



**TJW ENGINEERING, INC.**  
TRAFFIC ENGINEERING &  
TRANSPORTATION PLANNING  
CONSULTANTS

June 15, 2022

Ms. Kim Prijatel  
CITY VENTURES  
3121 Michaelson Drive, Suite 150  
Irvine, CA 92618

**SUBJECT: 11700 Arkansas Mixed Use Vehicle Miles Traveled (VMT) Analysis, City of Artesia**

Dear Ms. Prijatel,

*TJW Engineering, Inc. (TJW)* is pleased to submit this Vehicle Miles Traveled (VMT) Analysis for the proposed Arkansas Street Specific Plan and proposed mixed-use project located at 11700 Arkansas Street in the City of Artesia. The purpose of this memorandum is to satisfy the requirements for disclosure of potential impacts and mitigation measures per the California Environmental Quality Act (CEQA). The City of Artesia has not adopted thresholds and guidelines to evaluate VMT impacts. Therefore, this analysis has been conducted using the guidance from the Governor's Office of Planning and Research (OPR) and the County of Los Angeles, with baselines set using the existing VMT for the City of Artesia. It should be noted that the VMT guidelines and thresholds noted in this memorandum are specifically for this Project. The City is currently preparing Citywide VMT guidelines and thresholds to be used for future development projects.

### **PROJECT DESCRIPTION**

The project consists of two elements. The first element is the Arkansas Street Specific Plan encompassing a 4.2-acre area bounded to the north by Arkansas Street, to the east by Pioneer Boulevard, to the south and west by single-family residential neighborhoods. The second element is a mixed-use project consisting of 59 residential townhomes, including live-work units and 5,290 square feet of commercial space on a 2.65-acre site within the larger 4.2 acre proposed Specific Plan Area.

### **BACKGROUND**

Senate Bill 743 (SB-743), which was codified in Public Resources Code section 21099, was signed by the Governor in 2013 and directed the Governor's OPR to identify alternative metrics for evaluating transportation impacts under CEQA. Based on this, delay-based analysis (level of service) has been replaced by VMT. Pursuant to Section 21099, the criteria for determining the significance of transportation impacts must "promote the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and a diversity of land uses." Recently adopted changes to the CEQA Guidelines in response to Section 21099 include a new section (15064.3) that specifies that VMT

is the most appropriate measure of transportation impacts. A separate Technical Advisory issued by OPR provides additional technical details on calculating VMT and assessing transportation impacts for various types of projects.

## **THRESHOLDS**

The City of Artesia currently has not adopted impact thresholds for analysis of VMT. Therefore, this section discusses thresholds that have been recommended by the State as well as the County of Los Angeles, and other jurisdictions in Los Angeles County.

### *Office of Planning and Research*

The OPR guidelines indicates that mixed-use projects should be analyzed separately and compared to their respective thresholds.<sup>1</sup> The OPR recommends that a threshold of 85 percent of the existing jurisdictional average VMT/capita (or employee) for residential and office spaces. For retail projects, the OPR recommends using a threshold of no net change in VMT, but also recommends that retail projects under 50,000 square feet can be screened out from analysis as locally serving retail. It should also be noted, OPR recommends that mixed-use projects take credit for internal capture.

### *County of Los Angeles*

The County of Los Angeles also screens out retail projects under 50,000 square feet.<sup>2</sup> If a project does not screen out and a VMT analysis is required, the Guidelines require that daily vehicle trips, daily VMT, and daily employment VMT per employee for office, industrial and institutional projects be estimated using the Southern California Association of Governments (SCAG) Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Forecast Model. Transportation demand management strategies to be included as project design features should be considered in the estimation of a project's daily vehicle trips and VMT. A project has a potentially significant VMT impact if it meets one or more of the criteria listed below. The impact criteria below are considered as potential options that may be selected as thresholds for determining significance.

- **Residential Projects.** The project's residential VMT per capita would not be 16.8% below the existing residential VMT per capita for the Baseline Area in which the project is located.
- **Office Projects.** The project's employment VMT per employee exceeding would not be 16.8% below the existing employment VMT per employee for the Baseline Area in which the project is located.
- **Regional Serving Retail Projects.** The project would result in a net increase in existing total VMT.
- **Land Use Plans.** The plan total VMT per service population (residents and employees) would not be 16.8% below the existing VMT per service population for the Baseline Area in which the plan is located.

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<sup>1</sup> Office of Planning and Research (OPR) State of California – Technical Advisory on Evaluating Transportation Impacts in CEQA (December 2018)

<sup>2</sup> Los Angeles County Public Works – Transportation Impact Analysis Guidelines (July 2020)

### *City of Long Beach*

The City of Long Beach Traffic Impact Analysis Guidelines outlines that the OPR *Technical Advisory on Evaluating Transportation Impacts in CEQA* recommends a threshold for residential and office development that is 15 percent below existing conditions, measured against a regional average.<sup>3</sup> The region for Long Beach is Los Angeles County. As calculated from the 2016 SCAG RTP/SCS travel demand model, the average daily VMT per capita in Los Angeles County is 13.9 and the average daily VMT per employee in Los Angeles County is 21.2. Accordingly, the thresholds of significance for VMT impacts are:

- **Residential**—15 percent below the existing regional average VMT per capita ( $13.9 \times 0.85 = 11.8$  VMT)
- **Office**—15 percent below the existing regional average VMT per employee ( $21.2 \times 0.85 = 18.0$  VMT)
- **Retail**—No net change in total VMT
- **Industrial**—No net change in total VMT if consistent with the General Plan Land Use Element; 15 percent below the existing regional average VMT per employee (21.2) if inconsistent with the General Plan Land Use Element
- **Other Land Uses**—No net change in VMT per capita or VMT per employee if consistent with the General Plan Land Use Element; 15 percent below the regional average if seeking a General Plan Amendment

### *City of Whittier*

The City of Whittier has established the following significance threshold for VMT transportation impacts for each land use type in a project:<sup>4</sup>

- **For land use plans:** Plans exceeds 15% below City and Sphere of Influence (SOI) Baseline VMT for Total VMT per service population.
- **For Residential Projects:** Project exceeds 15% below City and Sphere of Influence (SOI) Baseline VMT for home-based VMT per capita.
- **For Office, Commercial or Light Industrial Projects:** Project exceed 15% below City and Sphere of Influence (SOI) Baseline VMT for home-based work VMT per employee.

### *Applicability to the City of Artesia*

As discussed above, most jurisdictions as well as the State have recommended or adopted a threshold of 15% below the existing regional average VMT per capita. The definition of the region has generally been either the City (e.g. Whittier) or the County (e.g. Long Beach). The County of Los Angeles has adopted a threshold of 16.8 percent below existing, and the threshold is based on the geographic location of the project. It should be noted that the residential per capita for the City of Artesia is the same as the County of Los Angeles (13.9 VMT/Capita).

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<sup>3</sup> City of Long Beach Traffic Impact Analysis Guidelines (June 2020)

<sup>4</sup> Draft Technical Memorandum Transportation Impact Analysis (TIA) for the Whittier General Plan (May 2021)

For residential projects in the City of Artesia, if a threshold of 15% (or 16.8%) below existing is applied to the Citywide or Countywide VMT, the following thresholds would be applicable:

- **15% below City or County:**  $13.9 \times 0.85 = 11.8$  VMT
- **16.8% below City or County:**  $13.9 \times 0.832 = 11.6$  VMT

Consistent with standard modeling practice, the effect of the retail component of the Specific Plan was based on a metric of no net change and was calculated based on the change in VMT between the without retail and with retail scenarios. Based on OPR's guidance, the retail component of the Project screens out of further analysis based on the size of the proposed retail component and is assumed to have a less-than-significant impact.

### ANALYSIS METHODOLOGY & FINDINGS

The VMT analysis was conducted using the 2016 SCAG Regional Transportation Plan (RTP) model with 2020 Socio-Economic Data (SED). The project site was coded into traffic analysis zone (TAZ) 21822100 and the Specific Plan into 21822200. Consistent to standard modeling practice, to isolate project VMT, the existing land uses in the TAZs were moved to the adjacent TAZ (21816100). The project land uses were converted to population based on household sizes in the area. The parent zone has a population of 4,302 and a total of 1,285 households, resulting in an average household size of 3.35. The project was coded with an average household size of 3.35. For the retail use, an average employee density of 1 employee per 730 square feet was used based on the SCAG Employment Density Study. To account for the live-work units, off model adjustments were made as discussed later in the memo.

#### *Model Outputs*

**Table A** summarizes the findings of the model runs. As seen on **Table A**, the unadjusted residential VMT/capita for the project is 13.0 miles. The residential VMT/capita for the Specific Plan area is 16.2 miles. **Table A** also shows that the existing VMT/capita for the City of Artesia is 13.9 miles.

*Table A: Model VMT Summary*

	Project	Specific Plan (Including Project)	City of Artesia
Total Households	59	99	4,662
Total Population	198	331	16,248
Total Employment	-	47	5,322
Total Service Population	198	378	21,570
Total Homebased VMT (HB) VMT	2,564	4,011	225,917
Total Homebased Work (HBW) VMT	-	711	89,149
Total PA VMT <sup>1</sup>	3,002	10,681	566,375
<b>VMT per Capita</b>	<b>13.0</b>	<b>12.1</b>	<b>13.9</b>

<sup>1</sup>: PA = Productions/Attractions

To account for the live-work units which will reduce home-based work VMT, the total home-based work (HBW) VMT for the project was obtained from the model. This was divided by the number of employees

to calculate the per capita HBW VMT. The model forecasts 76 workers for the City Ventures project, with a total HBW VMT of 1,280 miles, resulting in a BMW VMT of 16.8 miles per working resident. To account for residents working in the live-work units, a conservative number of one worker per assumed to work in the live-work space although this number could be higher (for example, a family business where all adult family members are involved). Since there are 22 live work units, it was assumed that 22 workers will work in the live work units. Therefore, the project VMT will decrease by at least 369 miles (22 x 16.8). For the Specific Plan area, the only live work adjustments applied are from the City Ventures part of the project since the Specific Plan does not include any additional live work units. **Table B** shows the calculations for live-work adjustments.

*Table B: Live-Work Adjustments*

	Project	Specific Plan (Including Project)
Total Workers	76	
Total Homebased Work Production VMT	1,280	
HBW Production VMT Per Worker	16.8	
HBW Production VMT for 22 Live-Work Units (Reduction)	369	369
Total Unadjusted Homebased (HB) VMT	2,564	4,011
Adjusted Homebased (HB) VMT for Home Office Apartments	2,195	3,642
Total Project Population	198	331
<b>Project VMT Per Capita</b>	<b>11.1</b>	<b>11.0</b>

As seen from **Table B**, the project VMT/capita is 11.1 and the Specific Plan VMT/capita is 11.0. Both are less than the thresholds discussed above, regardless of whether the 15% or the 16.8% threshold is applied.

## CONCLUSION

The analysis shows that the project VMT is forecasted to be 11.1 VMT/capita and the Specific Plan VMT is forecasted to be 11.0 VMT/capita. Both are lower than the thresholds discussed in the memo (11.6 VMT/capita or 11.8 VMT/capita). The retail portion of the project screens out of a VMT analysis based on the size of the retail center. Therefore, the project will have a less than significant VMT impact.

Please contact us at (949) 878-3509 if you have any questions regarding this analysis.

Sincerely,



Thomas Wheat, PE, TE

President

Registered Civil Engineer #69467

Registered Traffic Engineer #2565



David Chew, PTP

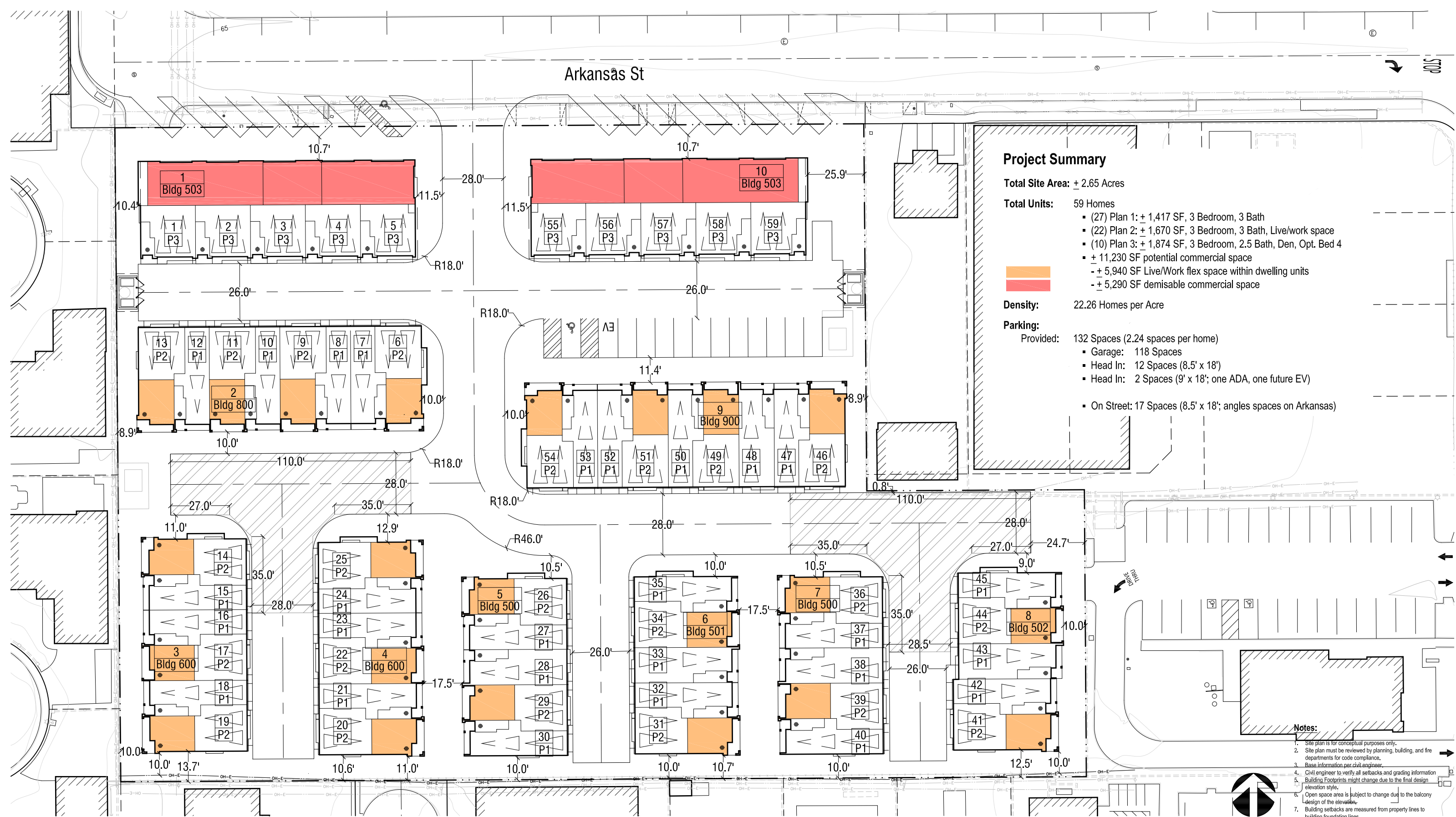
Transportation Planner



## Model Outputs

	City Ventures	SP Area	CV+SP	City of Artesia
TAZ	21822100	21822200		
TAZ_TIER1	21822000	21822000		
TAZ_ID	21822100	21822200		
POP	198	1343	331	16871
RES	198	133	331	116248
HH	59	40	99	4662
GN	0	0	0	0
K12	0	0	0	2627
COLLEGE	0	0	0	0
TOT_EMP	0	47	47	5322
Internal_Sequence_TAZ	4787	4788	9575	0
HBW_A_VMT	0	710.849976	710.849976	89148.85669
HB_P_VMT	2559.4	1451.8	4011.1	225916.5
TOT_P_VMT	2710.0	2594.3	5304.2	290633.3
TOT_A_VMT	290.2	5086.3	5376.5	275741.9
Tot HBP_VMT	2559.4	1451.8	4011.1	225916.5
TotHBWA_VMT	0.0	710.8	710.8	89148.9
TotPA_VMT	3000.2	7680.5	10680.7	566375.2
TotOD_VMT	0.0	0.0	0.0	0.0
VMT/Cap	13.0	10.8	12.1	13.9
VMT/Emp		15.2	15.2	16.8
Total Homebased Work VMT	1280.0			
Homebased Work VMT Per Worker	16.784			
Homebased Work VMT For 22 Workers	369.245			





**Project Summary**

- Total Site Area:** ± 2.65 Acres
- Total Units:** 59 Homes
- (27) Plan 1: ± 1,417 SF, 3 Bedroom, 3 Bath
  - (22) Plan 2: ± 1,670 SF, 3 Bedroom, 3 Bath, Live/work space
  - (10) Plan 3: ± 1,874 SF, 3 Bedroom, 2.5 Bath, Den, Opt. Bed 4
  - ± 11,230 SF potential commercial space
  - ± 5,940 SF Live/Work flex space within dwelling units
  - ± 5,290 SF demisable commercial space
- Density:** 22.26 Homes per Acre
- Parking:**
- Provided: 132 Spaces (2.24 spaces per home)
- Garage: 118 Spaces
  - Head In: 12 Spaces (8.5' x 18')
  - Head In: 2 Spaces (9' x 18'; one ADA, one future EV)
- On Street: 17 Spaces (8.5' x 18'; angles spaces on Arkansas)

- Notes:**
1. Site plan is for conceptual purposes only.
  2. Site plan must be reviewed by planning, building, and fire departments for code compliance.
  3. Base information per civil engineer.
  4. Civil engineer to verify all setbacks and grading information.
  5. Building Footprints might change due to the final design elevation style.
  6. Open space area is subject to change due to the balcony design of the elevation.
  7. Building setbacks are measured from property lines to building foundation lines.

**CONCEPTUAL SITE PLAN**  
**11700 ARKANSAS STREET SITE**

ARTESIA, CA



**CONCEPT STUDY**

