%	6.54%
14-15h	2.86%	0.08%	0.05%	2.99%	14-15h	5.76%	0.19%	0.30%	6.24%
15-16h	2.86%	0.08%	0.05%	2.99%	15-16h	6.34%	0.21%	0.33%	6.88%
16-17h	6.68%	0.20%	0.12%	7.00%	16-17h	6.85%	0.22%	0.36%	7.43%
17-18h	9.54%	0.28%	0.18%	10.00%	17-18h	7.74%	0.25%	0.40%	8.40%
18-19h	6.68%	0.20%	0.12%	7.00%	18-19h	7.05%	0.23%	0.37%	7.65%
19-20h	4.77%	0.14%	0.09%	5.00%	19-20h	5.37%	0.17%	0.28%	5.82%
20-21h	2.86%	0.08%	0.05%	2.99%	20-21h	4.19%	0.14%	0.22%	4.55%
21-22h	2.86%	0.08%	0.05%	2.99%	21-22h	2.98%	0.10%	0.16%	3.23%
22-23h	1.43%	0.04%	0.03%	1.50%	22-23h	1.83%	0.06%	0.10%	1.98%
23-24h	1.43%	0.04%	0.03%	1.50%	23-24h	1.05%	0.03%	0.05%	1.14%
<b>Total</b>	<b>95.39%</b>	<b>2.78%</b>	<b>1.78%</b>	<b>99.95%</b>	<b>Total</b>	<b>92.20%</b>	<b>3.00%</b>	<b>4.80%</b>	<b>100.00%</b>



# **RESIDENTIAL MARKET & SEGMENTATION ANALYSIS**

COLLIN CREEK MALL REDEVELOPMENT  
PLANO, TEXAS

MM CCM 48, LLC.  
April 12, 2019

Since 1967, RCLCO has been the “first call” for real estate developers, investors, the public sector, and non-real estate companies and organizations seeking strategic and tactical advice regarding property investment, planning, and development.

RCLCO leverages quantitative analytics and a strategic planning framework to provide end-to-end business planning and implementation solutions at an entity, portfolio, or project level. With the insights and experience gained over 50 years and thousands of projects—touching over \$5B of real estate activity each year—RCLCO brings success to all product types across the United States and around the world.

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## REPORT AUTHORS

### *Project Director:*

Todd LaRue, Managing Director

► P: (512) 215-3157 | E: [TLARUE@RCLCO.COM](mailto:TLARUE@RCLCO.COM)

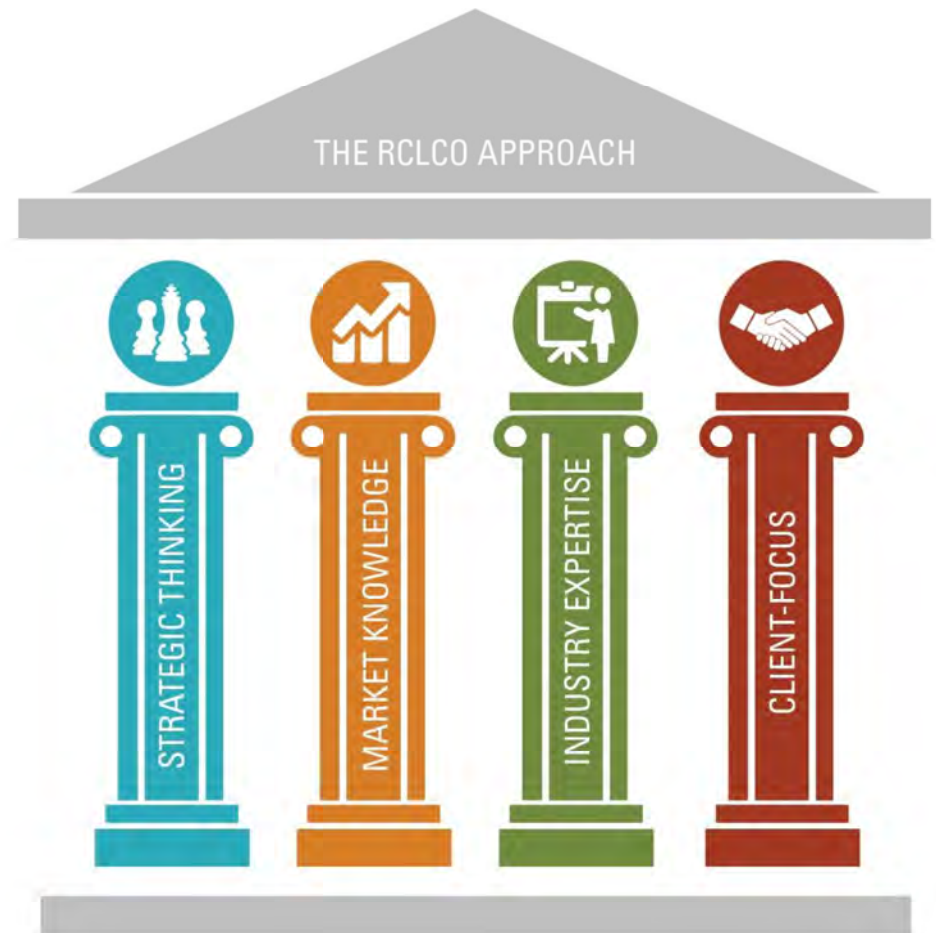
### *Project Manager:*

Cameron Pawelek, Vice President

► P: (512) 212-7198 | E: [CPAWELEK@RCLCO.COM](mailto:CPAWELEK@RCLCO.COM)

### *Additional Authors:*

Alex Shaia, Analyst



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## OBJECTIVES & KEY FINDINGS

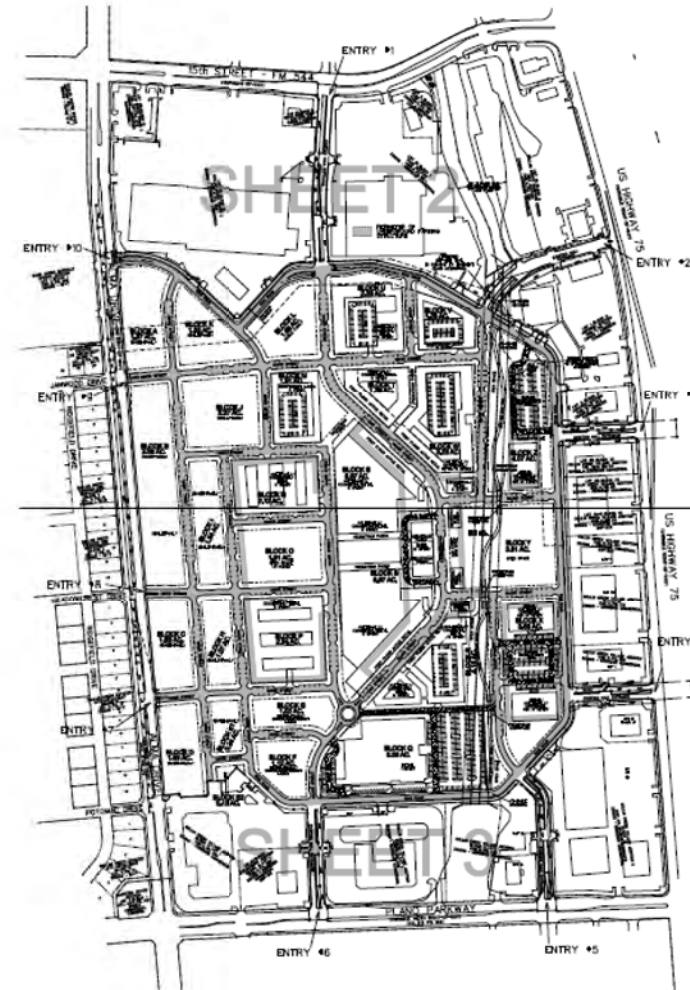
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## OBJECTIVES

The Client is currently planning the redevelopment of Collin Creek Mall, a single-use lifestyle retail center located west of Downtown Plano. The redevelopment of Collin Creek Mall presents an opportunity to develop a successful urban center offering greater density, social interaction, and commerce in a live-work-play environment. In order for this site to become a successful urban center, it must provide residential options that are appealing to and compatible with the surrounding community.

RCLCO was retained to help develop a forward-looking, market-driven strategy incorporating both for-sale and rental residential development. In order to develop a residential strategy consistent with the market opportunity at the subject site, RCLCO completed the following:

- ▶ Conduct a demographic analysis of the household base surrounding Collin Creek Mall, paying particular attention to age, income, tenure, preferred product type, and household segmentation.
- ▶ Examine the relevant competitive supply of rental housing as well as the expected pipeline of projects that may provide future competition.
- ▶ Examine the relevant competitive supply of for-sale housing development, paying careful attention to target customers, densities, and the proposed pipeline.
- ▶ Conduct a demand analysis for new housing at the MSA level and at the subject site, segmenting the market by socioeconomic characteristics and geography.
- ▶ Using available information, identify key gaps in the market that could be filled at Collin Creek Mall with relevant product types appealing to a variety of market segments.
- ▶ Conduct product profiles on unique product types that may have application to Collin Creek Mall, including niche product types that could add richness and generate interest in the community.
- ▶ Analyze all of the above and assemble residential development recommendations for Collin Creek Mall identifying target market audiences, pricing, and achievable lease-up/sales velocity.



# KEY FINDINGS

## **UNIQUE OPPORTUNITY TO CREATE A VIBRANT, MIXED-USE DISTRICT IN AN AREA WITH MOMENTUM**

The Collin Creek Mall redevelopment presents an opportunity to create a mixed-use district that is walkable and attainably priced in one of the fastest growing counties in the country. Strong regional access, proximity to Downtown Plano, and significant employment growth in the immediate vicinity all help support higher intensity land uses and a differentiated environment not afforded by most other suburban areas.

## **RAPIDLY GROWING METROPOLITAN AREA WITH A DIVERSE RANGE OF HOUSEHOLDS & HOUSING NEEDS**

Over the past 25 years and especially this economic cycle, the Metroplex has experienced robust household and employment growth, driven by a diversified economy, business-friendly local governments, and relatively low cost of living relative to other large-scale metropolitan areas. During the past few years, the market has illustrated signs of embracing new urban trends, especially in areas surrounding economic centers, a trend likely to benefit the Collin Creek Mall redevelopment.

The Metroplex as well as eastern and central Plano (See page 21 for a map of geographies) boast a broad range of household segments from post graduates to seniors, and everyone in-between. Housing needs continuously change as households move among life stages and generational shifts occur. Historically, builders and developers have developed for only a few household segments, while demographic trends and consumer preferences indicate a need for a wider array of residential products of varying orientations and price points.

## **DESPITE STRONG DEMONSTRATED SALES FOR SMALL-LOT SFDS & TOWNHOMES, THE AREA LACKS SUFFICIENT PIPELINE CATERING TO THE GROWING DEMAND POOL**

Compared to the Metroplex and Collin County, eastern and central Plano has a relatively diversified homebuyer distribution with professionals, mature households, and families all representing significant portions of the for-sale housing market. As such, a wide range of housing is needed to realize the full potential of housing demand in the area. Recently delivered for-sale housing is primarily in the form of

small-lot, single-family detached homes and townhomes which have achieved strong success in recent years given robust demand. Though townhomes have generally averaged pricing in the mid-\$300,000s and detached homes have average in the mid-\$400,000s, the subject site's proposed mix of uses and walkability is far superior to local competition and will allow the development to offer some higher value housing.

## **APARTMENT DEVELOPMENT IN THE AREA HAS PERFORMED WELL, BUT SOME SEGMENTS REMAIN UNDERSERVED**

Significant new apartment supply was added to the submarket over the past two years, leading to increased vacancy rates and lower rental rate growth, though a relatively limited pipeline will allow the market to stabilize over the next 18 to 24 months. As the area continues to urbanize, developers continue to deliver denser rental product, though the majority of new supply has targeted traditional apartment renters, especially young professionals. Through a strong segmentation strategy, rental product at Collin Creek Mall can appeal to a broader market audience, including some families and mature renter households.

## **IN ORDER TO MAXIMIZE RESIDENTIAL ABSORPTION ON-SITE, DELIVER DIFFERENTIATED HOUSING TARGETING THE WIDE RANGE OF RENTERS AND OWNERS IN THE MARKET**

*For-Sale Product Offering:* RCLCO recommends the delivery of a wide range of for-sale product, ranging from small-lot SFD to mid-rise condos, with a potential opportunity for a high-rise condo at least 10 years after the start of the development. With recommended pricing from the mid-\$200,000s to over \$600,000 across a variety of product types, RCLCO assumes the development can achieve between 76 and 94 annual average sales, once all product types are active.



*Rental Product Offering:* Though RCLCO recommends the delivery of five unique rental product types to appeal to key and underrepresented market segments, there should also be variation and segmentation within each product category to maximize absorption potential. Based on structural demand projections, RCLCO estimates there is annual average demand for 235 multifamily rental units and 24 single-family rental units, with average rents ranging between \$1.80 to \$2.00 per square foot.

# FOR-SALE PRODUCT RECOMMENDATIONS

	LOW- TO MID-RISE CONDOMINIUMS (40 DU/AC)	STACKED THS / FLATS (20-25 DU/AC)	TOWNHOMES (13-16 DU/AC)	SMALL-LOT SINGLE-FAMILY, DETACHED (8-12 DU/AC)
				
10-YR DEMAND	125 to 175 Potential Units 12-18 Annual Absorption	110 to 130 Potential Units 11-13 Annual Absorption	310 to 340 Potential Units 31-34 Annual Absorption	225 to 275 Potential Units 22-28 Annual Absorption
OPPORTUNITY	Attract young professionals looking to purchase their first homes, as well as empty nesters/retirees looking to downsize	Price alternative to traditional townhomes, targeted towards mature Millennials & young families looking for more space	Attract mature professionals, families, & empty nesters looking for housing in an urban neighborhood, but with open space & other amenities	Appeal to households seeking an urban environment & walkability, while maintaining a relatively sizable home; Additional support from empty nesters downsizing from 3,000+ SF homes
MARKET AUDIENCE	Young Professionals Mature Professionals Empty Nesters	Young Professionals Mature Professionals Young Families	Young Families Mature Professionals Empty Nesters	Young Families Intermediate Families Mature Professionals
SITE POTENTIAL	<b>MEDIUM:</b> This product type is untested in the market, as very few condo communities have delivered outside of urban Dallas	<b>HIGH:</b> Stacked flats allow the development to increase density while still providing households with enough space	<b>HIGH:</b> Townhomes are a proven product in the market & will likely see similar success to other communities in Plano	<b>HIGH:</b> The site will draw first-time owners looking for more space than an attached product at a lower price point than traditional detached homes
PRICING	<b>\$265,000 to \$515,000</b> ~\$305/SF	<b>\$250,000 to \$390,000</b> ~\$200/SF	<b>\$340,000 to \$430,000</b> ~\$195/SF Top of Submarket; 11% Premium over Heritage Creekside	<b>\$405,000 to \$595,000</b> ~\$190/SF Competitive with Top of Submarket; 14%+ Premium over Heritage Creekside
TIMING	<b>LONG-TERM</b>	<b>MID-TERM</b>	<b>NEAR-TERM</b>	<b>NEAR-TERM</b>

*Note: There is a potential opportunity for high-rise condominiums in the later phases of development to garner significant premiums over existing housing in the local market.*

# RENTAL PRODUCT RECOMMENDATIONS

	CONVENTIONAL APARTMENTS (75-85 DU/AC)	EMPTY NESTER APARTMENTS (60-75 DU/AC)	INDEPENDENT / ASSISTED LIVING (60-75 DU/AC)	TOWNHOMES (13-18 DU/AC)
				
<b>10-YEAR DEMAND</b>	1,800 to 1,900 Potential Units ~Approx. 1 bldg. every 18 mos., with varying orientations	335 to 375 Potential Units ~Approx. 2 bldgs. (1 age-targeted & 1 age-restricted)	135 to 155 Potential Units ~Approx. 1 bldg. after 2024	230 to 255 Potential Units ~Approx. 2-3 unique phases
<b>OPPORTUNITY</b>	Attract diverse groups of households looking for rental housing in low-density urban or high-density suburban locations	Capitalize on large (and increasing) base of 55+ renters looking for high-quality apartments in lower-density urban neighborhoods	Attract a unique market segment to the site, offering a slightly more urban location than other retirement communities in Plano	Offer an alternative for people who are looking for more space than an apartment, but who are not ready to purchase a home
<b>MARKET AUDIENCE</b>	Young Professionals Mature Professionals Students	Empty Nesters Retirees	Retirees/Seniors	Mature Professionals Young Families Empty Nesters
<b>SITE POTENTIAL</b>	<b>HIGH:</b> Numerous deliveries over the past few years in Plano show the depth of market & desire to rent in the submarket	<b>MEDIUM:</b> The walkability of the site in addition to restaurants & entertainment options will likely appeal to mature renters	<b>HIGH:</b> The site is well-equipped to provide green space & retail amenities that appeal to retirees	<b>HIGH:</b> Most single-family attached product in the region is for-sale but this could be an opportunity to attract different market segments
<b>TIMING PRICING*</b>	<b>Avg. of \$1.85-\$2.00 /SF</b> 550-1,600 SF	<b>Avg. of \$1.85-\$2.00 /SF</b> 5%+ Larger than Conventional Apartments	<b>Pricing Dependent on Level of Care &amp; Service Offered</b>	<b>Avg. of \$1.80-\$1.95/SF</b> 10%+ Larger than Conventional Apartments
<b>TIMING</b>	<b>NEAR-TERM TO MID-TERM</b>	<b>MID-TERM TO LONG-TERM</b>	<b>MID-TERM TO LONG-TERM</b>	<b>NEAR-TERM</b>

*Note: Potential to garner higher rents per square foot if construction exceeds six-stories for more urban-style rental units. RCLCO believes there is likely an opportunity for concrete or steel construction in later phases to support higher value product, assuming the project becomes destination worthy and also attracts employment in Class A office*

# LAND USE MATRIX

LAND USE	ESTIMATED AC	DENSITY (DU/AC)	TOTAL NUMBER OF UNITS	NEAR-TERM	MID-TERM	LONG-TERM	PHASING DETAILS / NOTES
<b>FOR-SALE RESIDENTIAL</b>							
Small-Lot Single-Family Detached	5.9	11-12	65-70	Initial Delivery			Deliver in 2-3 phases to ensure maximum pricing potential
For-Sale Townhomes	6.9	13-15	95-105	Initial Delivery			Deliver in 3-4 phases to ensure maximum pricing potential
Stacked THs/Flats	2.9	22-25	65-75		Initial Delivery		Increase density as development matures; deliver in 2-3 phases
Low- to Mid-Rise Condominiums	1.6	38-44	60-70		Initial Delivery		Increase density as development matures; deliver in two phases
High-Rise	0.8	95-105	75-85			Initial Delivery	Reserve a small pad site for the long-term high-rise condo potential
<b>RENTAL RESIDENTIAL</b>							
Rental Townhomes	3.9	16-18	60-70	Initial Delivery			Deliver rental townhomes in conjunction with multifamily properties to ensure operational efficiencies
Independent/Assisted Living	2.8	65-75	185-205		Initial Delivery		Delivery of two projects beginning in year six of development
Empty Nester Apartments	3.2	70-75	220-245		Initial Delivery		Deliver in two phases, with the potential to deliver one age-targeted & one age-qualified community
Conventional Apartments	10.3	80-90	825-915	Initial Delivery			Deliver new project every 12-18 months at increasing density as project matures
<b>TOTAL</b>	<b>38.2 Acres</b>	<b>44-48 DU/AC</b>	<b>1,680-1,840 Units</b>				

# SITE ANALYSIS & SOCIOECONOMIC TRENDS

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## STRENGTHS

- ▶ **Access to Employment:** The Telecom Corridor has an established reputation as a central office hub with a critical mass of existing employment. Additionally, the site is proximate to major highways connecting the site to other key regional hubs in Dallas and is proximate to DART's Red Line which provides easy access to Downtown Dallas.
- ▶ **Location:** Collin Creek Mall is located in an excellent position, proximate to both Highway 75 (Central Expressway) and the President George Bush Turnpike (PGBT), making the site easily accessible from all directions. Additionally, the site's location near Downtown Plano gives households easy access to retail and other urban amenities that the neighborhood has to offer.
- ▶ **Access to Recreation:** In addition to the urban amenities and retail offered proximate to the site, the cities of Plano and Richardson both have extensive trail and park plans, with proposed trails linking Collin Creek Mall to much of North Dallas and numerous parks and nature areas.
- ▶ **Momentum:** Both Heritage Creekside and CityLine have delivered a variety of rental and for-sale units over the past two years, finding great success both in terms of pricing and lease-up/sales pace. Collin Creek Mall can leverage the momentum in the area to attract households looking to move into a vibrant, urbanizing submarket.

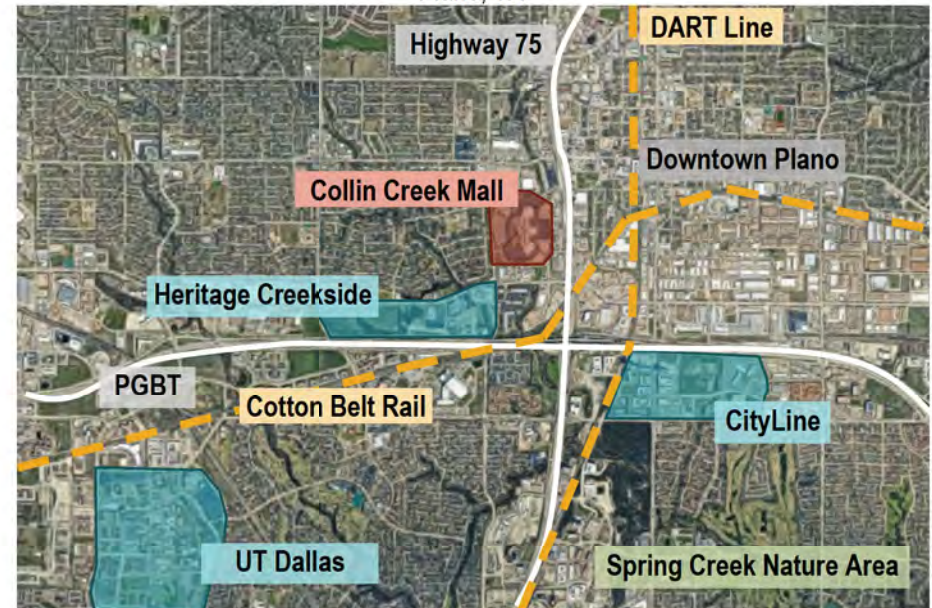
## CHALLENGES

- ▶ **Limited East-West Access:** Although the site is located directly across of the Central Expressway from Downtown Plano, there is limited permeability across the highway, isolating the mall from Downtown Plano and CityLine.
- ▶ **Historical Pull to DNT:** Despite a few major developments along the Central Expressway, much of the high-value, mixed-use development has occurred along the Dallas North Tollway, especially at Legacy/Legacy West and in Frisco. Utilizing recent momentum along Hwy. 75; the development of a strong master plan that integrates residential, commercial, and parkland; positioning land uses at a slight price alternative to DNT; and enhanced connectivity will help differentiate the Collin Creek Mall redevelopment.

## OPPORTUNITIES

- ▶ **Walkability:** Once completed, the site has the potential to create a unique, pedestrian-friendly environment unlike others in North Dallas. Likely, households will choose this location over other, likely cheaper, options due to the walkability and access to retail, employment, and services that the site will provide.
- ▶ **Improved Access to Downtown Plano:** Providing easier access over the Central Expressway in the form of pedestrian bridges or a circulator would help to connect Collin Creek Mall to Downtown Plano. These connections would create a more cohesive submarket and serve as an important driver of demand in the neighborhood.
- ▶ **Differentiation:** The delivery of a unique urban park or Crystal Lagoon will differentiate the development as a truly unique environment, appealing to a wide variety of market segments.

**Subject Area Overview**  
Plano, TX



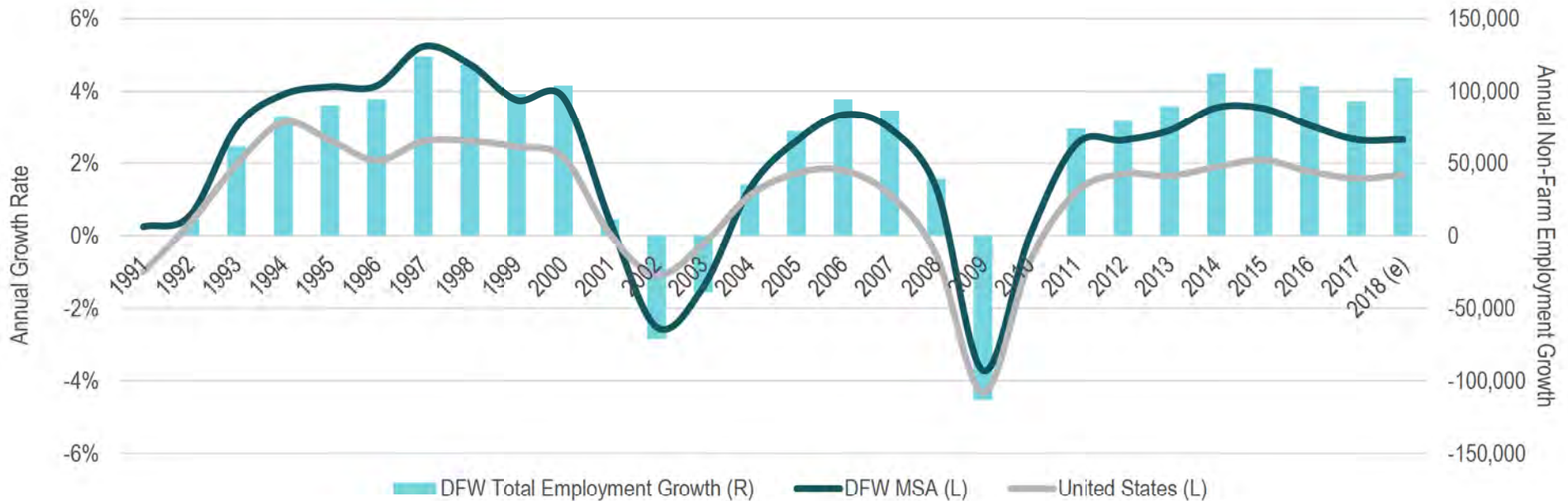
# EMPLOYMENT GROWTH

## OVER THE PAST 25 YEARS, THE DALLAS-FORT WORTH MSA HAS SEEN ROBUST EMPLOYMENT GROWTH, GENERALLY ABOVE THE UNITED STATES AS A WHOLE

- ▶ With the exception of two years following the dot-com bubble, employment growth rates across the Metroplex have exceeded that of the nation, leading to one of the fastest growing metropolitan areas in the country. Following the Great Recession, Dallas-Fort Worth made a relatively quick recovery given its diversified economy and aggressive economic development initiatives. While it is likely that the economy will experience at least one recession during the redevelopment of Collin Creek Mall, historical performance and future prospects bode well for rapid recoveries and long-term vitality.
- ▶ The Metroplex has continued to attract major corporate headquarters from across the United States due to its relative affordability and pro-business environment. As of 2018, the Dallas-Fort Worth MSA contained 22 Fortune 500 headquarters the third most headquarters in a metropolitan area behind only New York and Chicago. Since 2011, Dallas has seen average annual job growth of approximately 100,000 employees, representing an annual growth rate of 1.7%. As employers and employees continue to move into the market, Dallas should expect to continue to see long-term growth positively impacting the real estate market.

### Employment Growth

Dallas-Fort Worth-Arlington TX, MSA and United States; 1991-2018



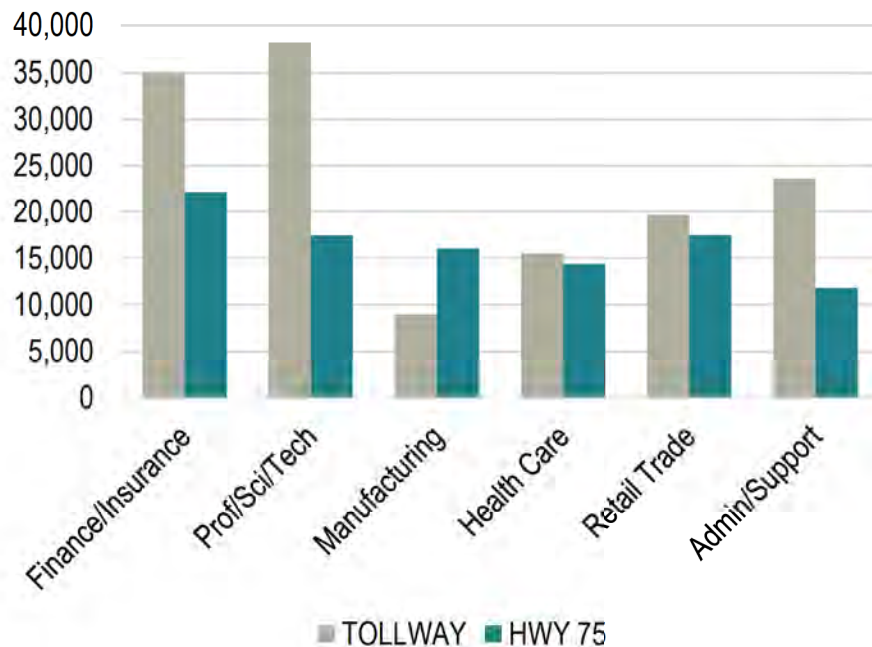
Source: Moody's

# CORRIDOR EMPLOYMENT COMPARISON

## MORE REGIONAL HEADQUARTERS TEND TO CONCENTRATE ALONG HIGHWAY 75 GIVEN THE AREA'S MORE ATTAINABLE PRICE POINTS AND MULTIMODAL ACCESS

The Dallas North Tollway and Highway 75 are both major regional office corridors with a combined total employment exceeding 400,000 employees. The corridors have three of their five top industries in common: Professional Services, Finance/Insurance, and Retail. While much of the employment in these corridors falls into the same industries, the tenant and office types differ. With its Legacy and Legacy West Developments, the DNT has a heavy concentration of major corporate offices, including headquarters of several Fortune 500 companies. Highway 75, however, has fewer large corporations and more regional/division hubs than national headquarters.

**Top Industry Employment by Corridor**  
North Dallas; 2016



**Corridor Employment Profiles**  
North Dallas; 2016

	DNT	HWY 75
<b>Total Employees, 2016</b>	226,963	163,755
<b>Percent Growth, 2010-2016</b>	23%	16%
<b>Fortune 1000 Companies</b>	5 (3 Fortune 500)	2 (1 Fortune 500)
<b>Major Employers</b>	<ul style="list-style-type: none"> <li>• Capital One</li> <li>• Bank of America</li> <li>• HP Enterprise</li> <li>• Ericsson</li> <li>• Toyota</li> <li>• Frito-Lay</li> <li>• JCPenny</li> <li>• NTT DATA</li> <li>• Pepsi</li> <li>• Dr. Pepper/Snapple</li> </ul>	<ul style="list-style-type: none"> <li>• State Farm</li> <li>• AT&amp;T</li> <li>• Blue Cross Blue Shield</li> <li>• RealPage</li> <li>• Geico</li> <li>• Raytheon</li> <li>• Fujitsu</li> <li>• Cisco</li> <li>• Fossil</li> </ul>

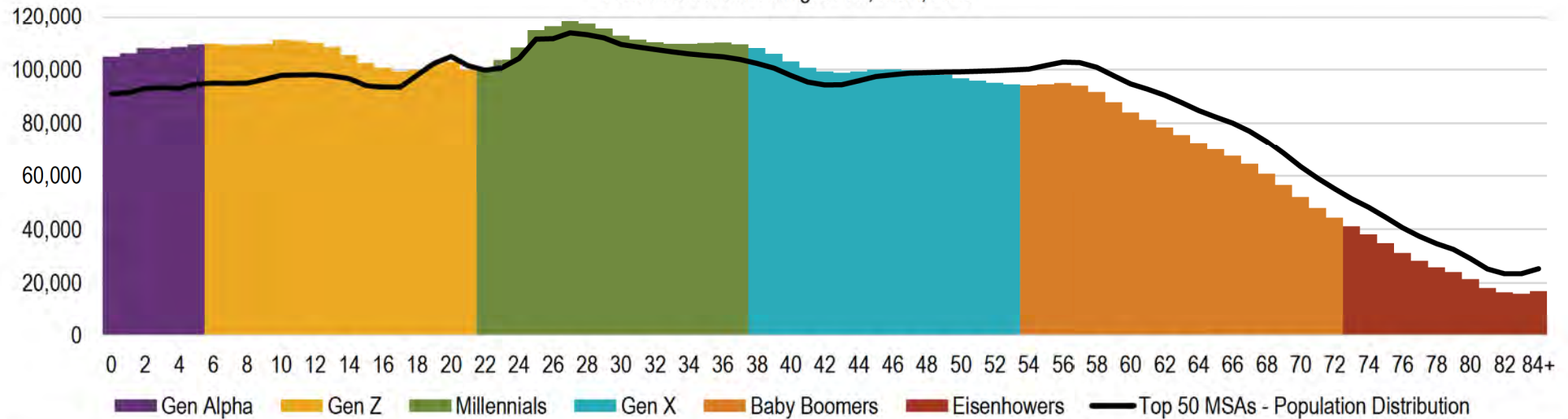
Source: U.S. Census Bureau

# GENERATIONAL DISTRIBUTION

## DUE TO STRONG ECONOMIC CONDITIONS AND HEALTHY MIGRATION INTO THE MSA, DALLAS HAS AN OUTSIZED NUMBER OF RESIDENTS UNDER THE AGE OF 45

As Dallas has attracted Millennials and Gen X from throughout the country, these segments have had children and stayed in the market. Due to this, Dallas has an outsized number of children and professionals under the age of 45 which help drive the economy and housing market. Moreover, over the next decade, these generations will continue to drive the need for a diverse offering of housing options, ranging from first-time homebuyers to downsizing empty nesters.

**Age Distribution of Population**  
Dallas-Fort Worth-Arlington TX, MSA; 2018



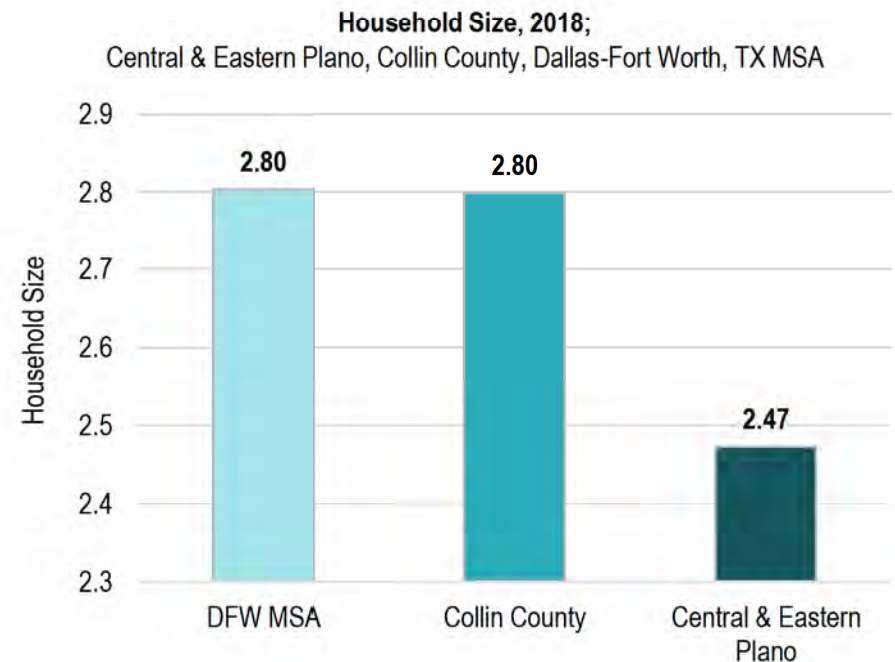
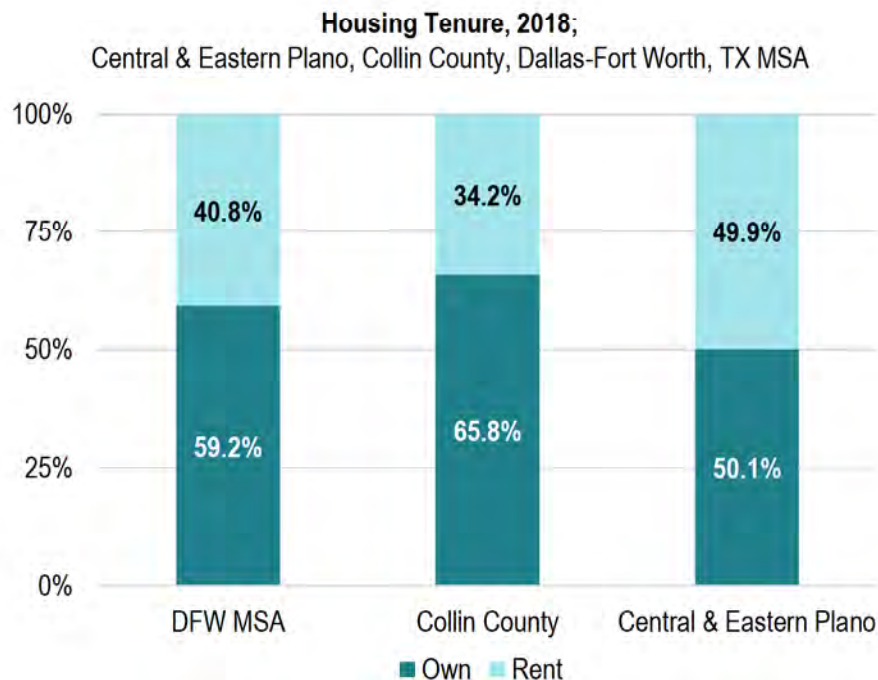
Year	Student Housing	Rental Housing	Rent as Couple / Buy Condo	Young Family Own	Mature Family Own	Empty Nester Downsize Own	Buy/Rent Retirement Home
2015	Millennials	Millennials	Millennials	Gen X Millennials	Baby Boomers Gen X	Baby Boomers	Eisenhowers Baby Boomers
2020	Gen Z	Millennials	Millennials	Millennials	Gen X	Baby Boomers Gen X	Eisenhowers Baby Boomers
2025	Gen Z	Millennials Gen Z	Millennials Gen Z	Millennials	Gen X Millennials	Baby Boomers	Baby Boomers
2030	Gen Z Gen Alpha	Gen Z	Gen Z	Millennials	Gen X Millennials	Gen X Baby Boomers	Gen X Baby Boomers

Source: Esri

# KEY DEMOGRAPHIC TRENDS

## ALTHOUGH COLLIN COUNTY HAS AN OUTSIZED SHARE OF OWNER HOUSEHOLDS, CENTRAL AND EASTERN PLANO HAVE AN ALMOST EVEN SPLIT BETWEEN RENTER AND OWNER HOUSEHOLDS, AS WELL AS SMALLER HOUSEHOLD SIZES

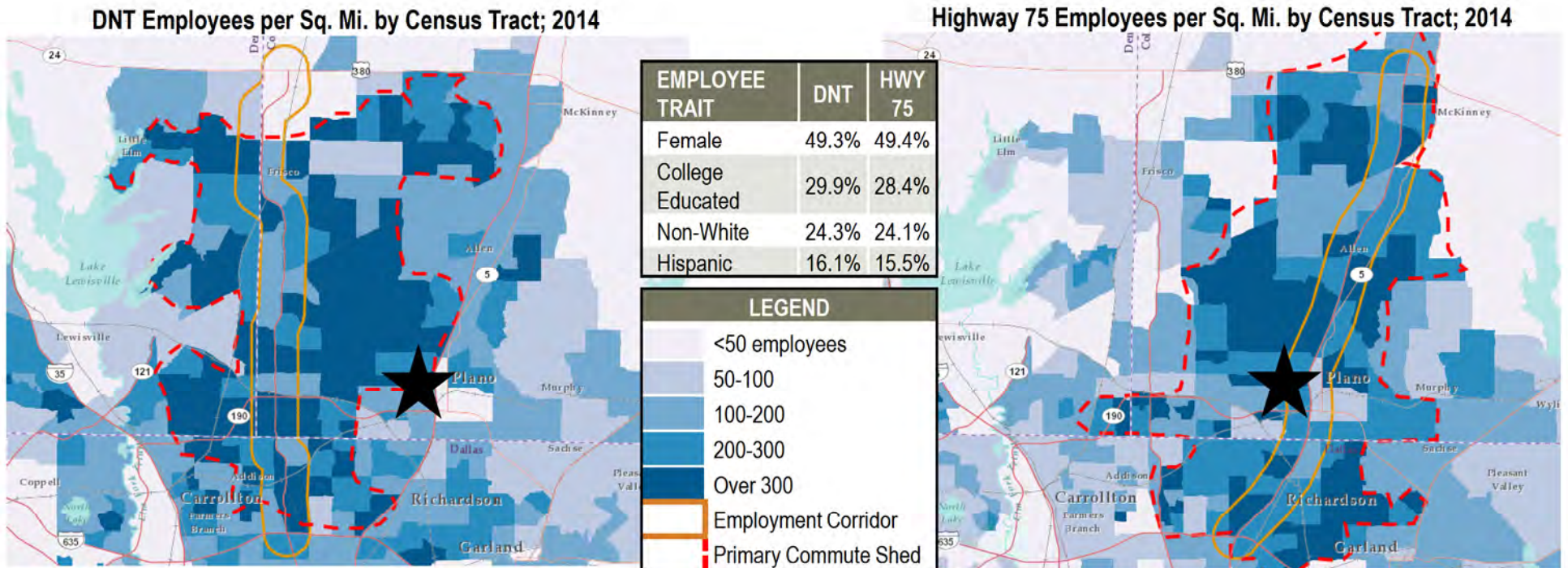
- ▶ Owner households represent 59% of all households throughout the Dallas-Fort Worth MSA; however, these households represent an even greater share in Collin County, an area offering high paying jobs, strong schools, and key services. Within Central and Eastern Plano (C/E Plano), there is an even split between renter and owner households, representing an opportunity to capitalize on both segments of the market. As household growth has remained strong throughout the MSA and Collin County, the subject site is likely to encounter strong demand for new rental and owner housing units over the next 10 to 15 years.
- ▶ Central and eastern Plano have significantly smaller household sizes than Collin County and the Dallas MSA as a whole, due in part to the large presence of professionals and empty nesters, as well as the high number of rental units in the market. Additionally, C/E Plano has a smaller share of family units than Collin County and the MSA as a whole, leading to smaller household sizes.



Source: RCLCO National Consumer Preference Survey – 2018

## THE COLLIN CREEK MALL REDEVELOPMENT WILL BENEFIT FROM ITS ACCESS TO HOUSEHOLDS ACROSS NORTH DALLAS

- ▶ Despite some differences in industries and employer types, the workforces of each corridor are markedly similar in their employee education, ethnic diversity, and gender balance
- ▶ The primary commute shed is roughly outlined (RED) for each. It is notable that most DNT employees live west of Highway 75, while most Highway 75 employees live east of the DNT; neighborhoods between the two corridors are popular among employees of both corridors. Given Collin Creek Mall's location at the intersection of Highway 75 and PGBT, the site will likely be able to draw from a larger area given its highly accessible location from multiple direction.
- ▶ The Highway 75 corridor has limited, new mixed-use districts relative to the DNT, which has seen significant high-density development. Despite recent development along Highway 75, single-family detached homes remain 50% of all housing units, and the housing stock is significantly older than that along the DNT, with 37% of all housing units built before 1980, compared to 18% for DNT.



Source: U.S. Census Bureau

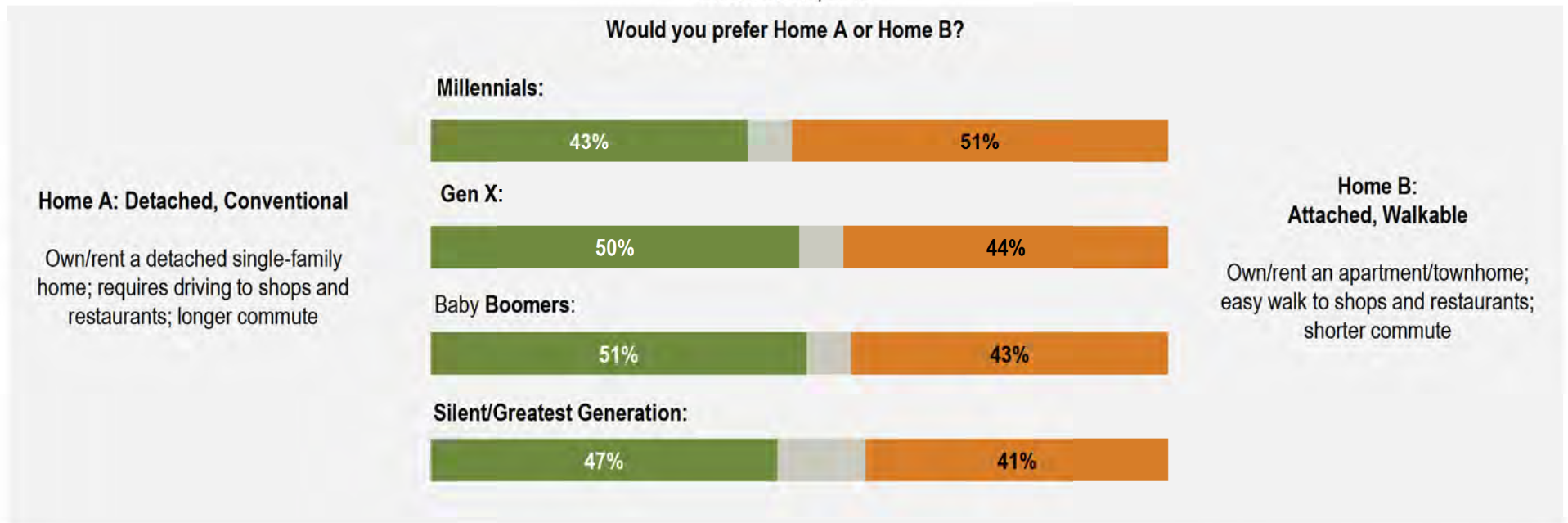
# NATIONAL HOUSING PREFERENCES

## NEW HOUSING DEVELOPMENT HAS HISTORICALLY FOCUSED ON SINGLE LAND USE ENVIRONMENTS, BUT YOUNGER GENERATIONS ENTERING THE HOUSING MARKET ARE MORE WILLING TO SACRIFICE SPACE FOR A MIXED-USE ENVIRONMENT

Younger generations are increasingly interested in living in walkable environments and are willing to sacrifice the space associated with detached product in order to live in a mixed-use neighborhood. This research is supported by RCLCO's National Consumer Preference Survey as well as research conducted by the National Association of Realtors, which shows that younger households would prefer to live in a neighborhood with shops, walkability, and easy access to employment rather than a suburban single-use neighborhood. Despite the research, developers have historically focused on single land use environments, providing large, single-family detached homes in suburban settings. As the subject site is poised to deliver a variety of residential product types and a mix of commercial land uses, it will likely appeal to these owners and households wishing to live in a more urban environment than what is currently offered in most areas of Collin County. Millennials are likely the primary target market when providing mixed-use product; however, there is a large portion of households from all generations who would prefer the attached, walkable home. The Collin Creek Mall redevelopment presents one of the strongest opportunities in Collin County and along the Central Expressway to provide a live-work-play environment for a range of household segments.

**Housing Preference by Generation**  
United States; 2015

Would you prefer Home A or Home B?



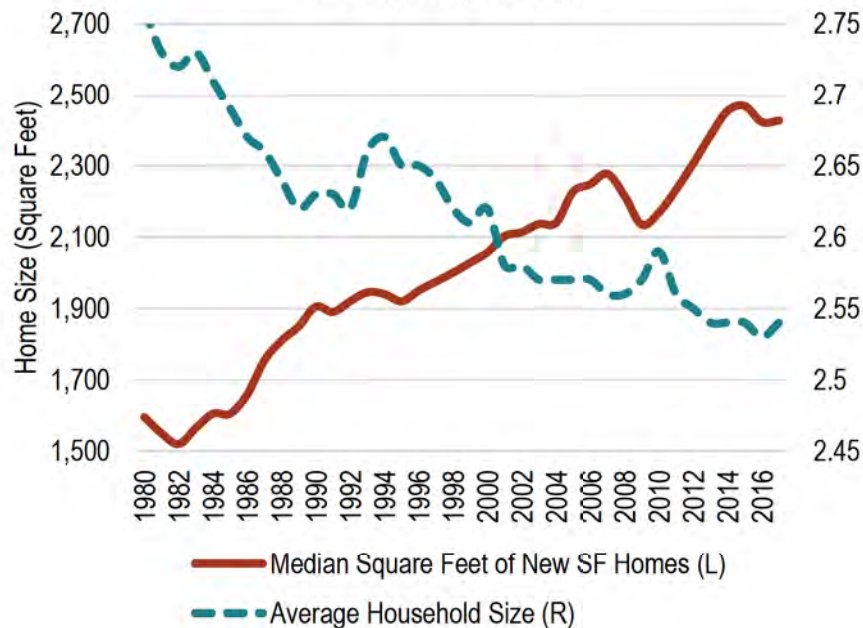
Source: National Association of Realtors, 2015

# HOUSEHOLD AND HOME SIZE MISMATCH

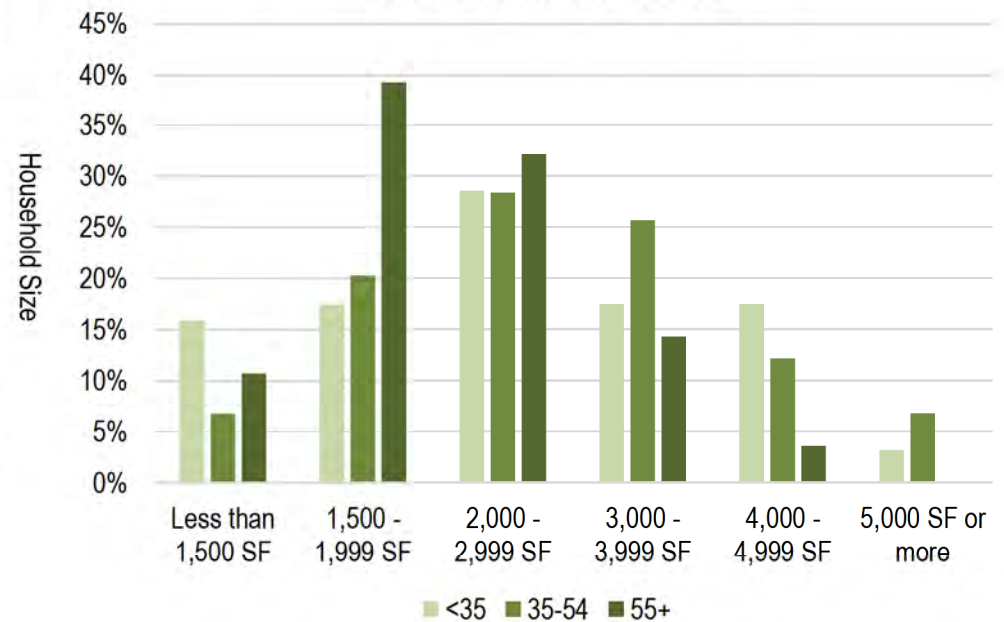
## DEVELOPERS THROUGHOUT THE UNITED STATES HAVE CONTINUED TO INCREASE THE OVERALL SQUARE FOOTAGE OF NEW, SINGLE-FAMILY HOMES DESPITE A DECLINE IN THE AVERAGE HOUSEHOLD SIZE AND STATED CONSUMER PREFERENCES

- ▶ As the average age of first marriage has continued to rise throughout the United States and families delay having children, the average size of households has continued to decline. Despite this decline in household size, builders have continued to increase the total square footage of new single-family homes. As housing becomes increasingly unaffordable, many households are looking to smaller, less expensive product types that fit their needs better than traditional, large lot single-family product. Furthermore, Millennials are often seeking smaller, first homes, while empty nesters look to downsize into lower maintenance housing.
- ▶ In addition to demographic shifts towards smaller households, RCLCO's national and regional consumer research indicates households have a higher preference for smaller homes and attached product than what is currently being built in the market. The chart below illustrates recent and prospective new home buyers' preference for home size by age of the householder. The vast majority of households indicate a preference for homes below 3,000 square feet, especially Millennials and Baby Boomers.
- ▶ The Collin Creek Mall redevelopment creates a unique opportunity to offer a range of housing types, as well as smaller, more efficient floorplans that could increase density as well as capture more segments of the market. Many young households are willing to trade size for affordability, and attracting these households to the site will be integral for realizing the development's full absorption potential.

**Completed New Single-Family Homes and Average Household Size**  
United States, 1980-2017



**Stated Home Size Preference by Household Age**  
Dallas-Fort Worth, TX MSA, 2018

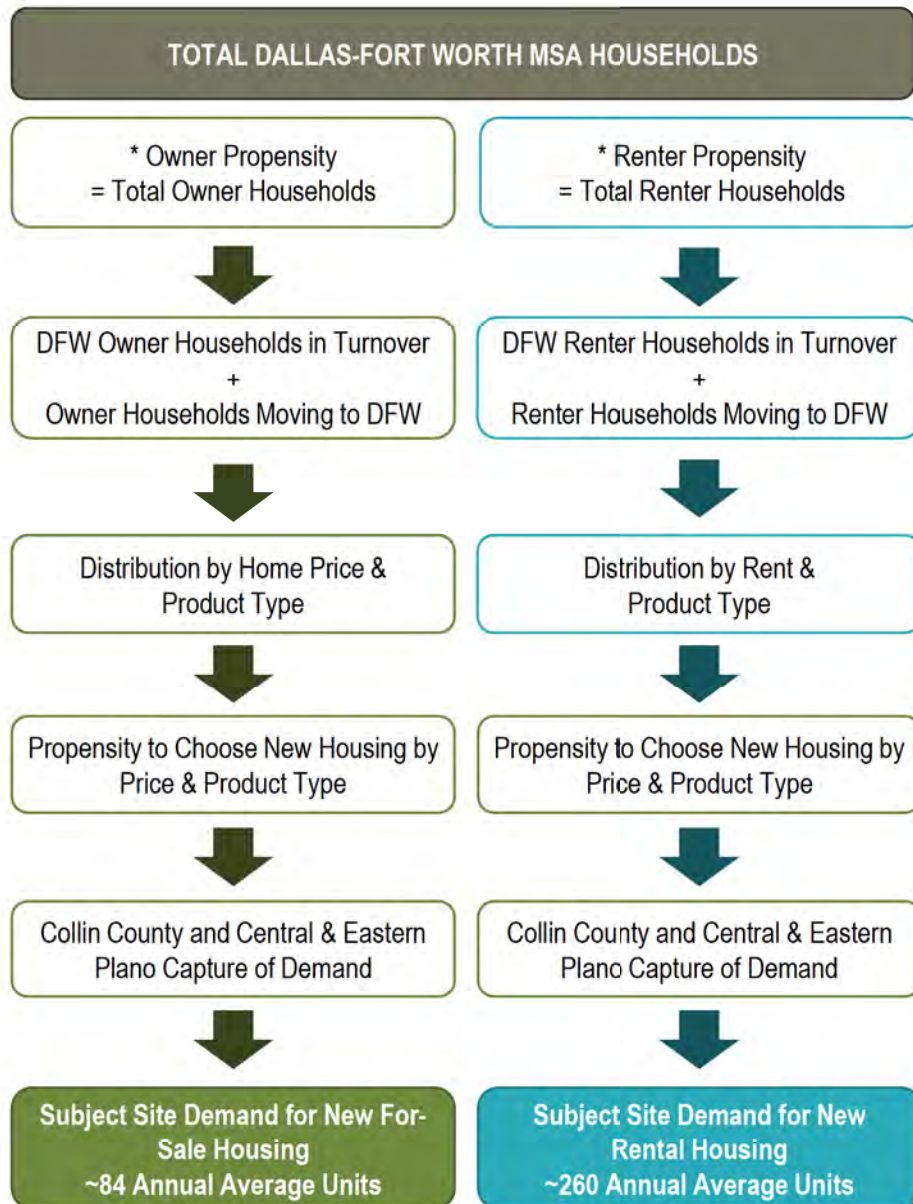


Source: U.S. Census Bureau; RCLCO National Consumer Preference Survey – 2018

## SEGMENTATION ANALYSIS

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# HOUSING DEMAND



RCLCO utilized Moody's Analytics and ownership propensities, product propensities, and turnover rates from US Census Bureau's 2015-2017 American Community Survey, as well as proprietary consumer research to estimate total for-sale and rental housing demand over the next 10 years. Based on household projections, current housing propensities, and demographic shifts, RCLCO projects annual average housing demand for a range of household segments and product types.

- ▶ Based on the methodology outlined above, RCLCO projects average annual structural demand of 394 to 473 for-sale housing units. Land availability and housing affordability are the two key constraints for new for-sale housing, though the introduction of higher density for-sale housing at Collin Creek Mall, if positioned appropriately, could help ease some of these concerns. After factoring in the site's relative competitiveness, ramp up period, and build-out timeline, RCLCO estimates an average absorption of 84 new for-sale housing units, annually.
- ▶ There is also a strong market for rental housing as the area continues to densify and urbanize with robust household and employment growth. Evaluating structural demand for all types of rental housing across central and eastern Plano, RCLCO estimates between 2,150 and 2,350 annual new rental units. Based on the competitive pipeline, land availability, and the proposed segmentation strategy, RCLCO estimates an average annual absorption of 260 new rental units.
- ▶ In order to achieve the stated absorption potential for rental and for-sale housing, it is crucial that a thoughtful and strategic segmentation strategy is implemented for the Collin Creek Mall redevelopment. Segmenting the market by household type, price point, and product orientation are critical success factors required to maximizing absorption potential and enables a developer to deliver multiple projects simultaneously while reducing internal competition.

Source: Moody's Analytics; RCLCO Consumer Research; U.S. Census Bureau's American Community Survey

# SEGMENTATION ANALYSIS

RCLCO analyzed the active buyer segments within the Dallas-Fort Worth-Arlington, TX MSA, Collin County, and a smaller geography consisting of two census Public-Use Microdata Areas (PUMAs). The geography consisting of two PUMAs was chosen as it best represents the segmentation and diversity of households currently living near the subject site. Due to the scale of the project at Collin Creek Mall, the subject site is likely to attract both owners and renters from across the DFW MSA and Collin County; however, the primary market segments renting or buying at the site are best reflected by the Central and Eastern Plano PUMAs.

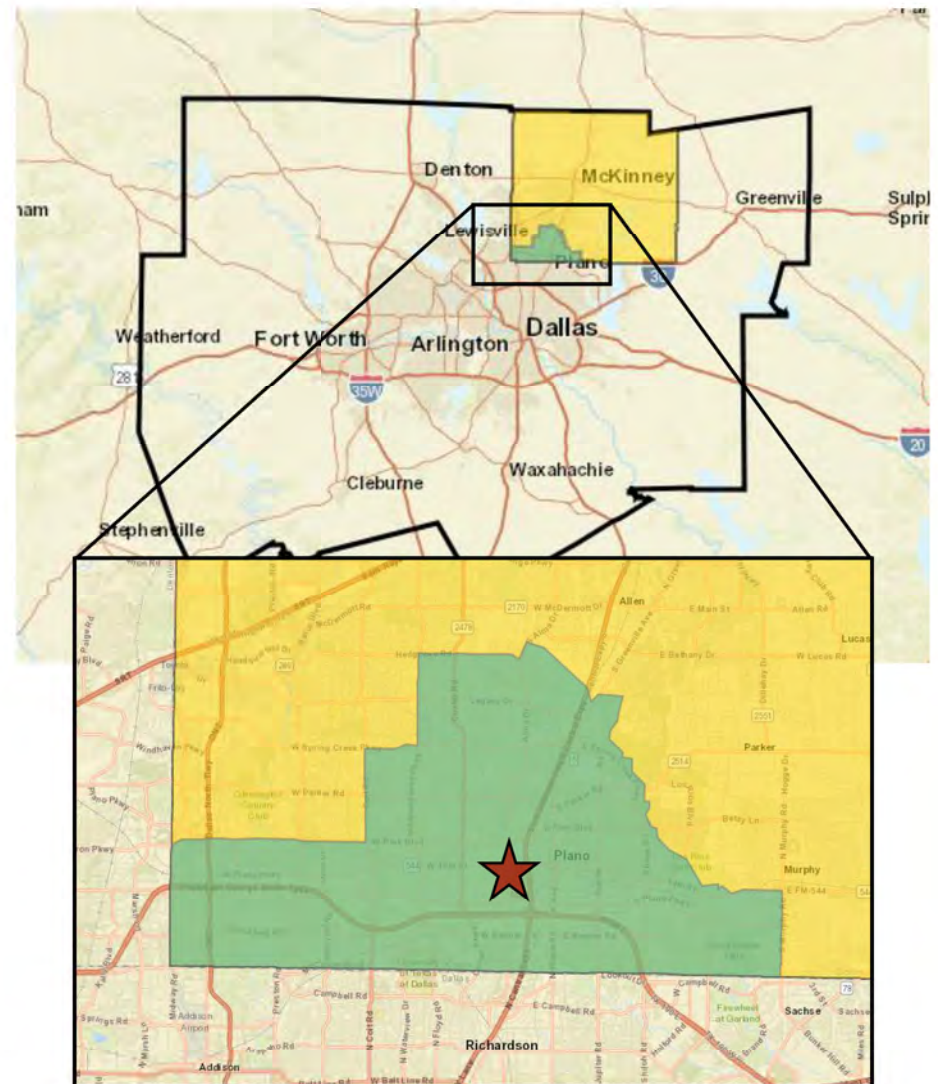
The segmentation analysis uses Public-Use Microdata Samples of the American Community Survey in order to classify recent homebuyers into a variety of segments based on a set of custom cross-tabulations outlined in the table below. Each of these market segments have distinct housing preferences that the subject site can potentially address. Additionally, RCLCO layers in a proprietary statistical demand model to estimate long-term demand by price point and segment. The findings of the segmentation analysis are described on the following pages.

## Definition of Household Segments

Segment	Age of Householder		Age of Oldest Child		Age of Youngest Child	
	Min	Max	Min	Max	Min	Max
<b>Childless Segments</b>						
Young Prof.	18	34				
Middle-Aged Prof.	35	44				
Mature Prof.	45	54				
Empty Nester	55	64				
Retiree/Senior	65	+				
<b>Family Segments</b>						
Young Family			0	4	N/A	N/A
Intermediate Family			5	17	0	12
Mature Family			N/A	N/A	13	N/A
Family w/ Mature Children			N/A	N/A	18	N/A

## Map of Segmentation Areas

Dallas-Fort Worth-Arlington MSA, Collin County, Central and Eastern Plano PUMAs

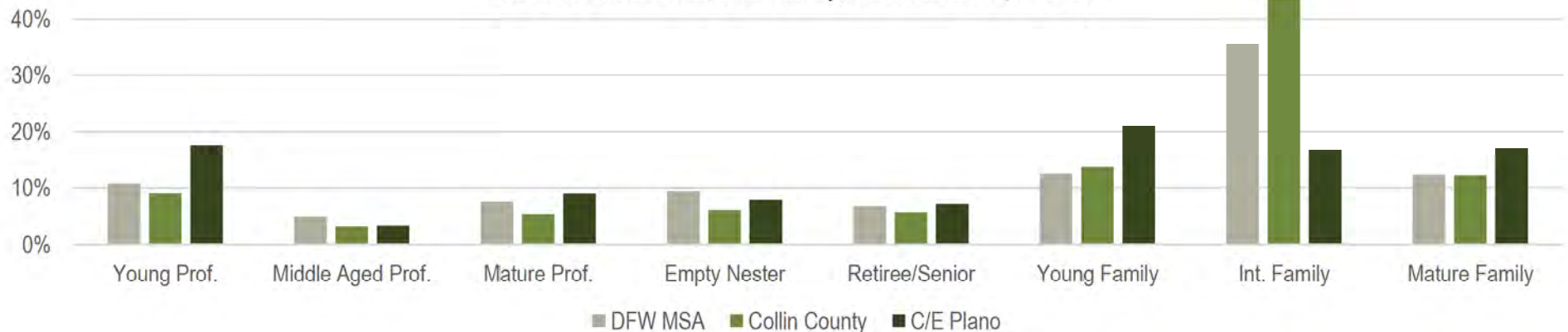


Source: Esri, RCLCO

# OWNER SEGMENTATION

SEGMENT	DESCRIPTION/OVERVIEW	MOBILITY	CAPTURE	C/E PLANO ANN. DEMAND	REL. TO CCM	PRODUCT PREF.
<b>Young &amp; Middle Aged Profs.</b>	Childless professionals tend to have higher turnover and mobility rates as they purchase a first or second home. These households often seek housing proximate to employment & entertainment, as well as homes with fewer bedrooms & more space for entertaining.	High turnover rates	<b>Outsized Capture</b> C/E Plano: 21% Collin County: 12%	<b>83-99</b>	High	TH, 2-over-2, Condo
<b>Mature Profs.</b>	Often classified as "never nesters", these households are primarily focused on high quality housing in close proximity to employment & services. Mature professionals often purchase some of the highest priced homes per square foot indicating their desire for quality.	Even share of active & overall owners	<b>Outsized Capture</b> C/E Plano: 9% Collin County: 5%	<b>36-43</b>	High	SFD, TH, 2-over-2, Condo
<b>Empty Nester+</b>	Less likely to move with many choosing to age in place; however, these segments represent the largest share of existing owner households. Introduction of compelling product in an appealing environment could entice these households to downsize into new, low maintenance housing.	Low turnover rates	<b>Outsized Capture</b> C/E Plano: 15% Collin County: 12%	<b>60-72</b>	High	SFD, TH, Condo
<b>Young Families</b>	Though representing a small share of all owner households, these households are highly active as they seek larger homes for growing families. <u>Prioritize homes that maximize value.</u>	High turnover rates	<b>Outsized Capture</b> C/E Plano: 21% Collin County: 14%	<b>83-99</b>	Low/Medium	SFD, TH
<b>Intermediate Families</b>	Represent one of the largest home buying segments, often rolling home equity from a 1st/2nd home into larger & more expensive new home. With older children & larger families, many of these households prioritize space, which limits the appeal of higher density residential product.	High turnover rates	<b>Under Representation</b> C/E Plano: 17% Collin County: 45%	<b>66-79</b>	Low	SFD
<b>Mature Families</b>	Due to the presence of older children these households are less likely to move, unless staying within the same school attendance zones. Some mature families with only one child at home may consider downsizing in preparation for becoming empty nesters.	Low turnover rates	<b>Outsized Capture</b> C/E Plano: 17% Collin County: 12%	<b>97-81</b>	Low/Medium	SFD

**Distribution of Active Home Buyers Affording Homes above \$300,000**  
Central & Eastern Plano, Collin County, Dallas-Fort Worth, TX MSA

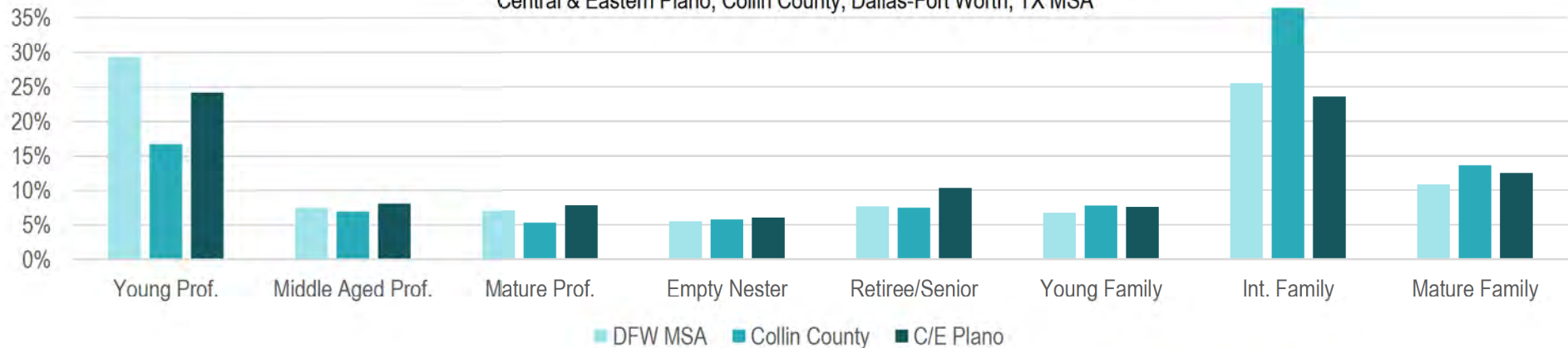


Source: U.S. Census Bureau's American Community Survey

# RENTER SEGMENTATION

SEGMENT	DESCRIPTION/OVERVIEW	MOBILITY	CAPTURE	C/E PLANO ANN. DEMAND	REL. TO CCM	PRODUCT PREF.
<b>Young &amp; Middle Aged Profs.</b>	Childless professionals tend to have very high turnover rates, seeking out some of the newest & nicest communities, depending on income level. These households often seek housing in urban locations proximate to employment & entertainment, expecting an array of amenities.	High turnover rates	<b>Outsized Capture</b> C/E Plano: 32% Collin County: 24%	<b>706-759</b>	High	Apt., TH
<b>Mature Profs.</b>	These households are primarily focused on exclusivity and quality, as well as proximity to both employment & services. These households often expect the highest-quality finishes & practical amenities geared towards mature renters.	Even share of active & overall renters	<b>Outsized Capture</b> C/E Plano: 8% Collin County: 5%	<b>171-184</b>	High	Apt., TH
<b>Empty Nester+</b>	These households expect large floorplans, high-quality finishes, & a sense of community designed around programming & amenities. Often, these renter households move back into neighborhoods with superior access to retail and entertainment.	Low turnover rates	<b>Outsized Capture</b> C/E Plano: 16% Collin County: 13%	<b>357-384</b>	High	Apt., TH, IL, AL
<b>Young Families</b>	Young families are often looking for an intermediate location to rent prior to purchasing their first home. These households are often looking for more space to take care of children and enhanced privacy.	High turnover rates	<b>Equal Capture</b> C/E Plano: 8% Collin County: 8%	<b>166-178</b>	Low/Medium	SFD, TH, Apt.
<b>Intermediate Families</b>	Intermediate families often prioritize space over features and amenities, leading them to primarily rent single-family product. These households prefer housing in secure, stable locations causing some households to move in order to access high-quality schools.	Even share of active & overall renter	<b>Under Representation</b> C/E Plano: 24% Collin County: 36%	<b>515-554</b>	Low	SFD, TH
<b>Mature Families</b>	Due to the presence of older children these households are less likely to move, unless staying within the same school attendance zones. Some mature families with only one child at home may consider downsizing in preparation of becoming empty nesters.	Low mobility & turnover rates	<b>Under Representation</b> C/E Plano: 12% Collin County: 14%	<b>273-293</b>	Low	SFD, TH

**Distribution of Active Renters Affording Units above \$1,250 per Month**  
Central & Eastern Plano, Collin County, Dallas-Fort Worth, TX MSA



Source: U.S. Census Bureau's American Community Survey

## FOR-SALE MARKET OVERVIEW

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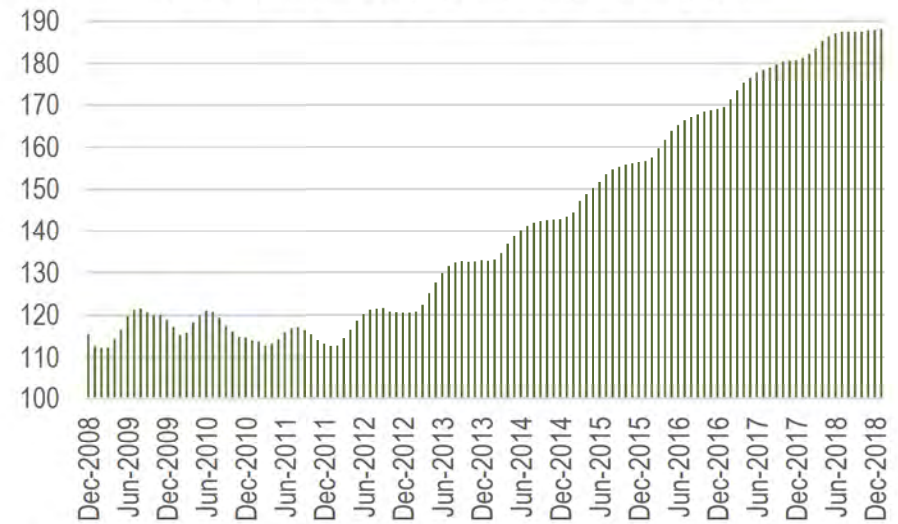
# FOR-SALE MARKET TRENDS

Strong employment and household growth continue to drive demand for new, for-sale residential development throughout the Dallas-Fort Worth MSA, though new housing activity has moderated in recent years. New housing starts increased by 4% in 2018 compared to the annual growth rate of 10% between 2009 and 2017.

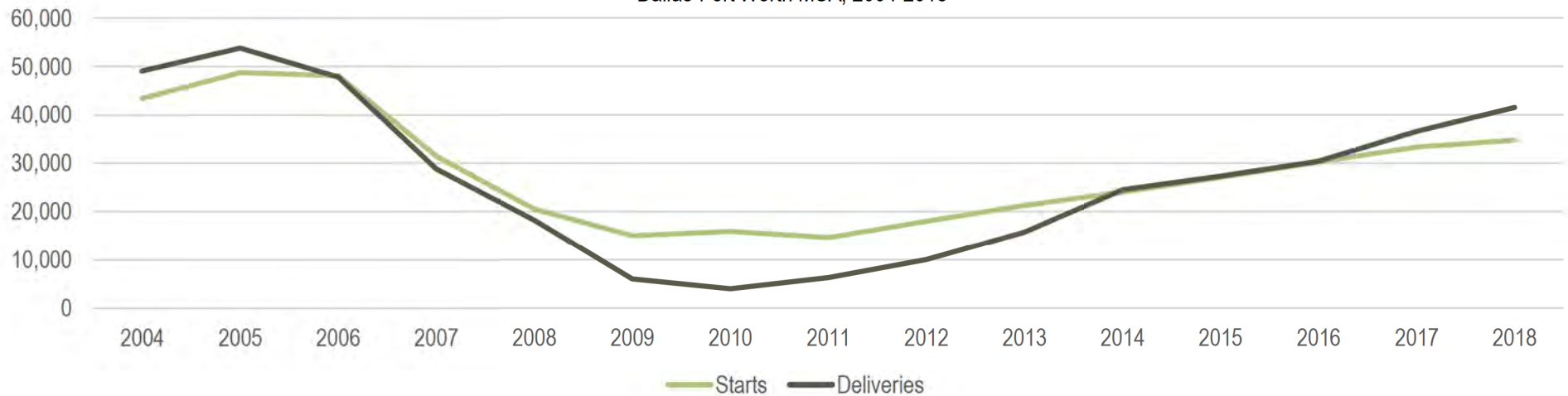
Though demand drivers remain strong, affordability concerns could present a significant threats to new residential development. Higher interest rates paired with increasing construction and land costs continue to increase pressure on the new housing market. Based on data from the Case-Shiller Home Price Index, housing is 55% more expensive than the previous peak of 2009.

Record transaction volumes and less than three months of housing inventory in the resale market illustrates significant demand for homes at lower price points (\$200,000 to \$350,000), with the median new home priced over 30% above the median resale home.

**S&P CoreLogic Case-Shiller Home Price NSA Index**  
Dallas-Fort Worth MSA; December 2008-January 2019



**New Home Starts and Lot Deliveries**  
Dallas-Fort Worth MSA; 2004-2018



Source: S&P CoreLogic Case-Shiller Index; Metrostudy

# COMPARABLE FOR-SALE PROPERTIES

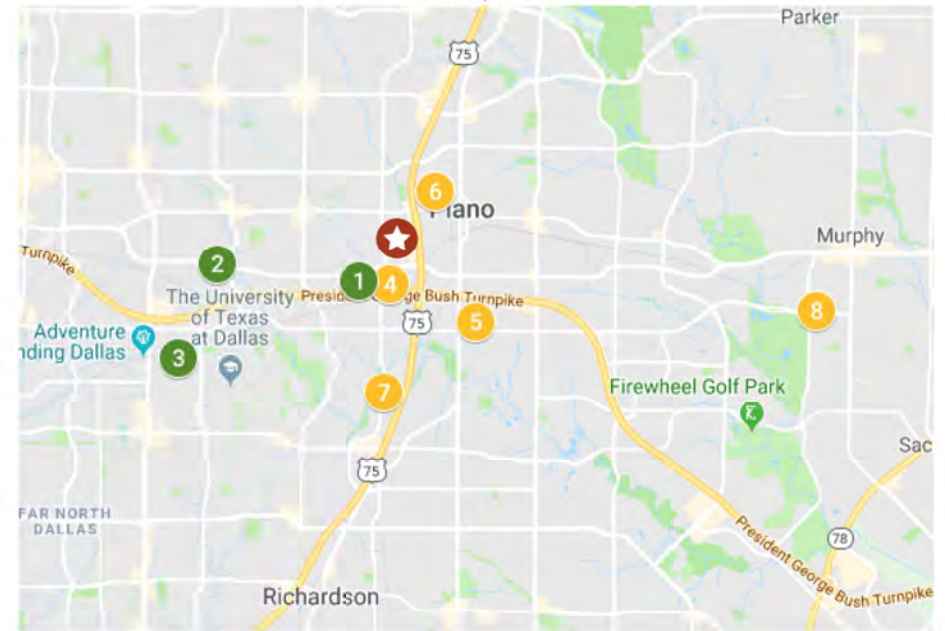
## NEW FOR-SALE PRODUCT IN PLANO HAS SEEN SUCCESS WITH RAPID SALES PACES DESPITE FEW UNIQUE PRODUCT TYPES

In order to estimate potential pricing and sales pace at the subject site, RCLCO surveyed a variety of communities throughout Eastern Plano and Northern Richardson that delivered over the past few years. While not an exhaustive survey, this overview is meant to provide insight on pricing, positioning, orientation, and absorption. Both new townhome and single-family detached product are achieving similar per square foot pricing but achieve variable overall pricing depending on unit size. The comparable townhome communities offer unit sizes of roughly 2,000 square feet, while the single-family detached product have average unit sizes of between 2,200 and 3,000 square feet. Most of these communities offer limited amenities, but for those located in mixed-use locations, nearby retail and walkability serve as the primary amenities. Many of the townhomes throughout Plano has standard finishes and lacks the differentiation that could attract a range of market segments.

As *Heritage Creekside* is the most proximate to the site and scheduled to deliver a mix of rental apartments, townhomes, and single-family detached units, it is likely the most comparable community to the subject site. Despite being the only community to offer an amenity package including a pool, meeting spaces, and fitness center, it is achieving pricing below most other comparable properties as it currently lacks walkability; however, its HOA fees are relatively high at \$250/month and townhomes at the subject site will offer superior walkability to retail and employment. *Residences at CityLine* is achieving top of market pricing on both a per square foot and overall basis, likely due to the mixed-use nature of the CityLine development and close proximity to Whole Foods Market. Due to the exciting mixed-use environment at the subject site, it can achieve pricing similar to or likely surpassing the *Residences at CityLine* depending on quality of finishes.

Although sales have been strong at many of the comparable properties, the future pipeline is relatively limited with only a few major developments. While *University Place* and *Heritage Creekside* will likely continue to deliver more units over the next few years, other pipeline projects are relatively small, one-off projects such as the planned townhome communities on 15<sup>th</sup> Street and 17<sup>th</sup> Street.

Map of Comparable For-Sale Properties  
Plano, TX



MAP KEY	PROPERTY	TYPE	YEAR BUILT	TOTAL UNITS	2018 SALES	AVG. PRICE	AVG. SIZE	AVG. BASE \$/SF
1	Heritage Creekside TH	TH	2017	94	47	\$346,000	1,975	\$175
2	Villas of Middleton	TH	2018	60	24	\$361,000	1,887	\$191
3	University Place	TH	2018	170	58	\$361,000	1,928	\$187
4	Heritage Creekside SFD	SFD	2017	19	8	\$426,000	2,532	\$168
5	Residences at CityLine	SFD	2017	32	6	\$590,000	2,840	\$208
6	Rice Field at Plano Arts	SFD	2017	60	14	\$392,000	2,217	\$177
7	Palisades	SFD	2017	100	30	\$462,000	2,276	\$203
8	Ingram Terrace	SFD	2016	62	16	\$479,000	2,991	\$160

Source: Property websites; Redfin; Zillow; Metrostudy

# FOR-SALE PRODUCT RECOMMENDATIONS

	LOW- TO MID-RISE CONDOMINIUMS (40 DU/AC)	STACKED THS / FLATS (20-25 DU/AC)	TOWNHOMES (13-16 DU/AC)	SMALL-LOT SINGLE-FAMILY, DETACHED (8-12 DU/AC)
				
10-YR DEMAND	125 to 175 Potential Units 12-18 Annual Absorption	110 to 130 Potential Units 11-13 Annual Absorption	310 to 340 Potential Units 31-34 Annual Absorption	225 to 275 Potential Units 22-28 Annual Absorption
OPPORTUNITY	Attract young professionals looking to purchase their first homes, as well as empty nesters/retirees looking to downsize	Price alternative to traditional townhomes, targeted towards mature Millennials & young families looking for more space	Attract mature professionals, families, & empty nesters looking for housing in an urban neighborhood, but with open space & other amenities	Appeal to households seeking an urban environment & walkability, while maintaining a relatively sizable home; Additional support from empty nesters downsizing from 3,000+ SF homes
MARKET AUDIENCE	Young Professionals Mature Professionals Empty Nesters	Young Professionals Mature Professionals Young Families	Young Families Mature Professionals Empty Nesters	Young Families Intermediate Families Mature Professionals
SITE POTENTIAL	<b>MEDIUM:</b> This product type is untested in the market, as very few condo communities have delivered outside of urban Dallas	<b>HIGH:</b> Stacked flats allow the development to increase density while still providing households with enough space	<b>HIGH:</b> Townhomes are a proven product in the market & will likely see similar success to other communities in Plano	<b>HIGH:</b> The site will draw first-time owners looking for more space than an attached product at a lower price point than traditional detached homes
PRICING	<b>\$265,000 to \$515,000</b> ~\$305/SF	<b>\$250,000 to \$390,000</b> ~\$200/SF	<b>\$340,000 to \$430,000</b> ~\$195/SF Top of Submarket; 11% Premium over Heritage Creekside	<b>\$405,000 to \$595,000</b> ~\$190/SF Competitive with Top of Submarket; 14%+ Premium over Heritage Creekside
TIMING	<b>LONG-TERM</b>	<b>MID-TERM</b>	<b>NEAR-TERM</b>	<b>NEAR-TERM</b>

# HIGH-DENSITY EXAMPLES

	<b>Museum BLVD</b> Houston, TX (Museum District)	<b>The Parkview Residences at Southlake</b> Southlake, TX (Southlake Town Square)	<b>Georgia Row at Walter Reed</b> Washington, D.C. (Walter Reed)	<b>Cleo &amp; Mason</b> Los Angeles, CA (Playa Vista)
<b>Concept</b>				
<b>Description</b>	<b>Condominiums</b>  <i>Museum BLVD</i> is a 37-home, four-story condominium building located in Houston's Museum District. The luxury condominium building offers balconies in all units and two-story penthouses, some with a private terrace. Despite the luxury finishes, the smaller unit sizes and low HOA fees allow it to be a price discount to more traditional single-family housing. These units likely appeal to empty nesters downsizing from larger single-family housing in the suburbs of Houston.	<b>Condominiums</b>  <i>Parkview Residences at Southlake</i> is a condominium community located at Southlake Town Square offering two and three bedroom units with luxury finishes. Its proximity to Southlake Town Square is similar to a condominium building's proximity to the redesigned retail at Collin Creek Mall. The target audience for these condominium units are mature professionals and empty nesters looking to downsize into a luxury unit in a walkable environment.	<b>Reinvented Stacked Flats (2-Over-2-Over-1)</b>  <i>Georgia Row at Walter Reed</i> delivered in 2018, offering 60 for-sale townhome-style condominiums with stacked floor plans resulting in three units (some with multiple floors) on top of one another. These homes represent a compelling alternative for prospective buyers who would like more space than a traditional condominium unit, but who cannot afford or otherwise do not want a full single-family home.	<b>Stacked Flats</b>  Built by Brookfield Residential in 2017, <i>Cleo and Mason</i> are new for-sale communities with four floors, each with its own single-story condominium unit on it. Located in Playa Vista, Cleo & Mason offer unique, luxury housing in a live-work-play development area in another infill location that is somewhat comparable to the subject site.

Image Source: Craftmark Homes; Brookfield Residential; REW  
Source: RCLCO

# SINGLE-FAMILY EXAMPLES





	455 Dovercourt Toronto, Ontario (Little Italy)	One Museum Place Atlanta, GA (Midtown)	Heritage Creekside Plano, TX	Villas at Legacy West Plano, TX (Legacy West)
Concept				
	<b>Townhome Over Creative Office</b>	<b>Luxury Townhomes</b>	<b>Small-Lot Single-Family Detached</b>	<b>Small-Lot Single-Family Detached</b>
Description	<p>Formerly a 30,000 square foot city services building, <i>455 Dovercourt</i> has been redeveloped to offer updated office space on the first two floors, as well as 12 new for-sale townhomes built on top of the existing building. Located in a more residential area of Toronto but close to downtown, each townhome also has a rooftop with views of the city skyline. Unit sizes range from 1,000 to 1,500 square feet, helping to keep absolute price points lower than they would be for full single-family homes.</p>	<p>Located in Midtown, the primary urban core of Atlanta, <i>One Museum Place</i> is an ultra luxury townhome development. In addition to luxury finishes and spacious floorplans, each residence has its own garage and elevator. The community is located adjacent to the High Museum of Art and close to Piedmont Park. The townhomes are primarily owned by empty nesters looking to move into a luxury residence in an urban, walkable neighborhood.</p>	<p><i>Heritage Creekside</i> is a residential development in Plano, TX consisting of townhomes, multifamily apartments, and single-family detached homes. The single-family detached homes are on small lots, primarily targeting first-time home buyers who might be unable to purchase a traditional single-family home on a larger lot but desire the privacy and size that a single-family detached home provides.</p>	<p>The <i>Villas at Legacy West</i> are located close to various corporate headquarters and the Shops at Legacy, a new retail development in Plano. The single-family detached homes are on small lots bridging the gap between traditional single-family homes and attached homes. This community offers homes between 2,000 and 4,200 square feet, larger than traditional single-family attached homes. These homes likely target professionals working in the many office headquarters in the market.</p>

Image Source: Surge Homes; Residences at Southlake; Cambridge Homes; Realtor.com

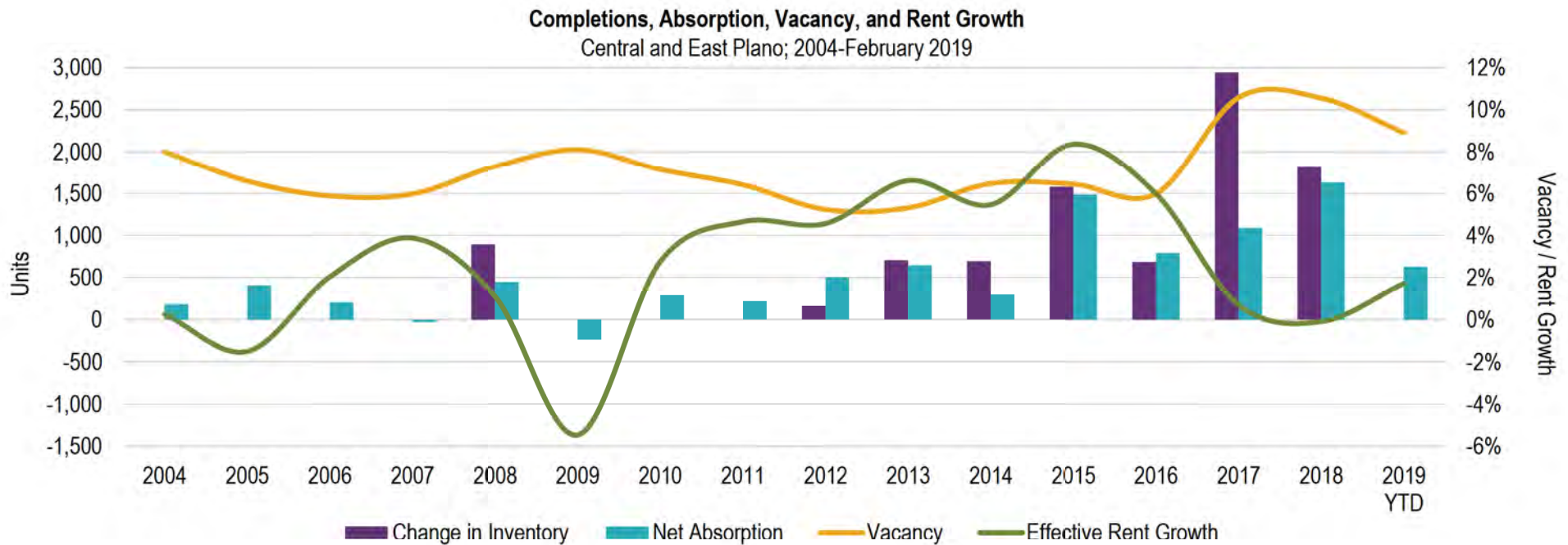
## RENTAL MARKET OVERVIEW

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# APARTMENT TRENDS

## A SURGE IN RECENT DELIVERIES HAS LED TO INCREASED VACANCY RATES AND LOWER RENT GROWTH, BUT A LIMITED PIPELINE WILL LIKELY HELP TO BALANCE SUPPLY AND DEMAND DYNAMICS OVER THE COMING YEARS

Between 2004 and 2013, Central and East Plano had only seen 1,050 total deliveries; however, in the following years between 2013 and 2018, 8,400 units delivered in the submarket. During this drastic period of growth, rent growth remained steady around 6% but vacancy increased to 11% due to the spike in deliveries in 2017 as a large share of units were in lease-up. Although the vacancy rates seem rather high, there are only two projects scheduled to deliver in 2019, adding a total of 560 units to the market. This is well below the average number of deliveries over the past few years, likely allowing the market to absorb more than these deliveries, bringing the vacancy rates down. Additionally, there are 2,700 units either planned or proposed; however, Oak Point accounts for almost 1,000 of those units and there is a possibility that some of the other projects do not deliver on schedule or at all. Unless Oak Point gains more traction, likely the primary competition at the subject site will be additional multifamily units at Heritage Creekside



Source: Costar

# COMPARABLE RENTAL COMMUNITIES

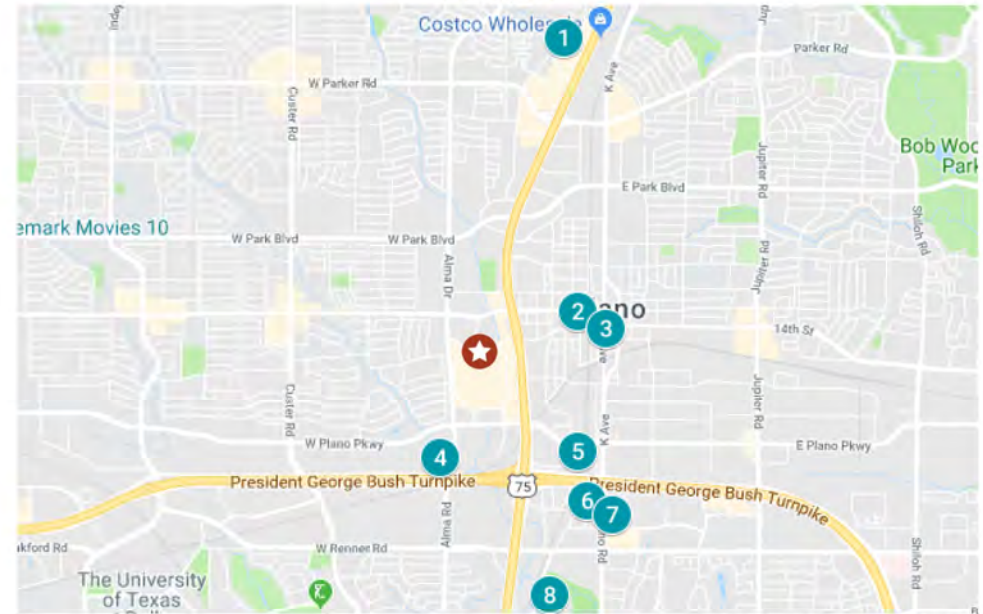
## RENTAL COMMUNITIES IN PLANO OFFER UNIQUE PRODUCT-TYPES IN ORDER TO SEGMENT THE MARKET AND MAXIMIZE ABSORPTION POTENTIAL

In order to provide insight on rental rates and absorption potential at the subject site, RCLCO surveyed eight rental communities in proximity to Collin Creek Mall. Most new communities currently achieve asking rents between \$1,500 and \$1,800 with varying rents per square foot depending on unit size. The majority of apartment communities that have delivered in the area offer a similar wrap-style product; however, *Morada Plano*, an apartment community delivering this year expecting to achieve top-of-market rents, plans to deliver below-grade parking in order to maximize density on-site while also providing retail options. The community is also delivering small units in order to maximize the rent per square foot, while maintaining overall asking rent comparable, or lower, to other communities in the area.

The CityLine development delivered five communities between 2016 and 2019 but has segmented their communities in order to attract a wide array of market audiences. *Anthem CityLine* is a standard apartment building offering a variety of amenities appealing to young professionals, with very small unit sizes for Plano. Moreover, *The Riley* offers much larger unit sizes and is achieving the highest overall rents among the competitive set, appealing more towards empty nesters and mature renters, willing to pay more for a larger unit. In order to maximize absorption potential, the subject site should follow this example of delivering a variety of apartment buildings with varying sizes, quality, and overall price points in order to appeal to the largest number of market segments.

Both *Aura One90* and *Avilla Premier Place* offer unique rental product types that help to distinguish their product from other communities in the submarket. *Aura One90* also offers rental townhomes in addition to apartments that have private entrances and garages. *Avilla Premier Place* offers exclusively single-family detached rentals, with each private residence containing its own patio and/or yard. Both of these communities are targeting more mature renters or families who might be unable or prefer not to purchase a home at the time, but prefer the privacy and space offered by a single-family residence.

Map of Comparable Rental Properties  
Plano, TX



MAP KEY	COMMUNITY NAME	YEAR BUILT	# OF UNITS	OCC. RATE	AVG. SIZE (SF)	AVG. ASK RENT	AVG. ASK \$/SF
1	Avilla Premier Place*	2017	122	95%	1,013	\$1,807	\$1.78
2	Junction 15	2015	276	89%	869	\$1,307	\$1.50
3	Morada Plano	2019	183	0%	851	\$1,620	\$1.90
4	The Bridge at Heritage Creekside	2017	326	92%	916	\$1,576	\$1.72
5	Aura One90	2016	386	94%	939	\$1,502	\$1.60
6	Anthem CityLine	2016	233	94%	823	\$1,456	\$1.77
7	The Riley	2018	262	89%	1,075	\$1,821	\$1.69
8	Jefferson Vantage	2018	420	17%	930	\$1,681	\$1.81

\*Avilla Premier Place is a single-family detached rental community  
Source: Axiometrics, Community Websites

# RENTAL PRODUCT RECOMMENDATIONS

	CONVENTIONAL APARTMENTS (75-85 DU/AC)	EMPTY NESTER APARTMENTS (60-75 DU/AC)	INDEPENDENT / ASSISTED LIVING (60-75 DU/AC)	TOWNHOMES (13-18 DU/AC)
				
<b>10-YEAR DEMAND</b>	1,800 to 1,900 Potential Units ~Approx. 1 bldg. every 18 mos., with varying orientations	335 to 375 Potential Units ~Approx. 2 bldgs. (1 age-targeted & 1 age-restricted)	135 to 155 Potential Units ~Approx. 1 bldg. after 2024	230 to 255 Potential Units ~Approx. 2-3 unique phases
<b>OPPORTUNITY</b>	Attract diverse groups of households looking for rental housing in low-density urban or high-density suburban locations	Capitalize on large (and increasing) base of 55+ renters looking for high-quality apartments in lower-density urban neighborhoods	Attract a unique market segment to the site, offering a slightly more urban location than other retirement communities in Plano	Offer an alternative for people who are looking for more space than an apartment, but who are not ready to purchase a home
<b>MARKET AUDIENCE</b>	Young Professionals Mature Professionals Students	Empty Nesters Retirees	Retirees/Seniors	Mature Professionals Young Families Empty Nesters
<b>SITE POTENTIAL</b>	<b>HIGH:</b> Numerous deliveries over the past few years in Plano show the depth of market & desire to rent in the submarket	<b>MEDIUM:</b> The walkability of the site in addition to restaurants & entertainment options will likely appeal to mature renters	<b>HIGH:</b> The site is well-equipped to provide green space & retail amenities that appeal to retirees	<b>HIGH:</b> Most single-family attached product in the region is for-sale but this could be an opportunity to attract different market segments
<b>TIMING PRICING*</b>	<b>Avg. of \$1.85-\$2.00/SF</b> 550-1,600 SF	<b>Avg. of \$1.85-\$2.00/SF</b> 5%+ Larger than Conventional Apartments	<b>Pricing Dependent on Level of Care &amp; Service Offered</b>	<b>Avg. of \$1.80-\$1.95/SF</b> 10%+ Larger than Conventional Apartments
<b>TIMING</b>	<b>NEAR-TERM TO MID-TERM</b>	<b>MID-TERM TO LONG-TERM</b>	<b>MID-TERM TO LONG-TERM</b>	<b>NEAR-TERM</b>

*Note: Potential to garner higher rent prices per square foot if construction exceeds six-stories for more urban-style rental units.*

# SINGLE-FAMILY EXAMPLES






	RedPeak Platt Park Townhomes Denver, CO (Platt Park)	RESIDENCES AT PALMER SQUARE Princeton, New Jersey (Palmer Square)
Concept		
Description	<b>Rental Townhomes</b>	<b>Rental Townhomes</b>
Positioning	<p>Located in the older, historic neighborhood of Platt Park near the University of Denver, <i>RedPeak Townhomes</i> opened in 2015, providing spacious, rental townhomes for renters of all ages. This community offers a unique product consisting of luxury, rental townhomes in a market mainly comprised of rental apartments and for-sale units.</p> <p><b>75% Larger Units</b> <b>80% Higher Asking Rents</b> <b>Than Other New Buildings Nearby</b></p>	<p>Located a block away from Princeton University, <i>Residences at Palmer Square</i> consists of luxury rental townhomes, targeted towards professors, administrators, and empty nesters who are looking for more space than a traditional rental apartment, but who do not want to purchase a home. With top-of-the-line finishes and spacious floor plans of at least 1,600 square feet, the units achieve top-of-market rents.</p> <p><b>75% Larger Units</b> <b>100% Higher Asking Rents</b> <b>Than Other New Buildings Nearby</b></p>

Image Source: RedPeak; Plano Profile; Residences at Palmer Square  
Source: Axiometrics; RCLCO



# “TRUE” SENIORS HOUSING

	<b>Balfour at Riverfront Park</b> Denver, CO (LoDo)	<b>Abiitan Mill City</b> Minneapolis, MN (Gateway District)	<b>HarborChase of the Park Cities</b> Dallas, TX (University Park / Preston Hollow)
<b>Concept</b>			
	<b>Assisted Living / Memory Care</b>	<b>Independent Living / Memory Care</b>	<b>Assisted Living / Memory Care</b>
<b>Description</b>	Located in the vibrant neighborhood of LoDo, <i>Balfour at Riverfront Park</i> provides residents with access to urban amenities, as well as proximity to family living or working in Downtown Denver. The community offers amenities such as a fitness center and a heated saltwater pool, as well as on-site nurses and doctors for residents who need assistance. It also provides a continuum of service to allow individuals with varying needs to stay on site.	Located in the heart of Downtown Minneapolis, <i>Abiitan Mill City</i> offers the unique combination of senior living in an urban environment. The community opened in 2017, targeting retired couples who need some daily assistance but also want to take advantage of the entertainment that Minneapolis has to offer. <i>Abiitan Mill City</i> offers numerous daily events both on and off-premises as well as high-end units for retirees.	<i>HarborChase of the Park Cities</i> is an ultra-luxury retirement community located in North Dallas, targeting wealthy retirees. <i>HarborChase of the Park Cities</i> offers a high-quality, luxury product not found in other assisted living communities. The community is also designed so that residents can receive a wide array of health services depending on each individual's need.
<b>Positioning</b>	<b>\$4,000 / Month for Independent &amp; Assisted Living</b> <b>\$8,100 / Month for Memory Care</b> <b>Compared to ~\$2,500 for New Apartments Nearby</b>	<b>\$1,900 - \$6,900 / Month for Independent Living</b> <b>\$6,500 / Month for Memory Care</b> <b>Compared to ~ \$2,000 for New Apartments Nearby</b>	<b>\$7,500 / Month for Assisted Living</b> <b>\$9,000 / Month for Basic Memory Care</b> <b>Compared to ~\$2,000 for New Apartments Nearby</b>

*Note: Independent Living communities are typically age-restricted, targeting senior households who are downsizing from the primary home, and still able to live independently. No services or care provided.; Assisted Living Housing includes assistance with daily activities (dressing, grooming, moving about). Attracts "well but frail" seniors over the age 75, in reasonably good health but no longer able to independently care for self.*

*Source: Axiometrics; RCLCO*

## DISCLAIMERS

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# CRITICAL ASSUMPTIONS

Our conclusions are based on our analysis of the information available from our own sources and from the client as of the date of this report. We assume that the information is correct, complete, and reliable.

We made certain assumptions about the future performance of the global, national, and local economy and real estate market, and on other factors similarly outside either our control or that of the client. We analyzed trends and the information available to us in drawing these conclusions. However, given the fluid and dynamic nature of the economy and real estate markets, as well as the uncertainty surrounding particularly the near-term future, it is critical to monitor the economy and markets continuously and to revisit the aforementioned conclusions periodically to ensure that they are reflective of changing market conditions.

We assume that the economy and real estate markets will grow at a stable and moderate rate to 2020 and beyond. However, stable and moderate growth patterns are historically not sustainable over extended periods of time, the economy is cyclical, and real estate markets are typically highly sensitive to business cycles. Further, it is very difficult to predict when an economic and real estate upturn will end.

With the above in mind, we assume that the long-term average absorption rates and price changes will be as projected, realizing that most of the time performance will be either above or below said average rates.

Our analysis does not consider the potential impact of future economic shocks on the national and/or local economy, and does not consider the potential benefits from major "booms" that may occur. Similarly, the analysis does not reflect the residual impact on the real estate market and the competitive environment of such a shock or boom. Also, it is important to note that it is difficult to predict changing consumer and market psychology.

As such, we recommend the close monitoring of the economy and the marketplace, and updating this analysis as appropriate.

Further, the project and investment economics should be "stress tested" to ensure that potential fluctuations in revenue and cost assumptions resulting from alternative scenarios regarding the economy and real estate market conditions will not cause failure.

In addition, we assume that the following will occur in accordance with current expectations:

- ▶ Economic, employment, and household growth
- ▶ Other forecasts of trends and demographic and economic patterns, including consumer confidence levels
- ▶ The cost of development and construction
- ▶ Tax laws (i.e., property and income tax rates, deductibility of mortgage interest, and so forth)
- ▶ Availability and cost of capital and mortgage financing for real estate developers, owners and buyers
- ▶ Competitive projects will be developed as planned (active and future) and that a reasonable stream of supply offerings will satisfy real estate demand
- ▶ Major public works projects occur and are completed as planned

Should any of the above change, this analysis should be updated, with the conclusions reviewed accordingly (and possibly revised).

# GENERAL LIMITING CONDITIONS

Reasonable efforts have been made to ensure that the data contained in this study reflect accurate and timely information and are believed to be reliable. This study is based on estimates, assumptions, and other information developed by RCLCO from its independent research effort, general knowledge of the industry, and consultations with the client and its representatives. No responsibility is assumed for inaccuracies in reporting by the client, its agent, and representatives or in any other data source used in preparing or presenting this study. This report is based on information that to our knowledge was current as of the date of this report, and RCLCO has not undertaken any update of its research effort since such date.

Our report may contain prospective financial information, estimates, or opinions that represent our view of reasonable expectations at a particular time, but such information, estimates, or opinions are not offered as predictions or assurances that a particular level of income or profit will be achieved, that particular events will occur, or that a particular price will be offered or accepted. Actual results achieved during the period covered by our prospective financial analysis may vary from those described in our report, and the variations may be material. Therefore, no warranty or representation is made by RCLCO that any of the projected values or results contained in this study will be achieved.

Possession of this study does not carry with it the right of publication thereof or to use the name of "Robert Charles Lesser & Co." or "RCLCO" in any manner without first obtaining the prior written consent of RCLCO. No abstracting, excerpting, or summarization of this study may be made without first obtaining the prior written consent of RCLCO. This report is not to be used in conjunction with any public or private offering of securities or other similar purpose where it may be relied upon to any degree by any person other than the client without first obtaining the prior written consent of RCLCO. This study may not be used for any purpose other than that for which it is prepared or for which prior written consent has first been obtained from RCLCO.





## **AUSTIN**

221 West 6th Street, Suite 2030  
Austin, TX 78701

## **LOS ANGELES**

11601 Wilshire Boulevard, Suite 1650  
Los Angeles, CA 90025

## **ORLANDO**

964 Lake Baldwin Lane, Suite 100  
Orlando, FL 32814

## **WASHINGTON, DC**

7200 Wisconsin Avenue, Suite 1110  
Bethesda, MD 20814



March 15th, 2023

Ms. Christina D. Day  
Director of Planning  
City of Plano – Planning Department  
1520 K Avenue, Suite 250  
Plano, TX

**Re: ZC2022-018; Request to rezone 5.2 acres located on the west side of J Place, 111 feet north of State Highway 190 from Light Commercial to Planned Development-Corridor Commercial and to rescind Specific Use Permit Nos. 525 and 529 for Contract Construction, Nos. 526 and 528 for Auto Storage, and Nos. 527 and 530 for Used Car Dealer. Zoned Light Commercial with Specific Use Permit Nos. 525 and 529 for Contract Construction, Nos. 526 and 528 for Auto Storage, and Nos. 527 and 530 for Used Car Dealer and located within the 190 Tollway/Plano Parkway Overlay District.**

Dear Christina,

I first want to thank you and the Planning Staff for your time, effort and vision in assisting us with this application over the past year. In particular, Mr. Eric Hill and Mrs. Raha Pouladi have been instrumental in crafting a project that the City of Plano can be proud of in a corridor that has been identified for redevelopment. We are providing this letter to a) support our petition to create a Planned Development-Corridor Commercial (PD-CC), for a 5-story multifamily project to replace the existing low-rise industrial buildings and outdoor storage and b) rescind the six SUPs currently in place.

The property's future land use category is Downtown Corridor (DT) in the Comprehensive Plan ("Comp Plan" or "Plan"). The Comp Plan discusses Transit Oriented Development Areas (TOD), Corridor Revitalization & Redevelopment and Historic Preservation within the Downtown Corridor. The spirit of the Comp Plan's objective for the Downtown Corridor is to transition this area of Plano away from old warehouses and open lots to a "more accessible, walkable and unified corridor". This zoning proposal is a valuable opportunity for Commission to allow redevelopment of a blighted area in step with the spirit of the Plan. Specifically, the Comprehensive Plan identifies three main priorities of the Downtown Corridor: 1. Enhancing bicycle and pedestrian connections, 2. Improving mobility connections between Downtown and Collin Creek area, and 3. Focusing



density in the Downtown core and within ¼ mile walking distance of rail stations. This proposal accomplishes all three.

The Comp Plan provides dashboard tools for evaluating rezoning petitions to either favor or disfavor. The tools disfavor on two points and the Downtown Vision and Strategy Update disfavors based on interpretation. We ask P&Z to review each and make findings in order to approve our petition.

***Disfavored because...***

1. Downtown Corridor Dashboard is above the 90% threshold for Multifamily Types;
2. Above the maximum density of 50 UPA
3. The Downtown Vision and Strategy (published in 1999) initially recommended 1,000 new units in the study area. Later updates expanded the recommendation to 2,000 units within the broader Plano DART Corridor (CityLine/Bush station to Parker Road station). According to Staff's estimation the 2,000 unit recommendation has been exceeded over the last 24 years of growth and development.

***Why Approve?***

1. This 90% Multifamily/10% Single Family is unlikely to ever come into "balance" within the DT Corridor boundaries. The best way to induce landowners to forego their current cash flow from old warehouses and sell for redevelopment is to re-zone for higher density. Developers of Single Family Attached and Detached cannot economically deliver low-density SF units outside of the occasional custom home or small Townhome development. Single Family will organically follow and fill in smaller gaps where feasible if the City first catalyzes positive change with larger sites like ours. To accommodate the Comp Plan's goal for redevelopment in the corridor, exceptions to the dashboard thresholds will be necessary.
2. The project will be approximately 68 Units per Acre. The Comp Plan disfavors density above 50 UPA in non-TOD locations. However, the Comp Plan supports density up to 100 UPA in TOD locations. The Comp Plan does not explicitly acknowledge the CityLine/Bush Station in Richardson as a transit stop for TOD purposes under the Comp Plan. We ask the Commission to remedy this by explicitly acknowledging the CityLine/Bush Station as part of the TOD analysis. If so, the project is 0.20 mile walking distance from the CityLine/Bush station to the sidewalk egress from our site and the density would be supported.
3. The Downtown Vision and Strategy Update states: "The opportunity for growth extends across the entire 2 1/2 mile DART corridor from the President George Bush Turnpike to Parker Road Stations. With the addition of the proposed 12th Street Station, the entire



corridor is within walking distance of one of four DART stations. No place outside of Downtown Dallas is better served by transit". With the Silver Line infrastructure improvements bringing substantially more connectivity to Plano, it is prudent for the Commission to consider expanding the vision from prior years to add residential density in one of the most transit-rich locations in DFW. Additionally, the 2,000 units mentioned in the Downtown Vision and Strategy Update can reasonably be read as a goal, not a hard cap on residential units.

### **Rescinding Special Use Permits**

We request that the existing Special Use Permits listed below be terminated upon City Council voting to change zoning to PD-CC and adopt the PD stipulations as submitted.

SUP 525 – Contract Construction

SUP 526 – Auto Storage

SUP 527 – Used Car Dealer

SUP 528 – Auto Storage

SUP 529 – Contract Construction

SUP 530 – Used Car Dealer

Sincerely,

Adam Brown

Trinsic Residential Group

**MEETING DATE**

Monday, April 10, 2023

**RESULTS**

I, Mayor/Councilmember \_\_\_\_\_, after review of the written information and listening to the hearing participants, voted in **SUPPORT** of this case, finding the following:

1. The request is consistent with the overall Guiding Principles of the Comprehensive Plan because: \_\_\_\_\_;  
and
2. The request is substantially beneficial to the immediate neighbors, surrounding community, and general public interest because: \_\_\_\_\_;  
and
3. The request is consistent with other policies, actions, maps:
  - Bicycle Transportation Plan Map
  - Downtown Vision & Strategy Update (2019)
  - Future Land Use Map & Dashboards – Character Defining Elements
  - Future Land Use Map & Dashboards – Description & Priorities
  - Parks Master Plan Map
  - Thoroughfare Plan Map & Cross-Sections
  - Transit-Oriented Development Policy
  - Other: \_\_\_\_\_
4. Comments on any of the above which further explain my position: \_\_\_\_\_.

Overall, I believe the applicant's request should be supported; and the reasons I have indicated above outweigh the project's incompatibility with the mix of uses, density, or building heights favored by the Future Land Use Map Dashboard of the Comprehensive Plan.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## City Council Findings Form

The Guiding Principles establish overarching themes that apply to all policies and actions and express values for Today, 2050, and Together. These Principles are not intended to stand alone but to be used in concert with one another and carry across the Plan as a whole. Each principle must be judged through a lens that incorporates all of the other principles to be fully and accurately understood.

### Guiding Principle 1 | Plano Today

- 1.1. The Plan enhances the quality of life in the near term, continually striving to meet the needs and priorities of current residents, businesses, and institutions of Plano.
- 1.2. The Plan promotes the safety, viability, and vibrancy of Plano's existing neighborhoods, managing growth and shaping change that complements the city's suburban character and rich history.
- 1.3. The Plan promotes the educational, recreational, and cultural centers of the community, providing an environment for world-class facilities, businesses, and institutions that support a vital economy.
- 1.4. The Plan respects the suburban character of Plano and seeks to preserve and enhance the built environment.
- 1.5. The Plan acknowledges that Plano is mostly developed and does not anticipate significant changes in population or residential development in the future.
- 1.6. Implementation of the Plan will be open and transparent, with a high standard for exceptions to land use principles, proactively seeking community input, and updated when needed with opportunities for the public to continually share their needs and priorities with community leaders and inform the decision-making process.

### Guiding Principle 2 | Plano 2050

- 2.1. The Plan enhances the quality of life in the long term, preparing for future generations of residents, businesses, and institutions of Plano who may not yet have a voice but are impacted by the decisions of today.
- 2.2. The Plan successfully manages Plano's transition to a mature city, seeking innovative approaches and best practices to accommodate emerging trends, technologies, and opportunities that improve the quality of life and allow the city to remain attractive and vibrant into the future.
- 2.3. The Plan builds on Plano's strong history of thoughtful planning, guiding future development and redevelopment where it is safe, attractive, appropriate, and convenient; contributes to a variety of housing, employment, and social opportunities; and respects the natural environment.
- 2.4. Implementation of the Plan will be fiscally responsible, ensuring that alternatives are considered and completion of actions provides the greatest long-term value.

### Guiding Principle 3 | Plano Together

- 3.1. The Plan serves people of all backgrounds, striving to meet the needs of an inclusive and vibrant community that calls Plano "home."
- 3.2. The Plan promotes a community that is safe, engaged, and rich in educational, cultural, and recreational opportunities that are highly desirable to residents and visitors alike.
- 3.3. The Plan embraces Plano's position as a leader in the region, demonstrating the city's standard of excellence and supporting our neighbors through linkages including health, economy, culture, transportation, and sense of community.
- 3.4. The Plan manages growth and redevelopment in a gradual manner, ensuring changes are beneficial to neighbors and the surrounding community based on real, city-level demand.
- 3.5. Implementation of the Plan will be done in partnership with the community and educational, nonprofit, civic, cultural, faith-based, and governmental organizations, promoting cooperation towards common goals that enhance the quality of life for the residents, businesses, and institutions of Plano.

**MEETING DATE**

Monday, April 10, 2023

**RESULTS**

I, Mayor/Councilmember \_\_\_\_\_, after review of the written information and listening to the hearing participants, voted in **OPPOSITION** to this case, finding the following:

I agree with the conclusions in the preliminary report provided by staff because:

\_\_\_\_\_.

**or**

The project is incompatible with the Future Land Use Map Dashboard of the Comprehensive Plan because: \_\_\_\_\_;  
and

The request is inconsistent with the overall Guiding Principles of the Comprehensive Plan because: \_\_\_\_\_;  
and

The request is not substantially beneficial to the immediate neighbors, surrounding community, and general public interest because: \_\_\_\_\_;  
and

The request is inconsistent with other policies, actions, maps:

- Downtown Vision & Strategy Update (2019)
- Expressway Corridor Environmental Health Map & Guidelines
- Future Land Use Map & Dashboards – Character Defining Elements
- Future Land Use Map & Dashboards – Mix of Uses
- Redevelopment & Growth Management Policy - Action 1 (RGM1)
- Redevelopment & Growth Management Policy - Action 8 (RGM8)
- Redevelopment of Regional Transportation Corridors Policy
- Transit-Oriented Development Policy
- Other: \_\_\_\_\_

Comments on any of the above which further explain my position: \_\_\_\_\_.

Overall, I believe the applicant's request should be opposed due to the reasons I have indicated above.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## City Council Findings Form

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