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Transportation Planning
Traffic Engineering
Public Policy

MEMORANDUM

To: John Grenier, P.E.
Grenier Engineering, Inc.

From: Marcos Esparza, P.E.
Senior Associate

Cc: Curtis C. Lueck, Ph.D., P.E.
Principal

Date: April 19, 2013

RE: Junction at Iron Horse - Individual Parking Plan Update
Including Additional Analysis requested by COT Staff (CLA 2012.06B)



John Grenier
Exp 3-31-2015

BACKGROUND AND IPP EXECUTIVE SUMMARY

The attached Individual Parking Plan (IPP) is an updated assessment of parking demand and supply for the above referenced project. This iteration of the study includes supplemental information requested by City staff upon their review of the draft report in January 2013. This information includes an analysis of The District (a student housing project located at Fifth Avenue and Sixth Street), Roosevelt Point (a student housing project under construction next to the ASU campus in downtown Phoenix), and the extensive federally-funded work by King County dealing with the relationship between land use and parking for multifamily housing.

The Junction is located between 9th Street and 10th Street, and is bordered on the west by 3rd Avenue, as shown in the aerial photo at right. The project site is zoned C-3 (commercial) with a small portion of R-3 zoning on its eastern edge. The project scale has changed since the original IPP was approved in March 2012 with the addition of a fifth floor, and subsequent reduction in scale based on neighborhood input back to a four story project.

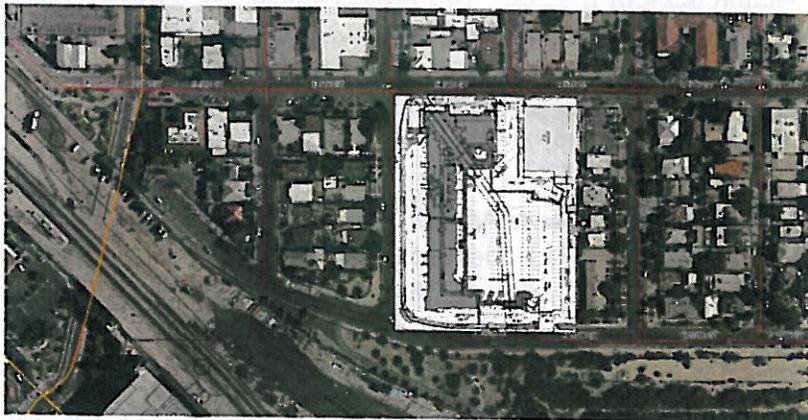


Exhibit 1 Site Plan and Project Setting

have significantly less parking demand than a standard apartment building because this project is:

1. Marketed for students attending the University of Arizona main campus and Downtown, and perhaps Pima Community College,
2. Within one mile of these activity centers,
3. Within the Iron Horse neighborhood with a "Walk Score" of 90, the highest in the Tucson area,
4. In an area that is readily bikeable, and
5. Adjacent to abundant public transit services, including the imminent Modern Streetcar.

In addition, this project is within the Downtown Area Infill Incentive District Zone (IID) which allows for a reduction in parking spaces for certain land uses, as indicated below.

3. Parking.

a. Parking as required by Sec. 3.3.4 may be reduced up to twenty-five (25%) percent. Parking may be decreased by more than 25% per an agreement with the City's Parking Authority or through an Individual Parking Plan (Sec. 3.3.5.1) if the analysis and finding shows the proposed parking is adequate. (Ord. No. 10886, §5, 03/22/11)

b. Accessible Parking and Bicycle Facilities. The number of accessible parking spaces required by the City of Tucson's adopted Building Code and bicycle facilities shall not be reduced or eliminated and shall be based on the number of motor vehicle parking spaces required prior to any modification.

c. Parking may be provided either solely by one of the following options or a combination of the following options:

- i. On-site;
- ii. Off-site within one-quarter (1/4) of a mile of the project site through a shared parking agreement with the City;
- iii. On-street on the same side of the street as the proposed use up to five (5) spaces on a collector or arterial street per approval by the City's Transportation Department; and/or
- iv. An in-lieu fee per an agreement with the City's Parking Authority.

The City of Tucson is now recognizing that student housing has special land use characteristics, including diminished travel demand and parking needs, which are disparate from the normal zoning categorizations. For reference, the LUC defines "group dwelling" as follows,

6.3.8.3 Group Dwelling. Group Dwelling is the residential occupancy of a permanent structure or structures by one (1) or more individuals where the individual or group of individuals has the exclusive right of occupancy of a bedroom. Typical uses include fraternities; sororities; convents; dormitories; rooming and boarding; boarding houses, not primarily for travelers; and apartments where individual bedrooms are separately leased. (Ord. No. 8582, §1, 9/25/95; Ord. No. 9421, §1, 7/10/00)

The City recently amended the definition of “group dwelling” to address recent concerns regarding “mini-dorm” student housing projects that met with resistance from neighbors. The amended language is provided below.

6.3.8.3 - Group Dwelling. Group Dwelling is the residential occupancy of a permanent structure by five (5) or more unrelated persons or by one (1) or more individuals where the individual or group of individuals has the exclusive right of occupancy of a bedroom. Typical uses include fraternities; sororities; convents; dormitories; college student rentals; rooming and boarding; boarding houses, not primarily for travelers; and apartments where individual bedrooms are separately leased. Related persons include persons related by blood, marriage, domestic partnership as defined in Tucson City Code Chapter 17, Article IX or a legal custodial relationship.

And finally, this project is within the boundaries of the proposed Downtown Links Urban Overlay District (Subarea 1 – Iron Horse Neighborhood) which promotes waiving parking requirements for new development in this subarea. For these reasons, we believe that the proposed number of parking spaces as shown in the site plan, in conjunction with unbundled parking and other policies, will more than accommodate the anticipated parking needs of the project tenants and users.

In order to justify a parking reduction, the City requires the attached IPP, per LUC Section 3.3.5.1.D, which is contained in the following pages. Due to the spatial relationship between the site and public transit and parking described above, it clearly meets Condition 2 (projects within ¼ mile of a transit stop or public parking facility) for the consideration of an IPP.

Appended to the IPP is a supplemental analysis of The District’s parking demand and supply, as requested by staff. We also expanded the analysis to include a similar project in ASU’s downtown campus environs in Phoenix, and utilized the extensive work undertaken by King County (Seattle) Washington. King County’s progressive “Right Size Parking” effort was funded by a grant from the Federal Highway Administration’s Value Pricing Pilot Program grant.²

Summary of Findings

Based on this analysis and the supplemental study, we recommend 100 resident parking spaces based on the Right Size Parking calculator (rounded and the remaining 35 spaces for visitors. This totals 135 spaces, consistent with the site plan. Parking for the project can also be expanded by use of nearby public parking spaces at 4th Avenue/Toole on an as-needed basis.

² See http://ops.fhwa.dot.gov/tolling_pricing/value_pricing/projects/not_involving_tolls/parking_pricing/wa_rightsizeparking.htm

INDIVIDUAL PARKING PLAN UPDATE

THE JUNCTION AT IRON HORSE

APRIL 10, 2013

1. Number of required and proposed parking spaces. Indicate the data source in establishing the number of proposed parking spaces.

- a. The City has designated the project a “dormitory” with a requirement of 0.85 parking spaces per bedroom¹. For 232 bedrooms, this results in at least 197 spaces required based on the City’s designation of the project and the LUC parking space requirements for this land use.

The number of spaces proposed is based on the proximity of alternate modes for student tenants, and the precedents for reduced trip and parking generation provided by other student housing projects previously approved in Tucson. The traffic studies for the student housing projects “The District” and the “1020 Tyndall Project at the U of A” indicated that trip and parking generation should be expected to be less than typical rates for these uses based on the proximity to the school and the availability of alternate modes including transit lines, bike and pedestrian routes, and operational Car Share program. (Recent studies in Toronto and other areas show that Car Share programs can replace demand for up to eight parking spaces per shared vehicle.)

These nearby studies indicate a trip generation of about 42% of the typical rates, which can be roughly correlated to parking generation. Because this project has similar transit orientation and proximate bike and pedestrian routes to and from the University of Arizona (and the Downtown Pima Community College campus), we estimate approximately 50% of the LUC parking supply would be needed.

2. Location of Parking Spaces -- Site Plan

- a. All of the parking is on-site with driveway access from Ninth Street and Tenth Street.
- b. A 24 x 36” site plan is attached.

3. Existing and proposed site conditions and uses, including any available on-street parking.

- a. Crescent Electric, an electrical products supply company, recently occupied the project site and vacated in March. There are 44 on-street parking spaces adjacent to the project site, including 14 on 3rd Avenue, 22 on 10th Street, and 8

¹ The City of Tucson Land Use Code Section 3.3.4.2 has a 0.7 parking space “per resident” rate for the same land use (Group Dwelling, Dormitory), but the 0.85 space “per bedroom” rate was applied as being more conservative.

on 9th Street. The project is in the Iron Horse Neighborhood. The site is zoned C-3 with a small portion of R-3 on its eastern edge. Much of the surrounding area is zoned C-3, with some R-3 to the east.

4. Site access and traffic circulation patterns.

- a. Access to the site, as shown in the plan will be via the adjacent local streets (9th Street and 10th Street). Vehicular traffic circulation patterns will be toward major streets including 4th Avenue and 6th Street. Non-auto traffic will be via the extensive pattern of sidewalks, bike facilities, and transit lines.

5. Location and distance from the project site to existing residential neighborhoods.

- a. This residential project is within the highly walkable Iron Horse neighborhood, and is just south and west of the Pie Allen neighborhood.

6. Neighborhoods adjacent to the site with a Residential Parking Permit program;

- a. According to ParkWise, both the Iron Horse and Pie Allen neighborhoods participate in the City's residential parking permit program.

7. Availability, location and distance to alternate modes of transportation

- a. The site is adjacent to or near several Sun Tran bus routes and a University of Arizona Cat Tran shuttle route. The nearest Sun Tran stop is 850 feet away.
- b. The Tucson Modern Streetcar will travel along 4th Avenue, with a stop about 400 feet from the site at 9th Street and 4th Avenue. The line is already under construction expected to be in service in 2013.
- c. Established pedestrian infrastructure (sidewalks, transit stops, and crosswalks) and proximity to downtown and the 4th Avenue Business District encourage travel by alternate modes.
- d. Public parking is readily available within 800 feet along 4th Avenue, at the Depot Plaza garage (287 spaces) and at the new Centro Garage (378 spaces), as well as other locations.
- e. The developer has committed to providing SunTran passes to residents.
- f. The project will provide one long term bicycle parking space and 0.2 short term bicycle parking space per resident.
- g. The project will provide at least one parking space for use by a car share program such as Hertz Connect, which already operates in the area.
- h. The developer will work with the City on a traffic mitigation plan for the purposes of reducing traffic speeds and vehicle/pedestrian conflicts on 9th Street in the vicinity of the project.
- i. The project will provide an 8-foot sidewalk along the project frontage of 9th Street, and will enhance the sidewalk area along 3rd Avenue and 10th Street, with improvements to possibly include historic tree species and street furniture (benches and/or trash receptacles).

8. ***Hours of operation and peak use time(s) of each use***
 - a. This project is residential and access would not be time-restricted. The highest parking occupancy (i.e., the period with the most occupied spaces) would likely be between 12:00 a.m.-7:00 a.m.

9. ***Evidence that all required parking for the proposed uses will either be on-site or at an approved off-site parking location.***
 - a. Because this is a residential site, tenants would want to ensure that their vehicles are secure and on-site, or adjacent to the project.
 - b. The supplemental analysis (attached) demonstrates that the 135 provided parking spaces slightly exceeds what CLA has determined to be adequate (i.e., 125 spaces) for this site.

10. ***Existing and proposed shared parking agreements, where applicable. The shared parking agreement must be prepared in a manner acceptable to the Director.***

An Individual Parking Plan (IPP #TI25A00091) was approved on March 26, 2012 by Glenn Moyer, AICP, Planning Administrator for the City of Tucson for this project with the following conditions:

- a. Tenants shall have the option of not including parking in their lease. Parking shall be a separate charge, minimum \$25 per month, per space.
 - b. One Full Fare Stored Value Card (currently \$15) Sun Tran pass shall be included with each lease and shall be presented to the tenant on the move-in date.
 - c. Bicycle parking shall be provided at a minimum of 1.0 long term spaces and 0.2 short term spaces per bedroom. (Note – *The City of Tucson Land Use Code Bicycle Space requirements for “Group Dwellings” is 0.5 space/bedroom and 0.1 space/bedroom for long term and short term parking, respectively: LUC Section 3.3.8.2.B*)
 - d. Provide verification that a car sharing service will be made available to tenants. A minimum of one dedicated car sharing space is required.
 - e. The four northernmost parking spaces accessed from the alley adjacent to the existing commercial uses fronting 9th Street shall be available for use by the general public.
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11. ***For projects within three hundred (300) feet of an R-3 or more restrictive zone, the IPP project must address how the proposal will not cause a safety hazard, noise, or parking impacts on an adjacent existing neighborhood. The IPP must include the following:***
 - a. ***Methods to avoid potential increases in noise and light intrusion as described in Sec. 3.3.5.1 E.8,9, and 10;***

- b. Methods to deter vehicular access into adjacent residential neighborhoods using signage or other means; and;***
- c. Methods to prevent drive-through traffic or habitual parking within adjacent residential neighborhoods or commercial developments.***

A six-foot high screen wall will be built at the east property line with fast growing tree species between R-3 and commercial uses. This will provide a visual screen and reduce light intrusion into the neighborhood from headlights. The proposed parking lot lights meet the dark skies ordinance and do not direct light onto existing residential areas. All outdoor lighting fixtures on the perimeter are small and fully shielded per outdoor lighting code. The landscape plan is included with this IPP.

It will also retain noise on sight. The project mitigates light and noise intrusion by centralizing the on-site parking and isolated access, both vehicular and pedestrian, to 9th and 10th Streets. All parking and public spaces are located behind the building façade, with most of the activity near the commercial properties on 9th. The site plan will not include outdoor speakers.

Vehicular traffic can access the site only from adjacent existing streets, and there is no reasonable expectation of traffic intrusion of any kind from this project. We believe that, even though within 300 feet of some R-3 zoned parcels, additional considerations are not applicable to the project due to site design, building architecture, and being primarily in a compatible C-3 zone with a very small portion of R-3.

The developer's intent is to provide only the "Right Size" amount of parking, which will discourage unnecessary auto ownership and use. For instance, as a condition of the IPP approved by the City of Tucson in March (see appendix), on-site parking will be leased to residents instead of being included in their rent. This unbundled parking will further discourage auto ownership and encourage the use of alternate modes.

A shared use agreement for the parking area shall be considered during the specific days of the bi-annual 4th Avenue Street Fair whereby residential permit holders may park their vehicles on-site of the project.

12. Any other information deemed appropriate by the Director including a traffic study.

- a. The following section provides supporting information for justification of a parking reduction.***

Support for Parking Reduction

The urban project setting is easily accessed by transit, walking and bicycling. As a student housing project, typical traffic impacts are not expected. Trip generation and parking generation rates, and concomitant impacts to surrounding streets, will be much less than a typical residential development based on the following:

- The project will primarily serve University of Arizona and Pima College students who wish to live near the campuses.
- The proximity to the campuses will be appealing to those students without cars and support the lifestyle choice of those who chose to not have a car.
- The site is adjacent to or near several Sun Tran bus routes and a Cat Tran shuttle route.
- The Tucson Modern Streetcar will travel on 4th Avenue, with a stop less than one-eighth mile from the site.
- Established pedestrian infrastructure (sidewalks, transit stops, crosswalks) and proximity to downtown and the 4th Avenue Business District encourage travel by alternate modes.
- Abundant public parking is readily available in along 4th Avenue, and at the nearby garages at 4th Avenue/Congress/Toole.

Although surface parking will be available on-site for a fee, it is anticipated that most tenants will be students who will walk, bike, or use transit rather than drive a motor vehicle. As such, the motor vehicle trip rate will be much lower than a typical apartment. Based on trip generation approved by the City for two nearby student housing projects (“The District” on 6th Street/5th Avenue the “1020 Tyndall Project at the U of A”, south of Speedway Boulevard), we forecast that this project will generate no more than about 50% of the typical trips for a typical apartment, with a concomitant reduction in parking demand.

Parking Demand - Research

Parking demand at any development project is a function of many factors including land use, intensity, location, travel characteristics, alternative mode availability, parking management strategies, and pricing, among others. The land use will determine elements such as arrival and departure rates, occupancy patterns, and parking duration. For a typical residential development, parking occupancy is highest during the evening and early morning and lowest during the day when residents are away from home.

This project, however, is unique to Tucson because it is one of the first truly “alternate mode oriented” projects. Most residents could easily live here without owning a car due to the proximity of school, shopping, and recreation, and because of the availability of alternate modes serving most of the residents’ routine travel needs. Accordingly, we considered many of the factors listed above in our determination of the sufficiency of on-site parking rather than merely applying standard parking generation rates.

The on-site parking supplied with the development is 135 spaces available for 76 units with 232 beds. Based on residential uses, the on-site parking supply will be 1.78 spaces per unit and 0.58 spaces per bed. Our analysis emphasizes whether this will be sufficient parking for the development, rather than determining if it meets any current, yet arguably inappropriate, parking standard.

Literature Review

Parking generation at student housing facilities is not well documented by ITE and others compared to most major land uses. For this project we researched ITE publications and other resources to learn from the recent experiences of others in similar project settings.

Right Size Parking

The Federal Highway Administration funded the “Right Size Parking” (RSP) project in 2011. Seattle’s public transit agency (King County Metro) was awarded a grant from the FHWA Value Pricing Pilot Program to address the issues around multifamily residential parking supply in King County. An introduction to the RSP is presented in a recent article in *ITE Journal*², which is attached. Thorough documentation is available on King County’s web site at <http://metro.kingcounty.gov/up/projects/right-size-parking>. This study represents a huge step forward in quantifying the relationship between land uses, transit availability, and parking demand in urban areas, and is discussed fully in the supplement and on their website.

ITE Parking Generation – Land Use 550- University/College

Because this project is marketed for University/College school students, we reviewed the latest edition of *Parking Generation* for ITE Category 550 (University/College) which considers total school population, i.e., students, faculty and staff. ITE indicates an average parking ratio of 0.22 spaces per school population in urban areas. When one considers that faculty and staff comprise 20% to 30% of the population, and that they likely have a greater parking demand than students, the actual rate for resident students would be substantially less than the average rate. Utilizing ITE Category 550, a student parking supply of 0.10 to 0.15 spaces per person would be considered reasonable for a project such as The Junction at Iron Horse.

ITE Parking Generation – Land Use 221- Low/Mid-Rise Apartment

ITE parking demand data was collected for apartments in urban and suburban areas. The data indicate that parking demand in Low/Mid-Rise Apartments in urban areas is as low as 0.66 per unit. We believe that for student tenants, the rate would be at the bottom of the range or lower in transit-oriented urban areas such as this. For comparison, parking demand for the suburban sites averages 0.9 spaces per bedroom with 1.7 bedrooms per dwelling unit. The data does not consider tenant type (i.e., students).

² *Do Land Use, Transit, and Walk Access Affect Residential Parking Demand?*, ITE Journal, February 2013

University Gateway Project

CLA reviewed a 2005 study for a student housing project next to the University of Southern California (USC). This 2005 study, *Resident Parking Demand for the University Gateway Project*, was conducted for an eight-story residential and retail/restaurant project adjacent to USC.

The similarities to the Junction at Iron Horse project and the USC project are:

- 1) Both have ease of walking/bicycling to campus buildings,
- 2) The availability of many adjacent and nearby transit routes.

The author of this study also researched parking demand at other post secondary school housing projects. This research found that using ITE apartment parking generation rates and accounting for higher dwelling occupancies and the presents of parking pricing produces parking demand estimates of between 1.40 and 1.92 spaces per apartment unit. Using Eno Foundation and ULI rates produces parking generation estimates of between 0.20 and 1.57 spaces per unit. University parking practices were also reviewed as part of this study, and based on pricing and parking policies, parking demand ranged from 0.0 (i.e., no parking was provided on-site) to 1.67 spaces per unit.

The results of this research showed that parking generation for student housing projects varies depending on the factors discussed above, and should be considered on a case-by-case basis. A major factor in parking demand that was not evident in the 2005 study is that the downturn in the economy likely has limited student's vehicle ownership. Increases in tuition as well as the high cost of car ownership and fuel likely have reduced the number of students that own cars on campus. More importantly, the USC project does not have the broad availability and adjacency of alternate modes as the subject project. For this development, we expect the parking demand to be much less than indicated in the University Gateway report.

Are TODs Over parked?

This study by the University of California Transportation Center asserts that too much parking is provided in most transit oriented development.³ The authors state "[p]art of the blame for the surfeit of parking in transit orient development (TODs) could be the reliance on parking generation figures from the Institute of Transportation Engineers (ITE). Implicitly, ITE standards assume that car ownership levels are no different in rail-served and non-rail served areas. Outdated parking standards have a way of perpetuating themselves. A study of Southern California communities...found the vast majority based their parking requirements on those of surrounding communities or ITE standards, and only 3% conducted their own parking studies." The study found that for metro Portland (which is somewhat similar to Tucson and has a currently-operating street car) the trip generation and parking generation rates were up to 40% below the estimated ITE rates.

³ *Are TODs Over parked?*; University of California Transportation Center, UCTC Research Paper No. 882

CarShare

The study also references the implications of car share programs on auto ownership and parking demand. The study states “ [f]our years after the inauguration of City CarShare, 29% of carshare members had gotten rid of one or more of their cars and 63% lived in zero-vehicle households. A predictive model showed that living close to a carshare pick-up spot was strongly associated with car-shedding. By extension, putting shared-cars in and around TODs could relieve many households from owning a second car or a vehicle altogether. Through a combination of proximity advantages and lifestyle predispositions, living near transit can de-generate vehicle trips. And with the option of car-sharing, it can likely reduce parking demands as well.” The developer of the Junction at Iron Horse project has indicated an interest in using a car share program (similar to the Hertz on-demand car share program at the University of Arizona), and so the need for off-street parking can be further diminished by resident use of this service. In fact, the developer must provide verification that a car sharing service will be available to tenants with at least one car-share space as a condition of the IPP approved in March.

Parking Demand

Parking demand for this project will be low due to the projects’ proximity to the University, and the availability of several modes of travel that do can reduce passenger car use. Based on other studies reviewed and ITE data, as well as expectations that fewer student residents will own vehicles due to the current economy and cost of attending the University, we believe that the number of on-site parking spaces shown on the preliminary plans will be sufficient for the project. We note that demand can be managed by the developers and that alternative parking is readily available.

Summary

Based on our research and analysis, we find that the 135 parking spaces provided on-site will be adequate for the proposed uses and that it slightly exceeds the recommend 125 spaces. The extra ten spaces should be considered contingency spaces.

If additional parking is needed to meet residential demand, it is readily available at nearby public garages. If the building has surplus parking, which is not the owner’s intent, they can leave those spaces empty or re-purpose the spaces to other uses.