Sierra Madre Villa Station

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Executive Summary

Transit-oriented development (TOD) is a concept that has recently emerged in the planning world. It is associated with terms such as “new urbanism”, “mixed-use”, and “pedestrian communities,” in a response to sprawl, traffic, congestion, pollution, housing affordability, and the shortage of housing. In a regional planning sense, the Los Angeles area has many of these problems. The Gold Line, an $850 million light rail system, was built as a partial response to these problems. Though fairly new, it has already received both praise and criticism. Initial ridership is below ridership projections. To increase ridership, TOD has recently been endorsed as being the “solution to the solution”.

The objective of this study is to examine the Gold Line Allen station and understand how the station and station area are utilized. Examining the station and station area creates a better understanding of how people regularly use the system, identifies the trip purposes of passengers, and points out issues that may inhibit or enhance the success of the Gold Line. The factors which are not compatible with the success of public transit are highlighted and used to recommend improvements. These recommendations range from improving the design of the station and areas adjacent to the station, identifying safety concerns, pointing out land uses that are incompatible with the success of a transit system, and identifying parcels that may provide an ideal location for future transit-oriented development projects. Overall, this study gives a better understanding of the Gold Line and creates a guide for the future improvement of the light rail system and station area.
Chapter 1. Station Area Analysis

The study area includes the Gold Line Allen station and adjacent neighborhoods within a half-mile (1/2) radius, with more specific attention to a quarter-mile (1/4) radius of the station. Allen station is the eleventh stop east of Union Station, on a thirteen (13) station light rail system. The station serves the surrounding residents, as well as providing a gateway to some of the area’s most notable landmarks/destinations: Cal Tech, the Huntington Library, and Pasadena City College. As the land use map at right shows, the north side of Allen station consists of single-family homes, parks, and schools. South of Allen station are commercial buildings, light industrial structures, as well as numerous multi-family and single-family residential units.

The Allen station lies between the Lake station to the west and the Sierra Madre station to the east. It is just over a half-mile north of the bustling commercial district of Colorado Boulevard. It is unique in that it is adjacent to low- to medium-density residential, general commercial, and limited commercial land uses. Unlike other stations that are surrounded by bustling commercial districts, this station is bordered by residential land uses, which creates a strong neighborhood feel.

Demographics

The area surrounding Allen station is demographically diverse. Its diversity stems from the age, ethnicity, housing, income, and type of businesses found within the station.
The 2000 Census indicates that the Allen station area contains five census tracts (tract 4623, 5626, 4627, 2628 and 4634), which contain a population of 24,097 people. Of the many different races that reside within these five census tracts, there are currently 54% White, 11% African-American, 1% American–

Indian, and 13% Asian, along with other residents that checked belonging to one or more other races (Figure 2). Census data also shows diversity of income. There is a high of $75,267 to a low of $33,505, with a range of $41,762 (Figure 3).\(^{(1)}\)

\(^{(1)}\) Census 2000
Figure 3: Household median income by tract

In relation to the Gold Line, a majority of Allen Station area residents, work outside of their place of residence.\(^{(1)}\) Currently 86% of residents within Allen station’s half-mile radius use a car, truck, or van to reach their destination. Only 5% of these residents utilize public transit. Another 4% walk, 2% use bicycle, and 3% work at home.\(^{(1)}\)

Walking Survey

Walking surveys help analyze what areas the Allen station effectively serves. Five (5) minute and ten (10) minute point in all directions (N, E, S, W) were tracked from the station platform (Figure 4). The 5-minute mark is similar to a quarter-mile radius. The 10 minute point nearly fell within the half-mile radius of the station.

Business Types

Another walking survey was conducted to note the number and type of businesses operating in the study area. Located on the south side of Allen Station are a number of

\(^{(1)}\) Census 2000, Journey to with trip mode
auto related businesses such as car dealerships, auto body repair shops, and a storage facility. There are 150 businesses located within a half-mile (1/2) radius of the station. The breakdown is as follows (*Table 1*):

<table>
<thead>
<tr>
<th>Area</th>
<th>% of Businesses</th>
</tr>
</thead>
<tbody>
<tr>
<td>Allen Avenue, North of 210</td>
<td>9.3</td>
</tr>
<tr>
<td>Allen Corridor, East</td>
<td>37.3</td>
</tr>
<tr>
<td>Allen Corridor, West</td>
<td>33.3</td>
</tr>
<tr>
<td>Allen, Colorado Blvd</td>
<td>20.0</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Businesses within . . . .</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Quarter-Mile (1/4) radius</td>
<td>60.7</td>
</tr>
<tr>
<td>Half-Mile (1/2) radius</td>
<td>39.3</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Types of Businesses</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Auto-related</td>
<td>34.6</td>
</tr>
<tr>
<td>Services</td>
<td>23.3</td>
</tr>
<tr>
<td>Retail</td>
<td>12.6</td>
</tr>
<tr>
<td>Food</td>
<td>12.0</td>
</tr>
<tr>
<td>Others</td>
<td>13.3</td>
</tr>
</tbody>
</table>

*Table 1: Business Breakdown*

As previously noted, a majority of businesses are on the south side of the station. About sixty-one percent (61%) were within a quarter-radius. Again, the survey proved that this was indeed an auto-dominated business district, with about thirty-five percent (35%) of businesses being auto-related. The survey and analysis gave a better insight to what is currently going on in the area.

**Surveys**

Two types of surveys were conducted to learn what effect, if any, the Gold Line had on the business owners and residents in the area. Survey 1 focused on station area businesses, and Survey 2 focused on station area residents. A series of four questions were asked in each survey:
Survey 1: Business Survey

1. How long have you been in this location?
2. What has been the impact on the business due to the Gold Line?
3. How important is the Gold Line for the future of Pasadena?
4. Should the city permit TOD around the Gold Line Allen Station?

Survey 2: Resident Survey

1. How often do you use the Gold Line system?
2. Reasons for not using the Gold Line?
3. How important is the Gold Line for the future of Pasadena?
4. Should the city permit TOD around the Gold Line Allen Station?

Survey 1 was conducted with 42 businesses in the area. Most of the businesses located in the area have been operating for over 2 years, and a few as long as 25 years (Figure 5).

Figure 5: Length at location
The majority of respondents claimed that there was no impact on their business since the debut of Allen Station in 2003 (Figure 6). Ten percent (10%) of respondents claimed their business have experienced a negative impact. Respondents revealed that when they open their business in the morning, parking lots specified for these businesses normally reach capacity. A full parking lot can inhibit clients from visiting these shops. Nevertheless, seventy-nine percent (79%) of respondents agreed that Gold Line is definitely important for the future of Pasadena (Figure 7).
However, there were some mixed feelings when businesses were asked: should TOD be permitted around Allen Station (Figure 8). Almost half agreed that transit-oriented clusters would improve pedestrian traffic and ridership at the Allen Station. But concerns were expressed regarding the extent of the development. Furthermore, since many businesses are auto-related, many say TOD will not benefit their business. However, there were several other businesses that will embrace mix-use development in east Pasadena.

![Transit-Oriented Development around Gold Line Allen Station](image)

*Figure 8: TOD*

were expressed regarding the extent of the development. Furthermore, since many businesses are auto-related, many say TOD will not benefit their business. However, there were several other businesses that will embrace mix-use development in east Pasadena.

![How often do you use the Gold Line system?](image)

*Figure 9: Use of Gold Line*
Survey 2 is comprised of responses from 68 residents around Allen Station. According to the responses, a majority of the current residents do not take advantage of the Gold Line. The most common method of transportation of choice was the personal vehicles (Figure 10). Many of the residents prefer driving to the Gold Line; others complained that the light rail system did not reach their destination. Several residents

Figure 10: Reasons not using Gold Line

extended to their destination. A portion of the residents also said using the Gold Line is unnecessary since it takes just as long if not more to reach their destination versus driving
their own car. Similar to the business responses, seventy-five (75) percent of the residents also believe that the Gold Line is important for the future of Pasadena (Figure 12). Residents in the area agreed more strongly than the businesses concerning the ques-

![The City of Pasadena should permit TOD clusters around the Gold Line Allen Station](image)

*Figure 12: TOD Clusters*

Even though ridership has not reached projections, there was a consensus among businesses and residents that the Gold Line is indeed important for the future of Pasadena. In general, the public seems to be very knowledgeable of the TOD/mix-use concept, probably because the city of Pasadena is known for its many TOD projects.
Chapter 2. Station Analysis

An in depth analysis was done for the station (Figure 13). A number of features were looked at including accessibility, design, landscape, and safety.

Figure 13: Allen station platform

Accessibility

The Gold Line is a part of a larger transportation network serving the Los Angeles region. The station is connected with neighboring areas through various types of bus services. Metro buses routes 177, 256, and 686 run through here. Pasadena’s ARTS bus transports passengers from the station to other areas of the city, and vice versa. Also, nearby Pasadena City College operates a direct school-to-station service.

Figure 14: Metro bus
that runs every 15 minutes. With no parking planned for the area, the station was intended as a drop-and-ride location. Because of flat topography, walking and biking to and from the station is fairly comfortable (note the walking survey.)

**Station Design**

The station itself is found just underneath the 210 Freeway. The sidewalks are wide, measuring approximately fifteen (15) feet in width. This setback is important to the station because it allows the station to be highly accessible during peak hours for those arriving and departing from the station. In the front of the station, passengers find two electronic ticket booths, bike racks, and maps to orient passengers and educate them on where the transit systems operate. Security precautions include several security cameras and emergency boxes, which are found at the ground and platform level throughout the station.

The platform of the Allen Station sits in the 210 Freeway between the east and west bound traffic. To access the platform a passenger must enter on the westerly side of Allen Avenue, using either three flights of seventeen steps or one of two of the available elevators. Once on the platform, a passenger will notice that the platform is fifteen (15) feet wide, which is relatively narrow. This is approximately half the width of the

*Figure 15: “Papel picado” design at station entrance*
platform found at Sierra Madre Villa. There are trash receptacles and benches along the platform, which runs approximately eighty (80) feet in length. The station has two emergency exits found at each end of the platform. Aesthetically, the station incorporates an industrial design of concrete and steel. This industrial feel is emphasized by the polished grillwork throughout the station ranging from the platform’s main shelter, the benches, safety railings, and elevators. The station has very little public art compared to other stations along the Gold Line system. In the entrance of the station a passenger will find green ironwork in the entrance and stair case area. The ironwork is made to present “papal picado” or paper cutting, which is an artistic feature found in Mexican culture (Figure 15). This was put in place to commemorate residents of Mexican heritage who have helped shape the present community. In addition, a sundial can be found at the westerly most point of the stations platform. The sundial is constructed from steel and overlooks awaiting passengers; it is symbolic in that to represents the importance of time to those utilizing the system.

Landscaping

Landscaping is an attribute that is a neglected feature of the station. The entrance of the station is barren because of the high concentration of concrete used in the stations design (Figure 16). Landscaping is found only to the north

*Figure 16: “Concrete Station”*
and south of the station in the low to medium density residential land uses areas. In these areas homes are nicely landscaped with ten (10) feet wide sidewalks and parkways to break up the monotony of concrete. In the commercial, limited commercial and industrial areas, landscaping is minimal with the exception of a small number of city trees that line the sidewalk.

Safety

The design of the Allen Station raises a number of safety issues that are elaborated more in the Issues and Opportunities sections. At night, the entrance of Allen Station as well as the staircase leading up to the platform does not seem to contain an adequate amount of lighting. The current amount of lighting might create a potential for criminal activity with the lack of visibility Allen Station provides for the residents and riders of the station area. There are currently fourteen lights located on the platform with added lighting in the stairway, elevators, and entrance.

Another element that the Allen Station should use to improve the safety for Gold Line riders is the usage of video cameras. There are currently three cameras located on the platform, as well as one at the entrance of the station. On the platform, there is a camera located by the elevators at the east end. The other two cameras focus on the seating area, where there are four double-sided benches located in the middle of the platform. The camera located at the entrance focuses on both the staircase leading up to the platform and the elevators. There are also call boxes located throughout Allen Station. The first of the three emergency call boxes is located near the entrance by the public telephones. The other two emergency call boxes are located at the top of the platform, one near the seating and the other near the elevators. There are also emergency
exits located at both the east and west ends of the platform. The exits both lead to a small area that is between the two sets of tracks, however, this space does not consists of any type of railing to separate the emergency area from the light rail track space.

Security at the Allen station is sufficient in that it provides security cameras and a design theme; however, it does not match the standards in lighting, landscaping, and art in the other stations on the system.
Chapter 3. Issues

There are a number of issues that inhibit the success of the Gold Line Allen station. The problems that the station and station area has are adjacent incompatible lands uses, noise and safety issues, and station design. These factors may have contributed to the low ridership of the Gold Line system and the underutilization of the Allen Station.

Incompatibility of Land Uses

Incompatible and/or low-density land uses are the main contributor to the lack of passenger departures and arrivals at the Allen Station. For the future success of a transit system, their needs to be land uses that compliment the adjacent transit modes and have sufficient density. The necessary lands uses that have been identified as facilitating the use of transit modes are mixed uses, including medium to high density housing and commercial land uses. Uses that will not help facilitate the use of public transportation are what have been regarded as “auto-related land uses”. They are uses that are categorized as those in which the automobile is a necessary function to the success of their uses. Examples of land uses that are auto-dominated are drive-thru restaurants, big box retail businesses, gas stations, auto repair shops (Figure 17), and car

Figure 17: Auto business on Walnut
dealerships, to just name a few. It is important to note that the station does provide transit service for people dropping off their cars for service or repair.

Currently, the area south of the 210 Freeway and north of Walnut Avenue on Allen Avenue contains these uses. A lumber yard (Figure 18), public storage, drive-thru restaurants, auto body repair shops, and a small strip mall center are adjacent to the station. These businesses are not normally found adjacent to a rail station in a mature transit system. For the Gold Line to be more successful, these businesses should gradually be replaced with businesses that are complimentary to the Gold Line system. This move would allow more pedestrian activity along Allen Avenue, create a node of activity, and improve ridership along the transit system.

Noise and Safety

Noise and safety present another issue for the Gold Line system. Due to the fact that the platform at Allen Station is located in the center of the 210 Freeway (Figure 19), noise is significant. On the platform, it is very difficult to carry a normal conversation at room level. Passengers
have to compete with the noise of the traffic that is to the north and south of them. According to the Sierra Madre Villa station team, it was discovered that the decibel rating on the platform was equivalent to the decibel rating generated from an alarm clock. This makes being on the platform an unpleasant experience for riders.

Safety is another important factor for Allen Station because of its location to the freeway. With the proximity of oncoming traffic and the existing three (3) feet center divider, the potential for an accident exists. If a car were to go careening into the freeway center divider, there is little screening from automobile traffic and passengers. There is a potential for debris from a car hitting passengers, or even unruly passengers interfering with traffic by throwing objects into oncoming traffic.

On Allen Avenue, the blocks between Walnut Avenue and the 210 Freeway create a number of hazards for pedestrians walking to the station. Most driveway lengths found in the study area provide short distances for the ingress and egress of vehicles, which can make it difficult for drivers pulling in and out of driveways to avoid pedestrians utilizing the sidewalk. The number of driveways facing Allen Avenue can create a high potential for accidents. Pedestrians have to compete with automobile when on the sidewalk. For an improved pedestrian environment to take place, the numbers of driveways should be reduced.

**Lack of Station Design**

Station design is an important component for the success of Allen Station. Looking at the design of other stations along the Gold Line system, there have been efforts to design stations to conform to the character of the community. In case of the Chinatown station, efforts were made to make the station resemble Chinese culture by
incorporating the architectural style and art indigenous to the surrounding culture. At the Lake Avenue station, families are seen as a recurring theme. This was accomplished by showing various pictures and art depicting children and adults. Allen Station has not incorporated these concepts to the same degree. A passenger, as well as a passerby, may see the station as being a featureless destination. It gives a cold and uninviting feel. For the station to be appealing it must be able to attract passengers and create a focal point for the area. Without an appeal, passengers may not choose to utilize the station.

Our studies show that many issues exist for the Allen station and its surrounding neighborhoods. Some issues (e.g. design, art) exist because of funding limits; other issues (e.g. land uses, landscaping) existed prior to the Gold Line. However, an issue points to an opportunity. The following chapter goes further into the issues with suggestions on how to address them.
Chapter 4. Opportunities

Many opportunities were created with the addition of the light rail station at Allen Avenue. Although this study found numerous opportunities, four key opportunities are summarized below.

Station Design Improvement Proposals

There is an opportunity to add station design improvements to make the station more inviting. Even though Allen Station consists of a “Rider’s Dream” design, it lacks a strong tie to the area it serves. Additional art such as murals consisting of a “neighborhood” theme would complement the residents, schools, and parks in the surrounding area. Examples can be taken from stations along the system (Figures 20, 21). Also, in areas of the station where there are blank concrete walls (there are several); this is a great opportunity for murals and art of some sort. Residents can be involved in the project in designing and production.

Figures 20, 21: Chinatown and Lake station design.
Noise and Safety Concerns

As previously mentioned, safety is a concern at the station. There are many ways that this issue can be addressed. For instance, by adding more lighting to both the entrance and platform, residents and Gold Line users will feel safer during their evening usage of the Gold Line. Another issue is the usage of guardrails on the edge of the station’s platform to prevent waiting passengers from falling into the tracks. With the platform being approximately fifteen (15) feet wide (nearly half the width of the Sierra Madre Station), there needs to be a more accommodating aspect added to the station in order to give its users a safer feel. By placing a guardrail on the outside edges of the platform where rail car access is not needed, many of the people utilizing Allen station will feel safer.

Again, noise on the platform was one of the biggest complaints to Gold Line riders. One initial idea was the use of glass walls that would reduce the noise, as well as the “intimidating” feel that that station platform creates from passing cars. Although glass walls can be expensive, there are other options. One alternative can be sound absorbing panels similar to light rail stations in Calgary, Canada (Figure 22). Attaching sound absorbing panels on top of the existing freeway retaining wall adjacent to the platform can reduce noise from the freeway and at

*Figure 22: Sound absorbing panels; Calgary, Canada*
the same time address the safety issue. One option may be to research the effectiveness of resurfacing existing roadways, which in this case would be the 210 Freeway.

The Allen corridor is a unique neighborhood in the city because of its neighborhood feel and its transit access. Because of its location, thousands of commuters (rail + auto) cross the station area daily. The Allen station could serve as focal point to as a “gateway” to the area.

Improving Connectivity

Another opportunity that exists is better connectivity. Because the Gold Line runs along the 210 Freeway, it just barely misses the heart of the highly populated Colorado Corridor. One proposal is using MTA buses to provide direct or rapid/express service of some sort to feed into the Gold Line system. And since this area is highly diverse, the service can be promoted in Chinese and Spanish through various media such as billboards, newspapers, radio, and so forth.

Also, as previously stated, the Gold Line is connected to Pasadena City College by a variety of buses and a shuttle service. The college’s transit coordinator indicates that the shuttle serves approximately 45 students/day. (1) Even though the school promotes the Gold Line-shuttle service through “fliers, campus catalogs, and class schedules,” the use of the shuttle has not reach expectations. (1) Even though use of the shuttle is low, this data probably does not paint the entire picture. Not all students who use the Gold Line use the shuttle service. A walking survey revealed that a significant number of students getting off the station and walking towards the school. Because Pasadena City College is

(1) Pasadena City College
(2) Pasadena City College website, http://www.pasadena.edu
known as a ‘commuter school,’ a majority of students are most likely from areas outside the service area of the Gold Line; however, if Gold Line is expanded into East San Gabriel Valley and the Inland Empire, there is a potential to increase ridership within the 24,000-student Pasadena City College.\(^{(2)}\)

**Transit-Oriented Development**

The biggest opportunity found in the study was the potential of mixed-use development, with a strong emphasis for housing adjacent to the station. This could not only address the region’s housing crisis, but it can be an opportunity to address affordable housing, with a bulk of new development catering to low-middle income families. Because a major theme to transit-oriented development is multi-family housing, and because the areas around Allen station have a good mix of residential units, the parcels adjacent to the station would be ideal.

*Figure 23: Mission Meridian Village residences*

for a transit-oriented development without having to disrupt the current neighborhood character. One example that would work well in this area is the Mission Meridian Village development located in the historic district of South Pasadena, across the street.
from the Gold Line station. This 67-unit project has a variety of housing units ranging from lofts, condominiums, and single-family residences.\(^{(1)}\) The density for this project is similar to Pasadena’s vision for the area. Although the project is of higher-density than the surrounding area, its craftsman bungalow design was applauded for blending into the existing character of the neighborhood. Compatibility was a key ingredient to getting the residents approval. Findings show that businesses and residents of Allen are supportive of transit-oriented development only if the design is right.

\(^{(1)}\) Mission Meridian Village, South Pasadena
Chapter 5. Goals and Objectives

The following proposes a series of possible goals and objectives for the Allen Station, for two alternative development scenarios.

Goals:
I. A medium density/mixed-use development pattern that is clustered around the rail station and compatible with the station area.
II. A community that provides housing opportunities for a diverse range of incomes.

Objectives:
I. New residential units within a ½ mile of the Allen station by 2020:
   Scenario A. Allen #1 - 265 units
   Scenario B. Allen #2 - 188 units
II. New developments exceeding 10 units or more must have 20% assigned to affordable housing around the Allen station.
III. Retail square footage within a ½ mile of the Allen station by 2020.
   Scenario A. Allen #1 – 12,500 sf
   Scenario B. Allen #2 – 37,500 sf
IV. New developments not to exceed 80% residential, and 20% retail.

Analysis
Allen Station is predominantly residential land uses, thus the focus of new development in the area should be directed more toward residential units that are compatible with the area. Scenario A has a greater focus on residential units at a higher
density where Scenarios B has less density on the residential uses and allows for more retail space. All figures are projected to be met by at least 2020. It is suggested that any development above 10 units provide a 20% affordable housing element. Requiring this will help create a mix of varying incomes that will help diversify the area. Overall height must be considered in this area because all existing development is low to medium density. Any high density development would not be homogenous to the area and may upset the surrounding community.
Chapter 6 Alternatives

Three sites chosen for possible redevelopments, as follows:

<table>
<thead>
<tr>
<th>Address</th>
<th>Property Type</th>
<th>Total SF</th>
</tr>
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<tbody>
<tr>
<td>300 N Allen Ave.</td>
<td>Commercial/Industrial</td>
<td>17,587</td>
</tr>
<tr>
<td>1885 Locust St.</td>
<td>Commercial/Industrial</td>
<td>60,784</td>
</tr>
<tr>
<td>234 N Allen Ave.</td>
<td>Commercial/Industrial</td>
<td>100,009</td>
</tr>
</tbody>
</table>

Figure 25: Site Location Map

All three sites are within the ¼ mile radius of Allen Station. Site #1 and #2 are commercial/industrial parcels and site #3 is a combination of two smaller parcels; commercial/industrial site, and a storage property. The three sites are within walking distance of the station, most ideal for a successful transit-oriented development. All the chosen sites are analyzed under three typologies the group created for feasible alternatives. Allen station carries a suburban residential atmosphere, thus there is no
office space recommended in the alternative. Alternative structures will include different proportions of retail and residential space according to each typology.

<table>
<thead>
<tr>
<th>TYPOLOGIES</th>
<th>Site 1</th>
<th>Site 2</th>
<th>Site 3</th>
</tr>
</thead>
<tbody>
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<td><strong>Assumptions</strong></td>
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<td>100,009</td>
</tr>
<tr>
<td>Unit per acre</td>
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<td>32.8</td>
<td>32.8</td>
</tr>
<tr>
<td>Ground floor</td>
<td>1</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Above ground floor stories</td>
<td>3</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td><strong>Residential parking requirement</strong></td>
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<td>1.67</td>
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<tr>
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<td>Unit size</td>
<td>1328</td>
<td>1328</td>
<td>1328</td>
</tr>
<tr>
<td>Gross/net ratio</td>
<td>0.75</td>
<td>0.7</td>
<td>0.7</td>
</tr>
<tr>
<td>Landscape %</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td>Retail percentage</td>
<td>0.15</td>
<td>0.15</td>
<td>0.15</td>
</tr>
<tr>
<td><strong>Calculations</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Retail sf</td>
<td>2,637</td>
<td>9,117</td>
<td>15,001</td>
</tr>
<tr>
<td>Net res sf</td>
<td>17,577</td>
<td>60,782</td>
<td>100,005</td>
</tr>
<tr>
<td>Gross residential</td>
<td>23,436</td>
<td>86,831</td>
<td>142,865</td>
</tr>
<tr>
<td>Building footprint</td>
<td>7,812</td>
<td>28,944</td>
<td>47,622</td>
</tr>
<tr>
<td>SF available for tuck under parking</td>
<td>5,176</td>
<td>19,826</td>
<td>32,621</td>
</tr>
<tr>
<td>Residential parking spaces</td>
<td>22.1</td>
<td>76.4</td>
<td>125.8</td>
</tr>
<tr>
<td>Retail parking spaces</td>
<td>0.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Total parking spaces</td>
<td>22.1</td>
<td>76.4</td>
<td>125.8</td>
</tr>
<tr>
<td>Tuck under spaces</td>
<td>13.8</td>
<td>52.9</td>
<td>87.0</td>
</tr>
<tr>
<td>Net spaces needed</td>
<td>8.3</td>
<td>23.6</td>
<td>38.8</td>
</tr>
<tr>
<td>Site area needed @ grade</td>
<td>3,113</td>
<td>8,837</td>
<td>14,539</td>
</tr>
<tr>
<td>Site area needed @ 2 level structure</td>
<td>1,557</td>
<td>4,418</td>
<td>7,270</td>
</tr>
<tr>
<td>Landscape area</td>
<td>2,637</td>
<td>9,118</td>
<td>15,001</td>
</tr>
<tr>
<td>Remaining land w/pkg at grade</td>
<td>4,016</td>
<td>13,886</td>
<td>22,847</td>
</tr>
<tr>
<td>Remaining land w/pkg at 2 level garage</td>
<td>5,572</td>
<td>18,304</td>
<td>30,117</td>
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<td>Remaining land w/pkg at below grade</td>
<td>7,129</td>
<td>22,723</td>
<td>37,386</td>
</tr>
<tr>
<td><strong>Total Units</strong></td>
<td>13</td>
<td>46</td>
<td>75</td>
</tr>
</tbody>
</table>

*Figure 26: Del Norte Site Comparison - Scenario B*
The generic scenarios were compared to examples of TOD elsewhere in California. One example is Del Norte Place, an apartment community conveniently located one block from the El Cerrito del Norte BART station. Del Norte project is a four story high residential with ground floor designated for retail. It is at a density of 32 units per acre, containing 135 housing units total. Of the housing units, 21 percent is senior housing. This project falls into Scenario B, which is 85 percent residential and 15 percent retail, including a portion dedicated to affordable housing. An alternative such as this one on Site #1 would be an ideal alternative to use the parcel to its full potential.

Site #2: 1885 Locust St. 60,784 sq ft.

According to the specific plan of Pasadena, 54.4 units per acre are allowed. Using the specific plan as a guideline, Coggins Square project would be a perfect example for the 2nd site alternative. Coggins Square is a building complex containing 87 units of affordable family apartments in a five story building, located in Walnut Creek, California. The total square footage of Coggins Square project is 69,452 with 55 units per acre. The project is entirely residential; however, for the Pasadena site the structure
will be altered to include retail space. The building will be high residential (95%) with low retail (5%) incorporated at the street level. Like Coggins Square, the alternative use for this site will be four stories above ground, with one ground floor.

Site #3  234 N. Allen Ave.  100,009 sq ft

For the 3rd site in
Pasadena, Lenzen Affordable Housing project would fit perfectly to work as an alternative for the 100,009 square feet site. Lenzen Housing project is located in the midst of an industrial warehouse neighborhood in San Jose, California. The U-shaped project contains a mixture of studios, one, and two bedroom units. The center of the project includes a courtyard and other amenities. Lenzen project is 54 units per acre on a 101,158 sq ft site. Lenzen Affordable Housing much like the examples for the previous typologies is strictly residential. In order to apply it to site #3, 80% of the building will be designated for residential use while the remaining 20% will be of retail usage at the street level. All parking will be tucked under to be shared between both retail and residential units.

Figure 29: Lenzen Affordable Housing, San Jose, CA.
Recommendations

Scenario A is the more compatible scenario for the area. It meets the height recommendations at fifty feet and should not be overwhelming on the surrounding community. It also meets units per acre as specified in the specific plan. Overall the uses are more compatible with the surrounding area. The higher density residential and lower density retail uses allow for maximum use of the station area. The amount of retail suggested still allows the area some flexibility in development and can contribute more to a walkable community based on the retail that does develop.
Chapter 7: Conclusions

After selecting potential sites for TOD, additional research revealed that the City of Pasadena’s vision for the Allen Corridor was similar to the one included in this study. Also, a revision of codes (e.g. building height, setbacks, density, etc) points to the possibility of the Allen corridor being TOD district in the future.

The *East Colorado Specific Plan* selected parcels along Allen Avenue for higher diversity development. This is the same conclusion reached in this report. Several parcels along Allen Avenue, approximately ¼ mile south of the station, have high potential for TOD. The only difference between this research and that indicated in Pasadena’s Specific Plan is the additional 1/6-mile of development along Allen Avenue. The goal of the city is to connect the Allen with the Colorado Boulevard business district. Currently there is an abundance of multi-family housing along this 1/6-mile of Allen Avenue, ranging from 15 to 70 units per acre. Although they are not “true” TOD’s, they provide dense housing near the station. Instead of new developments, improvements such as wider sidewalks and benches can ‘connect’ the two districts.\(^{(1)}\)

As noted in the Specific Plan, Allen Avenue has the “potential to take on a more urban landscape.” For this to happen, there is a need for “additional lighting” and “wider sidewalks,” which will lead to “pedestrian traffic increase.” The maximum building height has been increased to 60 feet. This would allow “commercial, retail, and office and residential uses” in the upper floors. Also, “the allowable residential density will be 60 units per acre.” This is an increase from its previous of 32 units per acre designation. In addition, parking requirements have been reduced by 25%. By altering the “specific

\(^{(1)}\) East Colorado Specific plan
development standards for areas within ¼ mile of the station,” the city is taking the right steps in transforming the area around the Allen station into a transit node. (1)

While mixed-use developments around transit stops have been going on for decades, planning for transit-oriented development is still in its early phase; yet, it has been gaining momentum recently. With better design and examples of TOD, along with increased traffic, the lack of housing, and the availability of vacant land, development in transit corridors will increase. It will not be long until this concept becomes standard in development of this Southern California, with cities like Pasadena being an innovator in TOD in this region. Unlike Del Mar and Sierra Madre, no projects were planned for Allen at the opening of the Gold Line station, which points to its ‘under use’ status. The characteristics of existing housing units, the underutilization of parcels, and the business and resident support for TOD makes the Allen Corridor a prime transit-oriented development area.
References

- East Colorado Specific Plan
  (Allen Corridor proposals)

- www.census.gov
  (Census information)

- www.challc.com/ProjMMS.html
  (Mission Meridian Village)

- www.ci.pasadena.ca.us
  (City of Pasadena)

- www.mta.net
  (Metropolitan Transit Authority)