San Diego Affordable Housing Parking Study

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Submitted to
City of San Diego

Submitted by
Wilbur Smith Associates

In association with
AECOM

Michael R. Kodama Planning Consultants

Richard Willson, PhD

National Data and Surveying Services

WilburSmith
ASSOCIATES

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EXECUTIVE SUMMARY

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Executive Summary

Purpose & Goals

The purpose of the San Diego Affordable Housing Parking Study was to determine the links between affordable housing variables (income levels, household age, transit accessibility, land use context, and housing type) for use in developing a corresponding regulatory framework for parking requirements.

Organization & Process

The study was broken down into the following discrete related tasks addressed by a collaborative team process.

- Stakeholder and Public Outreach
- Review of City Policies and Current Research
- Data Collection Methodology & GIS Database
- Statistical Analysis & Parking Demand Tool
- Best Practices and Case Studies
- Applied Parking Model
- Policy Recommendations

Stakeholder & Public Outreach

A detailed public outreach strategy was developed including the use Project Working Group (PWG) that was used to solicit advice and feedback on policy issues. Other key elements of the outreach included project fact sheets, a public workshop and stakeholder focus groups.

Review of City Policies, Current Research & Best Practices

The city's parking code and policies, recent industry research pertaining to affordable housing and parking requirement adjustments, and best practices from similar communities were reviewed, revealing the following:

1) There is a substantial gap between demand for affordable housing and the number of units that can realistically be built in San Diego.
2) Affordable housing developments in San Diego are subject to a complex set of parking requirements and potential modifications. But, it is not clear the current code provides modifications in a manner consistent with a project's likely parking demand.
3) In addition to increasing the price of housing by driving up construction costs, parking requirements also impact site design; reducing the land available for residences.
4) While the costs created by excessive parking requirements affect all types of homeowners and renters, their impact on lower income households is particularly disproportionate because low income households consistently own fewer vehicles than their higher income counterparts.

Data Collection Methodology & GIS Database

GIS Database of Affordable Housing Sites: The consultant team developed a master list of affordable housing project sites based on city records.[1] The database contained 265 unique developments that were coded with a series of "project" and "neighborhood" variables that captured key characteristics about each development's qualities and surroundings. The sites were further reduced to eliminate all sites with less than 80% restricted units leaving 138 affordable sites available for data collection.

Site Selection Methodology: The 138 sites established a variable profile target for a future a data collection sample. The goal for data collection was to select a minimum of 30 sites to survey that met the existing

[1] The list maintained by SDHC, RDA, CCDC and SEDC included both rental and ownership developments and contains project types ranging from senior housing, to transitional homes, to inclusionary units within larger market rate developments.

project characteristic mix (existing population of affordable housing sites) and 20 of those sites to collect on-site parking occupancy data. The final selection was made by the city staff. Sources of data for the study are summarized as follows:

- Household surveys –Household characteristics (e.g. size, income, # vehicles, parking behavior)
- Management surveys - Project characteristics, details and operations
- Field observations – Parking counts, land uses and parking restrictions.

A total of 2780 household surveys were distributed to 34 selected project sites with an overall 40% return. One management survey was returned for every project site. Field observations were conducted at 21 sites that maintained the original sample mix and also had a survey response rate of 20 percent or more. Occupancy data was collected at each site both on and off-street between the hours of 12AM and 4AM to measure peak resident parking demand. Property manager feedback was most helpful in the review of tandem parking and parking assignment practices.

Parking Demand Analysis

The statistical analysis of the survey and field data provided a step-by-step examination of the primary determinant of residential parking demand – household vehicle availability– considering both the level of household vehicle availability and factors that affect it. The findings are summarized as follows:

1) Parking demand for affordable projects is about one half of typical rental units in San Diego; almost half the units surveyed had no vehicle.
2) Parking demand varies with type of affordable housing (i.e., Family Housing versus SRO); higher demand is also associated with larger unit size and higher income.
3) Household vehicle availability varies significantly with income; however, income may be correlated with other project characteristics, such as project type and size.
4) Parking demand is less in areas with many walkable destinations and more transit service.
5) In all of the projects studied, the amount of peak overnight parking used was less than the amount supplied.

Parking Model: A parking model was developed based upon the findings in the statistical analysis. It provided empirically-based rates for four types of affordable housing: Family, Living Unit/SRO, Senior Housing, and Studio - 1 Bedroom. The model's predictions were compared with existing requirements and supply patterns, to understand the alignment of those requirements with actual demand levels. The main conclusion from these tests was that current requirements *do not* require significantly more parking than the household survey-based parking model would suggest. Overnight parking occupancy in projects (where data was available) was less than the current requirements and the model prediction, but overnight parking counts did not account for visitor parking, overnight trips by residents, and some other aspects of demand.

Recommendations

It was recommended that the parking model be used to create a look up table of new affordable housing parking requirements. The parking requirements are determined based on type of affordable housing and its context in terms of transit availability and walkability. The parking requirements also include provisions for visitor and staff parking and expected vacancy. The recommended parking requirements are summarized in the following table.

Executive Summary

Type of project		A. Total units	B. Studio Low/Med/ High	C. 1 BR Low/Med/ High	D. 2 BR Low/Med/ High	E. 3 BR Low/Med/ High	F. Subtotal for units (sum B3 – E3)	G. Visitor parking (G2*A1)	H. Staff parking (H2*A1)	I. Subtotal w/ staff + visitor (F3+G3+H3)	J. Total requirement with vacancy factor adjustment (I3*J2) Vacancy adj./no vacancy adj.
Family Housing	1. Units										
	2. Rate		N/A	1.0/0.6/ 0.33	1.3/1.1/ 0.5	1.75/1.4/0. 75		0.15	0.05		1.1/1.0
	3. Spaces										
Living Unit/ SRO	1. Units										
	2. Rate		0.5/0.3/0.1	N/A	N/A	N/A		0.15	0.05		1.1/1.0
	3. Spaces										
Senior Housing	1. Units										
	2. Rate		0.5/0.3/ 0.1	0.75/0.6/ 0.15	1.0/0.85/0.2	N/A		0.15	0.05		1.1/1.0
	3. Spaces										
Studio – 1 bed-room	1. Units										
	2. Rate		0.5/0.2/ 0.1	0.75/0.5/ 0.1	N/A	N/A		0.15	0.05		1.1/1.0
	3. Spaces										
Special Needs	1. Units										
	2. Rate		0.5/0.2/ 0.1	0.75/0.5/ 0.1	N/A	N/A		0.15	0.10		1.1/1.0
	3. Spaces										

Notes on Model & Parking Requirements:

1. Requirements should be developed based on the four housing types outlined in this table.
2. Requirements are based on mean (average) vehicle availability.
3. Requirements should be based on walkability/transit indices (Suburban, urban and core designations have been simplified to low, medium and high, respectively).
4. 10% base vacancy factor is adjustable if using unassigned parking. Unassigned parking is the preferred method.
5. Visitor parking = 0.15 spaces/unit, or zero for dense urban areas, or unassigned lots.
6. Staff Parking should be considered on a case by case basis, with 0.1 for staff intensive developments.
7. Parking management tools and travel demand management strategies should be considered for appropriate developments to supplement minimum requirements.

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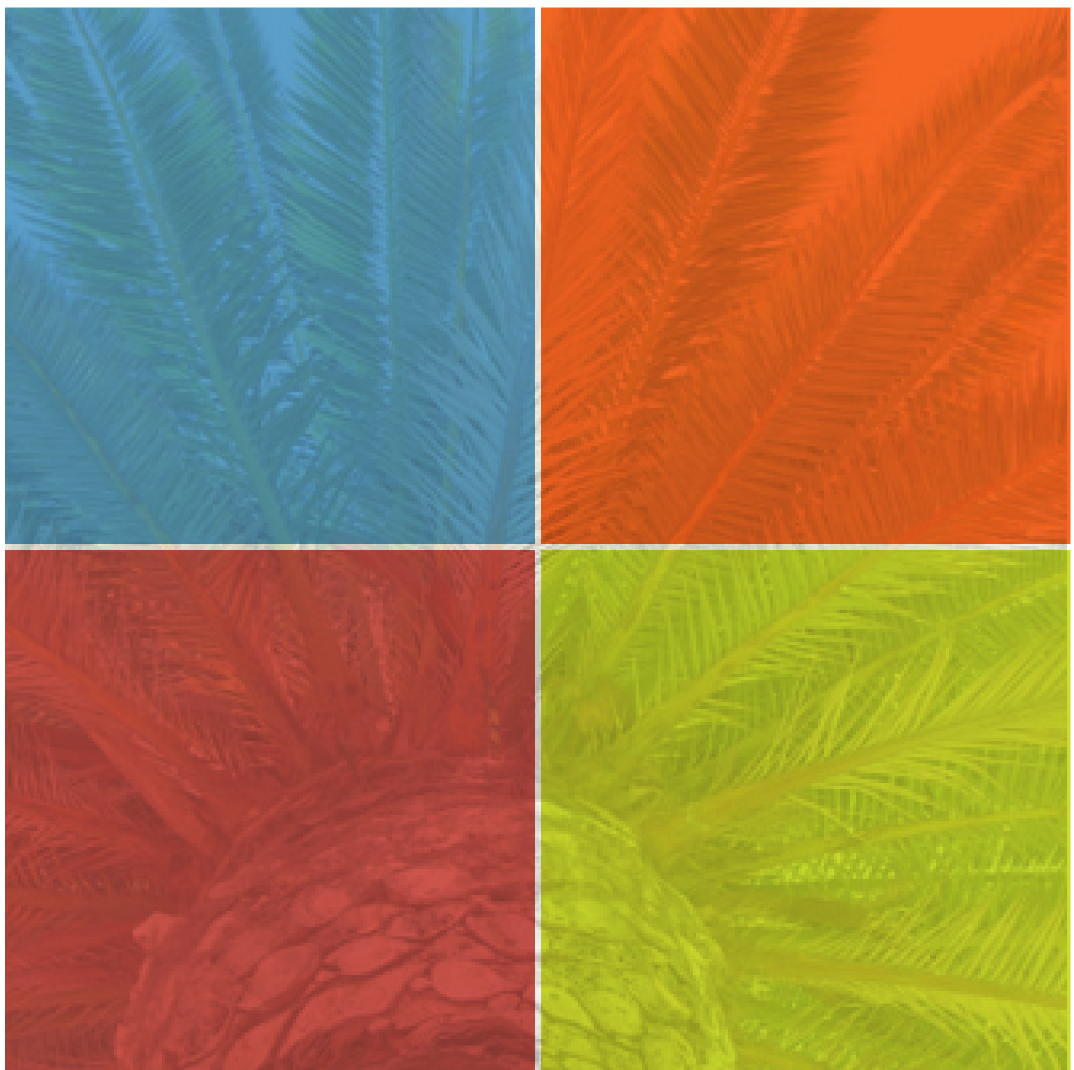
CHAPTER 1.0 **Introduction**



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1.0 Introduction

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1.0 Introduction

Purpose & Goals

Provision of adequate affordable housing is a priority for the City of San Diego; therefore, it is vital that the City explore innovative parking regulations that encourage well-designed projects and maximize living space. Inflexible or outmoded parking requirements contribute to land use inefficiencies, increased costs, and affect the City's stock of affordable housing.

The purpose of the affordable housing and parking study is to determine the links between affordable housing variables (income levels, household age, transit accessibility, land use context, and housing type) and parking demand. The goal of this project is to develop a regulatory framework that tailors parking requirements for affordable housing projects that is sensitive to their context and other key factors that determines the parking demand and increase the use of alternative modes of transportation for each project.

For the purpose of this study, regulated affordable housing is defined as a project that receives government funding; has tenant/owner income restrictions; has occupancy restrictions (such as number in household, senior tenancy or special needs requirements); and/or are deeded as long-term affordable units. The projects could be for-sale, rentals, temporary shelters and/or some variation.

Organization & Process

The San Diego Affordable Housing Parking Study was broken down into several discrete related tasks which were addressed by a collaborative team process. The main tasks included:

- Stakeholder and Public Outreach
- Review of City Policies and Current Research
- Data Collection Methodology & GIS Database
- Statistical Analysis & Parking Demand Tool
- Best Practices and Case Studies
- Applied Parking Model
- Policy Recommendations

Project Coordination, Stakeholder & Public Outreach

Study efforts and outreach strategies included the use of a Technical Working Group (TWG) which met monthly to guide and review the team's progress and deliverables as well as a Project Working Group (PWG) that was used to solicit advice and feedback on policy issues. The TWG included members of various city departments (Housing Commission, CCDC, SEDC, Redevelopment and SANDAG). The PWG included the members of the TWG and additional community stakeholder groups listed as follows:

- San Diego Housing Federation

- Business Industry Association
- Community Housing Works
- Bridge Housing
- San Diego Apartment Association
- San Diego Chamber of Commerce
- Parking Advisory Committee
- Community Planning Committee (CPC) Chairs (2)
- Redevelopment Project Area Committee
- Technical Advisory Committee to Land Use & Housing
- Business Improvement District Council

A detailed public outreach strategy was developed for the study which included project fact sheets, a public workshop and stakeholder focus groups. A series of four focus groups were held over one day with affordable housing developers, CPC chairs, affordable housing advocates and business owners to elicit perspectives on the issues related to affordable housing and parking issues.

Review of City Policies and Current Research

The consultant team reviewed and evaluated the city's parking code and policies as well as recent industry research pertaining to affordable housing and parking requirement adjustments. City documents reviewed included: the existing San Diego Municipal Code, the 2008 General Plan and the General Plan Housing Element (2006), SANDAG's 2007 Regional Transportation Plan, The 2002 Multi-family Residential Parking Study, the City of San Diego Downtown Community Plan (2006) and the Comprehensive Parking Plan for Downtown San Diego (2009) and the 2007 Parking Workshop Report to City Council . Current industry research evaluated included:

- Jia, Wenya, and Martin Wachs. Parking Requirements and Housing Affordability: A Case Study of San Francisco, Research Paper 380, University of California Transportation Center – University of California at Berkeley. Berkeley, CA; July 1998.
- Non-Profit Housing Association of Northern California (NPH). Rethinking Residential Parking: Myths and Facts. San Francisco, CA; April 2001.
- Litman, Todd. Parking Requirement Impacts on Housing Affordability. Victoria Transport Policy Institute. January 2009.
- Department of Housing and Urban Development (HUD). Best Practices for Effecting the Rehabilitation of Affordable Housing. HUD Office of Policy Development and Research. September, 2006.
- Been, Vicki, Josiah Mader, and Simon McDonnell. Minimum Parking Requirements, Transit Proximity, and Development in New York City. Submitted to Transportation Research Board Compendium of Papers. August 2009.

From these reviews, the consultant team analyzed and identified potential obstacles and trends for moving towards a more efficient system of parking requirements for affordable housing. The team drew upon knowledge of best practices in similar communities and statistical analysis of data collected from the project sites to recommend revisions regarding the regulatory and policy framework impacting parking requirements within the study area.

Data Collection Methodology & GIS Database

GIS Database of Affordable Housing Sites

The consultant team developed a master list of affordable housing project sites based on records maintained by the San Diego Housing Commission, the Redevelopment Agency, the Center City Development Corporation, and the Southeastern Economic Development Corporation. The list includes both rental and ownership developments and contains project types ranging from senior housing, to transitional homes, to inclusionary units within larger market rate developments. Where available, the projects on the list were augmented with additional information including construction year and the number and mix of units. Once the master list was assembled in a spreadsheet format, it was translated into a spatial database using Geographic Information Systems software (GIS). After geocoding and editing, the current spatial database contained 265 unique developments. These sites were coded with a series of "project" and "neighborhood" variables that captured key characteristics about each development's qualities and surroundings. The sites were further reduced to eliminate all sites with less than 80% restricted units leaving 138 affordable sites available for data collection.

Site Selection Methodology

The 138 sites established a variable profile target for a future a data collection sample. The goal for data collection was to select a minimum of 30 sites to survey that met the existing project characteristic mix and 20 of those sites to collect on-site parking occupancy data.

Data Collection Methodology

Data collection tools included a household survey, a property manager survey and on-site parking data collection. The project team developed the survey tools under the review of the city staff and TWG. Surveys were distributed and collected by the city staff to 34 selected project sites.

On-site data collection was collected at 21 sites that maintained the original sample mix and also had a resurvey response rate of 20 percent or greater. Parking occupancy data was collected at each site both on and off-street between the hours of 12AM and 4AM to measure peak resident parking demand.

Statistical Analysis and Parking Demand

The statistical analysis of the survey and field data provides a step-by-step examination of the primary determinant of residential parking demand – household vehicle availability – considering both the level of household vehicle availability and factors that affect it. The methods used to analyze household-level responses to the survey included descriptive statistics such as mean and frequencies, crosstabulations, comparisons of means (ANOVA), and exploration of logit modeling approaches. In addition, regression analysis is used to analyze project-level characteristics. Comparisons were also made between household survey responses on vehicle availability and parking occupancy information gained through field study to provide multiple sources for understanding parking demand.

Applied Parking Model

The parking model was developed based upon the findings in the statistical analysis. It provides empirically-based rates for four types of affordable housing: Family, Living Unit/SRO, Senior Housing, and Studio - 1 Bedroom. These categories were developed based on similarity in parking demand patterns and goal of having at least 50 observations for each category. The model structure can be used to analyze any type of affordable housing project if new housing types emerge or additional data is available—such analysis would apply new rates in the appropriate area of the model. The spreadsheet model is intended to support the development of parking requirements for affordable housing. Its first use is to illustrate the parking requirement implications of ten affordable housing projects. The model's predictions are compared with existing requirements and supply patterns, to understand the alignment of those requirements with actual demand levels.

Best Practices and Case Studies

The consultant team reviewed the best practices of several cities in California and the Western United States with respect to the provision of parking and affordable housing. Cities included Long Beach, Los Angeles, Santa Barbara, Pasadena, San Leandro, Santa Clara, California, Denver, Colorado, and Portland, Oregon. Practices included: parking reductions for certain housing types, the inclusion of on street parking, density bonuses, inclusionary zoning, transit user preference, etc. The WSA team recommended a sequential process for applying parking management strategies for affordable housing: Manage Parking Demand; Manage Parking Location; Limit Parking Time; Price Parking; and Expand Parking Supply.

Recommendations

The analysis of San Diego's existing parking requirements for affordable housing reveals that current parking requirements, which account for differences in transit access, Centre City locations, and income characteristics of residents result in parking amounts that are generally consistent with the predictions of the model. It was recommended that the model be used to create a look-up table of new affordable housing parking requirements. The following is a brief summary of the elements recommended for inclusion in the parking model/look-up table.

1. Types of affordable housing

The statistical analysis in Chapter 6 showed that household vehicle availability was related to the type of affordable housing being considered, justifying specific requirements based on type of housing. Based on these results, it was recommended the requirements be based on: Family Housing, Senior Housing, Living Unit/SRO Housing, Studio/1-Bedroom and Special Needs. Other types of affordable housing such as transitional housing should be determined on a case-by-case basis. With regard to income as an influence on parking demand, the analysis found that income and parking demand were positively correlated, but that housing type captured much of the same impact.

2. Demand measurement

The statistical analysis reported the mean (average) level of vehicle availability at the household level.[1] The consultant team recommends the use of mean vehicle availability as a proxy for parking demand. This strikes a balance between the risk of providing less parking than demanded (if a specific project had higher than average demand) and spending money building more parking than required (if a specific project had less than average demand). This approach is most likely to ensure the right amount of parking for the average project of a particular type.[2]

3. Future walkability and transit conditions

The parking model differentiates between three levels of a combined walkability/transit availability measure, taking that combined indicator as representing future walkability and transit conditions.[3,4,5] This method provides a research-based method of distinguishing between vehicle availability in different land use and transit contexts.

4. Parking Pricing

Parking pricing/unbundling for tenants is not currently supported by the City due to rental covenants applied to affordable housing developments. Certain funding sources used in constructing projects provide that there cannot be additional charges beyond rent in deed-restricted affordable housing.[6] While charging for parking is an emerging practice for residential developments that can limit parking demand, the restriction noted above ruled out this option.

5. Assignment of spaces and vacancy factor

Parking requirements often include a vacancy factor (an amount above and beyond predicted demand) to account for that fact that in some land uses it is unlikely that all spaces will be completely filled because of inefficiencies in the parking space search process or restrictions on space use.[7] If parking is not assigned to users or specific units, for example, there may be a justification to reduce the vacancy factor, since sharing can occur between residents, visitors, and staff parking uses. The consultant team recommends instituting a practice of unassigned parking to optimize use of the entire on-site supply.

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[1] The mean household vehicle availability for this study was 0.68 vehicles per household.

[2] It should be noted that The Institute of Transportation Engineers (ITE) *Parking Generation Informational Report* does not provide rates for affordable housing. The ITE counsels that professional judgment is needed to determine which type of measurement should be used in developing requirements. This is one of the reasons that original data collection was undertaken for this study.

[3] The walkability index included one point each for: 1: commercial uses present within ½ mile, 2. GT 120 commercial parcels present w/in ½ mile, 3. Office, civic or educational uses present w/in ½ mile, GT 50 Office, civic or educational uses present w/in ½ mile.

[4] The transit availability index is calculated by assigning: 1 point – 0-15 peak transit trips/hr, 2 point – 16-30 trips/hr, 3 points – 31-45 trips/hr, 4 points – GT 45 trips/hr.

[5] The combined walkability/transit index is calculated by taking a straight average of the walkability and transit indices and looking for natural break points in the data to reflect different walkability/transit conditions. Suburban : 0-1.99, Urban: 2.0-3.99, Core: 4.0+

[6] All the projects surveyed for this study provided residents parking free of charge, with only one project charging a fee for an additional parking space.

[7] A base 10% vacancy rate is applied in the model, but this should be adjusted to project circumstances.

6. Visitor parking

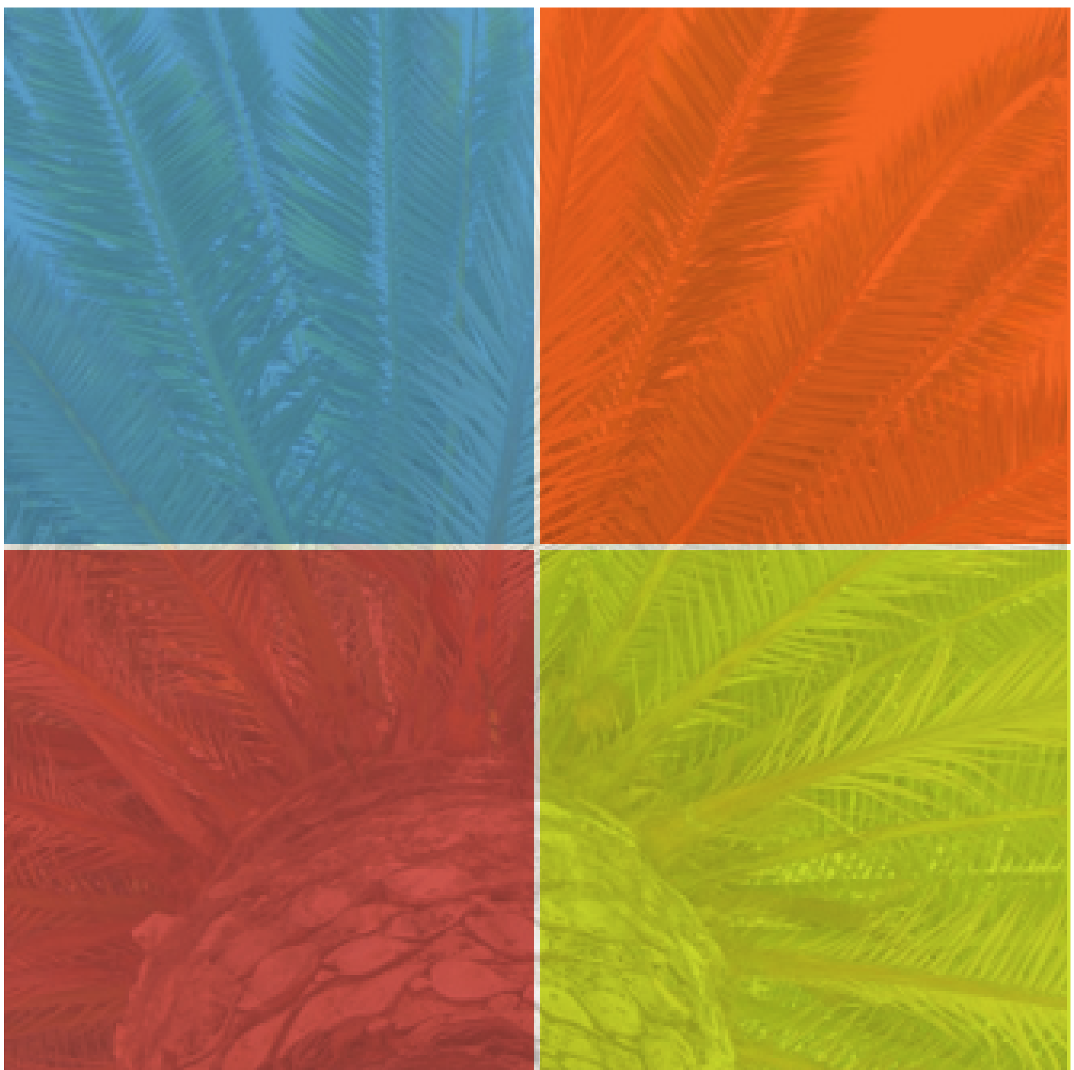
The parking model/look-up table includes an input variable for visitor parking. The visitor parking rate from the *ULI Shared Parking* model is applied in most situations in the parking model (0.15 spaces per unit).[8]

7. Staff parking

A staff parking rate of 0.05 spaces per unit is used in the parking model/look-up table (the average number of staff parking spaces assigned per unit among the projects that did assign staff parking is 0.051). This rate may vary, depending on the level of staff provided in different types of housing.

[8] Smith, Mary. (2005) *Shared Parking, Second Edition.* Washington DC: Urban Land Institute and International Council of Shopping Centers.

CHAPTER 2.0 Stakeholder and Public Outreach



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2.0 Stakeholder and Public Outreach

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2.0 Stakeholder and Public Outreach

Purpose & Goals

A public outreach program was developed for the Affordable Housing Parking Study to ensure the public had the ability to proactively provide input at key steps of the study development. The outreach program was detailed in a Public Outreach Strategy that included an overview of the project, an assessment of stakeholders who may be interested in the study, and outreach methods used to engage stakeholders.

Outreach Goals

The goals of the public outreach program were to:

- Develop a shared community knowledge base, accomplished by education on trends and research findings throughout the study.
- Facilitate early stakeholder outreach to identify issues, opportunities, and concerns as well as to establish the relationships needed for continued engagement.
- Create well-designed educational materials and media outreach to clearly convey project goals, research findings, community involvement opportunities, and draft recommendations, to accomplish transparent information exchange.
- Foster proactive engagement of key decision makers to present working project results and community perspectives, in order to prepare for a productive decision-making process.

Stakeholder Assessment

A stakeholder assessment was completed, which included identifying stakeholders and their probable concerns, as well as determining the best way to productively include them in the outreach process (Table 1). The stakeholder assessment was a working document, meaning identification of organizations, interests, and issues continued throughout the project. To identify stakeholders, the project team developed a list of possible concerns that could be held by stakeholders of the project. That list of concerns (identified below) was used to identify a list of stakeholder groups that may be interested in the subjects identified as concerns.

Concerns

Probable areas of concern of potential stakeholders included:

- Existing concerns about insufficient parking in built-out communities
- Existing negative perception of affordable housing developments
- Lack of affordable housing availability and production
- High cost of building affordable housing developments and related need for public subsidy
- Transit/land use relationship
- General distrust of government

Working List of Stakeholders

The working list of stakeholder groups included the following:

- Community members
- Affordable housing organizations
- Affordable housing residents
- City of San Diego Redevelopment Division
- Centre City Development Corporation (CCDC)
- Community planning groups
- Developers
- Disabled persons
- Local business owners
- Metropolitan Transit System (MTS)
- Parking districts
- Project Area Committees (PACs)
- Property managers
- San Diego Association of Governments (SANDAG)
- Southeastern Economic Development Corporation (SEDC)
- Seniors

Table 1: Stakeholder Assessment Matrix

Issue	Stakeholder Groups	Outreach Method						
		Project Brochures	Website	Focus Groups	CPC Outreach	Public Workshop	Public Official Updates	Project Working Group
Existing concerns about insufficient parking supplies in built-out communities	Community members	x	x		x	x	x	x
	Community planning groups	x	x		x	x		x
	Local business owners	x	x	x	x	x		x
	Parking districts	x	x			x		
	PACs	x	x		x	x		x
	Property managers	x	x		x	x		x
Existing negative perception of affordable housing developments	Community members	x	x		x	x	x	x
	Community planning groups	x	x			x		x
	Local business owners	x	x	x	x	x		x
	PACs	x	x		x	x		x
	Property managers	x	x	x		x		x
Lack of affordable housing availability and production	Affordable housing organizations	x	x	x		x		x
	CCDC	x	x			x		x
	Community members	x	x		x	x	x	x
	Community planning groups	x	x		x	x		x
	Developers	x	x	x		x		x
	Disabled persons	x	x			x		
	PACs	x	x		x	x		x
	Property managers	x	x	x		x		x
	Redevelopment Division	x	x			x		x
	SANDAG	x	x			x		x
	SEDC	x	x			x		x
	Seniors	x	x			x		

Issue	Stakeholder Groups	Outreach Method						
		Project Brochures	Website	Focus Groups	CPC Outreach	Public Workshop	Public Official Updates	Project Working Group
High cost of building affordable housing developments	Affordable housing organizations	x	x	x		x		x
	Developers	x	x	x		x		x
	Property managers	x	x	x		x		x
Transit/land use relationship	Affordable housing residents	x	x	x		x		
	CCDC	x	x			x		x
	Community members	x	x		x	x	x	x
	Community planning groups	x	x		x	x		x
	Disabled persons	x	x			x		
	Local business owners	x	x	x	x	x		x
	MTS	x	x			x		x
	Parking districts	x	x			x		
	PACs	x	x		x	x		x
	Redevelopment Division	x	x			x		x
	SANDAG	x	x			x		x
	SEDC	x	x			x		x
	Seniors	x	x			x		
General distrust of government	Community members	x	x		x	x	x	x

Outreach Methods

The stakeholder assessment yielded the identification of several types of stakeholders. Several outreach methods were used to actively engage different types of stakeholders identified. Outreach methods included a Project Working Group (PWG), fact sheets, a project website, a public workshop, stakeholder focus groups, and outreach to the Community Planners Committee (CPC).

Project Working Group

As part of this project, the City formed the Affordable Housing Parking Study PWG to represent the community and provide input and advisory recommendations. The PWG met throughout the project at critical junctions to provide valuable input to the project team.

Objectives

- Engage the community in identifying parking regulation improvements within the project scope.
- Utilize the expertise of local organizations to provide input and recommendations on key components of the study.

Targeted Participants

Representatives from the following organizations were invited to participate in the PWG:

- Bridge Housing Corporation
- Business Improvement District Council
- Business Industry of San Diego
- City of San Diego
- CCDC
- Community Housing Works
- Community Planning Committee
- Parking Advisory Committee
- Prairie Schwartz Heidel LLP
- Redevelopment PAC
- San Diego Apartment Association
- SANDAG
- San Diego Housing Commission
- Sand Diego Housing Federation
- San Diego Redevelopment Agency
- San Diego Regional Chamber of Commerce
- SEDC
- Technical Advisory Committee, LU&H

Implementation

The PWG met 4 times throughout the course of the project. Table 2 identifies each meeting, the topics discussed, and the number of working group members in attendance.

Table 2. Project Working Group Meetings

Date of Meeting	Meeting Topics	Attendance
January 29,2010	• Project Kickoff • Project purpose &background • Process &methodology	19
April 22, 2010	• Progress Report on Technical Tasks • Public Workshop #1 • Public Outreach Strategy	18
September 14, 2010	• Progress Report on Technical Tasks • Site Selection and Narrowing Process • Site List Discussion and Open Comments Forum	14
October 4, 2011	• Summary of Findings from data and focus groups • Summary of best practices • Policy direction and code requirements • Recommendations	Sign in sheet not available

Fact Sheets

At significant steps of the outreach program, fact sheets were prepared and distributed to update the public on project developments. These fact sheets were posted on the project website, distributed to identified stakeholders and community members, and sent to media contacts with press releases. Two fact sheets were developed over the course of the project.

Objectives

- Increase public awareness and understanding of the Affordable Housing Parking Study through meaningful and productive public involvement.
- Clearly identify outreach opportunities for the City to involve interested parties in the Affordable Housing Parking Study process.
- Develop a consistent, meaningful, and coordinated approach to external communication.

Targeted Participants

Fact sheets were designed to provide information to all stakeholders.

Implementation

Fact Sheet #1 communicated the project background and purpose of the study, announced the public workshop, described what affordable housing is, identified contributing agencies and the PWG, and explained opportunities for public participation. Study tasks were also identified.

Fact Sheet #2 focused on explaining parking demands for affordable housing developments. It explained key concepts related to parking management and detailed the City of San Diego base parking requirements, strategies for meeting parking demands for affordable housing developments, and minimum required parking spaces per unit for multi-family developments. Fact Sheet #2 also contained the results of the resident survey. Detailed information was provided on the following survey results:

- Average Household Vehicle Availability
- Average Vehicle Availability by Housing Type
- Average Vehicle Availability by Land Use and Transportation Context
- Parking Utilization
- Distribution of Residents' Household Vehicle Availability
- Average Vehicle Availability by Unit Size
- Average Vehicle Availability by Household Income Range
- Other Results
- Policy Considerations

Both fact sheets can be found in Appendix 2.1, Fact Sheets.

Website

The City developed a webpage dedicated to the Affordable Housing Parking Study. This webpage was an extension of the City's existing website and contained up-to-date detailed project information throughout the duration of the process. Interested parties were able to find detailed project information and workshop announcements, as well as view project documents and factsheets.

Objectives

- Develop a consistent, meaningful, and coordinated approach to external communication.
- Clearly identify outreach opportunities for the City to involve interested parties in the Affordable Housing Parking Study process.

Targeted Participants

The website was designed to provide project information to all stakeholders.

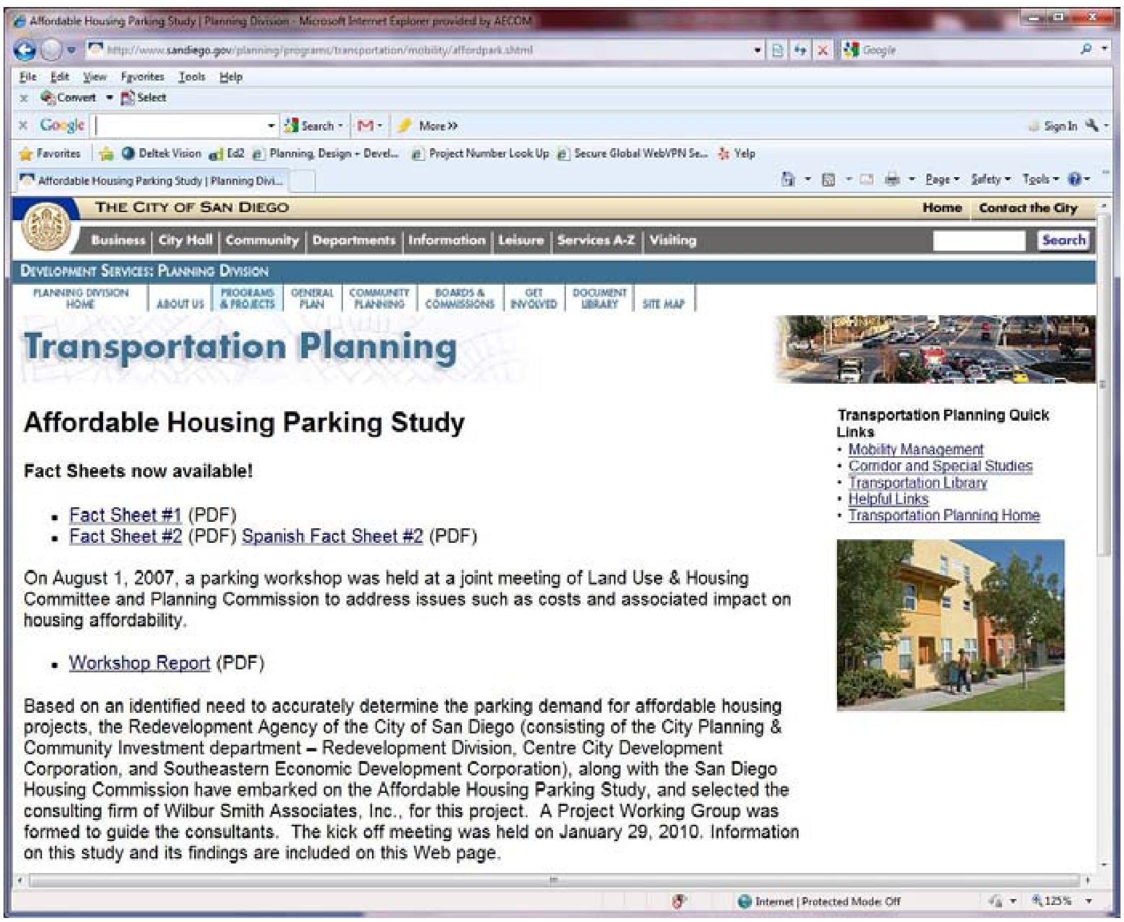
Implementation

The project website was launched at http://www.sandiego.gov/affordpark/. A screen shot of the website can be found as Figure 1. The website contained detailed information on the project background, including the July 20, 2007, report to the Land Use and Housing Council Committee and

Planning Commission joint meeting on the need to accurately determine the parking demand for affordable housing projects (REPORT NO. 07-132). Other information on the website included:

- Fact Sheet #1
- Fact Sheet #2
- Spanish Fact Sheet #2
- Affordable Housing Brochure
- Affordable Housing Fact Sheet
- Parking Study Scope of Work
- Project Working Group Member List
- Project Schedule
- Project Flowchart
- Public Workshop #1 Flyer
- Public Outreach Strategy
- May 18, 2010, Public Workshop Presentation Slides

Figure 1. Project Website as Viewed on August 2, 2011



Public Workshop

A public workshop was held to engage participants in discussions about issues and goals related to the Affordable Housing Parking Study. The workshop was held in a central location within San Diego to allow easy access for interested parties. The format was designed to both educate and collect input relevant to the project team's work program. The workshop focused on small discussion groups to ensure that all participants had the opportunity to voice their opinions. A summary was developed from the input collected during the public workshops.

Objectives

- Provide an opportunity for members of the public to provide input in the Affordable Housing Parking Study process.
- Educate community members about the purpose of the Affordable Housing Parking Study and related public participation program.
- Explain relationship of the project to other ongoing parking and planning studies.
- Collect input on affordable housing parking issues, opportunities, and challenges.
- Collect input on study recommendations.
- Ensure that everyone has an opportunity to participate and discussions are multifaceted.
- Create a fun and thought-provoking environment to stimulate broad thinking and to encourage people to attend the workshop.

Targeted Participants

The public workshop was developed in a format to make it accessible to all stakeholders.

Implementation

The public workshop was held on May 8, 2010, and focused on issue and opportunity identification. Members of the public were given a forum to identify challenges or concerns related to parking at affordable housing developments. The purpose of this meeting was to develop a defined set of issues and opportunities to serve as the framework for the planning process and the recommendations in the Affordable Housing Parking Study. The issues and opportunities identified for improving parking conditions were explored during the project team's research, analysis, and evaluation of parking management concepts. A summary of all the information collected during the public workshop can be found in Appendix 2.2, Community Input Summary.

Issues Identified during the Public Workshop

- Consider existing parking deficits and the impact this study can have on areas already identified as under-parked.
- Recognize that entertainment uses may have good transit access but may be unsuitable for parking standard reductions.
- Clarify misperceptions of the term "affordable housing" in relation to this study.
- Demonstrate the need for the study using accurate data.

- Increase parking standards in areas with identifiable needs.
- Ensure that political issues will not influence the study.
- Identify fair solutions in how public parking is used.
- Tailor parking ratios by the needs of specific locations rather than using a universal approach.
- Engage San Diego Metropolitan Transit System actively in the study.
- Examine the impact of standards in 50 years when variables may change.

Opportunities Identified during the Public Workshop

- Eliminate some shopping mall parking to create spaces for garages and parks.
- Look for opportunities for shared parking.
- Identify case studies from other areas to serve as examples of feasible parking solutions.
- Consider innovative solutions for parking design.
- Provide incentives to encourage people to reduce driving, such as transit passes.
- Map density of affordable housing with entertainment uses to coordinate parking and ensure adequate standards.
- Use surveys to identify travel patterns of residents in affordable housing developments.

Stakeholder Focus Groups

A series of stakeholder focus group meetings was held to hear perspectives on issues related to affordable housing production trends, development feasibility issues, resident travel behavior, neighborhood parking conditions, and other topics related to the study. To feed the discussion into the planning process, a summary with synthesis of key themes was prepared.

Objectives

- Develop a focused understanding of the issues related to parking and affordable housing in the City of San Diego.
- Provide an opportunity for focused stakeholders to provide input in the Affordable Housing Parking Study process.
- Review issues identified in the first public workshop and provide direction to the project team where further analysis is needed.

Targeted Participants

Representatives from the following groups would be appropriate for stakeholder focus groups:

- Affordable housing developers
- Affordable housing advocates
- Local business owners (including Business Improvement District presidents/leaders)
- Chairs of the City’s Community Planning Groups and redevelopment PACs

Residents were surveyed separately as part of the parking study analysis.

Implementation

The City of San Diego conducted focus groups with stakeholders on February 23, 2011. Each focus group had a common set of questions to gauge participant perspectives related to the need and strategies for tailored parking requirements. In addition, each group was asked specific questions that focused on the group's expertise. The questions posed to each group can be found in Appendix 2.3, Focus Group Questions.

Summary of Issues and Opportunities Raised during Focus Groups

Major discussion points that were shared by various participants are summarized below. The order of information does not represent any ranking or prioritization. The summary provides an overview of the input collected across all the groups; however, every group did not express every discussion point.

Considerations for Standards

- Housing type—who lives in the units—is a key determinant of the amount of parking required.
  - Parking reductions for special needs housing, very-low-income housing, age-restricted housing, and permanent supportive housing should be considered citywide, similar to reductions found in the Centre City Planned District Ordinance (PDO).
- Different areas of San Diego have different parking constraints and needs, and any parking standard reductions for affordable housing should consider differences in location.
  - Existing parking requirements may be more appropriate for suburban areas; however, residents who live in affordable housing in suburban areas still have a lower demand for parking than residents of market rate housing in the same areas.
- Infill development in urban areas faces significant challenges, and a reduced parking requirement for affordable housing in these areas would not only address the high cost of providing parking, but also the challenges of a small lot size for infill projects.
  - Transit availability can reduce the need for a vehicle, but safe, effective, reliable, and frequent service is a prerequisite for any potential reductions in parking requirements for affordable housing.
  - Proximity to goods and services (e.g., retail, grocery store, and medical), schools, and jobs are also important factors and could contribute to a formula for determining the eligibility for reduced parking requirements.
  - Areas already experiencing parking shortages are more likely to be impacted by any increases in demand, no matter how small. Cumulative impacts from many projects are also important to consider.

Barriers to Implementation

- Affordable housing developments should be distributed in communities throughout San Diego, so that each has its "fair share"; this could help reduce the need for vehicle ownership by allowing people to live closer to where they work.

- There are significant legal, financial, and regulatory obstacles to implementing shared parking. The City may be in the best position to help facilitate shared parking arrangements, especially for larger scale developments.
- In-lieu fees paid in exchange for a reduced parking requirement are a helpful contribution to solving community parking problems, but it is imperative to ensure that in-lieu solutions are actually implemented.
- Requiring insurance and registration for vehicles parked on-site could be detrimental because it encourages some vehicles to park on-street instead.
- Tandem parking is often not a viable solution for meeting parking requirements because it requires parking spaces to be assigned (eliminating shared parking options) and also can be challenging to implement in constrained infill sites.

Tips for Success

- Existing parking standards, and the costs associated with providing the required amount of parking, exacerbate a financing "gap" for affordable housing development, which is typically filled by public monies. Reducing parking requirements can make the "gap" smaller and reduce the necessary amount that is typically provided by public agencies.
- Reducing parking requirements only in areas that do not currently have their "fair share" of affordable housing could help incentivize development and achieve the requirements of Council Policy 600-19, Fostering of Balanced Community Development for the City of San Diego.
- Transportation demand management can potentially reduce parking demand. Potential strategies include car sharing and providing reduced/no-cost transit passes to residents.
- An effective, comprehensive, and consistent parking management policy is critical to addressing overall parking shortages where they exist.
- California Tax Credit Allocation Committee Low-Income Housing Tax Credit criteria are an important factor in site selection, and a necessary component of securing financing for affordable housing developments; eligibility requirements for parking requirements should be aligned with these requirements.
- There is a need for a clear definition of what types of projects are defined as "A"-affordable housing and the relationship with other housing programs, such as vouchers.

Outreach to the Community Planners Committee

City staff provided presentations to the CPC to explain the scope of the project and address the issues identified by stakeholders and community members. Presentations also identified how the study addressed those issues.

Objectives

- Clearly identify the scope and purpose of this project for the CPC.
- Provide an opportunity for CPC to provide input in the Affordable Housing Parking Study process.

- Provide an opportunity for the community planning groups to help promote the public workshops within their communities.

Targeted Participants

The presentation to the CPC was intended to serve as outreach to both that committee and respective Community Planning Groups.

Implementation

On April 27, 2010, Shahriar Ammi, Associate Engineer, CPCI, announced the May 8, 2010, public workshop and distributed workshop flyers.

On February 22, 2011, Terri O'Connor, Wilbur Smith and Associates, gave a presentation on the status of the Affordable Housing Parking Study.

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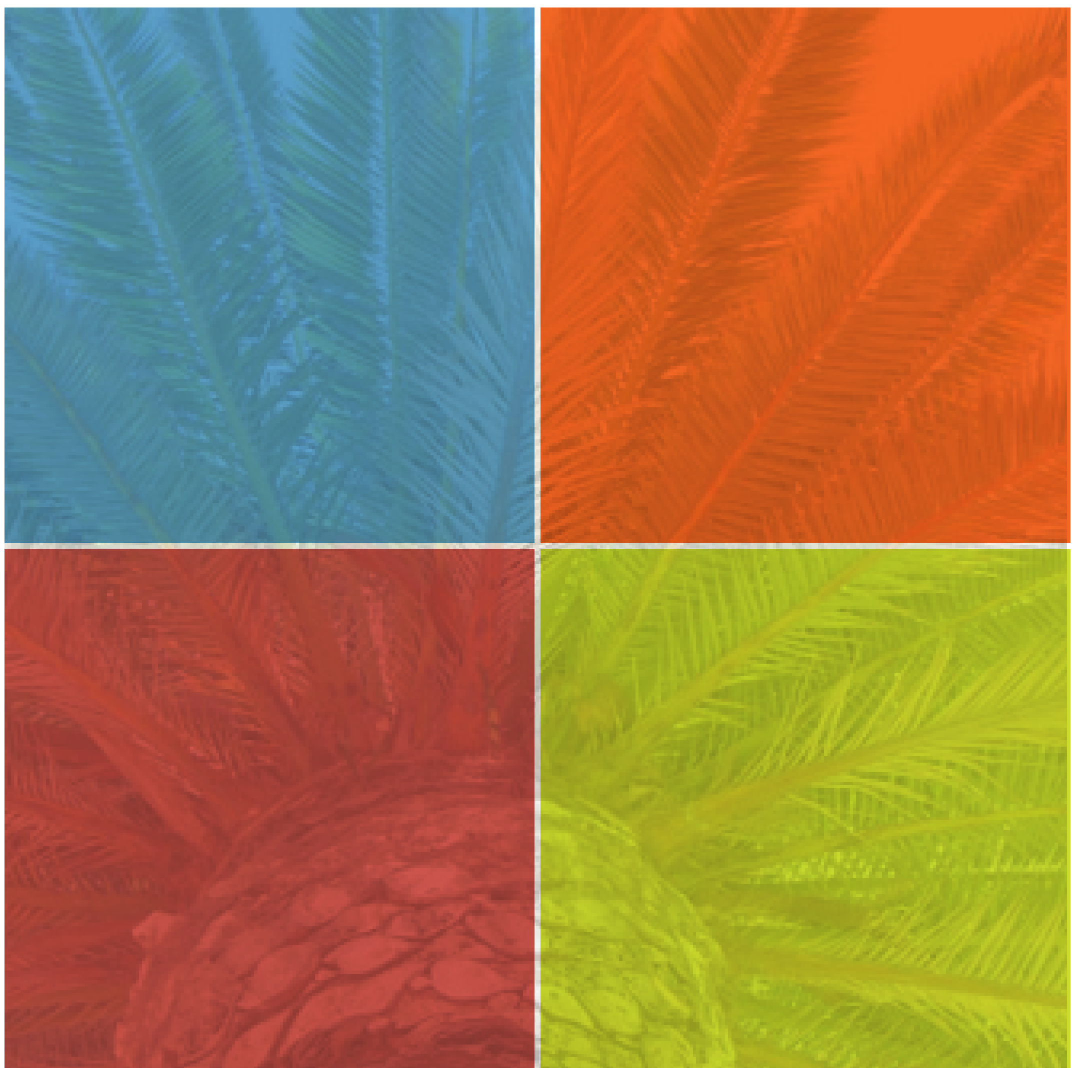
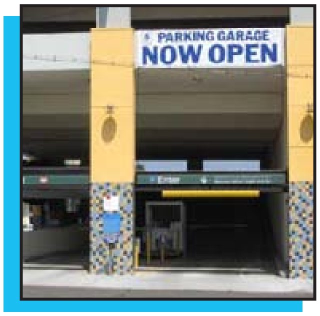
Appendix 2.1 **Fact Sheets**



City of San Diego

Affordable Housing Parking Study

Fact Sheet #1


Background

The management and regulation of parking has received a great deal of attention in recent years with the public's growing awareness of the social and environmental costs to provide land for one's vehicle at home, work and the places in between. Providing an efficient amount of parking and properly managing both on- and off-street parking is crucial for any community. A lack of convenient parking can be frustrating to drivers and potentially detrimental to businesses; however, an oversupply of parking can have equally detrimental social and environmental affects.

The City is examining the option of efficiency-based parking standards that allow for more flexible and accurate parking requirements at particular locations given factors such as housing affordability restrictions, residential density, geographic location, transit accessibility, urban context, type of housing, etc.

Purpose of the Study

The purpose of the Affordable Housing Parking Study is to consider options for customizing parking standards for affordable housing developments in order to create a better match between needs and requirements. The provision of affordable housing helps bridge the gap between the high cost of living in San Diego and the high percentage of low wage earners including families, seniors, and people with disabilities.

Excessive or inflexible parking requirements potentially increase the development costs of affordable housing, reduce the potential for on-site amenities, and create an inefficient use of land. This project will evaluate and make recommendations for appropriate regulations needed to shape parking requirements for affordable housing programs and associated projects. It will evaluate individual projects and look at key factors from the surrounding communities that determine parking demand and increase the use of alternative modes of transportation. Tailored parking requirements will also be consistent with existing policies that direct new growth to smart growth areas, which have better access to transit.

PUBLIC WORKSHOP #1
Affordable Housing Parking Issues, Opportunities, and Challenges

Details:

Date: Tuesday May 18, 2010

Time: 6:00 - 8:00 p.m.

Location: City Heights Urban Village Office & Townhomes
4305 University Avenue
Suite 640 (Large Community Room)
San Diego, CA 92105

Focus:

- Collect input on parking issues, opportunities, and challenges related to affordable housing to help inform the project team's research.

(See next page for workshop location map)

Public Workshop #1 Meeting Location

What is Affordable Housing?

For the purpose of this study, affordable housing is defined as a development that receives government funding; has tenant/owner income restrictions; has occupancy restrictions (such as number in household, senior tenancy or special needs requirements); and/or are deeded as long-term affordable units.

Contributing Agencies

San Diego-area agencies involved in housing planning and development are contributing to the study. These agencies include the Redevelopment Agency of the City of San Diego (consisting of the City Planning & Community Investment department – Redevelopment Division, Centre City Development Corporation, and Southeastern Economic Development Corporation), and the San Diego Housing Commission.

Project Working Group

As part of this project, the City has formed the Affordable Housing Parking Study Project Working Group (PWG) to provide input and advisory recommendations. The PWG will meet throughout the project to discuss and guide the progress of the project. As such, a primary objective of the PWG is to engage the community in identifying parking regulation improvements within the project scope.

Public Participation

Public input will play an essential role in the formulation of recommendations, programs, and priorities for the Affordable Housing Parking Study. Included in the study is an extensive public involvement strategy to ensure that the goals and policies in the plan reflect the priorities and concerns of the entire community. The City of San Diego has initiated a stakeholder-driven process whereby issues and ideas voiced by community members will guide project research, alternatives analysis, and recommendations.

Two public workshops will be conducted during the project. These will be timed with the planning process so that the community's input will inform the project team's work. The workshops will include different types of activities designed to actively engage participants in the process. The first workshop will be held on May 18th, 2010.

Study Tasks

This study is comprised of several integrated tasks designed to:

- Maximize community participation.
- Evaluate current policy documents and topical research.
- Extract valuable, statistically meaningful parking and socioeconomic data.
- Develop a parking demand tool.
- Draw upon lessons-learned from other communities.
- Develop appropriate policies to improve parking requirements for affordable housing within the city of San Diego.

For more information on the project, please visit the project website at:
http://www.sandiego.gov/affordpark/

Affordable Housing Parking Study

Fact Sheet #2: Understanding Parking Demands for Affordable Housing

Introduction

To understand parking conditions at existing affordable housing developments, the City of San Diego surveyed residents of existing affordable housing developments about the number of vehicles available to each household, vehicle use, travel patterns, number of persons per household, and the demographic characteristics of the residents of each household. In addition, a profile of each housing complex was developed based upon neighborhood characteristics (land use and transit) and characteristics of each housing complex. The on-site and off-site parking conditions were also identified and analyzed. About 2,750 surveys were distributed to 34 affordable housing developments, with a 37% return rate. Of those returned, 875 surveys from 21 sites were analyzed. The results of the analysis provide a foundation for evaluating potential modifications to parking requirements for future affordable housing developments.

Key Concepts

To understand parking demand at affordable housing developments, the study sought to measure the number of cars, trucks, and motorcycles that are owned, leased, rented, or provided by employers for each housing unit. This measure is referred to as "household vehicle availability." The number of vehicles available to each household is important because it is roughly equal to the number of parking spaces that would be required. Additional parking needs for on-site staff and visitors were also analyzed as part of the study. Although household vehicle availability is an important measure of the needed number of parking spaces, other factors such as proximity to transit and neighborhood walkability were found to have an impact on parking demand and should be considered in making decisions about parking requirements. Environmental impacts and costs associated with providing the parking, the surrounding neighborhood, and policy goals are also important.

City of San Diego Base Parking Requirements

Type of Unit	Base Parking	Transit Area or Very Low Income	Parking Impact Zone
Single-Family Residences			
Detached single dwelling unit	2 per dwelling unit	na	na
Detached housing for senior citizens	1 per dwelling unit	na	na
Multi-Family Residences			
Studio up to 400 sf	1.25 per dwelling unit	1.0 per dwelling unit	1.5 per dwelling unit
1 bedroom / studio over 400 sf	1.5 per dwelling unit	1.25 per dwelling unit	1.75 per dwelling unit
2 bedrooms	2.0 per dwelling unit	1.75 per dwelling unit	2.25 per dwelling unit
3-4 bedrooms	2.25 per dwelling unit	2.0 per dwelling unit	2.5 per dwelling unit
5+ bedrooms	2.25 per dwelling unit	2.0 per dwelling unit	2.5 per dwelling unit
Rooming houses	1.0 per tenant	0.75 per tenant	1.0 per tenant
Boarder and lodger accommodations	1.0 per two boarders or lodgers	1.0 per two boarders or lodgers	1.0 per boarders or lodger in beach impact area
Residential care facility (6 or fewer persons)	1 per 3 beds or per permit	1 per 4 beds or per permit	1 per 3 beds or per permit
Transitional housing (6 or fewer persons)	1 per 3 beds or per permit	1 per 4 beds or per permit	1 per 3 beds or per permit
Residential accessory uses: retail sales	2.5 per 1,000 sf	2.5 per 1,000 sf	2.5 per 1,000 sf
Residential accessory uses: eating and drinking establishments	5 per 1,000 sf	5 per 1,000 sf	5 per 1,000 sf

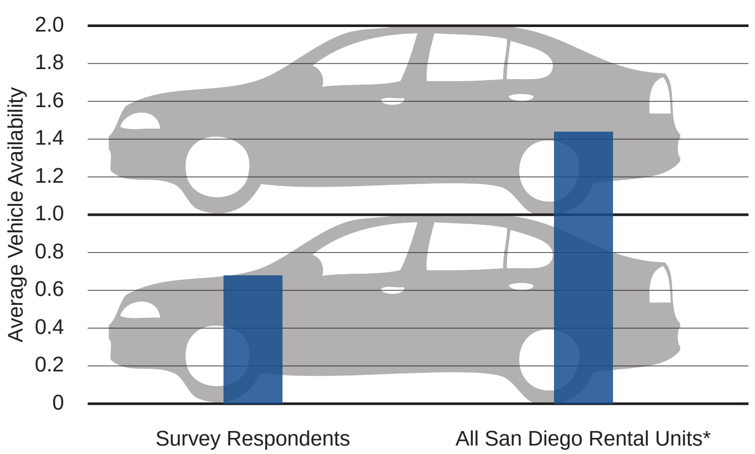
Source: San Diego Municipal Code, Chapter 14, Article 2, Division 5

Results From Affordable Housing Resident Survey

Average Household Vehicle Availability

On average, residents of affordable housing do not require as much parking as is typically required for rental housing in San Diego, which may justify the use of different parking requirements.

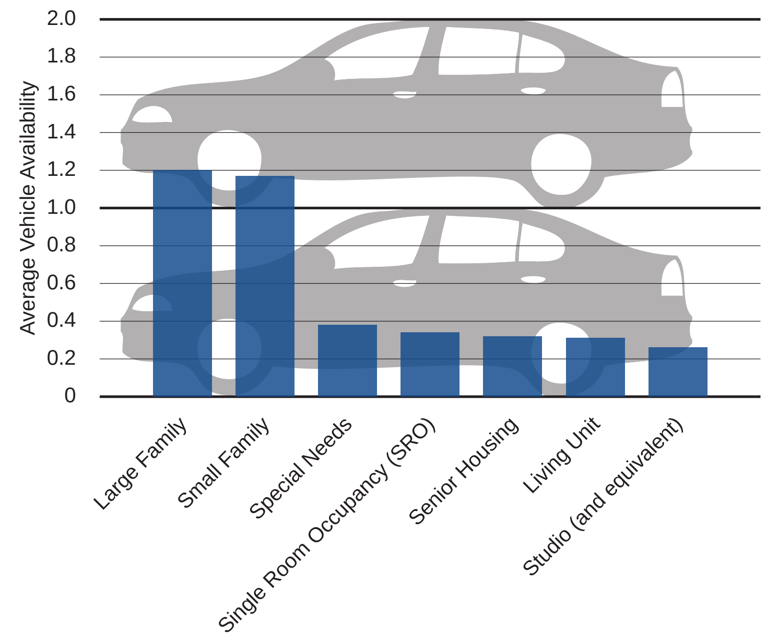
The results of the study show that the average level of household vehicle availability among survey respondents is almost half the average level for all rental housing units in San Diego.*



* Source: *2005-2009 U.S. Census American Community Survey*

Average Vehicle Availability by Housing Type

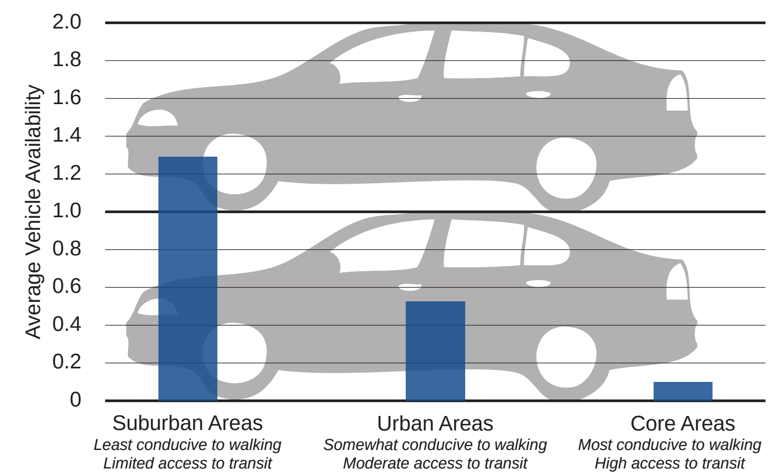
Large family and small family affordable housing have significantly higher average vehicle availability than all other housing types.



Average Vehicle Availability by Land Use and Transportation Context

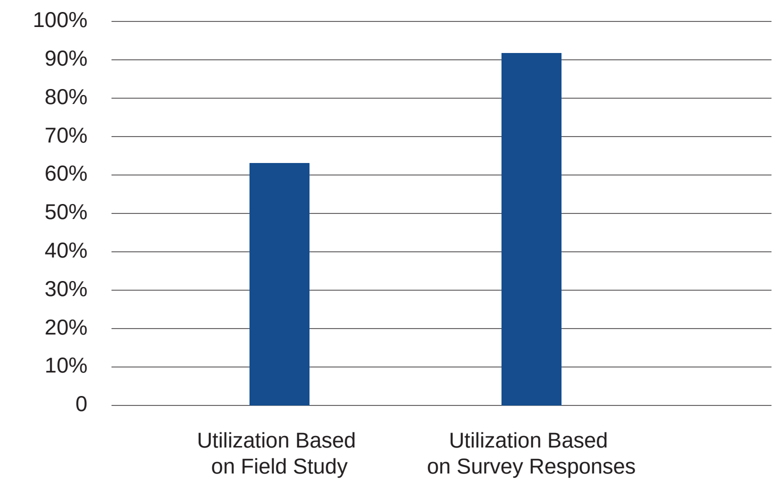
Neighborhood characteristics may influence vehicle ownership levels in affordable housing developments because people may not need cars if they can take transit or walk to destinations. The survey results showed that household vehicle availability is higher in areas that are less conducive to walking and have more limited access to transit.

As defined by a combined measure of the land use and transportation context, suburban areas have the highest mean vehicle availability and core areas have the lowest, with urban areas falling in the middle.



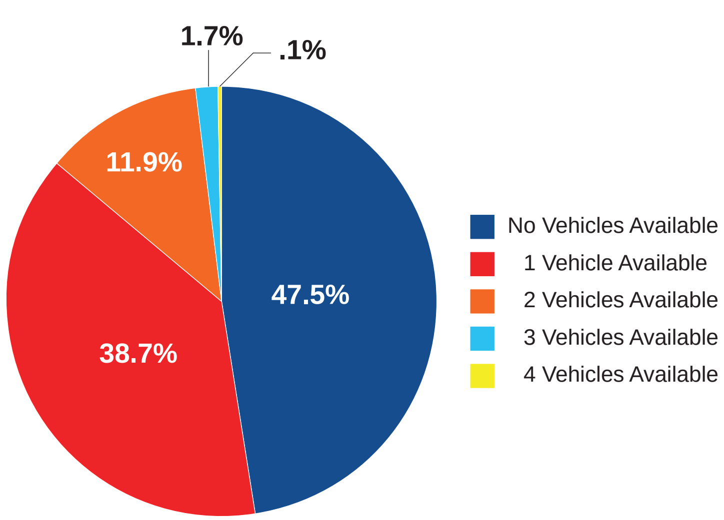
Parking Utilization

Overall, most of the affordable housing developments surveyed have unused parking. On-site parking utilization data indicated parking was less utilized than the household survey responses indicated. This is likely because data were collected at one point in time and the survey was based on the residents' aggregate experience. Overall, this indicates parking is oversupplied.



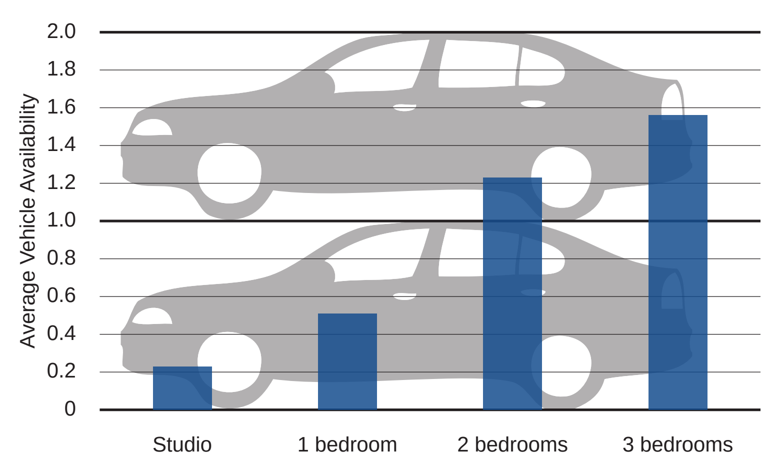
Distribution of Residents' Household Vehicle Availability

Almost half the households surveyed had no vehicle and 38.7% had only one vehicle. Only 13.7% of households had more than one vehicle.



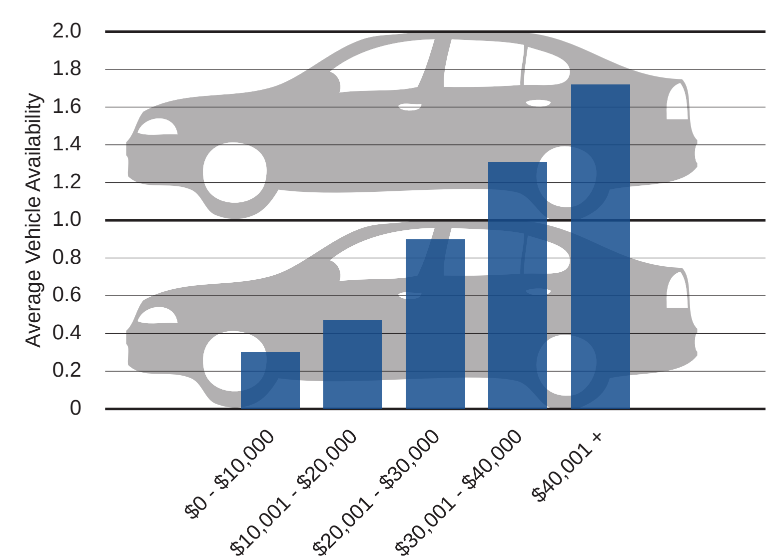
Average Vehicle Availability by Unit Size

Larger housing units, measured by number of bedrooms, are likely to have more residents, more drivers, and higher average vehicle availability.



Average Vehicle Availability by Household Income Range

Vehicle availability is higher in households with greater annual income.



Other Results

- Average vehicle availability decreases in affordable housing developments with a higher percentage of residents over the age of 65. However, this is not considered individually significant because a senior housing development is likely to have a lower number of bedrooms AND more residents over 65 years of age.

Policy Considerations

- The interrelationship of factors affecting parking demand at affordable housing is important when making decisions (e.g., housing type, unit size, location, and walkability).
- Priority should be given to distinct, measurable factors that are typically evaluated in the project development review process (e.g., unit size or location).

Strategies for Meeting Parking Demands for Affordable Housing Developments

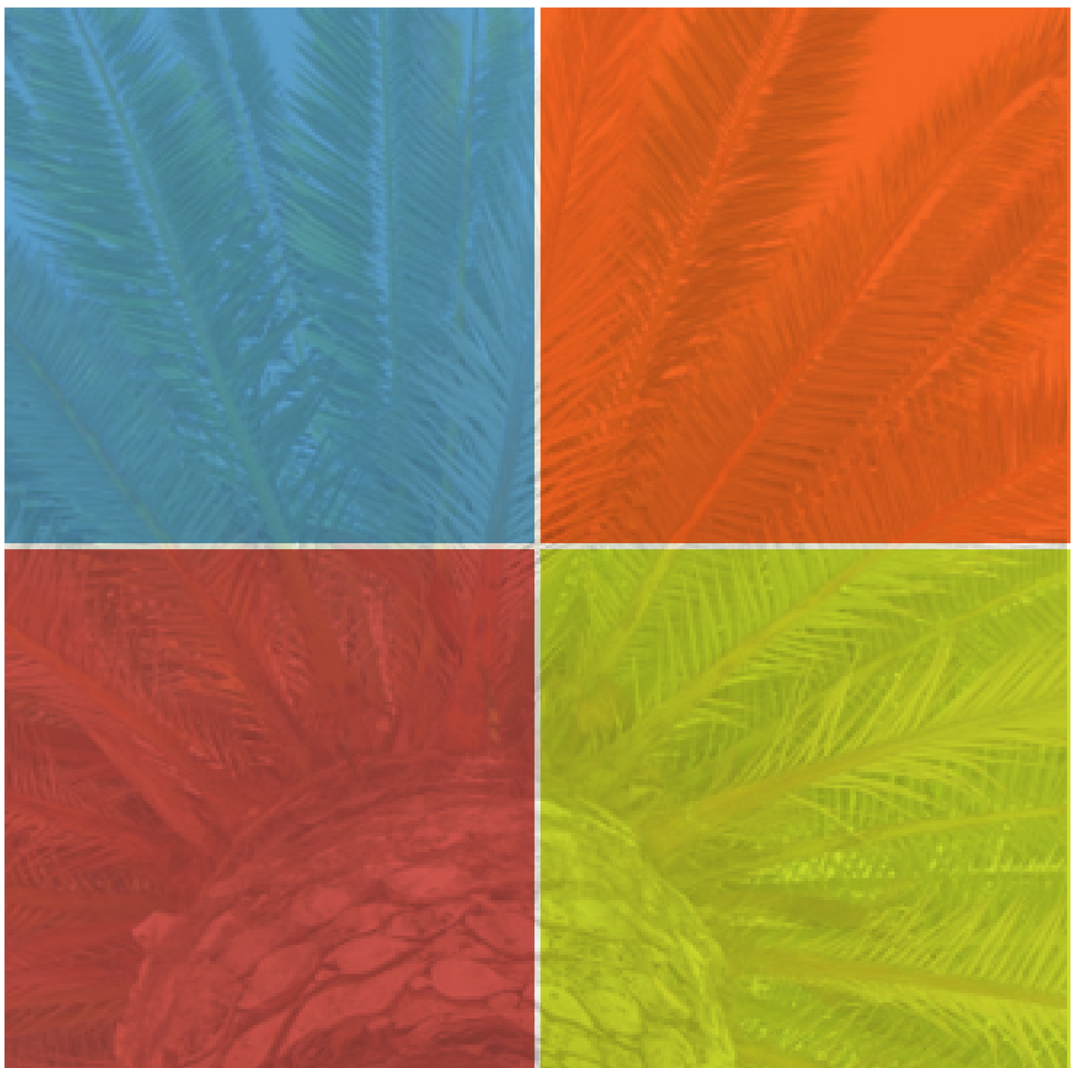
Strategy	City	Details
Reduced Parking Minimum for Affordable Housing Units	Los Angeles, CA	Up to 50% reduction in parking for affordable housing units
	San Leandro, CA	25% parking reduction for affordable housing units
	Santa Barbara, CA	1 space per dwelling unit for affordable housing parking maximum
	Pasadena, CA	25% parking reduction for affordable housing units
	Boulder, CO	Reduction in parking minimum for affordable housing based on site
	Denver, CO	25% parking reduction for affordable housing units
	Eugene, OR	0.67 spaces per affordable housing habitable room or 3 spaces total for dwelling unit, whichever is greater based on total available units
Reduced Parking Minimum for Senior Housing	Berkeley, CA	75% parking reduction for senior or disabled living facility
	San Leandro, CA	50% parking reduction for senior or disabled living facility
Reduced Parking Minimum for Affordable Housing in Proximity to Transit	Los Angeles, CA	Reduced parking minimum to 1 parking space per unit, for a project located within 1,500 ft of transit and having less than 3 habitable rooms per unit
	Portland, OR	No parking minimums for sites within 500 ft of transit service that has less than 20-minute headways
	San Leandro, CA	Additional parking reductions for affordable housing and/or senior/disable living dwelling units near transit
	Santa Clara, CA	25% parking reduction for affordable housing units for developments near transit stations, containing mixed uses, or participating in a TDM plan
	Seattle, WA	20% reduction in parking minimums if development is located within 80 ft of a transit station
Reduced Parking Minimum for Affordable Housing by Specific Location	Seattle, WA	Parking requirement reduced in urban areas
	Pasadena, CA	Alternative-parking requirement for all developments that contain affordable housing units located in Parking Benefit Districts
Parking Maximum for Affordable Housing	Seattle, WA	Parking maximum of 1 parking space per 2 affordable single-family dwelling units

Minimum Required Parking Spaces per Unit for Multi-Family Developments

City	Studio	AH Studio	1 BR	AH 1BR	2 BR	AH 2BR	3 BR	AH 3BR
Boulder, CO	1.0/DU	1.0/DU	1.0/DU	1.0/DU	1.0/DU	1.0/DU	1.5/DU	1.0/DU
Eugene, OR	1.0/DU	0.67 per AH habitable room	1.0/DU	0.67 per AH habitable room	1.5/DU	0.67 per AH habitable room or 3 spaces total for dwelling unit	1.5/DU	3 spaces total for dwelling unit
Denver, CO	1.0/DU	0.8/DU	1.0/DU	0.8/DU	1.25/DU	1.0/DU	1.5/DU	1.0/DU
Long Beach, CA	1.0/DU	Based on District	1.5/DU	Based on District	2.0/DU	Based on District	2.0/DU	Based on District
Los Angeles, CA	1.0/DU	1.0/DU*	1.0/DU	1.0/DU*	1.5/DU	1.0/DU*	2.0/DU	1.5/DU*
Pasadena, CA	1.0/DU	1.0/DU	2.0/DU	1.0/DU	2.0/DU	2.0/DU	2.0/DU	2.0/DU
San Leandro, CA	1.25/DU	1.0/DU	1.25/DU	1.0/DU	1.25/DU	1.0/DU	1.5/DU	1.0/DU
Santa Barbara, CA	1.25/DU	1.0/DU	1.5/DU	1.0/DU	2.0/DU	1.0/DU	2.0/DU	1.0/DU
Santa Clara, CA	1.0/DU	0.75/DU*^	1.0/DU	1.0/DU*^	2.0/DU	1.5/DU*^	2.0/DU	1.5/DU*^
Seattle, WA	1.0/DU	Based off District	1.0/DU	Based off District	1.0/DU	Based off District	1.0/DU	Based off District

AH = Affordable Housing / * = if near transit station / ^ = with TDM plan

Appendix 2.2 **Community Input Summary**



COMMUNITY INPUT SUMMARY
Public Workshop #1

The City of San Diego conducted Public Workshop #1 as part of the Affordable Housing Parking Study. The purpose of the Affordable Housing Parking Study is to consider options for customizing City parking standards for affordable housing developments in order to create a better match between needs and requirements.

Public Workshop #1 was conducted on Tuesday, May 18, 2010, from 6:00 to 8:00 p.m. in the Large Community Room of the City Heights Urban Village Office and Townhomes, located at 4305 University Avenue in the City Heights neighborhood in San Diego. The City notified the chairs of all recognized community planning groups by flyer (Attachment A) and project fact sheet (Attachment B), and announced the meeting at the March Community Planners Committee meeting. The meeting flyer and fact sheet were also distributed to the Redevelopment Agency Project Area Committees and were posted on the City's website and other standard meeting announcement locations used by the City.

Approximately 35 people attended, including representatives of various community planning groups. Some development community professionals also attended, as well as District 3 City Councilmember Todd Gloria.

The purpose of the workshop was to collect perspectives on parking supply, transit ridership, and affordable housing needs related to the Affordable Housing Parking Study. The format of the meeting included:

- Registration
- Welcome, introduction of project team, and workshop overview
- Presentation on
  - Project purpose and overview
  - Project scope and work plan
  - Public participation program
- Facilitated small group discussions on parking issues and ideas/opportunities and prioritization exercise
- Reports by representatives of the small groups
- Wrap-up

During the small group discussions, facilitators led groups through a brainstorming session on parking issues related to affordable housing and recorded input on flip charts. Facilitators then led the groups through an exercise to prioritize those issues that are more important to address. This was accomplished by giving participants four sticky dots and asking them to put the dots on those issues that they feel have the highest priority for addressing and/

or are the most serious. Facilitators then led the group through a brainstorming session on ideas and opportunities to address the prioritized issues. The same "sticky dot" method was used to prioritize the input on ideas and opportunities. Ideas gathered in the brainstorming sessions, including the number of "dots" received, can be found in Appendix C. A volunteer representative for each group was selected to report back to the large session by detailing the identified top three issues and any associated ideas/opportunities that could address those issues.

A comment card was also given to workshop participants to allow them to provide additional input related to the Affordable Housing Parking Study. Returned comment cards can be found in Appendix D.

Several themes emerged from the discussions and input collected through the comment cards. The themes summarized below reflect input related to the study, but all input collected is documented in Appendix C. Organization of the themes does not reflect any order or ranking.

Issues

- Consider existing parking deficits and the impact this study can have on areas already identified as underparked
- Recognize that entertainment uses may have good transit access but may be unsuitable for parking standard reductions
- Clarify misperceptions of the term "affordable housing" in relation to this study
- Demonstrate the need for the study using accurate data
- Increase parking standards in areas with identifiable needs
- Ensure that political issues will not influence the study

- Identify fair solutions in how public parking is used
- Tailor parking ratios by the needs of specific locations rather than using a universal approach
- Engage San Diego Metropolitan Transit System actively in the study
- Examine the impact of standards in 50 years when variables may change

Opportunities

- Eliminate some shopping mall parking to create spaces for garages and parks
- Look for opportunities for shared parking
- Identify case studies from other areas to serve as examples of feasible parking solutions
- Consider innovative solutions for parking design
- Provide incentives to encourage people to reduce driving, such as transit passes
- Map density of affordable housing with entertainment uses to coordinate parking and ensure adequate standards
- Use surveys to identify travel patterns of residents in affordable housing developments

Appendix A
Workshop Flyer

City of San Diego

Affordable Housing Parking Study
Public Workshop #1

The City of San Diego is examining parking standards for affordable housing development projects. Come share your perspectives on parking supplies, transit ridership, and affordable housing needs. The workshop will be held in City Heights:

May 18, 2010, 6:00 - 8:00 pm

City Heights Urban Village Office and Townhomes
4305 University Avenue
Suite 640 (Large Community Room)
San Diego, CA 92105

Visit our website for more information:
http://www.sandiego.gov/affordpark/

Opening Remarks by District 3 City Councilmember Todd Gloria

Ciudad de San Diego

REUNIÓN PÚBLICA #1
INVESTIGACIÓN SOBRE ESTACIONAMIENTO CON RESPECTO A VIVIENDAS ECONÓMICAS

La Ciudad de San Diego está evaluando las normas de estacionamiento para proyectos de viviendas económicas. Se le invita a usted a participar de una reunión pública para compartir sus pensamientos sobre el suministro de estacionamiento, el uso de transporte público y las necesidades relacionadas con viviendas económicas. La reunión se llevará acabo en City Heights:

18 de mayo del 2010, 18:00 – 20:00

Discurso de Apertura de Todd Gloria

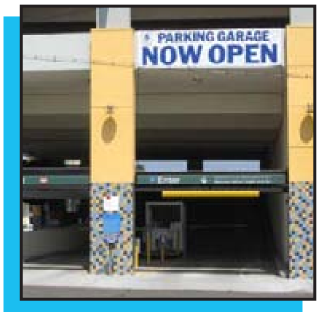
City Heights Urban Village Office and Townhomes
4305 University Avenue
Suite 640 (en el Salón Comunitario Grande)
San Diego, CA 92105

Para mayor información, visite nuestro sitio en Internet:
http://www.sandiego.gov/affordpark/

Appendix B
Fact Sheet #1

Affordable Housing Parking Study

Fact Sheet #1



Background

The management and regulation of parking has received a great deal of attention in recent years with the public's growing awareness of the social and environmental costs to provide land for one's vehicle at home, work and the places in between. Providing an efficient amount of parking and properly managing both on- and off-street parking is crucial for any community. A lack of convenient parking can be frustrating to drivers and potentially detrimental to businesses; however, an oversupply of parking can have equally detrimental social and environmental affects.

The City is examining the option of efficiency-based parking standards that allow for more flexible and accurate parking requirements at particular locations given factors such as housing affordability restrictions, residential density, geographic location, transit accessibility, urban context, type of housing, etc.

Purpose of the Study

The purpose of the Affordable Housing Parking Study is to consider options for customizing parking standards for affordable housing developments in order to create a better match between needs and requirements. The provision of affordable housing helps bridge the gap between the high cost of living in San Diego and the high percentage of low wage earners including families, seniors, and people with disabilities.

Excessive or inflexible parking requirements potentially increase the development costs of affordable housing, reduce the potential for on-site amenities, and create an inefficient use of land. This project will evaluate and make recommendations for appropriate regulations needed to shape parking requirements for affordable housing programs and associated projects. It will evaluate individual projects and look at key factors from the surrounding communities that determine parking demand and increase the use of alternative modes of transportation. Tailored parking requirements will also be consistent with existing policies that direct new growth to smart growth areas, which have better access to transit.

PUBLIC WORKSHOP #1
Affordable Housing Parking Issues, Opportunities, and Challenges

Details:

Date: Tuesday May 18, 2010

Time: 6:00 - 8:00 p.m.

Location: City Heights Urban Village Office & Townhomes
4305 University Avenue
Suite 640 (Large Community Room)
San Diego, CA 92105

Focus:

- Collect input on parking issues, opportunities, and challenges related to affordable housing to help inform the project team's research.

(See next page for workshop location map)

Public Workshop #1 Meeting Location

What is Affordable Housing?

For the purpose of this study, affordable housing is defined as a development that receives government funding; has tenant/owner income restrictions; has occupancy restrictions (such as number in household, senior tenancy or special needs requirements); and/or are deeded as long-term affordable units.

Contributing Agencies

San Diego-area agencies involved in housing planning and development are contributing to the study. These agencies include the Redevelopment Agency of the City of San Diego (consisting of the City Planning & Community Investment department – Redevelopment Division, Centre City Development Corporation, and Southeastern Economic Development Corporation), and the San Diego Housing Commission.

Project Working Group

As part of this project, the City has formed the Affordable Housing Parking Study Project Working Group (PWG) to provide input and advisory recommendations. The PWG will meet throughout the project to discuss and guide the progress of the project. As such, a primary objective of the PWG is to engage the community in identifying parking regulation improvements within the project scope.

Public Participation

Public input will play an essential role in the formulation of recommendations, programs, and priorities for the Affordable Housing Parking Study. Included in the study is an extensive public involvement strategy to ensure that the goals and policies in the plan reflect the priorities and concerns of the entire community. The City of San Diego has initiated a stakeholder-driven process whereby issues and ideas voiced by community members will guide project research, alternatives analysis, and recommendations.

Two public workshops will be conducted during the project. These will be timed with the planning process so that the community's input will inform the project team's work. The workshops will include different types of activities designed to actively engage participants in the process. The first workshop will be held on May 18th, 2010.

Study Tasks

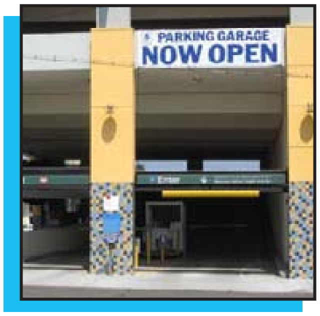
This study is comprised of several integrated tasks designed to:

- Maximize community participation.
- Evaluate current policy documents and topical research.
- Extract valuable, statistically meaningful parking and socioeconomic data.
- Develop a parking demand tool.
- Draw upon lessons-learned from other communities.
- Develop appropriate policies to improve parking requirements for affordable housing within the city of San Diego.

For more information on the project, please visit the project website at:
http://www.sandiego.gov/affordpark/

INVESTIGACIÓN SOBRE ESTACIONAMIENTO CON RESPECTO A VIVIENDAS ECONÓMICAS

Folleto #1



Contexto

En los últimos años la administración y regulación del estacionamiento han recibido mucha atención. Esta atención es debido al aumento de conocimiento del público con respecto a los impactos sociales y ecológicos que trae el consumo de terreno para mantener el coche en cualquier lugar desde la casa hasta el sitio de empleo. Es sumamente importante para cualquier comunidad tener suficiente estacionamiento y administrar bien los estacionamientos tanto dentro como afuera de la calle. No tener lugares convenientes para estacionarse puede ser una fuente de frustración para los conductores, y la falta de tales lugares puede afectar negativamente el comercio. Sin embargo, tener demasiado estacionamiento puede resultar en impactos sociales y ecológicos perjudiciales.

La Ciudad está evaluando la posibilidad de tener normas de estacionamiento basadas en la eficiencia que exijan requisitos flexibles y precisos para lugares que cumplan con ciertos requisitos en cuanto a los siguientes: la imposición de restricciones sobre el precio de viviendas, la densidad residencial, el sitio geográfico, el acceso al transporte público, el contexto urbano, el tipo de vivienda, etcétera.

Objetivo de la Investigación

El objetivo de esta Investigación sobre Estacionamiento de Viviendas Económicas es considerar las opciones disponibles para crear normas de estacionamiento para viviendas económicas que correspondan con las necesidades reales. El proporcionamiento de viviendas económicas ayuda a que a personas con bajos ingresos tales como familias, personas de la tercera edad y personas discapacitadas se les permita obtener vivienda en una ciudad de alto costo como San Diego.

Normas de estacionamiento excesivas o inflexibles pueden aumentar el costo de proyectos de viviendas económicas, reducir los servicios a los inquilinos por falta de espacio y resultar en el uso ineficiente del terreno. Esta investigación evaluará y hará recomendaciones apropiadas y necesarias para formar nuevas normas para los programas de viviendas económicas y sus proyectos relacionados. Evaluará proyectos individuales y considerará los factores claves de las comunidades vecinas que determinan la demanda del estacionamiento y aumentan el uso de medios de transportación alternativos. Las normas de estacionamiento adaptadas serán consistentes con las políticas actuales que dirigen el crecimiento a lugares urbanos de «crecimiento inteligente», los cuales tienen mejor acceso al transporte público.

REUNIÓN PÚBLICA #1
ASUNTOS, OPORTUNIDADES Y RETOS SOBRE EL ESTACIONAMIENTO DE VIVIENDAS ECONÓMICAS

Detalles:

Fecha: martes, 18 de mayo, 2010

Hora: 18:00 – 20:00

Lugar: City Heights Urban Village Office & Townhomes
4305 University Avenue
Suite 640 (en el Salón Comunitario Grande)
San Diego, CA 92105

Agenda:

- Recibir opiniones sobre asuntos, oportunidades y retos sobre las viviendas económicas, los cuales dirigirán y formarán la base de la investigación.

(Para mayor información del sitio de la reunión, vea el mapa en la siguiente página)

Reunión Pública #1 Sitio de la Reunión

¿Qué son las «viviendas económicas»?

Para esta investigación, «viviendas económicas» son definidas como proyectos urbanos residenciales que reciben fondos del gobierno, que tienen restricciones sobre los ingresos del inquilino/propietario, que mantienen restricciones en cuanto a las características del ocupante (p. ej. número de personas del hogar, personas de la tercera edad o personas con necesidades especiales) y/o cuyos grupos habitacionales son dedicados a lo largo plazo para personas de bajos o medianos ingresos.

Agencias Contribuyentes

Varias agencias gubernamentales de San Diego están apoyando a la implementación de esta investigación e incluyen la Agencia de Reurbanización de la Ciudad de San Diego (la cual se compone de Centre City Development Corporation, Southeastern Economic Development Corporation y la Sección de Reurbanización del Departamento de Planificación Urbana e Inversiones Comunitarias) y la Comisión de Viviendas de San Diego.

Equipo de Trabajo del Proyecto

Como parte de este proyecto, la Cuidad ha formado el Equipo de Trabajo del Proyecto de la Investigación sobre Estacionamiento de Viviendas Económicas («PWG» por sus siglas en inglés). Este equipo dará consejos y recomendaciones y se reunirá a lo largo del proyecto para guiar y discutir del progreso del proyecto. En ese sentido, el objetivo principal del PWG es cooperar con la comunidad para identificar la manera de mejorar las normas de estacionamiento dentro de los límites de la investigación.

Participación Pública

Los consejos y opiniones del público tendrán un papel importante en la formulación de recomendaciones, programas y temas de prioridad para la Investigación sobre Estacionamiento de Viviendas Económicas. Un elemento de la investigación es una estrategia extensiva para involucrar al público y asegurar que las metas y políticas de la investigación se alinean con los temas de prioridad y el interés de la comunidad entera. La Ciudad de San Diego ha lanzado un proceso dirigido por los interesados en el cual los temas y las ideas expresados por los miembros de la comunidad guiarán la investigación, el análisis de las opciones disponibles y las recomendaciones.

Dos reuniones públicas se llevarán a cabo a lo largo del proyecto. Las reuniones tomarán lugar al mismo tiempo que se formule el plan de acción para que los consejos y opiniones de la communidad informen el trabajo del equipo de proyecto. Estas reuniones tendrán diferentes tipos de actividades diseñadas para involucrar a los participantes durante el proceso. La primera reunión se llevará a cabo el 18 de mayo.

Tareas de la Investigación

Esta investigación se compone de varias tareas integradas con los objetivos de:

- Maximizar el nivel de la participación comunitaria.
- Evaluar las políticas actuales y hacer una investigación tópica.
- Extraer datos socioeconómicos y datos sobre el estacionamiento que sean estadísticamente significativos.
- Desarrollar una herramienta que identifique la demanda de estacionamiento.
- Aprender de las experiencias e investigaciones de otras comunidades.
- Desarrollar políticas apropiadas para mejorar las normas de estacionamiento de viviendas económicas en la Ciudad de San Diego

Para mayor información, visite nuestro sitio en Internet:
http://www.sandiego.gov/affordpark/

Appendix C
Small Group Brainstorming Flip Chart Notes

TABLE 1

- (1 sticker) Need to take all variables into account when considering projects
- Concentrating low mod housing and transit – mistake – linear ghetto
    - should – spread equitably
    - bus focus/line
    - majority of people voting for affordable housing don't live near transit or near AFH
- NPark – large amounts in one community where comms like NTC don't have any.
- Agreement on inundation issue
- Gen. Plan / smart growth
    - distrust this approach
- 30K for parking space
- (4 stickers) developers want to cut this to increase profits
- Affordable housing residents to have several cars
- You can't get around in SD on mass transit
- Bus fares are too high
- Transit is not time efficient
- City to provide infrastructure (on street parking) but developers should provide on site
- Senior housing could have less parking
- Units that have teenage children should not (growing families)
- Work trucks also in neighborhood
- Rev. from tickets —
    - 100% should be used for more parking
    - need parking enforcement at night
- (4 stickers) Misperceptions of what affordable housing really is
    - (1 sticker) restrictions are held for 55 years
    - (1 sticker) lose funding for noncompliance
- Excessive development has occurred
    - we need better plan
- (2 stickers) Everyone has a car, but the number of vehicles per household is directly related to income
    - lower income = less cars
- (3 stickers) Some disagreement in the group about this
- Different groups of people have different requirements (e.g. seniors, former homeless). Needs to be revisited.
- Parking is shared
- On-street parking is removed with new developments
- Car needs/circumstances change and reg don't account for it
- Tandem parking is bogus and not working → storage
- Rules are not enforced
    - Code comp. issue

- (4 stickers) too hard to get a res parking district in SD
    - challenge with comm. Buy in by percentage
    - City not in support
    - businesses require parking and don't provide it
    - move car every 72 hours – polluting
        - detriment to homeowners who can't park in front of their house
    - in-lieu fees for businesses (coming). City leverages to expand parking at the detriment of existing residents.

<u>Housing Commission Survey</u>

- (1 sticker) Empty parking – rent restricted housing
- (1 sticker) Should develop more housing less parking
- (1 sticker) South Bay
    - inundated with overflow parking
    - inundated with affordable housing and schools
    - breaking ground for new AFH development
    - not listening to CP group
- (1 sticker) Affordable housing uses government $ in a competitive process
    - $17 million loss of funds because of our regulations
    - needs to be looked at as part of the decision process
- Mismatch of regulations
    - "visitors" are not being counted
        - not really
- Make parking spaces a "full" sized spot!

<u>Opp</u>

- (3 stickers) City needs to change the way it does outreach
    - use the Web
    - utilize blogs to solve issues
    - meetings are dominated by junkies
    - community input needs to be more democratic
- (1 sticker) Community does not find out until it's too late
- Need true feedback
- (3 stickers) 500 feet of notification is not good enough
- Personal door-to-door is sometimes the only way the word gets out
- (1 sticker) Need incentives for car sharing
- (3 stickers) Consideration for mixed uses for parking (shared parking)
- (2 stickers) Create urban parks on top of garages
- (8 stickers) Eliminate some shopping mall parking for garages and parks (green/urban)
- (2 stickers) SB 375 – sustainable community strategy opportunity to address these issues
- Create allotments for how much affordable housing can go in a neighborhood

- (6 stickers) Adjust upward the number of parking spaces for affordable units
    - some disagreement on this
- (1 sticker) City Village
    - equal program to test ideas before moving forward City-wide

TABLE 2

Ideas and Opportunities

- (4 stickers) Measure parking now and future – affordable vs. market rate housing – parking changes
- Innovative parking design
- Eliminate garages for storage only

Shared Parking Policy Implementation

- (3 stickers) Study examples of shared parking and where it works best
- (4 stickers) Don't downsize parking
- No garages
- (3 stickers)
- Downsize parking
- (4 stickers) Design parking so it can be "shared"
- Policy that looks at size of development
- All reduced parking be converted to "place space" ← use for amenities
- (2 stickers) Fee for parking
- (4 stickers) Parking now vs. parking in 50 years – how do we measure?
- Trolley – improved service
- (1 sticker) Bike parking/storage in Affordable Housing Development
    - baby strollers/shopping personal carts
    - accommodations for these
- (1 sticker) Not enough parking in City Heights
    - need parking garages
- Curb cuts eat up street parking
- (1 sticker) Garages used as storage, not parking
- (2 stickers) No individual garages/car ports better
- Bad management and parking separate issues

What kinds of parking issues occur in or around Affordable Housing Developments?

- Disabled loading zones needed
- (1 sticker) Need to distinguish between owners and renters
    - owners make more $, more cars
- (1 sticker) Analysis needs to take account what's there
    - examine demographics (family, senior)
- Management
- (1 sticker) Don't always need 1 spot for every unit
- (2 stickers) Need mechanism to utilize shared unused parking
- Visitors parking
- (4 stickers) Innovative design for parking

    - design to hold more cars
    - angular parking/median parking
    - parking in middle of road
    - flexible shared parking
- (1 sticker) Shared cars/flex cars
- (1 sticker) Pay to park in developments (mandatory)
- (1 sticker) Efficiency-based parking strategy – are we using this?
- Inoperative vehicles take up extra spaces – prevent people working on cars in street
- Security at parking lots
- (2 stickers) Quality of life for residents due to parking issues
    - visitors, guests
- (3 stickers) Ask residents about problems
    - public transportation use – why not?

TABLE 3

Solutions

- (4 stickers) Incentives to not drive – transit passes, etc.
- (1 sticker) Unbundling parking/pricing parking
- (10 stickers) 2 spaces for every unit
- "One require" parking to fix historical deficiency
- "Car tax" or vehicle fee
- (1 sticker) On-street parking fees
    - especially fees for "non-cars"
- Expand parking enforcement
- Require bike parking
- (3 stickers) Congestion pricing
- (5 stickers) Get MTS <u>actively</u> involved
- (1 sticker) Alternative strategies to use public parking – maximize public parking (90°, angle-back in etc.)
- Concern that bicycle parking may be overlooked
- (5 stickers) Concern that political issues will influence the study
- (1 sticker) Concern that people are renting spaces for storage
- Older spaces are sometimes substandard size

Issues

- (1 sticker) Look at existing conditions (parking at current sites)
- (1 sticker) Insufficient parking around apartments/condos regardless of income
- (2 stickers) Important to consider transit availability
- Consider site location – traffic and parking issues
- (2 stickers) Historically underparked building → on-street parking
- (1 sticker) Transit is inadequate/not a first-class urban system
- Concerned about amount of red curb – reevaluate amount/locations
- (5 stickers) Concerns over fairness of how public parking is used (by who)
- (2 stickers) Relationship of income to parking not real

TABLE 4

Opportunities and Ideas

- Good property management and enforcement is important
- (4 stickers) Strategies that encourage neighborhood work (job)/housing balance
- (1 sticker) Strategies that include transit promotion
- (7 stickers) Map density of affordable housing with entertainment uses to coordinate parking/ensure adequacy
- (4 stickers) Do additional surveys to identify travel patterns of potential residents to identify transportation/infrastructure requirements
- Develop/study multi-level parking in same locations
- (1 sticker) Shared parking facilities
    - sync up with jobs/housing balance
- Utilize 2010 census results for more accurate parking requirements
- (1 sticker) Creative street parking opportunities
- (4 stickers) Study private transportation to alleviate parking, i.e. shuttles – by major employers
- Study feasibility of grade versus subterranean parking
- (5 stickers) Open parking plan – x spaces
    - balance tenant mix with available spaces, i.e. monitoring
- Base parking on area and job availability
- Carpooling
    - (5 stickers) tenant incentives, e.g. sh_____ facilities, bike racks, bus passes, car sharing parking spaces
    - flex car/zipcar parking spaces
- (2 stickers) Misconception that available public transportation will be used in proximity to affordable housing
- Mid city has the bulk of affordable housing, but fewer better-paying jobs
- Tend to get more gang activity with lower income families and subsidized housing
- (5 stickers) Parking ratio needs to be different depending on location
- City prevents additional parking on streets – such as angled parking or other creative techniques could relieve parking pressure on affordable housing
- (2 stickers) Study sites for surveys looking at mixed use commercial with affordable housing
- (2 stickers) Look at target tenant to develop parking requirement
    - Example is Veteran's Village is overparked/empty spaces
- For study sites look at sites where there are parking managers on-site.
- (1 sticker) In general, families do have fewer cars in affordable housing developments, in some cases parking reductions are appropriate
- (6 stickers) Disagree that affordable housing has fewer vehicles – streets have many cars
    - City department/structure lack of coordination on parking issues

- Angled parking, which could relieve parking pressure, is perceived as blight by the community
- (3 stickers) Trade-off between providing parking for affordable housing and providing additional uses
- (2 stickers) Social value of affordable housing must be considered despite potential parking impacts
- Visitor/guest parking for affordable housing/issues
- (3 stickers) Over impact/saturate areas that are adjacent to transit, too much affordable housing
- People in affordable housing do have cars
- (2 stickers) We should not cut back on parking for affordable housing
    - regardless of age, size of family, disability, usage of public transportation
- (6 stickers) Context sensitive for location of affordable housing relating to entertainment uses/bars, and new affordable housing and associated parking
- Streets are already impacted with too many cars
- (1 sticker) Infrastructure impacts
    - street design accommodates mass transit
    - fire department, school, police department availability?
- Empty spaces at existing affordable housing – even on weekends
- Downtown affordable housing near mass transit residents don't have cars

Appendix D
Comment Cards

City of San Diego

AFFORDABLE HOUSING PARKING STUDY

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

Design and build the parking in such a way that if the complex is over-supplied with parking that the excess parking can be used by others.

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses Talmadge Senior Village

_ Under Supplied _ Adequate X Over Supplied

2) Indicate projects' name or addresses 52nd/Dawson & ECB

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

(optional)

Name: ______

Address: ______

City of San Diego

AFFORDABLE HOUSING PARKING STUDY

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

The fact that too much parking is required
Absence of housing / jobs "fit" – residents have to travel too far to work.

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

- Incentives for use of mass transit
- Encourage creative parking designs to limit land use & promote green development / open space

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses

_ Under Supplied   _ Adequate   ✓ Over Supplied

2) Indicate projects' name or addresses

_ Under Supplied   _ Adequate   _ Over Supplied

3) Indicate projects' name or addresses

_ Under Supplied   _ Adequate   _ Over Supplied

[redacted]

City of San Diego

Affordable Housing Parking Study

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

It is good that a study is being done to see what reality is in terms of how parking is being used now.

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses Green Manor, Mission Hills

_ Under Supplied _ Adequate _ Over Supplied

2) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

[redacted]

City of San Diego

AFFORDABLE HOUSING PARKING STUDY

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

- Make sure when identifying 50 properties that will be included in the study that you look @ ... New properties, older properties, senior, disabled, transition age youth, veterans, previously homeless... the parking or lack of parking issues ~~#~~ will be very different for each category.

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

Set aside units for target populations who are highly ~~not~~ unlikely to drive and/or own cars - Seniors, Disabled, Transition age youth - Or, (selfishly) Developmentally Disabled people who do not work, own cars or drive

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses Rancho Buena Vista

_ Under Supplied _ Adequate _ Over Supplied

2) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses - call me - I will share access to 30 SD properties

_ Under Supplied _ Adequate _ Over Supplied

Name[redacted]
Addre[redacted]

City of San Diego

AFFORDABLE HOUSING PARKING STUDY

Comment Card

A H D

What do you see as the greatest challenges related to parking at Affordable Housing developments?

EQUALIZING AHD IN ENTIRE AREA NOT JUST @ "TRANSPORTATION CORRODORS"

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

1) NEIGHBOR PARKING IF RESIDENTS DON'T USE ALL SPACES

2) BETTER PROJECTS = :) RESIDENTS!

3) PUT AHD IN AREAS WHERE LOW OR NONE EXIST NOW (IE. NTC) NO LINEAR GHETTO'S

4) BUILD MORE GARAGES NOW FOR FUTURE!

Please rate the availability of parking supplies at affordable housing projects that you are familiar with. THE AREA AROUND

1) Indicate projects' ~~name or addresses~~ 30TH & UNIV. AVE 92104

X Under Supplied _ Adequate _ Over Supplied

2) Indicate projects' name or addresses NOW HAS RESIDENTAL PARKING BLIGHT

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

Nam[redacted]

Add[redacted]

City of San Diego

AFFORDABLE HOUSING PARKING STUDY

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

① POLITICIANS
DEVELOPERS > TIED AT #1

② LACK OF VISION FROM CITY LEADERS

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

① MORE ON-SITE PARKING - SEVERAL SITES IN SAN CARLOS HAVE NONE!

② FUTURE SITES MUST HAVE MTS INVOLVED. IN PROVIDING SERVICE AS RESIDENTS NEED IT, NOT AS MTS DECIDES W/O PUBLIC INPUT.

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses SEC. 8 APTS LAKE ARROWHEAD AND LK. MURRAY BLVD.

✓ Under Supplied _ Adequate _ Over Supplied

2) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

(optional)

Name:

Address:

City of San Diego

Affordable Housing Parking Study

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

The greatest challenge to parking is that ~~a~~ developer see it as an expense. Less parking means more profit. How can a city have good parking when the loudest voice wants to minimize parking.

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

1 ADJUST UPWARD THE REQUIRED PARKING PLACES.
2 ADOPT A REALISTIC VIEW OF HOW THE "OTHER HALF" LIVES
3 TAKE A LONGER TERM VIEW TOWARD NEIGHBOR-HOOD LIVABLITY
4 BETTER PAYING JOBS, UNION WORKERS + GREEN CARDS.

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

2) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses

_ Under Supplied _ Adequate _ Over Supplied

[redacted]tional)

Name:[redacted]

Addre[redacted]

City of San Diego

AFFORDABLE HOUSING PARKING STUDY

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

Parking space is considered by most people to be cheap/free. I want parking spaces to be commoditized - given a monetary value that could be marketed. Both on-street (parking permits & meters) and off-street, where a renter/owner could rent out their spaces.

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

- only have car parking required for the # of licensed Drivers.
- there is little correlation between income & number of parking spaces required/desired.
- Beef up Transit & bicycling options - better facilities, lower fares more frequent buses/trolleys.

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses ?

_ Under Supplied _ Adequate _ Over Supplied

2) Indicate projects' name or addresses ?

_ Under Supplied _ Adequate _ Over Supplied

3) Indicate projects' name or addresses ?

_ Under Supplied _ Adequate _ Over Supplied

Name: [redacted]
Address: [redacted]

AFFORDABLE HOUSING PARKING STUDY

Comment Card

What do you see as the greatest challenges related to parking at Affordable Housing developments?

Insufficient Parking at All condo & apartment developments in the entire county [illegible] [illegible] [illegible].

Are there any opportunities to improve parking facilities at Affordable Housing Developments?

of course - Build on Top of parking & underground parking where lots permit.

Remember you can't add spaces later — but you can convert spaces if [illegible] [illegible] [illegible] [illegible] [illegible] [illegible] [illegible]

Please rate the availability of parking supplies at affordable housing projects that you are familiar with.

1) Indicate projects' name or addresses

__ Under Supplied __ Adequate __ Over Supplied

2) Indicate projects' name or addresses

__ Under Supplied __ Adequate __ Over Supplied

3) Indicate projects' name or addresses

__ Under Supplied __ Adequate __ Over Supplied

(optional)

Name: ______________________

Address: ______________________

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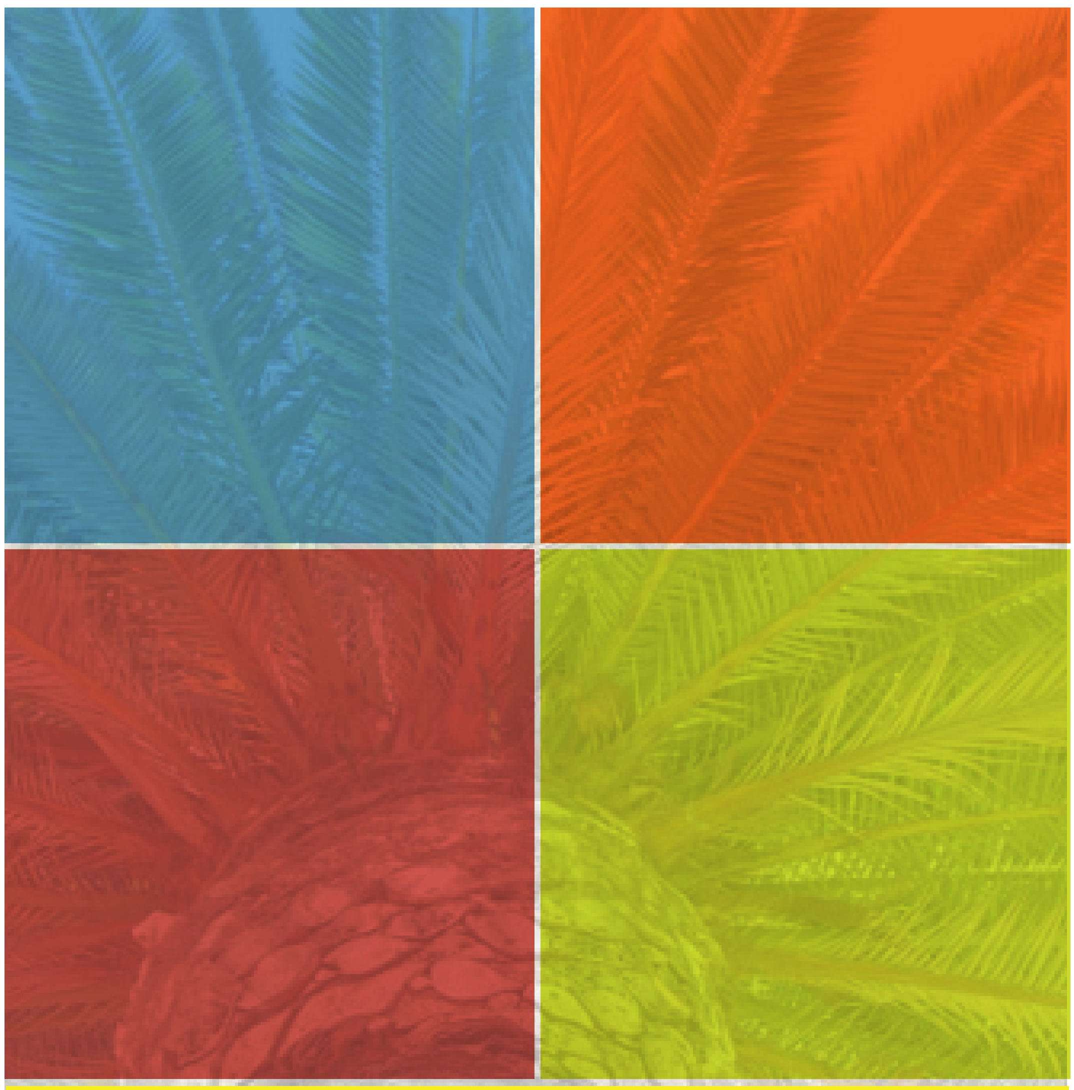
Appendix 2.3 **Focus Group Questions**



Affordable Housing Developers

1. What challenges do current off-street parking requirements pose to developing affordable housing?
    a. Are there any specific requirements that present a particular obstacle?
    b. What should the requirements be? Why?

2. When selecting sites for developing affordable housing projects, what factors do you consider?
    a. surrounding land use?
    b. proximity to transit?
    c. others?

3. Are there any portions of the current City off-street parking requirements that are beneficial to the development of affordable housing and that should be retained?
    a. Why do you think tandem parking is not being used as a way to reduce the burden of providing required parking supply at affordable housing developments?

4. How challenging is the application process for affordable housing developments?
    a. Realistically, what kind of information are you able to provide at the application stage?

5. As part of the Affordable Housing Parking Study, an analysis of the level of household vehicle availability and the factors that affect it was conducted. After reviewing the results (provided in *Fact Sheet #2, Results From Affordable Housing Resident Survey),* **what factors do you think are most important to consider in modifying parking policies/requirements?**

6. As part of the Affordable Housing Parking Study, a survey of best practices on parking policies for affordable housing that have been adopted by other cities was conducted. After reviewing the information (provided in *Fact Sheet #2, Strategies for Meeting Parking Demands for Affordable Housing Developments*)**, what factors do you think are most important to consider in making a decision to modify parking policies/requirements?**

7. Is there anything else that should be considered when making a decision on modifying the current off-street parking requirements?

Affordable Housing Advocates

1. What types of housing are most needed in San Diego? What are the challenges to creating it?

2. How can parking regulations be modified to make affordable housing and "special needs" housing easier to build?

3. As part of the Affordable Housing Parking Study, an analysis of the level of household vehicle availability and the factors that affect it was conducted. After reviewing the results (provided in *Fact Sheet #2, Results From Affordable Housing Resident Survey),* **what factors do you think are most important to consider in modifying parking policies/requirements?**

4. As part of the Affordable Housing Parking Study, a survey of best practices on parking policies for affordable housing that have been adopted by other cities was conducted. After reviewing the information (provided in *Fact Sheet #2, Strategies for Meeting Parking Demands for Affordable Housing Developments*)**, what factors do you think are most important to consider in making a decision to modify parking policies/requirements?**

5. Is there anything else that should be considered when making a decision on modifying the current off-street parking requirements?

Business Groups

1. Who do you think competes for parking that businesses' customers use?

2. Is shared parking a viable solution for providing parking for residential and commercial uses?

3. As part of the Affordable Housing Parking Study, an analysis of the level of household vehicle availability and the factors that affect it was conducted. After reviewing the results (provided in *Fact Sheet #2, Results From Affordable Housing Resident Survey),* **what factors do you think are most important to consider in modifying parking policies/requirements?**

4. As part of the Affordable Housing Parking Study, a survey of best practices on parking policies for affordable housing that have been adopted by other cities was conducted. After reviewing the information (provided in *Fact Sheet #2, Strategies for Meeting Parking Demands for Affordable Housing Developments*)**, what factors do you think are most important to consider in making a decision to modify parking policies/requirements?**

5. Is there anything else that should be considered when making a decision on modifying the current off-street parking requirements?

PAC Chairs/Planning groups

1. Has the introduction of affordable housing been an issue of concern in your community?
    a. If so, how does your committee/board address these concerns?
    b. Do you think residents are currently overcrowding existing units?

2. What do you see are the challenges to creating more affordable housing in your neighborhoods? Do you have any specific concerns?

3. How do you generally feel about parking in your neighborhood? Is there a surplus or shortage of parking? When? Why?

4. As part of the Affordable Housing Parking Study, an analysis of the level of household vehicle availability and the factors that affect it was conducted. After reviewing the results (provided in *Fact Sheet #2, Results From Affordable Housing Resident Survey),* **what factors do you think are most important to consider in modifying parking policies/requirements?**

5. As part of the Affordable Housing Parking Study, a survey of best practices on parking policies for affordable housing that have been adopted by other cities was conducted. After reviewing the information (provided in *Fact Sheet #2, Strategies for Meeting Parking Demands for Affordable Housing Developments*)**, what factors do you think are most important to consider in making a decision to modify parking policies/requirements?**

6. Our study seeks to show the realistic relationship between parking demand and various affordable housing characteristics. How is this best presented in an objective light to the public?

7. Is there anything else that should be considered when making a decision on modifying the current off-street parking requirements?

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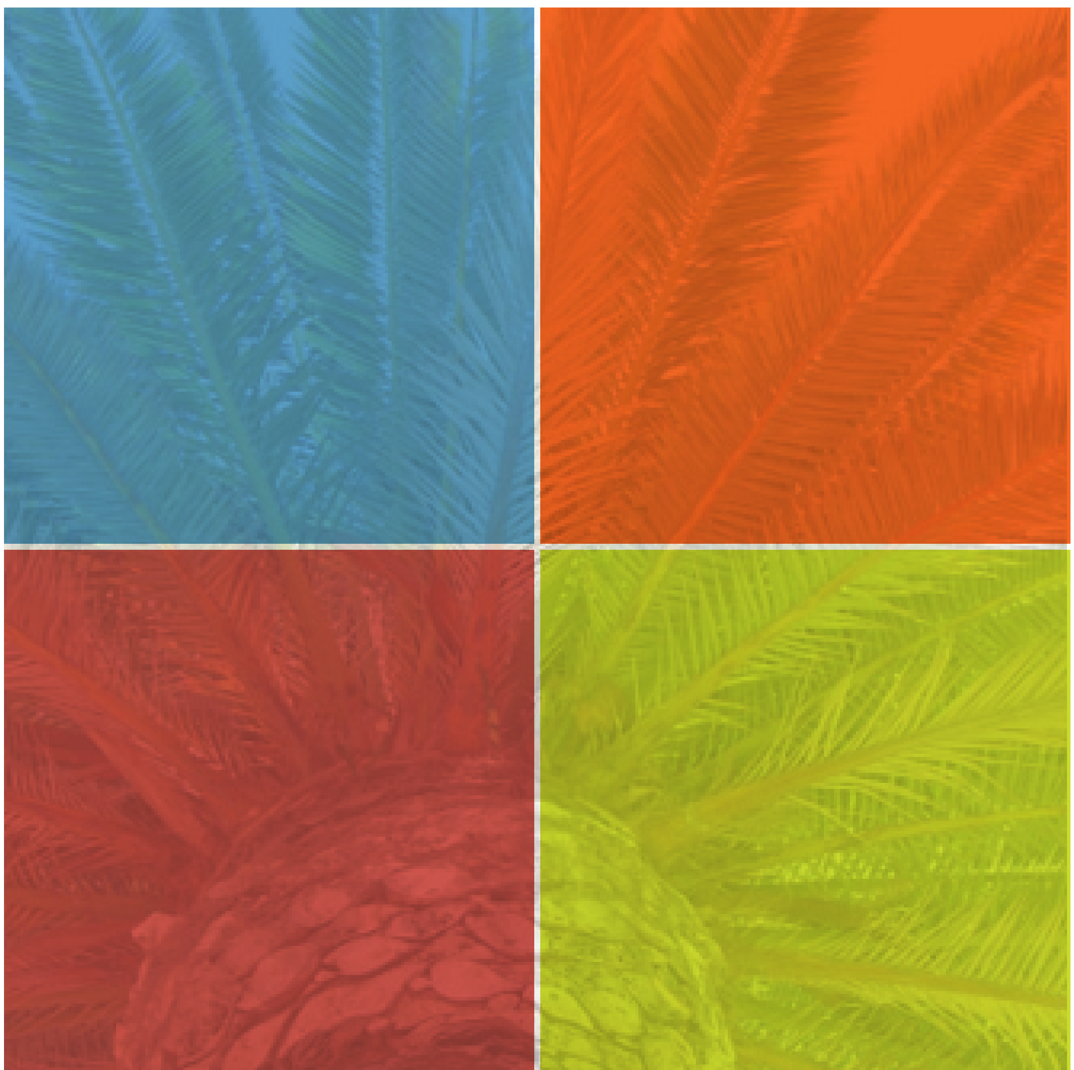
CHAPTER 3.0 Existing Policies and Research



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3.0 Existing Policies and Research

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3.0 Existing Policies and Research

Introduction

The implications of affordable housing parking requirements on the City of San Diego's affordable housing, transportation, and development goals are far reaching. Requiring excessive amounts of off-street parking can dramatically increase the cost of residential development, can encourage excessive auto use, and can lead to unsightly structures. In the context of subsidized affordable housing, spending scarce funding on underutilized parking may mean that fewer total residential units are built and fewer needy individuals will receive housing. On the side of the issue, under-requiring parking may adversely impact surrounding neighborhoods via spillover parking demand and cause difficulties for residents who depend on their vehicles to get to work at hours or locations that are not well served by transit.

Through data collection, statistical modeling, and case study analysis, the San Diego Affordable Housing Parking Study will develop a set of parking rates that accurately match parking demand with supply. These rates will consider the travel characteristics of affordable housing residents as well as the relationship of individual developments to transit and neighborhood services. This system of rates will thus ensure that the parking needs of each development are being met as closely as possible while also maximizing the use of resources for housing rather than parking.

This background memo reviews recent academic and industry literature discussing how parking requirements impact housing affordability and why residents of subsidized housing may have specific parking needs that are not well served by a more generalized set of requirements. The memo then discusses City policy regarding affordable housing and parking and summarizes how parking regulations are currently applied to affordable developments under the Municipal Code. Finally, the role of the Affordable Housing Parking Study is discussed in relation to the City's ongoing parking and transportation planning efforts. This background memo is thus intended to provide a shared foundation of key research and policy information as the City considers new ways to approach parking and affordable development.

Parking Requirements and Housing Affordability: Academic and Industry Research

There is a growing body of academic and professional literature that highlights the tension between residential parking requirements and housing affordability. Academics and housing advocates increasingly point to ways in which high residential parking requirements raise the cost of housing, hinder affordable residential development, and can detrimentally impact the bottom line of lower income households. The following surveys some of the more recent or notable pieces of literature that address the relationship between parking requirements and affordable housing and point towards better ways of providing parking and insuring access.

The most fundamental criticism of residential parking requirements as they relate to affordable housing is that every additional parking space built adds a significant amount to the overall construction cost of each residential unit. In market rate housing, these costs are passed directly on to residents in the form of higher sales costs or rents. In subsidized, affordable units, higher construction costs may instead simply increase the required subsidy per unit, thereby reducing the total number of units that can be built.

In 1998, Martin Wachs and Wenya Jia conducted one of the earlier and more frequently cited studies quantifying the link between parking requirements and increased housing costs.[1] Wachs and Jia studied six neighborhoods in San Francisco to determine the influence of code required parking on housing affordability among both single family houses and condos. Using a hedonic pricing model with housing and neighborhood variables as inputs and sales price as the dependent variable they found that controlling for other factors, single family homes and condominiums were an average of 10% more expensive when they included off-street parking. The paper further extrapolates that were it possible for a comparable set of new housing units to be legally provided without code required housing over 30,000 additional San Francisco households that could not qualify for a mortgage would be able to. The Non Profit Housing Association of Northern California makes similar claims regarding the expense of parking, stating that in California individual parking spaces often cost between $10,000 and $50,000 per space depending on parking design and location.[2] Similarly, research is cited showing that the inclusion of parking spaces can raise the cost of housing units by as much as $46,000. Finally, in the Victoria Transportation Policy Institute's his wide ranging survey of parking's impacts on housing affordability, Todd Litman reaches a similar set of conclusions.[3] Examining a variety of affordable housing developments around Canada and the United States and determines that depending on land values and the configuration of the constructed parking (surface spaces, structured, underground) requiring one space per unit increases the unit's base costs by an average of 12.5% while requiring two spaces increases the cost by an average of 25%.

In addition to increasing the price of housing by driving up construction costs, parking requirements also impact site design; reducing the land available for residences and potentially contributing to unattractive buildings and surface parking lots. In the same article, Litman demonstrates that requiring

1 Jia, Wenya, and Martin Wachs. Parking Requirements and Housing Affordability: A Case Study of San Francisco, Research Paper 380, University of California Transportation Center – University of California at Berkeley. Berkeley, CA; July 1998.

2 Non-Profit Housing Association of Northern California (NPH). Rethinking Residential Parking: Myths and Facts. San Francisco, CA; April 2001.

3 Litman, Todd. Parking Requirement Impacts on Housing Affordability. Victoria Transport Policy Institute. January 2009.

an additional parking space per unit in a typical, medium-density two story apartment building can increase land requirements by as much as 37%.[4] Similarly, the Non Profit Housing Association of Northern California argues that required parking can detract from a neighborhood's aesthetics through either large expanses of unsightly surface parking or overbearing buildings made bulkier through structured parking.[5]

The impacts of parking on site design and land consumption can be of particular concern for infill or reuse projects in denser neighborhoods. In an article describing best practices for affecting the rehabilitation of affordable housing, the Office of Housing and Development notes the importance of reduced parking requirements in making rehab and adaptive reuse projects a viable alternative for affordable housing production.[6] With the structure of a building already in place, it is difficult and sometimes impossible to retrofit existing structures to add additional off street spaces, a problem which can often prevent unique affordable housing projects from occurring in historic buildings and adaptive reuse contexts. Similarly, Viki Been, Josiah Mader, and Simon McDonnell examined parking requirements in New York City in relation to transit facilities.[7] The study found that per City policy, parking requirements on a unit per unit basis were indeed lower in dense developments near transit. They also found, however, that because of the high densities the amount of parking required per unit of developable land was significantly higher in these areas meaning that the "opportunity cost" of each parking space in terms of forgone residential development was elevated simply because each parking space takes up a large land "footprint."

While the costs created by excessive parking requirements affect all kinds of homeowners and renters, their impact on lower income households is particularly disproportionate. This is in part because lower income households tend to spend a greater percentage of their income on housing than higher income households as Litman demonstrates in his analysis. As the Bureau of Labor Statistics figures presented in Figure 1 show, households in the lowest income earning quintile have consistently dedicated 35%-40% of their total expenditures to housing while households in the highest income earning quintile tend to dedicate closer to 30% of their total expenditures. This effect is further amplified since the

4 Litman, 2009

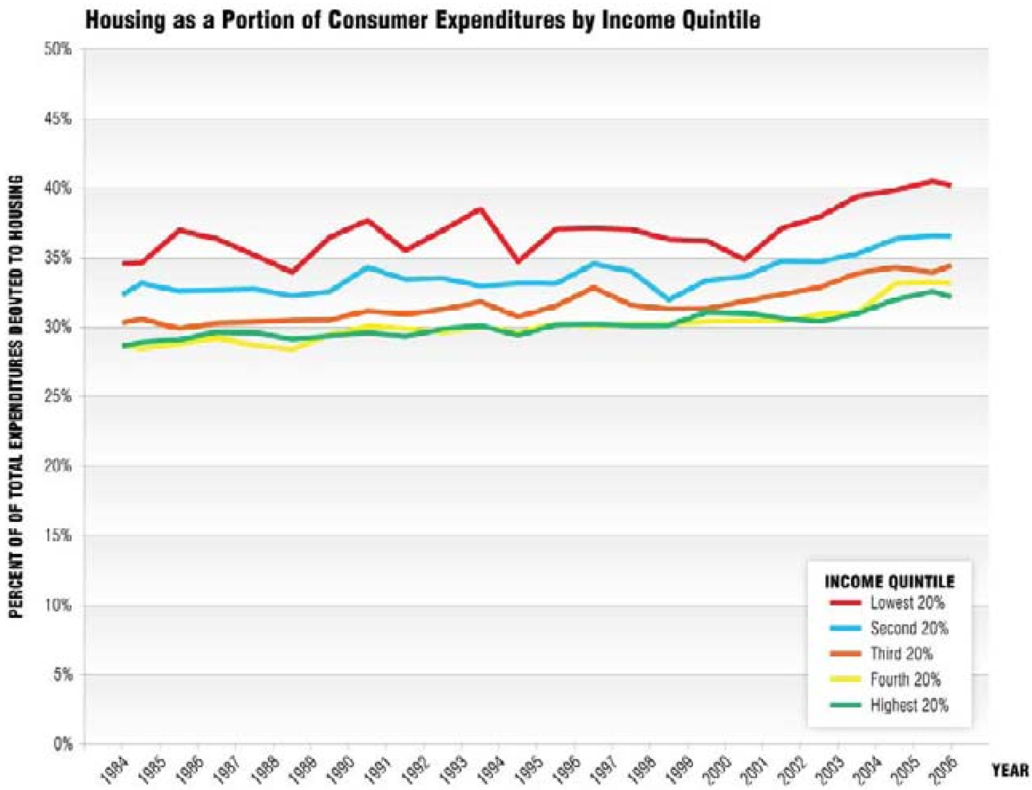
5 Non-Profit Housing Association of Northern California, 2001

6 Department of Housing and Urban Development (HUD). Best Practices for Effecting the Rehabilitation of Affordable Housing. HUD Office of Policy Development and Research. September, 2006.

7 Been, Vicki, Josiah Mader, and Simon McDonnell. Minimum Parking Requirements, Transit Proximity, and Development in New York City. Submitted to Transportation Research Board Compendium of Papers. August 2009.

component of housing costs that are driven by parking are relatively fixed and do not necessarily rise or fall at the same rate as the overall cost of the housing unit.

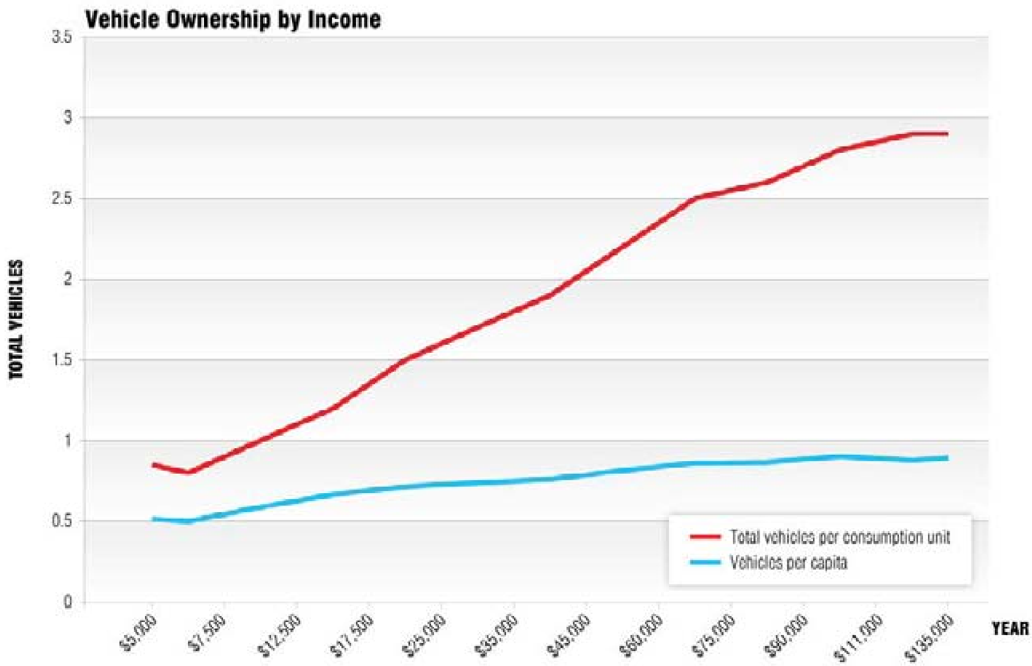
Figure 1



Source: Bureau of Labor Statistics

High parking requirements are additionally unfair to lower income households because national data clearly show that low income households consistently own fewer vehicles than their higher income counterparts. Litman cites Bureau of Labor Statistics data for the past 30 years demonstrating that even as overall vehicle ownership rates have risen, lower income households have continued to own vehicles at a lower rate. These same statistics have been recreated in Figure 2 and reiterate that as household (consumption unit) income rise so to does vehicle ownership on both a total and per capita basis. As of 2001, when Litman developed the data for his article, individuals living in a lowest income quintile owned an average of just under 0.6 vehicle each whereas those living in households in the highest income quintile owned an average of nearly 1.0 vehicle each. Standard parking ratios thus not only increase the costs of producing affordable housing, they fail to reflect the established data that lower income households own fewer cars.

Figure 2



Source: Bureau of Labor Statistics

Given the issues described above, many of the articles reviewed here also suggest ways in which the impact of traditional parking requirements on affordable housing can be lessened. Most of these strategies involve a combination of adjusting or eliminating traditional parking requirements for affordable housing and instead adopting what HUD refers to as "context sensitive rates" that are reduced from traditional levels to account for factors like lower vehicle ownership rates and proximity to transit. Similarly, Litman and the Non Profit Housing Association of Northern California suggest combining lower parking rates with travel demand management strategies such as shared parking, carsharing, and unbundling parking (charging for parking independently from housing costs as a way to further reduce parking demand or account for any demand that may not be satisfied by the physical parking supply.

Affordable Housing and Parking in San Diego

Expanding and maintaining the City's supply of affordable housing is an ongoing challenge in San Diego. The City's General Plan was adopted in July of 2008 and outlines a framework for future development. The General Plan is built around a "City of Villages" concept that emphasizes corridor and node focused infill development of mixed-use activity centers through coordinated land use and transportation planning. A key goal of the plan includes providing a diverse set of housing choices that meet the needs of all income levels. The General Plan's Housing Element, (prepared in 2006,) notes that there is currently a severe shortage of affordable housing available to people of low and moderate incomes. The Housing Element identifies five key housing goals including the provision of housing for all income levels, the maintenance and upgrading of existing affordable housing, the reduction of governmental constraints, the provision of affordable housing opportunities, and improving compliance with federal, state, and local laws. Unfortunately, these goals are hampered by a number of impediments to the construction of affordable housing including, land costs, infrastructure deficiencies in older urbanized communities, development review procedures, construction defect litigation, and community opposition to higher-density and affordable housing developments.

The challenges associated with producing affordable housing are reflected in the substantial gap between demand for affordable housing and the number of units that can realistically be built. The housing element notes that in 2000, the City of San Diego had approximately 181,572 very low and low-income households (defined as households earning 0-80 percent of Area Median Income or AMI). Based on this number, the San Diego Association of Governments (SANDAG) identified the City's share of regional housing need between 2003 and 2010 to include 45,741 new housing units, 18,735 of which were to be affordable to low, and very low-income groups. Meanwhile, the City estimated that it could only feasibly produce 3,980 new units for low- or very low-income households during that same time frame based on current funding and economic conditions.

Affordable housing developments within San Diego are funded through a variety of mechanisms. One of the most important of these is the Inclusionary Housing Program. A version of this requirement has been in effect since 1992 in the Northern portion of the City and a citywide version was introduced in 2003. Under the citywide ordinance developers building residential projects with 10 or more units are required to provide 10% of rental units to renters earning no more than 65% AMI or, if the units are for sale, to home buyers earning no more than 100% AMI. Developers are also allowed to forgo building required affordable units on-site and can instead pay an in lieu fee into the San Diego Housing Trust Fund which is then used for the development and maintenance of affordable residential projects. Developers meeting the inclusionary housing requirement receive a number of incentives including expedited permit processing, reduced utility connection fees, density bonus, and some reductions in parking requirements (discussed in detail below). The City's Density Bonus program works in conjunction with the Inclusionary Housing Ordinance to encourage the production of affordable housing by providing a 10% density bonus to projects that build their required inclusionary housing on-site rather than paying an in lieu fee.

In addition to affordable housing units supported through the development process, affordable housing in San Diego is also funded through the use of tax-credits and tax-exempt bonds, Housing and Urban Development Department (HUD) loans directly to non-profit builders, and other state and federal funding. The City has also worked with universities, employers, the military, and colleges to encourage the production of affordable housing targeted to specific populations. Affordable Housing in the City of San Diego is thus developed in a number of different formats and through the overlapping support of many programs and funding mechanisms. In addition to traditional multi-family rental and ownership units for families and individuals, the City also works to develop housing targeted specifically to the needs of the elderly and disabled communities, as well as the homeless and farm workers.

Affordable Housing Parking Requirements

Current off-street residential parking requirements as defined in the San Diego Municipal Code vary based on the unit type and location and are subject to a number of modifiers including reductions for affordable housing in certain situations. The following summarizes current residential parking requirements and describes how they are modified for affordable developments.

Table, 1, below presents a simplified version of the base parking requirements for residential units presented in Chapter 14, Article 2, Division 5 of the San Diego Municipal Code.

Table 1: Base Parking Requirements

Type of Unit	**Required Spaces Per Dwelling Unit**			**Exceptions and Notes**
	Base Parking	Transit Area or Very Low Income	Parking Impact Zone	
Single Family Residences				
Detached single dwelling unit	2	na	na	Units with 5 or more bedrooms in campus impact areas 1 space per bedroom

Type of Unit	Required Spaces Per Dwelling Unit			Exceptions and Notes
	Base Parking	Transit Area or Very Low Income	Parking Impact Zone	
Detached housing for senior citizens	1	na	na	1 bedroom per unit maximum
Multi Family Residences				
Studio up to 400 sf	1.25	1.0	1.5	
1 bedroom / studio over 400 sf	1.5	1.25	1.75	
2 bedrooms	2.0	1.75	2.25	
3-4 bedrooms	2.25	2.0	2.5	
5+ bedrooms	2.25	2.0	2.5	Units with 5 or more bedrooms in campus impact areas 1 space per bedroom
Rooming Houses	1.0 per tenant	0.75 per tenant	1.0 per tenant	
Boarder and lodger accommodations	1.0 per two boarder or lodgers	1.0 per two boarder or lodgers	1.0 per boarder or lodger in beach impact area	
Residential care facility (6 or fewer persons)	1 per 3 beds or per permit	1 per 4 beds or per permit	1 per 3 beds or per permit	
Transitional Housing (6 or fewer persons)	1 per 3 beds or per permit	1 per 4 beds or per permit	1 per 3 beds or per permit	
Residential accessory Uses: Retail Sales	2.5 per 1,000 sf	2.5 per 1,000 sf	2.5 per 1,000 sf	
Residential accessory Uses: Eating and Drinking Establishments	5 per 1,000 sf	5 per 1,000 sf	5 per 1,000 sf	

Source: San Diego Municipal Code, Chapter 14, Article 2, Division 5

As the table suggests, base parking requirements apply unless the development is located within one of the City's "Transit Overlay Zones" or some portion of the development is limited to occupancy by very low-income households (or is covered by an agreement with the San Diego Housing Commission). In cases where only some units are income restricted, the lower parking requirement will only be applied to the affordable units. Similarly, when development is located within one of the City's "Parking Impact Zones" the higher parking rate shown is applied. While the reduction in parking allowed for very-low income restricted units varies, none exceeds 25%.

In addition to the base rate modifications shown in Table 1, there are a number of other code mechanisms that can alter a residential development's parking requirements and may apply to affordable housing. Most notably, under section 143.0790 (g) if a development participates in the City's Density Bonus program (meaning that developer has set aside a percentage of units as affordable to low or very-low income households in a way that meets the criteria of Section 143.0720(c),(d), or (e)) the development as a whole may qualify for a separate set of parking requirements that may result in a reduction. These requirements are shown in Table 2 below and can be further modified as shown.

Table 2: Section 143.0790 Modified Parking Requirements

Type of Unit	**Required Spaces Per Dwelling Unit**			
	Base Code Rate (per unit)	Section 143.0790 (g) Parking Rate (per unit)	Transit Area Reduction (entire development)	Very-low income unit reduction (designated units only)
Studio or 1-bedroom	1.5-1.25	1.0	0.25 spaces per dwelling unit	0.25 spaces per dwelling unit
2 – 3 bedrooms	2.0-2.25	2.0	0.25 spaces per dwelling unit	0.25 spaces per dwelling unit
4 or more bedrooms	2.25	2.25	0.25 spaces per dwelling unit	0.25 spaces per dwelling unit

Source: San Diego Municipal Code, Chapter 14, Article 3, Division 7

Under the modified parking requirements, a qualifying 1-bedroom unit restricted to occupancy by a very-low income household could thus achieve a parking requirement of only 0.5 spaces, a 66% reduction from the base code requirement. Although this simplified set of parking requirements will result in a reduction from the base parking requirements in many circumstances, it is important to note that the use of different unit categories (consolidating studios and 1-bedroom units and 2 and 3 bedroom units into single groups) will result in a substantial variation in the actual reduction realized depending on the exact unit mix constructed. Units with 3 or more bedrooms, for example will not achieve any reduced parking benefits from the above schedule although they will be impacted differently depending on the transit and income bonuses they may be eligible for.

Finally, a separate set of parking requirements applies to certain affordable developments within the Centre City Community Planning Area. Section 103.1959 authorizes a limited number of conditional use permits to for low income restricted “Living Units” to be developed as a demonstration program in the Centre City Community Planning Area. These “Living Units” are subject to a lower base parking requirement of 0.90 spaces per unit and this requirement can be adjusted down further depending on the precise income restrictions and the payment if in-lieu fees.

In addition to parking reductions related to the City’s Density Bonus Program, there are several other Code provisions that impact how affordable housing developments can fulfill their parking requirements. San Diego’s municipal code establishes a Tandem Parking Overlay Zone (Chapter 13, Article 2, Division 9) that allows tandem parking arrangements to count towards two required off street parking spaces if a development is located within the designated zone and certain conditions are met. In order for a tandem parking arrangement to be counted as two off street parking spaces, at least one of the spaces must be within an enclosed structure and both spaces must be assigned to the same unit. Additionally, there are a variety of specific restrictions within the Tandem Parking Overlay Zone qualifying the use of tandem parking in different neighborhood plan areas.

The City of San Diego has a number of additional innovative parking programs including off site parking, shared parking, and parking assessment districts that provide flexible ways for developers to satisfy their parking requirements. However, while affordable housing developments may be affected by some of these programs, they are more likely to significantly impact commercial and office uses than they are residential properties. Section 142.0545 allows shared parking between two different uses located within 600 feet of each other. While residential developments are allowed to participate in shared parking programs to reduce their onsite parking requirements, only 25% of their calculated parking requirement is eligible for use as shared parking and only after each unit has already been assigned one dedicated space. More generally, section 142.0535 authorizes required parking to be provided off-site within 25 feet of the a residential use within the City’s defined “urbanized communities” provided certain other conditions are met. The City of San Diego also defines a series of neighborhood parking districts within the Chapter 15 Planned Districts section of Municipal Code. Although these parking districts contain language modifying many of the design and landscaping requirements related to off-street parking, they do not generally alter the baseline parking requirements for residential developments defined in sections 142.0520 - 142.0525 nor do they make unique provisions for affordable housing.

A review of San Diego's Municipal Code thus reveals that affordable housing developments are subject to a relatively complex set of parking requirements and potential modifications depending on their location and composition. While the code currently provides a number of opportunities for affordable developments to receive a reduced parking requirement, there is a great potential for variation in terms of the reduction received. Depending on whether the project was built through the Density Bonus program, where in the City it is located, what size units it includes, and whether those units are specifically restricted to very-low income households or targeted towards other needy populations a given development may receive little to no modification to its parking requirement or it may have its requirement greatly reduced. While all of the factors noted above might reasonably impact a project's parking requirements, it is not clear that the current code provides modifications in a manner that is consistent and rationally tied to a project's likely parking demand.

The 2002 City of San Diego Multi-Family Residential Parking Study

San Diego's affordable housing parking requirements have been studied before. In 2002, the City of San Diego Multi-Family Residential Parking Study attempted to identify whether reductions in parking requirements for affordable housing projects in San Diego were warranted. The study reviewed academic research pertaining to the impacts of parking on housing affordability and examined code reductions granted to affordable housing developments in other Southern Californian cities. The study also examined parking demand at 20 residential projects within the City of San Diego including four categories of development; market-rate units within ¼-mile of transit and those not near transit; and affordable units within ¼-mile of transit and those not near transit. The projects examined ranged in size from 13 to 310 units and did not include any projects with "mixed" market rate and income restricted units. The study found that on average, affordable units had a 13% lower parking demand than market rate units and that units within ¼ mile of transit had a 6% percent lower demand than units removed from transit. The study did not reach a clear conclusion as to the differences in parking demand between low- and very low income households. The study also included a survey of vehicle ownership at the sites examined and found that, on average, households qualifying for affordable housing owned 1.30 vehicles while households living in market rate housing owned 1.60 vehicles. Ultimately, the 2002 study recommended defining "affordable" as any unit restricted to very-low or low income families, requiring at least one parking space per unit for each housing unit, regardless of proximity to transit or income restrictions, and discounting parking rates for any units meeting affordability requirements.

San Diego's Transportation and Land Use Goals

As the preceding discussion has emphasized, parking requirements play a significant role in shaping development and can also influence travel behavior. It is thus important to examine the City of San Diego's broader land use and transportation goals and consider how "right-sizing" affordable housing parking requirements can contribute towards these objectives. Making sure that parking requirements accurately reflect parking demand and are appropriate for all areas and contexts will help maximizing development opportunities near transit will contribute to more vibrant developments and communities.

As noted earlier, San Diego's 2008 General Plan is centered on a "City of Villages" concept that emphasizes focused infill development and coordinated land use and transportation planning. The City of Villages strategy focuses on strengthening San Diego's existing neighborhoods through pedestrian friendly development that mixes residential, commercial, and employment uses and connects them to the regional transit network. The Village Strategy is intended to shape growth in a way that minimizes transportation impacts and encourages the use of alternative modes. Focusing denser development near transit is intended both to make transit more convenient and to maximize the value of investments in rail and other new transit infrastructure.

The land use and transportation objectives of the 2008 General Plan are captured in several of the Plans "Guiding Principles." Principle 5, "An integrated regional transportation network of walkways, bikeways, transit, roadways, and freeways that efficiently link communities and villages to each other and to employment centers" directly addresses the land use and transportation relationship. Similarly, Principle 3 "compact and walkable mixed-use villages of different scales within communities", Principle 4 "employment centers for a strong economy" and Principle 8 "balanced communities that offer opportunities for all San Diegans and share citywide responsibilities" all speak to the importance of a strong land use transportation connection.

The land use and transportation strategy outlined in the 2008 City of San Diego General Plan is coordinated with the San Diego Association of Governments (SANDAG) 2007 Regional Transportation Plan. Following on the heels of SANDAG's 2004 Regional Comprehensive Plan, the Regional Transportation Plan presents the transportation side of the land use transportation equation, identifying projects for multiple modes of transportation and attempts to ensure that the region's transportation needs are met in a balanced fashion. The 2007 RTP is developed around a compact, smart growth concept. At the regional level, the plan focuses transportation investments towards areas with smart growth potential while at the local scale it emphasizes better integrating transit and bicycle facilities into activity centers to encourage the use of alternative modes. The RTP includes specific goals that emphasize these objectives including supporting "livability" by focusing transit investments within supportive land use conditions, promoting "accessibility" by increasing transit ridership, walking, and bike usage, and "sustainability" by prioritizing transportation investments that discourage sprawl and promote smart building.

Many of the City of San Diego's more transformative land use and transportation goals are evidenced in plans for the downtown as the City moves forward with its ambitious redevelopment program. The City of San Diego Downtown Community Plan (2006) and the Comprehensive Parking Plan for Downtown San Diego (2009) both present a more detailed vision for how intensifying land uses changes and transportation policy and investments can be coordinated to achieve an "intense yet always livable" downtown community. The plan includes ambitious goals for increasing the intensity of land use and targets a build out sufficient to accommodate 165,000 jobs and 90,000 residents. These land uses changes will be accompanied by planned modifications to the road network, improved pedestrian and bicycle facilities, and new transit infrastructure and transit supportive development.

The Centre City Development Corporation (CCDC) also recently completed the Comprehensive Parking Plan for Downtown San Diego. As a guiding document for addressing parking issues in the downtown, the study examined the downtown's existing and future parking supply, projected future parking demand under several development scenarios, and developed parking management and policy recommendations. The 2009 study included all neighborhoods within the primary downtown area of San Diego and encompassed all public off-street and on-street parking as well as private off-street parking. Analysis indicated that the existing parking surplus for downtown would likely last through 2010, while parking shortages were projected to begin by 2015. General recommendations were then developed focusing on managing existing and near-term (2015) parking surplus, and implementing additional strategies to mitigate future impacts. Key issues and recommendations identified by the plan ultimately included shared parking, on- and off-street parking pricing, neighborhood parking management plans, modification of parking minimums downtown, encouraging affordable transit, expanding residential permit parking zones, and developing solutions to incentivize residents and businesses located downtown.

The types of recommendations and changes included in the Comprehensive Parking Study for Downtown San Diego are indicative of broader parking management trends around the country and in the City of San Diego. A traditional suburban approach to parking would tend to lean heavily on supply and would likely require large, discrete "buckets" of reserved parking for every use. A more forward looking model of parking management would suggest reducing the physical supply of parking but ensuring that the remaining supply was used in a more efficient and flexible fashion. By controlling the existing supply more efficiently, robust parking management practices combined with San Diego's existing municipal code tools, (such as enabling shared parking, tandem parking, and parking districts,) provide the support necessary to fine tune parking requirements to the needs of particular development types and neighborhoods.

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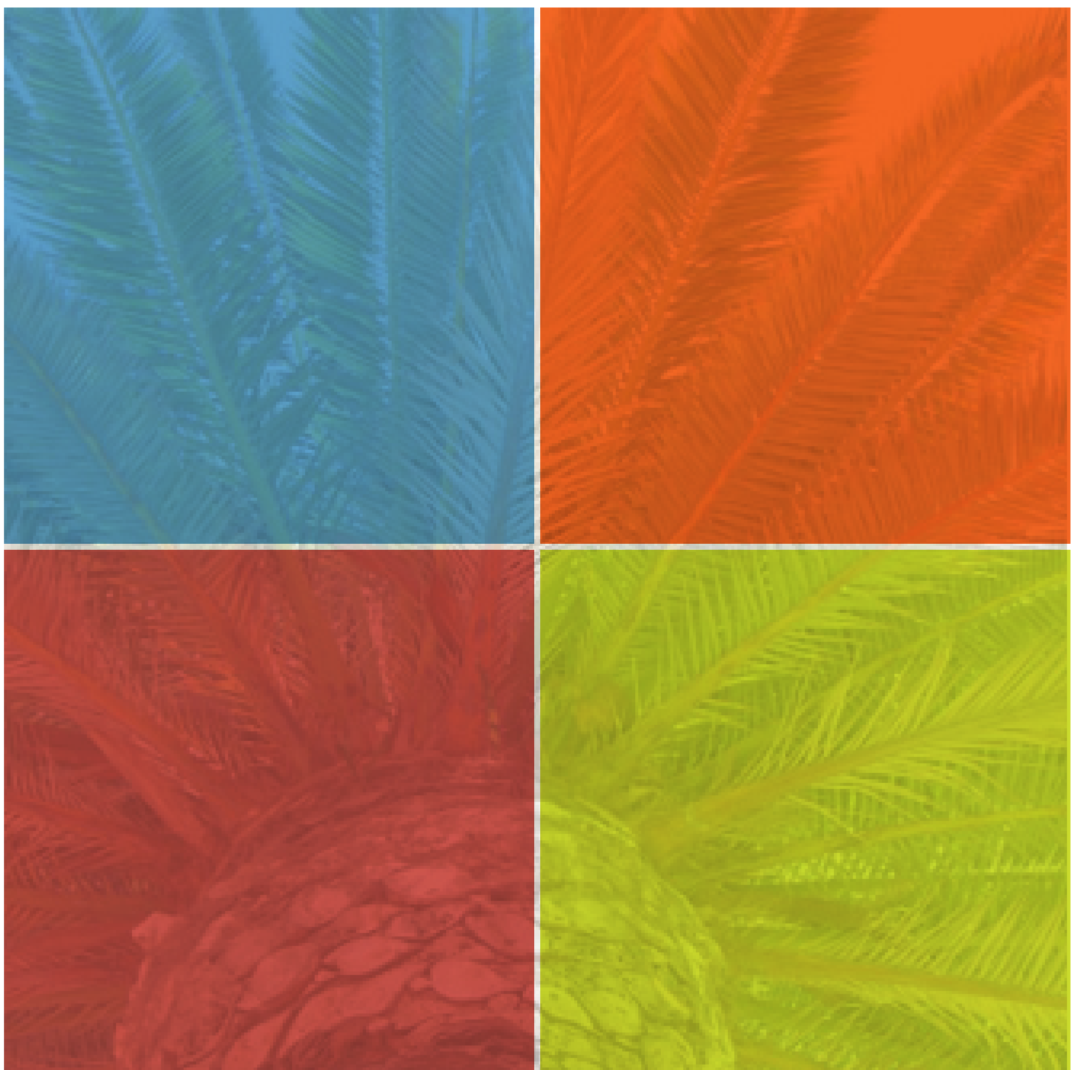
CHAPTER 4.0 **Methodology**



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4.0 Methodology

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4.0 Methodology

Introduction

The following document presents the preliminary output of the affordable housing database and discusses the methodology used to develop project and neighborhood level variables. It includes a summary of variables results for all projects included in the database and thus presents an overview of affordable housing stock characteristics within the City of San Diego. This summary is accompanied by a spreadsheet that presents a highly detailed project by project breakdown of all variables. All project data both provided by the city and analyzed for this study are provided in CD form in Appendix 4.1 – Housing Data and GIS Files.

Site List Refinement

The master list of affordable housing project sites was developed based on records maintained by the San Diego Housing Commission, the Redevelopment Agency, the Center City Development Corporation, and the Southeastern Economic Development Corporation. The list includes both rental and ownership developments and contains project types ranging from senior housing, to transitional homes, to inclusionary units within larger market rate developments. Where available, the projects on the list were augmented with additional information including construction year and the number and mix of units.

Once the master list was assembled in a spreadsheet format, it was translated into a spatial database using Geographic Information Systems software (GIS). While the master list strove to be as inclusive as possible, not all projects were subsequently included in the GIS database. The two major reasons for omitting individual projects are discussed below. It is important to note that the master list was maintained so that individual projects could be re-added to the database if the members of the project team or city staff believed they were erroneously removed or new information became available. Projects were removed for the following reasons:

- ***Address mismatches / no-address data:*** Projects were geocoded (mapped) using the addresses provided by the City on the master list and City of San Diego address data obtained through SanGIS. Entries that did not include an address could not be mapped and were excluded from the spatial database. Similarly, although the address match rate was generally quite high, a handful of addresses could not be matched against the SanGIS address database. In cases where the locations of these projects could not be determined through alternate means (such as an APN number) these projects were also excluded.

- ***Repeated sites:*** During the geocoding and data grooming process it became evident that a number of projects on the master list were either conclusively or likely repeat entries reported by multiple sources. Multiple entries of what were thought to likely be repeated projects were removed from the spatial database. (Again, it is important to note that a master dataset with all entries has been retained and projects can be re-added to the spatial database as appropriate).

Variable Assignment

After geocoding and editing, the current spatial database contained 265 unique developments. These sites were coded with a series of "project" and "neighborhood" variables that capture key characteristics about each development's qualities and surroundings. Due to the large number of sites and variables it was difficult to present a single set of summary information for all projects. The remainder of this document presents tables that summarize project and neighborhood variables for the entire database. Such summaries are useful because they provide a representative picture of what affordable housing in San Diego looks like "as a whole".

In most cases, the variables shown have been expressed in a summary form for ease of presentation and discussion. Most, but not all, of the available variables are included in these summary tables. Similarly some of the "breaks" and categorizations shown for certain variables represent a parsing of continuous values and can be altered or shifted if deemed appropriate by the TWG and project team. Variables have been categorized as shown to best illustrate the spread of values within the database. Detailed database outputs showing all developments and individual variable values have been provided in the accompanying spreadsheet. This spreadsheet directly reflects the categorization and availability of data in the database and should be referred to if questions regarding specific variable values or expressions arise.

Project-Level Variables

A summary of project-level variables for all developments in the database is presented in Table 1 below. For each category shown the number of individual developments falling into that category is displayed as is the total number of restricted units included in that category (since individual developments vary widely in size). Except where noted, information used to develop project-level variables was supplied directly by the City as part of the initial site list assembly process. Variables are defined and described in detail in Table 2.

Table 1: Project-Level Variables for All Developments

Variable	Number of Developments	Number of Restricted Housing Units
Total	265 (100%)	11,467 (100%)
Tenancy Type		
Rental Units	250 (98%)	11305 (99%)
For Sale Units	15 (2%)	162 (1%)
Proportion of Development Income Restricted		

Variable	Number of Developments	Number of Restricted Housing Units
All or majority of units restricted (over 80%)	145 (55%)	9954 (87%)
Fewer than 80% of units restricted	120 (45%)	1513 (13%)
Project Type		
New Construction	182 (69%)	6509 (57%)
Rehabilitation / Acquisition	67 (25%)	3875 (34%)
Other / Not specified	16 (6%)	1083 (9%)
Construction / Rehabilitation Year		
Before 1990	65 (25%)	1472 (13%)
After 1990	200 (75%)	9995 (87%)
Housing Type		
Multi-family / Large Family / Small Family	192 (72%)	6430 (56%)
Individual / SRO	17 (6%)	1610 (14%)
Senior	23 (9%)	1892 (16%)
Special Purpose / Transitional	26 (10%)	1336 (12%)
Other / Not specified	7 (3%)	199 (2%)
Average bedrooms per unit by development		
1	43 (16%)	3678 (32%)
1 - 2	30 (11%)	1556 (14%)
2 - 3	93 (35%)	2713 (24%)
3 or more	21 (8%)	488 (4%)
Unit information not specified	78 (29%)	3032 (26%)
Regulatory Zones		
Development in Parking Impact Overlay Zone	18 (7%)	1079 (9%)
Development in Historic District Overlay Zone	11 (4%)	463 (4%)
Development in Parking District	171 (65%)	6319 (55%)

Table 2 Project-Level Variable Definitions and Notes

Variable	Data Source	Expression
Tenancy Type	City provided	For Sale or Rental (transitional housing categorized as rental)
Proportion of Development Income Restricted	City provided	Proportion of units in each development that are subject to income or tenancy restrictions. 80% was chosen as a cut off point but most developments are either 95-100% income restricted or less than 15% restricted. Variable in database is continuous and can be adjusted as needed.
Project Type	City provided	Project type describes the development's origin. Most are either "new construction" or "rehabilitated." Other category includes a small number of projects listed as "adaptive reuse" or "condo conversion"
Construction / Rehabilitation Year	City provided	Indicates year that development was built or rehabilitated. 1990 was selected as an arbitrary categorization. Database contains an actual year for each project and categorization can be altered as desired.
Housing Type	City provided	Describes the intended residents and use of the development. Categorizations shown were based on a range of different descriptions provided by the City. The database contains more detailed categories and some further refinement is possible but is ultimately based on City-provided data.
Average Bedrooms per unit by Development	City provided	Expresses the average number of bedrooms per unit in each development as a general indicator of that development's unit mix. Database contains individual totals of unit type for each development where such data has been provided. Many projects do not have this data available.
Regulatory Zones	SanGIS	Regulatory zone information was developed using GIS data from SanGIS. This variable shows whether a project falls within a historic district zoning overlay, a parking impact zoning overlay, or an existing parking management district.

Neighborhood-Level Variables

A summary of Neighborhood-Level variables is provided in Tables 3 and 5 below. Table 3 presents variables that reflect the transportation characteristics of an area and may influence travel choices and vehicle ownership of those living there. Table 5 includes variables that describe the land uses and services that are prevalent within an area. Neighborhood variables were developed using GIS analysis based on data supplied by SanGIS and SANDAG. “Neighborhoods” for each project were defined as quarter-mile, half-mile, or full-mile circles surrounding the project site depending on the variable being examined. Variable details and definitions are discussed in Tables 4 and 6.

Table 3 Neighborhood-Level Variables- Transportation Characteristics[1]

Variable	Number of Developments	Number of Restricted Housing Units
Total	**265 (100%)**	**11,467 (100%)**
Rail routes accessible within ½ mile		
0	185 (70%)	6711 (59%)
1	31 (12%)	711 (6%)
2 or 3	49 (18%)	4045 (35%)
Peak hour Rail trips accessible within ½ mile		
0	185 (70%)	6711 (59%)
4 - 10	33 (12%)	747 (7%)
More than 10	47 (18%)	4009 (35%)
Bus routes accessible within 1/4 mile		
0	22 (8%)	1168 (10%)
1	32 (12%)	1441 (13%)
2-4	158 (60%)	5818 (51%)
5-10	32 (12%)	1711 (15%)
More than 10	21 (8%)	1329 (12%)
Peak hour Bus trips accessible within 1/4 mile		
0	22 (8%)	1168 (10%)
2-8	93 (35%)	2904 (25%)
9-20	112 (42%)	4826 (42%)
20-40	20 (8%)	1424 (12%)
More than 40	18 (7%)	1145 (10%)

[1] The Illustrated concepts of GIS buffer and centroid analysis required for the distance based analysis shown in Tables 3 and 5 are described in Appendix 4.2.

Variable	Number of Developments	Number of Restricted Housing Units
Linear miles of Class I and II Bike Facilities within 1 mile		
0	12 (5%)	813 (7%)
Less than 1	52 (20%)	2240 (20%)
1 to 3	151 (57%)	6434 (56%)
More than 3	50 (19%)	1980 (17%)
Intersections within ½ mile		
0-50	7 (3%)	473 (4%)
50-150	71 (27%)	4989 (44%)
More than 150	187 (71%)	6005 (52%)

Table 4 Neighborhood-Level Variables- Transportation Characteristics Definitions and Notes

Variable	Data Source	Expression
Rail routes[2] accessible within ½ mile	SANDAG	Variable describes the number of accessible rail routes within ½ mile of a project based on the number of route-serving stations that fall into a half mile radius. The full database contains the same calculation for a ¼ mile neighborhood area.
Peak hour rail trips accessible within ½ mile	SANDAG	Variable is based on SANDAG transit data and describes the number of *accessible peak hour rail trips* within ½ mile of a project based on the number of route-serving stations that fall into a half mile radius. The full database contains the same calculation for a ¼ mile neighborhood area. Variable in the full database is continuous and divisions shown can be adjusted. ½ and ¼ mile are proxies for walking distance.
Bus routes[3] accessible within ¼ mile	SANDAG	Variable describes the number of accessible bus routes within ¼ mile of a project based on the number of route-serving stops that fall into a half mile radius. The full database contains the same calculation for a ½ mile neighborhood area.

[2] Unique rail trips defined by number of accessible routes (not stops/stations) within ½ mile of defined study area.
[3] Unique bus trips defined by number of accessible routes (not stops) within ¼ mile of defined study area.

Variable	Data Source	Expression
Peak hour bus trips accessible within 1/4 mile	SANDAG	Variable is based on SANDAG transit data and describes the number of accessible peak hour bus trips within ½ mile of a project based on the number of route-serving stops that fall into a half mile radius. The full database contains the same calculation for a ¼ mile neighborhood area. Variable in the full database is continuous and divisions shown can be adjusted. ½ and ¼ mile are proxies for walking distance.
Linear miles of Class I and II Bike Facilities within 1 mile	SANDAG	Variable indicates the linear miles of Class I and Class II bike facilities that fall within a 1 mile radius of each site. Variable in the full database is continuous and divisions shown can be adjusted.
Intersection within ½ mile	SANGIS	Variable was developed using SanGIS roads data and indicates the number of non-freeway intersections within a ½ mile radius of each site. The variable is intended to capture the ease of walking in the project vicinity with a higher number of intersections indicating a more "walkable" neighborhood. Variable in the full database is continuous and divisions shown can be adjusted.
BRT	Not provided	While BRT was not a part of this study, the city can make assumptions based on the quality/character of BRT service in a given project area. If the service is separated from car traffic it should be treated as rail service, if mixed with traffic it should be treated as a bus service. If there is a combination, a ratio (e.g. 50% bus/50% rail) that best represents the route character in the project area should be applied.

Table 5 Neighborhood-Level Variables - Land Use Characteristics

Variable	Number of Developments	Number of Restricted Housing Units
Total	**265 (100%)**	**11,467 (100%)**
Mean Housing Units per Acre within ½ mile		
Less than 5	17 (6%)	1478 (13%)
5 to 12	26 (10%)	1410 (12%)
12 to 20	83 (31%)	4205 (37%)
Greater than 20	139 (52%)	4374 (38%)

Variable	Number of Developments	Number of Restricted Housing Units
Land Use Activity Index		
0 points (least active)	4 (2%)	187 (2%)
1 point	6 (2%)	570 (5%)
2 points	132 (50%)	6097 (53%)
3 points	70 (26%)	1066 (9%)
4 points (most active / fine-grained)	53 (20%)	3547 (31%)

Table 6 Neighborhood-Level Variables- Land Use Characteristics Definitions and Notes

Variable	Data Source	Expression
Mean Housing Units per Acre within ½ mile	SanGIS / Census	Variable presents the average residential density (housing units per acre) within a ½ mile radius of each project site. The variable was developed using adjusted census data from SanGIS. Variable in the full database is continuous and divisions shown can be adjusted.
Land Use Activity Index	SANDAG, SanGIS	The land use activity index is a 0-4 indexed scale that attempts to capture the prevalence of activity generating, walkable land uses within the ½ mile neighborhood surrounding each project. The variable was developed using SANDAG data on current land uses[4],[5] overlayed onto SanGIS parcel data.[6] The index is based on the presence of commercial, civic, business, and educational uses and is calculated by assigning one point for each of the following: • Commercial uses are present within ½ mile (1pt) • Over 120 commercial parcels are present (1pt) • Office, civic, or educational uses are present within ½ mile (1pt) • Over 50 office, civic, or educational use parcels are present (1 pt) A score of 0 thus indicates a lower level of walkable, activity generating uses while a score of 4 indicates the maximum level of such uses within a project's neighborhood.

[4] Existing Land Uses from SANDAG 2009 (http://www.sandag.org/resources/maps_and_gis/gis_downloads/land.asp).
[5] Land Use Codes: http://www.sandag.org/resources/maps_and_gis/gis_downloads/downloads/codes/Land_Use_Definitions.html (commercial (5000's), office (6000's), public services (6100's), hospitals (6500's), military use (6700's) and schools (6,800's)).
[6] SanGIS 2010 parcel data.

Site Selection Process

The section discusses steps used to winnow down the total pool of affordable housing sites in the City of San Diego to a smaller subset that will be used for surveying and data collection. This process was designed to ensure both that a representative sample of sites is selected for in depth study and that these sites yield useful data.

Figure 1: Site Selection Process

1) Initial List (265 Sites)	• Geocode from initial information provided by City • Eliminate duplicate entries and remove projects with less than 80% restricted units
2) Consolidated List (138 sites)	• Refine and add variables • Group variables into indeces and select a smaller , respresentative sample of sites (50)
3) Contact List (50 sites)	• Contact property managers and asses willingness to cooperate with surveying and data collection • Gather AMI data for sites
4) Survey (30 sites)	• Distribute resident surveys to 30 sites • Eliminate up to 10 sites due to low response rates
5) Data Collection (20 sites)	• Perform on site data collection at 20 sites

As Figure 1 indicates, the major site “selection” event occurred between steps 2 and 3 when the list of 138 sites was reduced to 50. During this process project and neighborhood variables associated with each site were collapsed into a list of simplified characteristics that was then used to develop a representative sample of the total population. The goal of this process is to ensure that a broad cross section of project geographies, sizes, and types were represented in the 50 site sample such that it would be possible to gather sufficient data on all variables of interest. It was also critical, however, to ensure that that specific project types were not overrepresented in a way that skewed the dataset or limited its applicability.

The simplified list of site variables is included in the accompanying spreadsheet entitled: “Indexed Variables and Selection Guidance Tool,” which is provided in Appendix 4.1. This spreadsheet contains an updated full list of sites and variables, a list of sites with simplified, indexed variables, and a discussion showing how the composite indexes used were developed from individual quantitative variables. The spreadsheet is set up as a model that allows the user to interactively select sites to sample and guides them towards choosing a representative set of project sites. The following simplified criteria were used to classify sites for selection.

- **Geography:** Geography is a basic criteria used to sort sites and insure that there is a reasonable representation of projects across the City, independent of any other variables. For the purposes of site selection the City was simply divided into four geometric quadrants. These quadrants are not intended to conform to any specific neighborhood or political boundary and are only used to help ensure a broadly representative geographic selection of sites.
- **Housing Type:** For the purposes of site selection developments have been classified into three broad categories; family housing, senior housing, or "other "sites including individual and transitional housing.
- **Project Size:** To ensure that a mix of project sizes are included in the sample, all projects have been classified as "small" or "large" based on whether they have greater or fewer than 60 units (the approximate median number of units for all developments).
- **Transit Availability:** Projects are given a general transit accessibility score based on the quality and variety of transit they are close to. For the purposes of site selection transit accessibility is simply classified as high, medium, or low. These values are a composite based on a number of individual variable inputs. The method used to score transit availability is shown on the "Index Development" tab in the included worksheet.
- **Land Use Character:** Projects are also given a "land use character" score based on the variety and density of surrounding land uses. For the purposes of site selection land use is classified as urban, mixed, or suburban. These values are a composite based on a number of individual variable inputs. The method used to score transit availability is shown on the "Index Development" tab in the included worksheet.

Appendix 4.1 **Housing Data and GIS Files**

Appendix 4.1 Housing Data and GIS Files

List of files included on Data CD

1. Original Files from City
   a. AB 987 Summary Database UPDATE 12082009
   b. Affordable Housing Projects in San Diego

2. Consolidated Projects List
   a. Consolidated project list 033010
   b. SDAH dropped from consolidated 033010 list

3. Geocoded Projects
   a. Affordable Housing Coded Database Output 04192010

4. 138 Study Sites to 34 Survey Sites
   a. San Diego Affordable Housing Sites FINAL 09092010

5. Indexed Variables and Site Selection Guidance Tool 06022010

Appendix 4.2 **Land Use and Transit Index Development**

Appendix 4.2 Land Use and Transit Index Development

Detailed Methodology

The following discussion details the data sources and methodology used to develop the land use and transit indices used in the statistical analysis for the affordable housing parking study. The calculated indices and supporting data for each of the sites reviewed for the study are provided in Appendix 5.3.

Data Sources

The initial development of neighborhood-level variables for the full set of affordable housing sites was conducted in GIS using data acquired through SanGIS and SANDAG. For the Transit and Land Use variables in question the following external datasets were used (all downloaded in February and March of 2010). Current availability of these datasets is indicated in the left column of the table.

Final Variable	Layers Used	Source	Current Availability
Land Use Index	"LU" (description: "2009 Current Land Use")	SANDAG	2009 layer is available for download on the shared SanGIS / SANDAG data warehouse
	"Parcels_South" and "Parcels_North" (description: 2009 San Diego County Parcels"	SANGIS	2009 data no longer available (Updated data published for 2012). Files used have been maintained for the project and can be provided as requested.
Peak hour rail trips and Peak hour bus routes within ½ and ¼ mile	"RTCOV" (description transit routes 2008")	SANDAG	2008 layer is available for download on the shared SanGIS / SANDAG data warehouse
	"Transit Stops"	SANDAG	2008 layer is available for download on the shared SanGIS / SANDAG data warehouse

Development of the Land Use Index

Methodology Summary

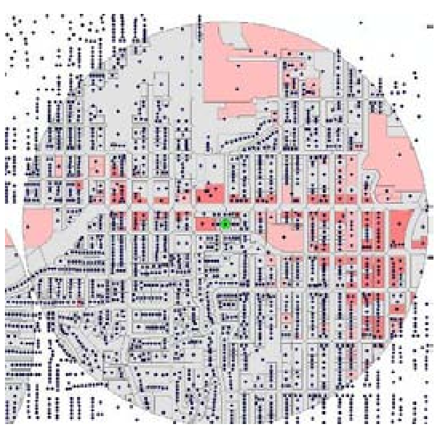
Land uses in the 5,000 and 6,000 series (roughly corresponding to commercial, office, civic, educational, and institutional uses) were pulled from the SANDAG current land use data as a broad representation of active," "activity generating" uses. Since the goal was the development of a very rough index and since detailed land use definitions were not available, a broad set of land uses (everything in the 5,000 and 6,000 series) was deliberately used to avoid the problem of "cherry-picking" particular use classifications for inclusion or exclusion. If this or a similar index be used for future, prescriptive purposes a more detailed and nuanced list of “active” uses should be developed.

These use definitions were then mapped onto all of the SanGIS defined parcels whose centroids fell within a half mile radius of each project site. Defining the inclusion of a parcel by centroid is a standard GIS methodology.   Attributes where then generated for each site specifying the number of “commercial” (5,000 series) sites within ½ mile and the number of “office, civic, educational, and institutional uses” (6,000 series) within ½ mile.

SanGIS Parcel Data with parcel centroids shown

Sample of SANDAG current land use layer

Parcel centroids overlaid onto land use date



Parcels shown against ½ mile project buffer and 5000 and 6000 series land uses (red and pink respectively)

Parcel centroids clipped to buffer and coded by land use.

A 4-point land use activity index was then developed using the following criteria:

- 1 point if project had at least one 5000 series parcel within a half mile
- 1 point if project has more than 120 5000 series parcels within a half mile (120 was the mean number of 5,000 series parcels observed within the dataset of 290 sites).
- 1 point if project has at least one 6000 series parcel
- 1 point if project has more than 50 6000 series parcels (50 was the mean number of 6,000 series parcels observed within the dataset of 290 sites).

The activity index was subsequently adjusted to a 1-4 scale, with 1 being set as a minimum (effectively giving a point to the small number of sites that had earned zero points under the above criteria).

Detailed GIS Methodology

Input Layers Used:

- Geocoded Affordable Housing Sites (initial list of 290)
- "LU" Current Land Use Layer (SANDAG, 2008)
- "Parcels-South" and "Parcels_North" (SANGIS) (2009 parcel layer- provided as separate layers for north and south of county)

ArcGIS Steps:

Note- both the parcel and land use datasets are extremely large files. Clipping and stripping out extraneous text attributes is thus recommended throughout as a means to speed calculations and avoid crashes.

1. Create ½ mile buffer of geocoded project sites, stripping out all fields except for the project ID and name.
2. Use ½ mile buffer layer to Clip SANDAG Land Use data and the SANGIS parcel data. Clipping early helps keep data set size small and makes calculations easier.
3. Within the clipped Land Use layer, create a text field called "LUtext." Use the calculate function to populate it with values from the numeric "lu" field. Next create a short integer field called "lu-short." Calculate its values using the expression "Left ([LUtext],1)." This creates a field of landuses truncated to the first digit of the 1,000's. Delete the LUtext field.
4. Convert parcel polygons to centroids (using the included x and y coordinate fields in the attribute table) and delete all fields except for Parcel ID (minimizes dataset size to speed calculations)
5. "Identity" parcel centroid layer to clipped land use layer. Resultant output ("LU coded centroids") is a new layer of parcel centroids with a SANDAG landuse assigned to each feature

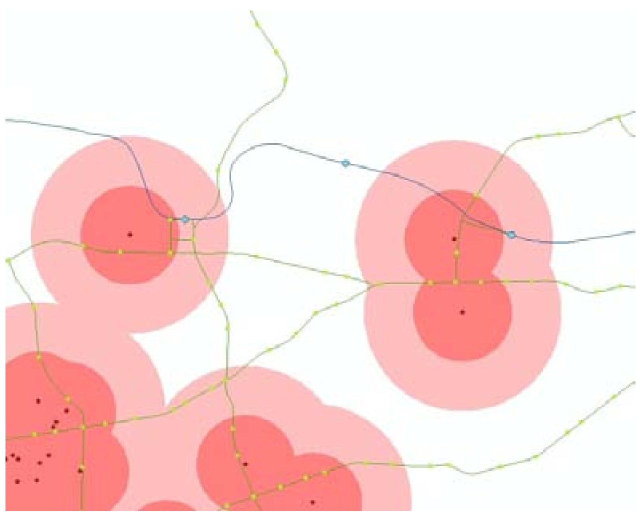
6. Create two new short integer fields "LU_5," and "LU_6." These fields will be used in a subsequent step. Calculate values for each as follows:
7. "LU-5"- select features where lu_short= 5 and calculate "LU_5" value for selected feature as 1.
8. "LU-6"- select features where lu_short= 5 and calculate "LU_5" value for selected feature as 6.
9. "Identity" coded centroids to each project buffer. Resultant output ("LU coded centroids by project") is an expanded layer of centroids with a unique entry for each centroid that occurs in each project's ½ mile buffer radius. This step is necessary since some projects are close to each other and thus have overlapping ½ mile radii.
10. Open "LU coded centroids by project" attribute table and summarize by project ID. Within the summarize dialog box select the "sum" option for the "LU-5" and "LU-6" fields.
11. The resultant output table will contain one entry for each project and will show the total number of parcels within a half mile of the project site, the number of parcels falling within a SANDAG 5000 series land use (broadly defined as commercial) and the number falling within a SANDAG 6000 series land use (broadly including office, educational, civic, and institutional uses). At this point data can be migrated to Microsoft Excel if desired
12. Calculate the Land Use Index using formula described above.

Development of Transit Peak Frequency Variables

Methodology Overview

The GIS methodology used to generate approximations of peak hour transit trips in the vicinity of projects is constrained by the SANDAG data. Within the SANDAG GIS data, route names and frequencies are available by route but are not associated to stops. Since, particularly in the case of rail lines, a transit route may pass in the vicinity of a project without actually stopping it is necessary to associate routes and frequencies to stops. To do this, the following basic procedure was followed:

SANDAG data was split into rail and bus. Route data (route name and frequencies) was then associated onto individual stops. Individual inspection and visual verification was used to confirm this procedure- that said this was a necessary step do to data limitations. Using an automated procedure to map routes on stops runs the risk of over-representing transit service at some stops (in cases, for example where a SANDAG route line is shown as geometrically intersecting a point stop but where the actual bus line may not stop). This procedure was necessary given the structure of available data and was performed uniformly across all project sites. For each project the number of unique routes and peak hour trips associated with stops falling in a ½ or ¼ mile radius was calculated. The result is a metric that is good for comparing sites, but may (when combined with the dated nature of the data) not be the best representation of current, on-the-ground transit reality. If this or a comparable index will be used going forward the methodology should be revisited.



Rail routes and stops (blue) and bus routes and stops (green) shown against ½ and ¼ mile project buffers (red)

Detailed GIS Methodology

Input Layers Used:

- Geocoded Affordable Housing Sites (initial list of 290)
- "RTCov" (SANDAG 2008 layer of Transit routes with route name, mode, and peak hour frequency defined in minutes)
- "Transit Stops" (companion SANDAG 2008 layer of Transit stops with mode information)

ArcGIS Steps:

Note- the following steps are essentially the same for both the bus and rail calculations. The only difference is whether the ½ mile or ¼ mile buffer is used.

1. Create ½ mile and ¼ mile buffers around all project sites
2. Split both the "RTCov" layer and "Transit Stops" layer into separate bus and rail layers using the "MODE" field found in each (entries coded 4 and 5 for rail, 8,9,10 for bus)
3. "Dissolve" route layers by route name filed to create a new layer with a single feature per route. Make sure to maintain the peak frequency field within the dissolve operation (and within all subsequent operations).
4. Buffer the dissolved route layer by 25 feet to create a layer of thin route polygons. Converting linear routes to polygons is methodologically necessary. The number of feet used in the buffer may have an impact on the final calculated variable if changed.
5. "Identify" the stops layer to the route buffers (thus creating an output layer of stops with a single record for every route-stop combination)
6. "Identify" routes to desired project buffers (1/2 or ¼ mile). This creates a unique point feature for every route-stop-project combination
7. Generate a text field in the above layer and populate it with a concatenation of the route name and project ID.
8. Summarize on this concatenated field to create a list of routes by project (make sure that the peak frequency by route is maintained).
9. Create a "trips per hour field" and translate peak frequency by route into trips per peak hour by dividing 60/ peak frequency.
10. Summarize again using the project ID and summing peak hour trips. The resultant sum is the number of unique peak-hour trips within that project's walk shed and the automatically generated count field is the number of unique routes.

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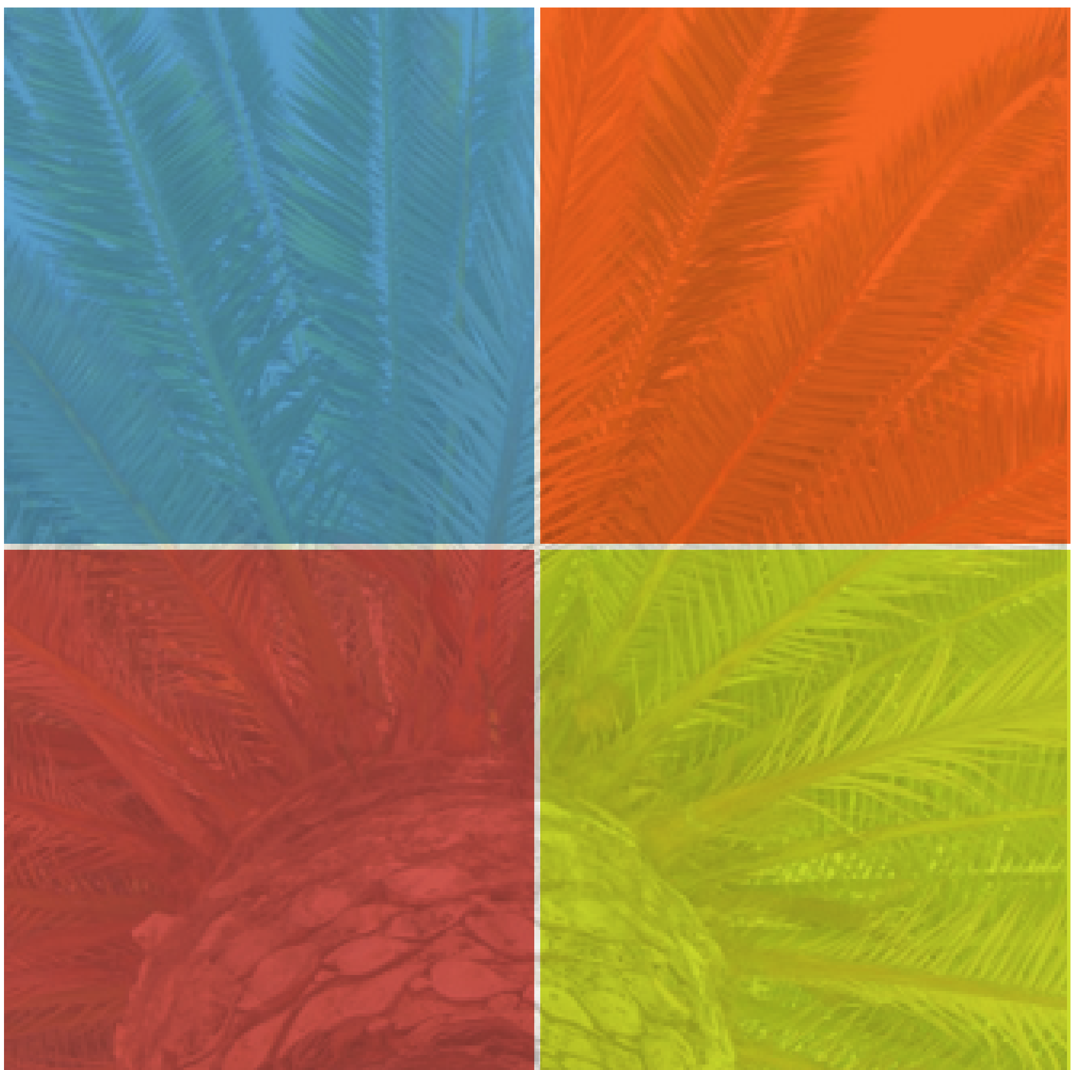
CHAPTER 5.0 **Data Collection Summary**



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5.0 Data Collection Summary

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Appendices

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5.0 Data Collection Summary

Data collection for the affordable housing parking study was comprised of three major efforts 1) Resident Surveys 2) External Data Review and 3) On-site parking Data Collection (Field Surveys).

Resident and Property Manager Surveys

Resident and Property Manager Surveys were distributed to a total of 34 properties by the City of San Diego Staff. A total of 1110 resident household surveys were returned for a 40% response rate. The survey instruments are provided in Appendix 5.1.

External Data Review

Data was provided by the City and SANDAG including for the development of detailed site data information for the purpose of developing statistical methodology. These data were described in detail in Task 4 and are listed below.

Project Level Variables

- SANGIS – Regulatory Zones
  - Transit Area Overlay Zone (TAOZ)
  - Parking Impact Overlay Zone
  - Historic District Overlay Zone
  - Parking District
- Housing Commission
  - Affordable Housing Sites
  - Project Type
  - Housing Type
  - Bedrooms per unit by development
  - Tenancy Type
  - Income Restriction
- Housing Commission – Annual Income Data

Neighborhood Level Transit Variables

- Rail Routes and Peak Trips within ¼ mile (SANDAG)
- Bus Routes and Peak Trips within ¼ mile (SANDAG)
- Linear miles of Class I/II bike facilities within 1 mile (SANDAG)
- Intersections within 1 mile (SANGIS)

Neighborhood Level Land Use Variables

- Businesses within ½ mile (SANGIS)

- Groceries within ½ mile (SANGIS)
- Schools within ½ mile (SANGIS)
- Mean Housing units/acre within ½ mile (SANGIS/Census)
- Land Use Activity Index (SANDAG/SANGIS)

Field Surveys

On-Site Field Data Collection

On-site data related to site and neighborhood characteristics, parking conditions, and parking demand, was collected at 21 affordable housing sites. This served to validate and enrich the findings of the resident and manager surveys and will contribute to the statistical modeling process. At most surveyed sites, the response rate was better than anticipated and allowed for survey data to be used as the primary input to the model. Given this, the main focus of on-site data collection was to capture data that validated and enriches the survey data set. The following is a summary of the on-site data collected.

Site Conditions

- Site Access Issues
- On-site Parking Inventory
- General parking facility layout
- Tandem Parking practices

Neighborhood Conditions

- Availability of on-street or other public parking including any metering or other on-street parking restrictions within a 1-block radius of the site.
- Immediately surrounding land uses within a 1-block radius of site. Land use documentation will serve to verify and refine land use characterizations taken from City and County GIS data. Gathering more detailed land use data in the area immediately surrounding each site will also provide information regarding the demand for on-street parking.
- Confirm the location and availability of each site's nearest transit facility, (bus and trolley stops) as currently documented in the GIS database assuming such a facility exists within a half mile.

Parking Demand

Occupancy data was collected at each study site's parking facility during the early hours of the morning (12AM to 4AM) to provide a snapshot of on-site, residential parking demand. While this will capture parking demand within the project's dedicated parking, it will be more difficult to account for residents who may have parked outside of the site's dedicated parking. Although it was not possible to capture the exact number of vehicles related to individual projects that may be parking on-street it will be possible to make a qualitative assessment of the likely prevalence of on-street parking by site residents.

First, early morning on-street occupancy counts were conducted on the blockfaces surrounding the project at the same time that the facility parking counts occur. Occupancy levels in the facility garage or lot, occupancy levels on-street, the presence of on-street restrictions, and surrounding uses were all taken into account to determine the prevalence and likelihood of on-street parking. This methodology will not yield an exact numeric estimate of on-street demand but was used to develop a qualitative categorization of demand that could also be used as a model input.

Project Site Summaries

The primary purpose of surveying residents and collecting data on-site was to provide variable inputs for the statistical modeling efforts. Key data and variables for each of the 21 selected sites were developed into project site summaries format that include key indicators developed in the GIS database, the results of the resident and manager surveys, and details from the on-site data collection. These summaries are provided in Appendix 5.2.

Walkability/Transit Scores

A matrix of the land use and transit GIS data tabulated for each of the 21 sites outlined in the above sections and their corresponding walkability/ transit scores are provided in Appendix 5.3.

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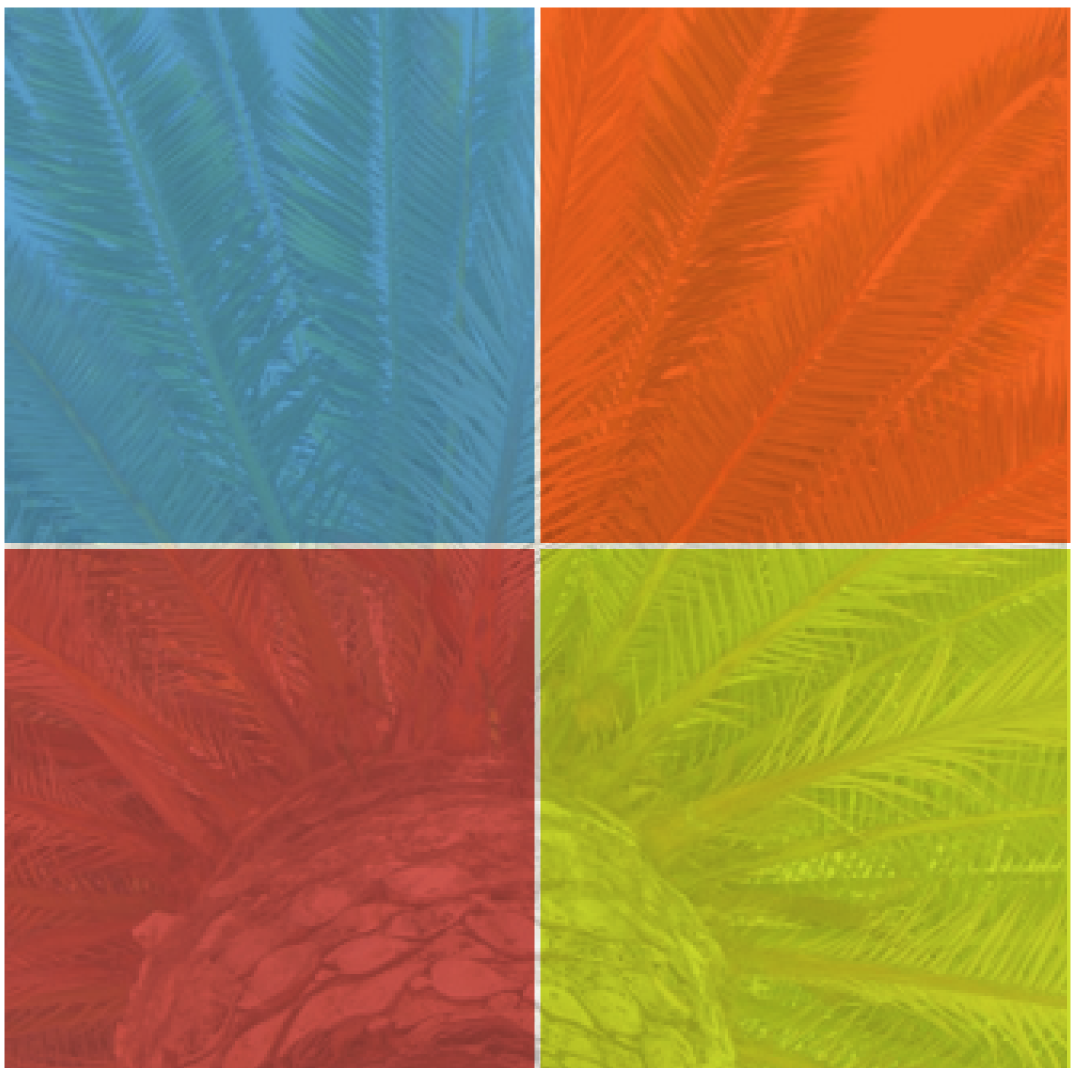
Appendix 5.1 **Survey Instruments**



City of San Diego Affordable Housing Parking Study
Resident Survey

Please take a few minutes to answer the following questionnaire about parking at the building or complex where you live. Your responses will help the City improve parking conditions and better understand the parking needs of affordable housing residents. **All of your responses will be held strictly confidential and will be used for information purposes only.**

Once you have completed the survey, please seal it inside the attached envelope and return it to your property manager at the office or use a drop box if provided. Your property manager will check off that you have completed the survey but WILL NOT see or have access to your responses. Your property manager will provide the sealed envelopes directly to the City representative.

Please contact your property manager if you have any questions about this survey. Thank you for your help!

---

0) What is your complex's name and unit number?

____

1) How long have you lived here?

☐ More than 1 year ☐ less than 1 year

1a) If less than 1 year, did you previously live in a different unit in the same complex or development?

☐ Yes ☐ No

2) Including you, how many people live in your home?

☐ 1 (just me) ☐ 2 ☐ 3 ☐ 4 ☐ 5 ☐ 6 or more people

3) How many of the people living in your home are **under 18** years old?

☐ none ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more people

4) How many of the people living in your home are **over 65** years old?

☐ none ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more people

5) How many **licensed drivers** live in your home?

☐ none ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more people

6) How many people living in your home are **employed fulltime** (work 35 or more hours a week)

☐ none ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more people

7) How many people living in your home are **employed part-time** (work 1-34 hours per week)

☐ none ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more people

8) Please provide the ***employer ZIP codes*** for the fulltime and part-time employed residents (for purposes of commute length/transit access analysis)
a. __________ b.__________ c. __________ d. __________ e. __________

9) How many people in your home work either before 7:00am, after 7:00pm, or anytime on the weekend?
☐ none ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more people

10) How many total vehicles (cars, trucks, or motorcycles) do you and the people living in your home have?
☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more vehicles

11) Do you have private or assigned parking that only you or people in your home can use?
☐ No ☐ Yes

10a) how many spaces are assigned to your home?
☐ 1 ☐ 2 ☐ 3 ☐ 4 or more spaces

12) In general, do you think that your building or apartment complex has enough parking?
☐ Always ☐ Most of the time ☐ Some of the time ☐ Seldom / Never

13) How often do you or people living in your home use transit (take the bus or ride trolley/trains)?
☐ Most days ☐ Once or twice a week ☐ Once or twice a month ☐ Never

14) How would you rate your neighborhood as a place to take transit?
☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very Poor

15) What is the average number of visitors (visitor = one visitor or one small group arriving together) that you have per week to your home?
☐ 0 ☐ 1 ☐ 2 ☐ 3 ☐ 4 or more visitors/groups

16) Where do your visitors usually park?
☐ Visitor parking ☐ Un-used off-street parking (in complex)
☐ On-street parking ☐ Other (Please Explain)____________________

If you or people living in your home have vehicles, please continue. If you have no vehicles, the survey is complete. Please place the survey in the envelope, seal it, and return it to the manager / office. Thank you for your responses!

PLEASE DO NOT MAIL THIS FORM

Please answer the following questions for each vehicle driven by you or someone in your home. If you have more than 4 vehicles, fill out the boxes for the 4 vehicles that are most frequently used.

First Vehicle

17) This vehicle is a: ☐ Car ☐ Truck / SUV ☐ Motorcycle/scooter

18) How often is this vehicle used?

☐ Every day ☐ A few times a week ☐ Less than once a week

19) What kinds of trips is this vehicle used for during a typical week **(choose all that apply)**

☐ Trips to work ☐ Used at work (on the job) ☐ Trips to school or daycare

☐ Medical appointments ☐ Shopping / errands ☐ Religious services

☐ Social visits ☐ Recreation (sports, hobbies)

☐ Other (please explain):

20) When it is at home, where is this vehicle **usually** parked? **(Pick only one)**

☐ In an assigned / private space in the building or complex where you live

☐ In a different space in the building or complex where you live (unassigned, unused spaces assigned to others, visitor parking)

☐ On the street

☐ In a parking garage or lot that is not part of the building or complex where you live

☐ Other (please explain):

Second Vehicle

21) This vehicle is a: ☐ Car ☐ Truck / SUV ☐ Motorcycle/scooter

22) How often is this vehicle used?

☐ Every day ☐ A few times a week ☐ Less than once a week

23) What kinds of trips is this vehicle used for during a typical week **(choose all that apply)**

☐ Trips to work ☐ Used at work (on the job) ☐ Trips to school or daycare

☐ Medical appointments ☐ Shopping / errands ☐ Religious services

☐ Social visits ☐ Recreation (sports, hobbies)

☐ Other (please explain):

24) When it is at home, where is this vehicle **usually** parked? **(Pick only one)**

☐ In an assigned / private space in the building or complex where you live

☐ In a different space in the building or complex where you live (unassigned, unused spaces assigned to others, visitor parking)

☐ On the street

☐ In a parking garage or lot that is not part of the building or complex where you live

☐ Other (please explain):

Third Vehicle

25) This vehicle is a: ☐ Car ☐ Truck / SUV ☐ Motorcycle/scooter

26) How often is this vehicle used?

☐ Every day ☐ A few times a week ☐ Less than once a week

27) What kinds of trips is this vehicle used for during a typical week **(choose all that apply)**

☐ Trips to work ☐ Used at work (on the job) ☐ Trips to school or daycare
☐ Medical appointments ☐ Shopping / errands ☐ Religious services
☐ Social visits ☐ Recreation (sports, hobbies)
☐ Other (please explain):

28) When it is at home, where is this vehicle **usually** parked? **(Pick only one)**

☐ In an assigned / private space in the building or complex where you live
☐ In a different space in the building or complex where you live (unassigned, unused spaces assigned to others, visitor parking)
☐ On the street
☐ In a parking garage or lot that is not part of the building or complex where you live
☐ Other (please explain):

Fourth Vehicle

29) This vehicle is a: ☐ Car ☐ Truck / SUV ☐ Motorcycle/scooter

30) How often is this vehicle used?

☐ Every day ☐ A few times a week ☐ Less than once a week

31) What kinds of trips is this vehicle used for during a typical week **(choose all that apply)**

☐ Trips to work ☐ Used at work (on the job) ☐ Trips to school or daycare
☐ Medical appointments ☐ Shopping / errands ☐ Religious services
☐ Social visits ☐ Recreation (sports, hobbies)
☐ Other (please explain):

32) When it is at home, where is this vehicle **usually** parked? **(Pick only one)**

☐ In an assigned / private space in the building or complex where you live
☐ In a different space in the building or complex where you live (unassigned, unused spaces assigned to others, visitor parking)
☐ On the street
☐ In a parking garage or lot that is not part of the building or complex where you live
☐ Other (please explain):

The City of San Diego thanks you for helping with this important study! Please place the survey in the envelope, seal it, and return it to the manager/office. Thank you for your responses!

PLEASE DO NOT MAIL THIS FORM

City of San Diego Affordable Housing Parking Study
Property Manager Survey

Please take a few minutes to answer the following questionnaire about parking at the building you manage. Please answer all questions with as much detail as possible and feel free to attach additional comments or pages if you run out of room or have a parking concern or idea the questions do not address. If you have a written set of rules or procedures describing parking policies at the building you manage, please attach them to the completed survey.

Your responses will help the City better understand the parking needs of affordable housing residents. Please contact Shahriar Ammi (619-236-6576, SAmmi@sandiego.gov) if you have any questions about this survey or any other part of the project process. Thank you for your help!

---

1) How many total dwelling units are in your building / complex? __________

2) How many units are subject to income restrictions? ______________

3) Please fill in the following table:

Unit Type	Total number of units	Number of income restricted units
a) Studio		
b) 1-bedroom		
c) 2-bedroom		
d) 3-bedroom		
e) 4-bedroom		
f) Other (please explain)		

4) In addition to residential units, what other facilities, if any, does your building / complex include? (Community center, retail or commercial space). Please describe:

5) How many total parking spaces does the building or complex you manage include? ______________

6) Are the spaces allocated to specific uses?

☐ Yes ☐ No (skip to question 7)

Please use the categories below to indicate how spaces are allocated:

6a) Number of spaces assigned to specific residents or units: _________
6b) Number of spaces available to residents first come / first serve: _________
6c) Number of staff only spaces: _________
6d) Number of visitor only spaces: _________
6e) Number of unassigned / general use spaces: _________
6f) Number of Disabled spaces _________

6g) Number of Motorcycle spaces __________
6h) Other spaces (please explain): __________

7) In general, do you think that this parking supply is sufficient to meet the demand for parking by residents?

☐ Always sufficient ☐ Mostly sufficient ☐ Sometimes sufficient ☐ Never sufficient

8) When would you estimate is the time of peak parking demand at your complex?
☐ Week**day** morning ☐ Week**day** midday ☐ Week**day** evening
☐ Week**end** morning ☐ Week**end** midday ☐ Week**end** evening
☐ Other (Please Explain)______________________________

9) Are parking spaces assigned to residents by unit?

☐ Yes ☐ No (skip to question 10)

If yes, how many spaces are assigned to each unit type? (for example, 1 space assigned to studio units or 2 spaces assigned to 2 bedroom units)

9a) Studios: _______
9b) 1 bedroom units: _______
9c) 2 bedroom units: _______
9d) 3 bedroom units: _______
9e) 4 bedroom units: _______

10) Please describe the process of assigning spaces to residents. How are specific spaces assigned? Can residents request additional spaces? Is there a waiting list for spaces? If you have a written set of rules or procedures describing parking policies at the building you manage, please attach them to the completed survey.

11) Do Residents have the option of paying a fee for an additional space?
☐ Yes ☐ No (Skip to question 12)

10a) If Yes, how much? __________ **10b)** How many extra spaces can be leased? ________

12) Are residents required to register their vehicles (license plate numbers) with property management?

☐ Yes ☐ No

13) Is it necessary to enforce parking rules? If yes, please explain how enforcement is done (notices, towing, other actions). What rules are most commonly enforced?

14) Are there problems with residents using visitor parking spaces? If so, please explain.
Are their problems with residents parking in other residents' assigned spaces? If so, please explain.

15) How often do residents complain about a lack of parking or request additional parking?

☐ Frequently ☐ Occasionally ☐ Almost never

16) Are you aware of residents parking on street or in other off-street lots or garages other than the complex's dedicated parking? Please describe your observations and indicate your estimate of how frequently this occurs?

17) Within the last year, have your received complaints from neighboring residents or merchants concerning resident parking in areas outside the building? If yes, please explain and describe the complaint.

18) How would you rate the neighborhood around the building you manage as a place to take transit (bus and rail)?

☐ Very good ☐ Good ☐ Fair ☐ Poor ☐ Very Poor

19) In addition to standard buses or rail, are there any specific shuttle or ride services that serve the residents in your building? If yes, please explain.

20) Does your building include bike racks or secure bike parking? For approximately how many bikes?

21) If your building does provide bike parking, how would you describe its use?

☐ Very full / well utilized ☐ Moderately utilized ☐ Mainly unused

22) Does the development provide free or discounted transit passes to residents?

☐ Free ☐ Discounted (monthly fee$_____________) ☐ No

The City of San Diego thanks you for helping with this important study!

Appendix 5.2 **San Diego Project Site Summaries**

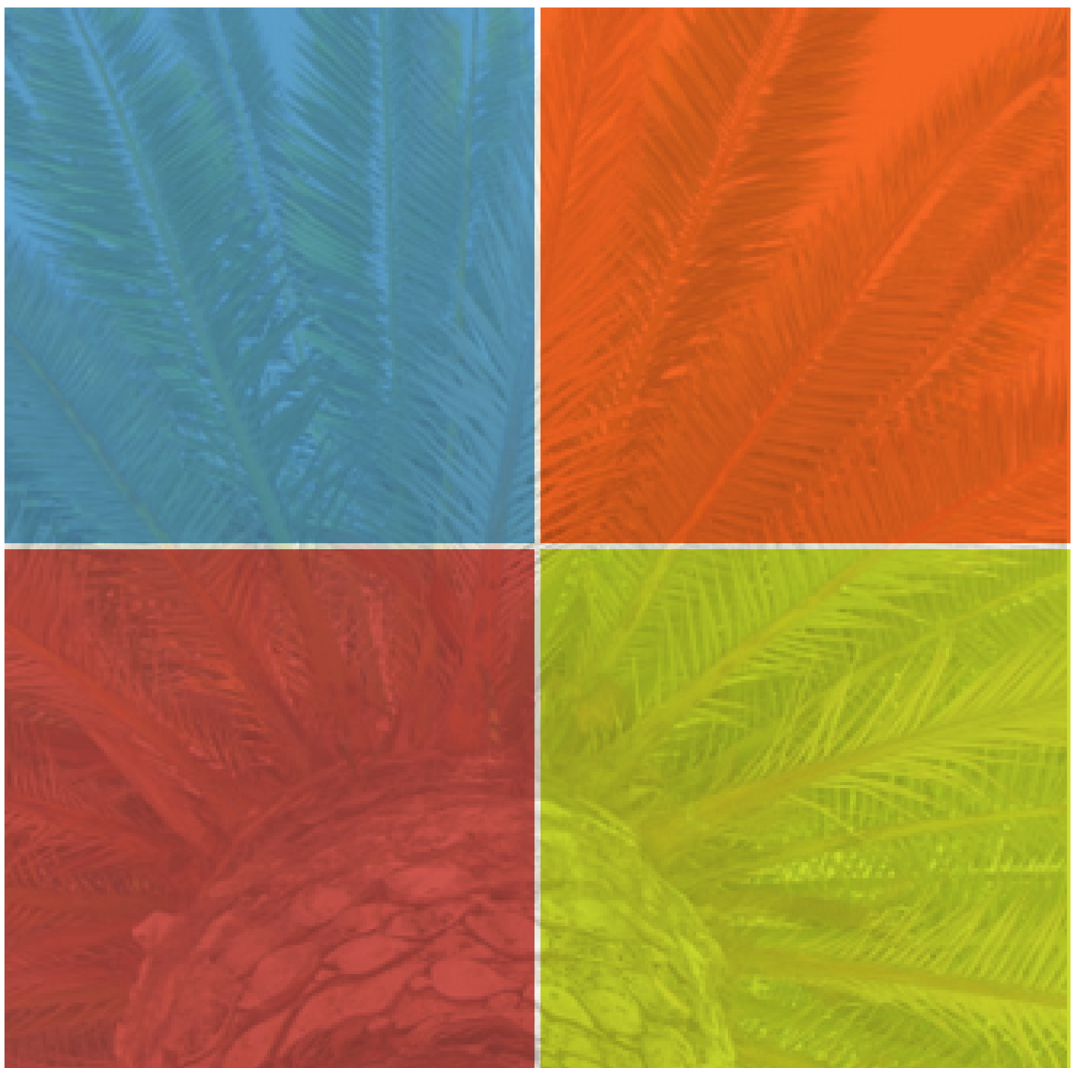


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Table Of Contents

16th & Market Apartments

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 640 16th Street
- **Housing Type:** Large Family
- **Number of Units:** 136
- **Year Built:** 2009
- **Transit Index:** 3
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	East Village
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	1 and 2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, some 9 hour parking available
Nearby Public Parking Facilities	5 Star Parking lot at Market and 13th
Number of Transit Lines within 1/4 mile	6

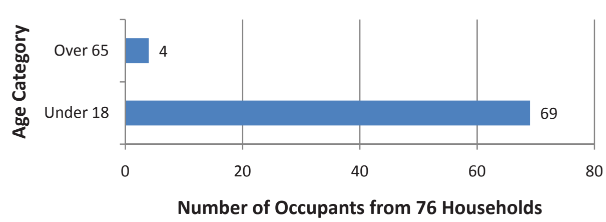
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage
Parking Quantity	129 spaces
Parking Occupancy Rate	75%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	Yes
Free or Discount Transit Passes Available?	No
Regulatory Zones	Downtown

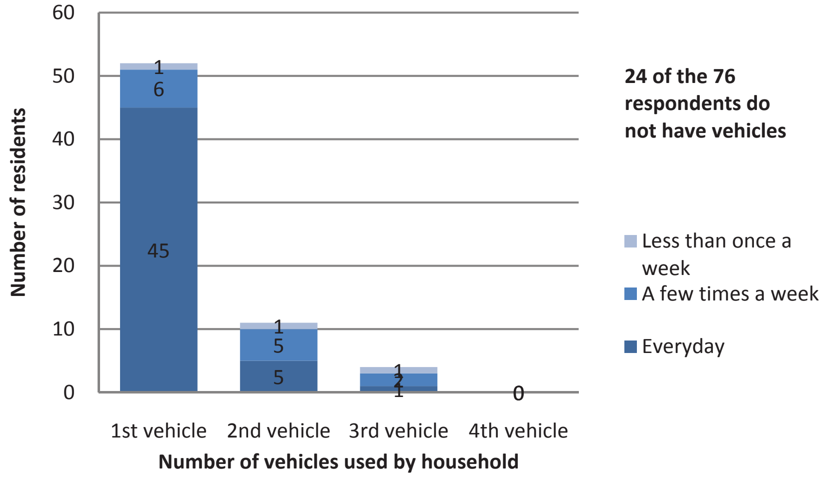
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	56%
Average Household Size (# of persons)	2.51
Average Number of Visitors per Household per Week	1.66
Percentage of Households with No Vehicles	32%
Average Vehicles per Household	0.87

AGE DISTRIBUTION

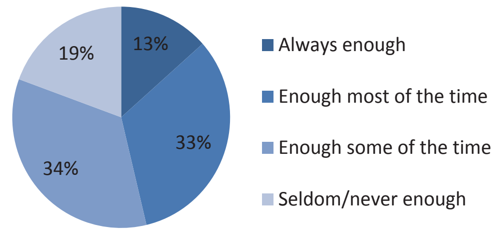


VEHICLE USE

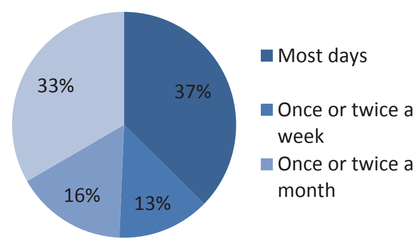


24 of the 76 respondents do not have vehicles

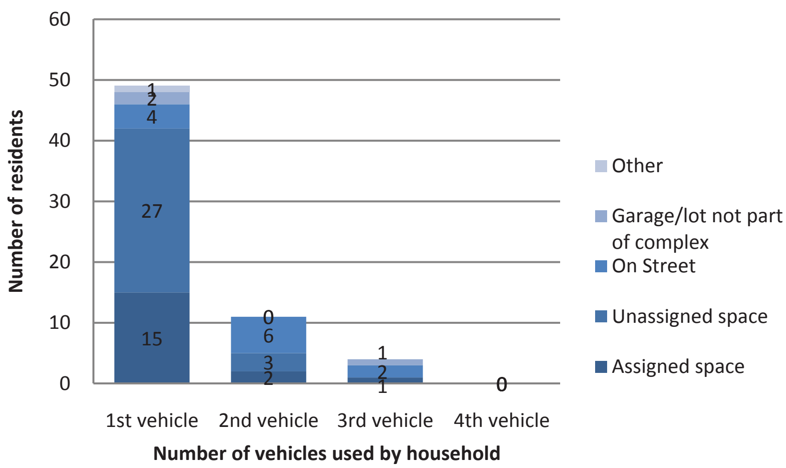
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



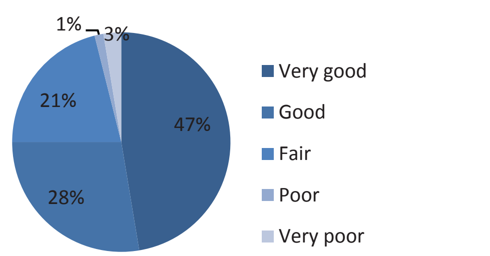
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



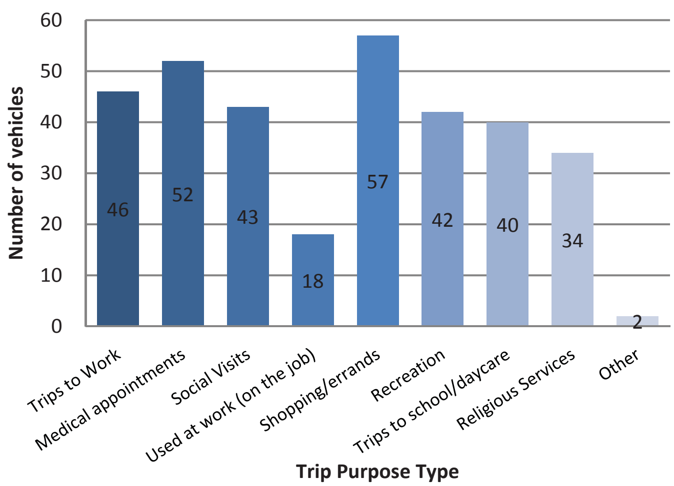
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

G Street north of project site

Internal garage conditions

40th Street Apartments

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 1440 40th Street
- **Housing Type:** Small Family
- **Number of Units:** 16
- **Year Built:** 2005
- **Transit Index:** 1
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Southcrest
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	30 minute parking at nearby school during arrival/dismissal period
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	0

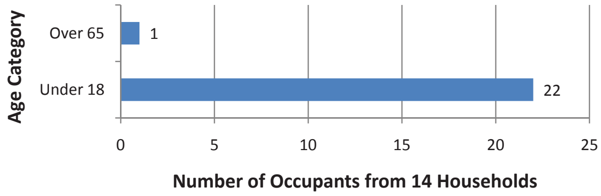
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	20 spaces
Parking Occupancy Rate	81%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekend evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

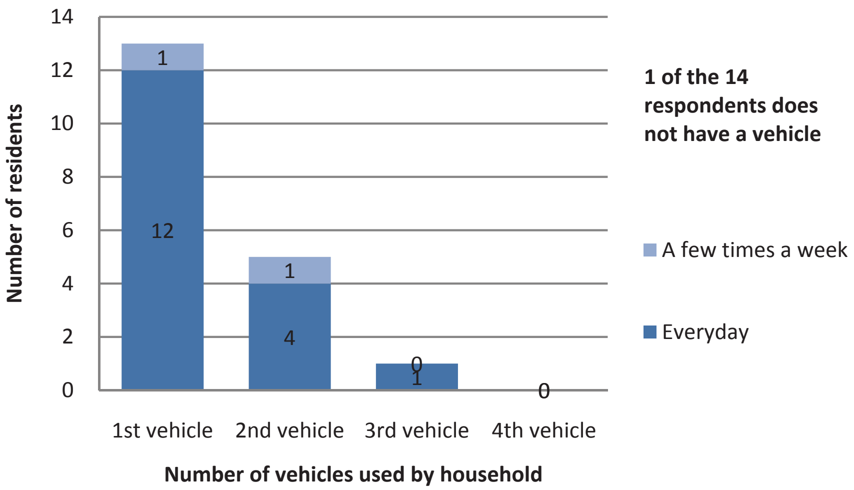
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	88%
Average Household Size (# of persons)	3.50
Average Number of Visitors per Household per Week	0.86
Percentage of Households with No Vehicles	7%
Average Vehicles per Household	1.50

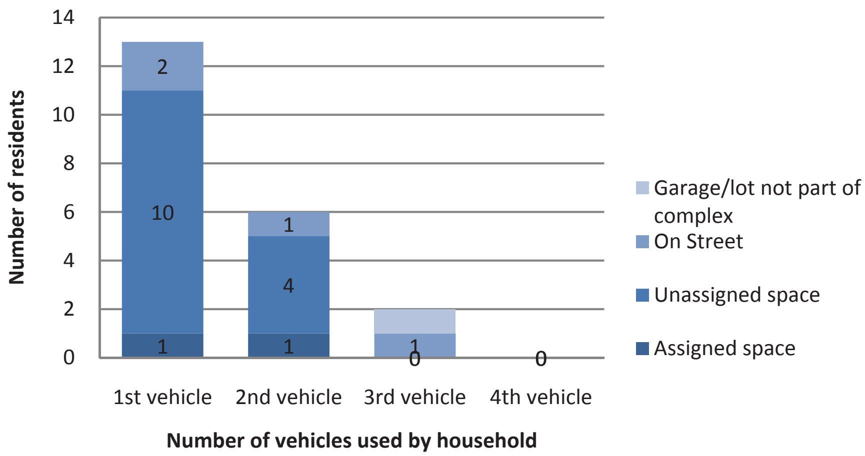
AGE DISTRIBUTION



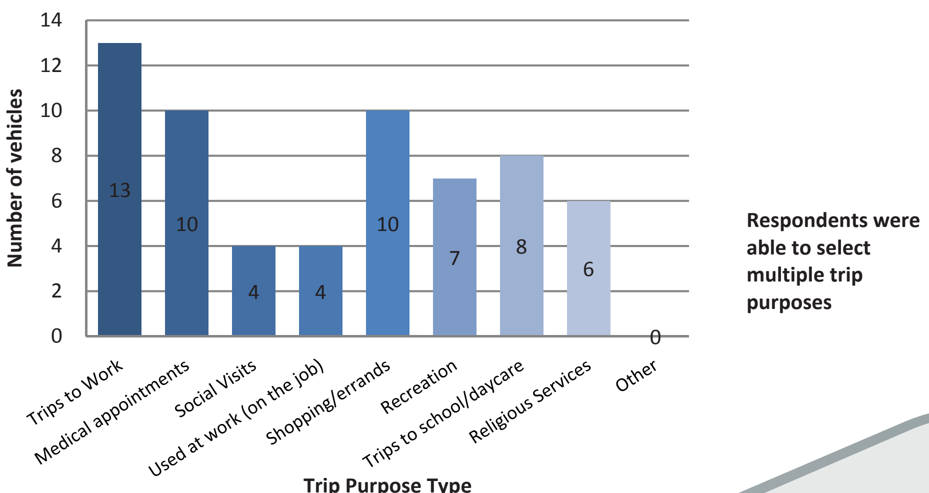
VEHICLE USE



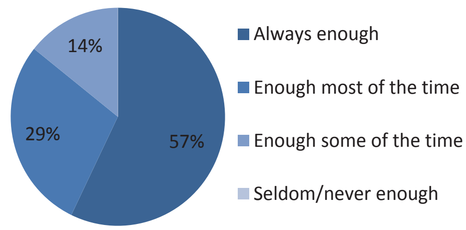
LOCATION OF PARKED VEHICLE AT COMPLEX



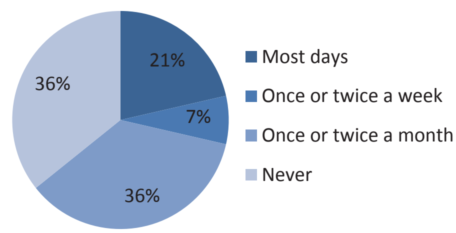
RESIDENTS' TRIP PURPOSE



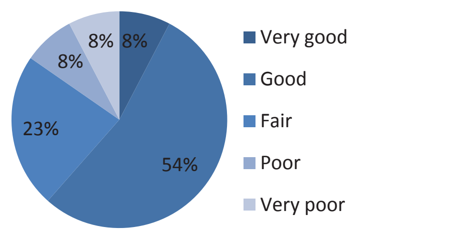
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



40th Street north of project site

On-site parking conditions

Beyer Courtyard Apartments

Project site area. No on-street blockfaces surveyed

PROFILE

- **Location:** 3412-3466 Beyer Boulevard
- **Housing Type:** Large Family
- **Number of Units:** 60
- **Year Built:** 2006
- **Transit Index:** 1
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	San Ysidro
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	1

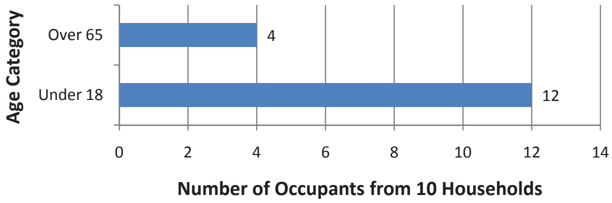
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	118 spaces
Parking Occupancy Rate	16%
Assigned Parking?	Yes
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	Yes
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

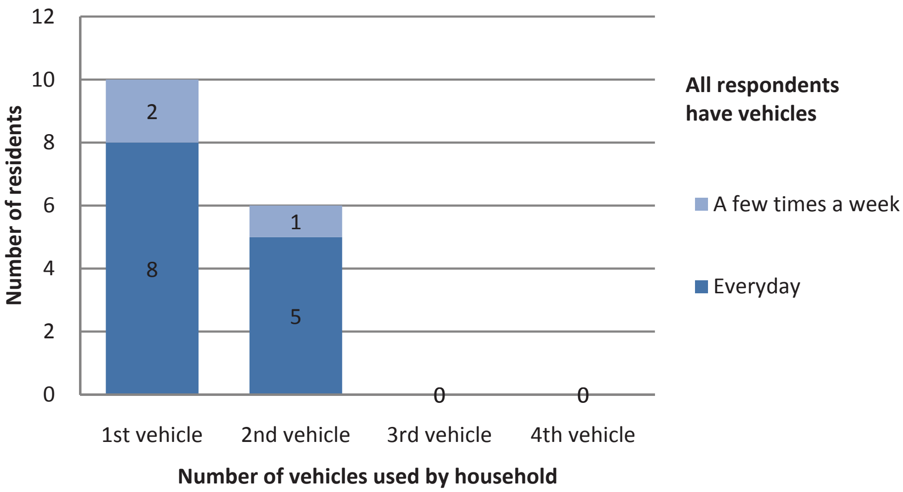
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	20%
Average Household Size (# of persons)	3.10
Average Number of Visitors per Household per Week	2.10
Percentage of Households with No Vehicles	0%
Average Vehicles per Household	1.60

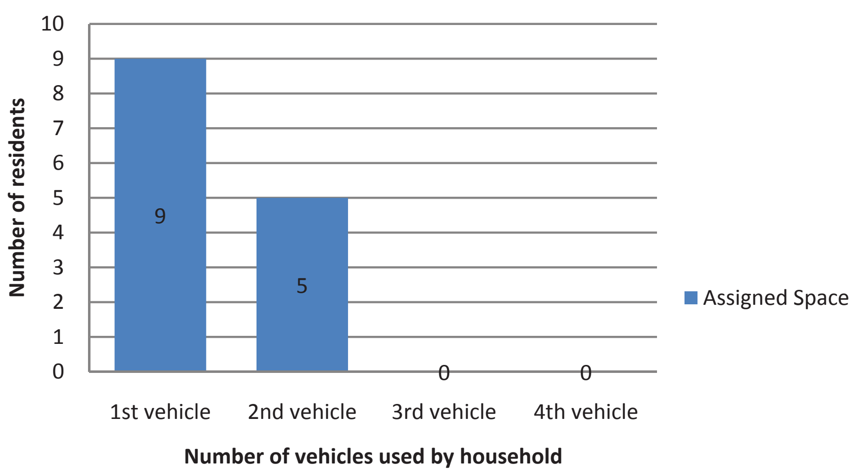
AGE DISTRIBUTION



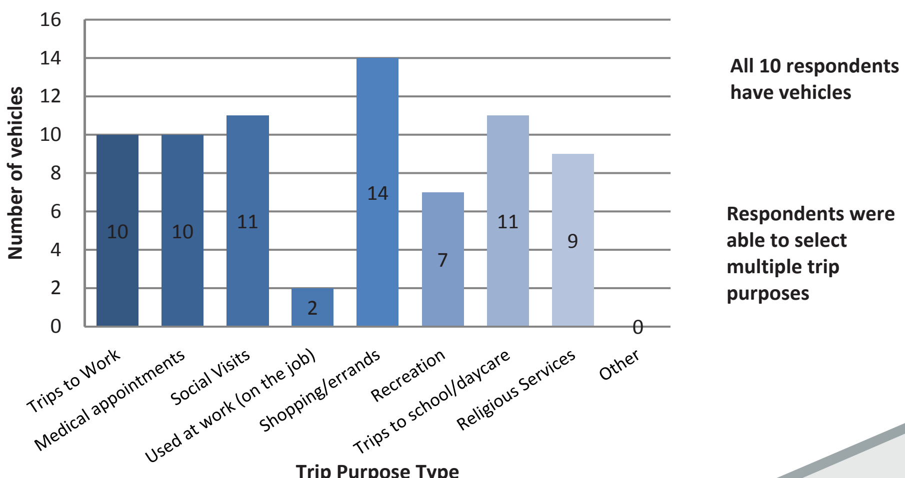
VEHICLE USE



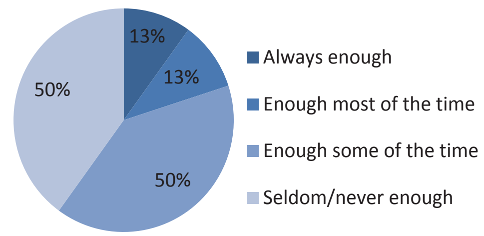
LOCATION OF PARKED VEHICLE AT COMPLEX



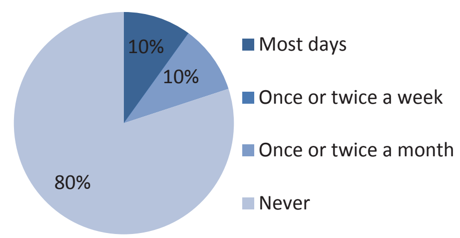
RESIDENTS' TRIP PURPOSE



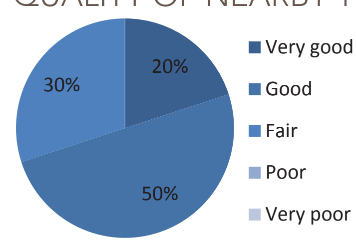
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



Beyer Boulevard southeast of project site

On-site parking conditions

CCBA Senior Gardens

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 438 Third Ave
- **Housing Type:** Senior
- **Number of Units:** 45
- **Year Built:** 2000
- **Transit Index:** 2
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Marina
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, some free 9 hour parking available
Nearby Public Parking Facilities	5 Star Parking lot at Island and 2nd
Number of Transit Lines within 1/4 mile	4

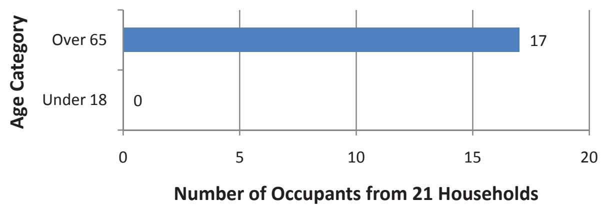
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage
Parking Quantity	7 spaces
Parking Occupancy Rate	88%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday morning
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	Downtown

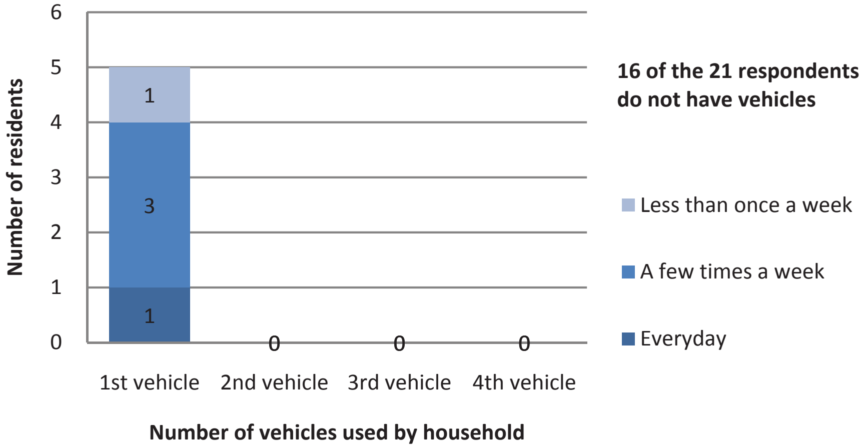
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	47%
Average Household Size (# of persons)	1.10
Average Number of Visitors per Household per Week	1.26
Percentage of Households with No Vehicles	76%
Average Vehicles per Household	0.24

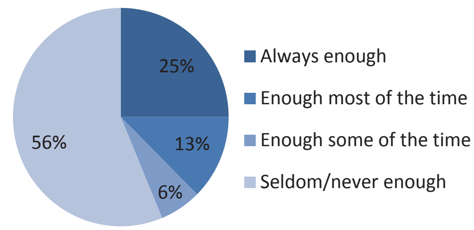
AGE DISTRIBUTION



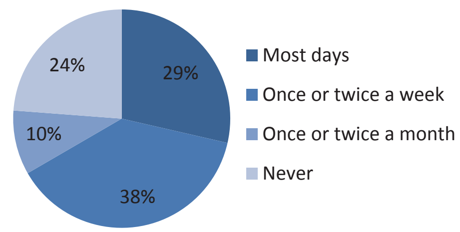
VEHICLE USE



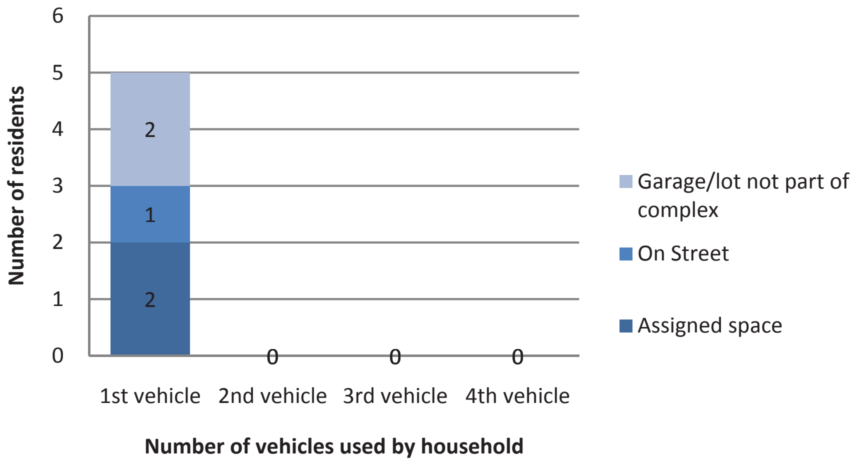
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



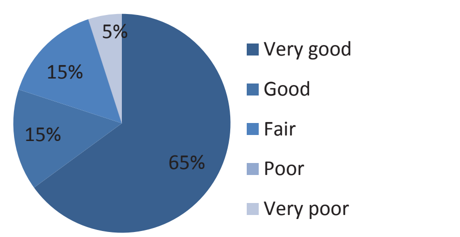
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



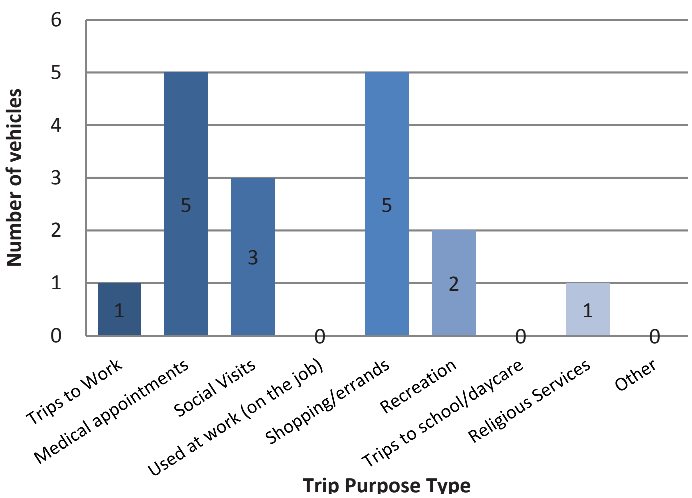
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

Project site and 3rd Avenue

Internal garage conditions

City Heights Square

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 4065 43rd Street
- **Housing Type:** Senior
- **Number of Units:** 150
- **Year Built:** 2007
- **Transit Index:** 1
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Teralta West
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	30 minute and 2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, some free parking available
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	3

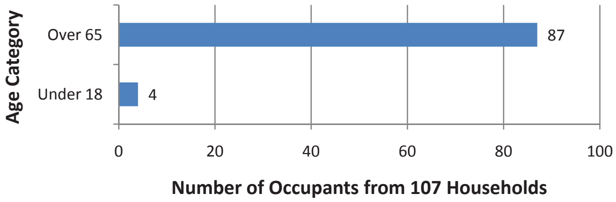
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage
Parking Quantity	76 spaces
Parking Occupancy Rate	56%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday midday
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	Mid-City

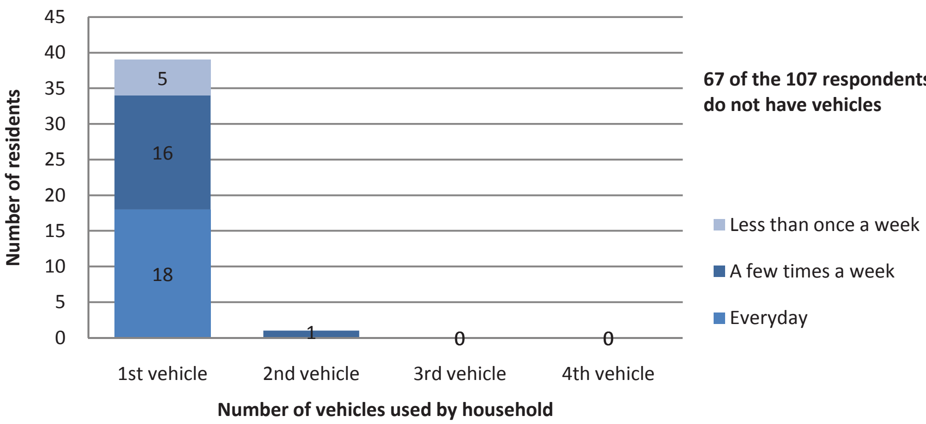
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	71%
Average Household Size (# of persons)	1.19
Average Number of Visitors per Household per Week	1.40
Percentage of Households with No Vehicles	63%
Average Vehicles per Household	0.45

AGE DISTRIBUTION

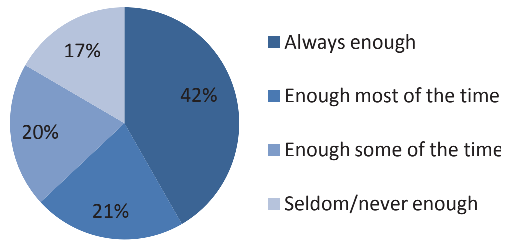


VEHICLE USE

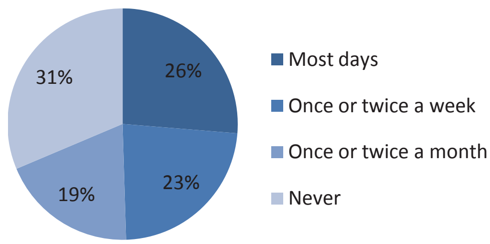


67 of the 107 respondents do not have vehicles

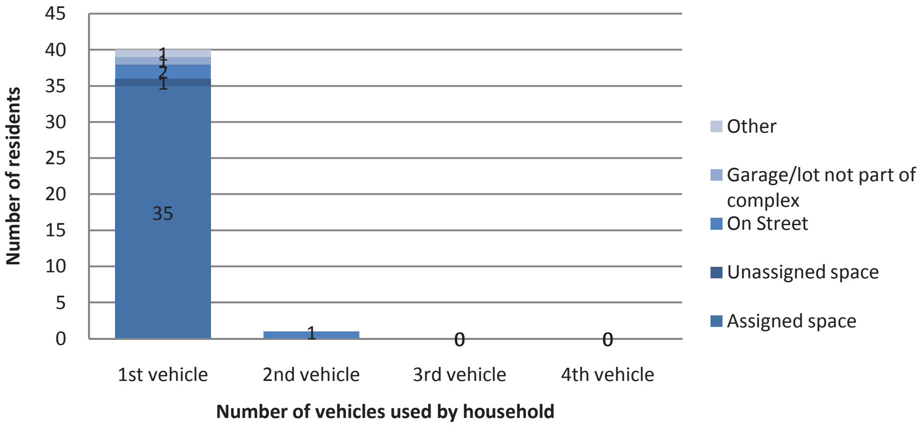
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



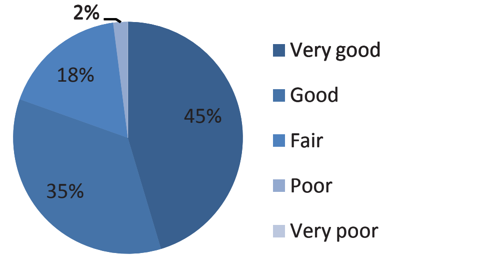
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



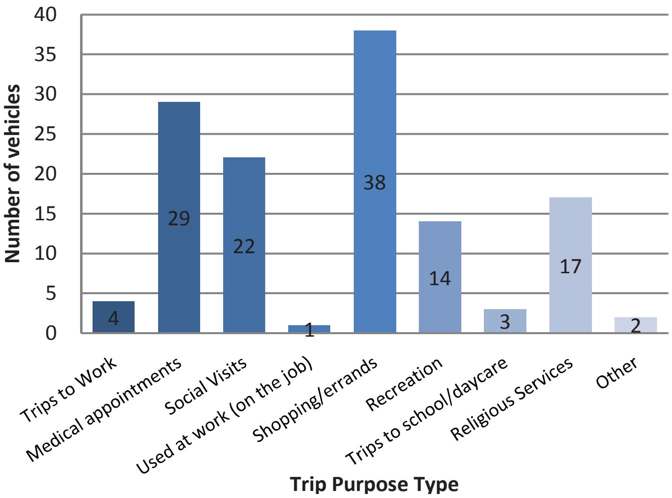
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT

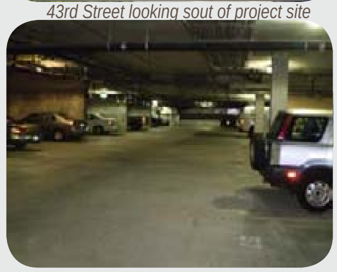


RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

43rd Street looking sout of project site



Internal garage conditions

Creekside Trails

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 2125 Coronado Avenue
- **Housing Type:** Large Family
- **Number of Units:** 50
- **Year Built:** 2006
- **Transit Index:** 2
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Nestor
On-Street Parking Available?	Yes, but not along Coronado
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	4

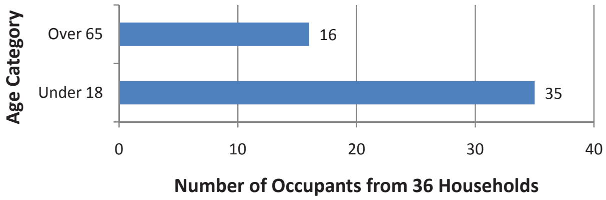
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	77 spaces
Parking Occupancy Rate	71%
Assigned Parking?	Yes
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

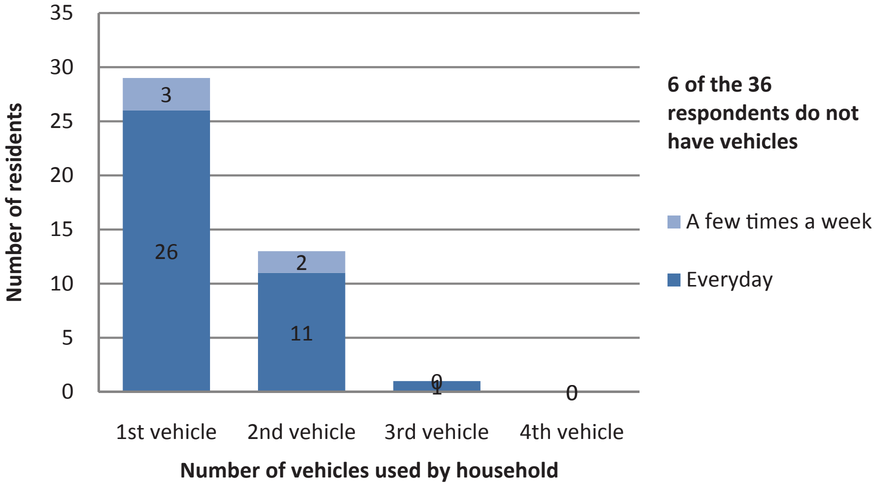
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	72%
Average Household Size (# of persons)	3.10
Average Number of Visitors per Household per Week	2.10
Percentage of Households with No Vehicles	0%
Average Vehicles per Household	1.60

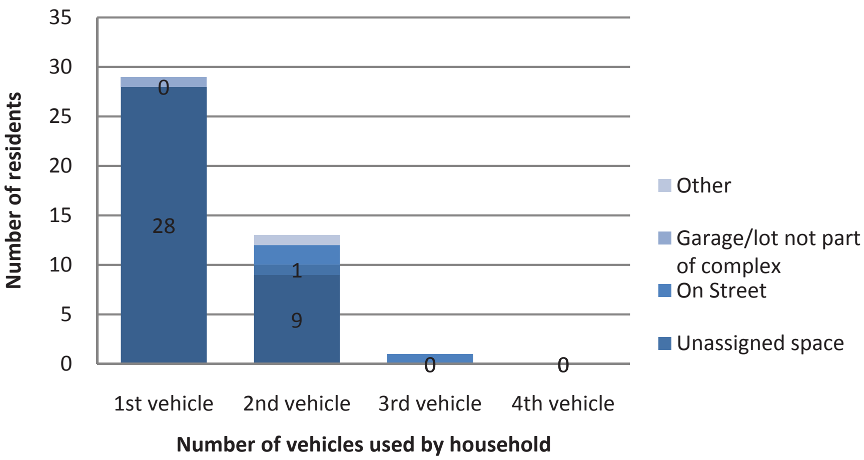
AGE DISTRIBUTION



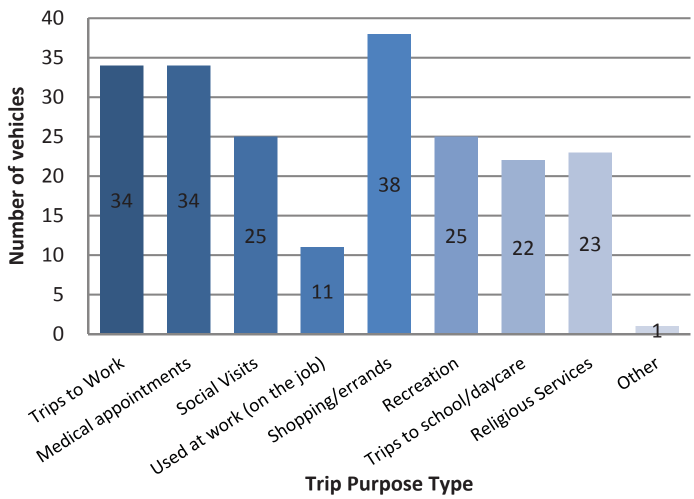
VEHICLE USE



LOCATION OF PARKED VEHICLE AT COMPLEX

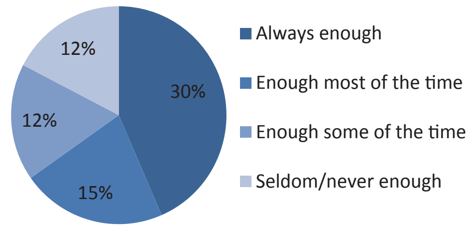


RESIDENTS' TRIP PURPOSE

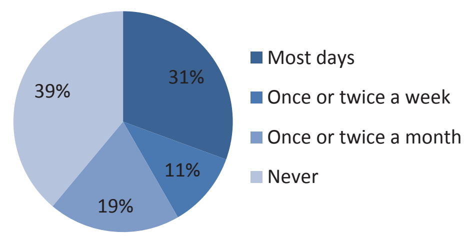


Respondents were able to select multiple trip purposes

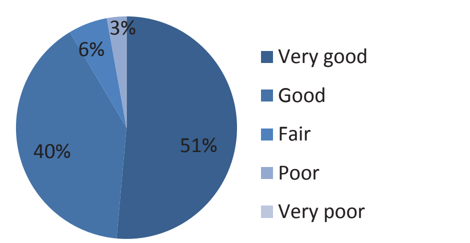
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



Coronado Avenue west of project site

On-site parking conditions

Horton House

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 333 G Street
- **Housing Type:** Senior
- **Number of Units:** 153
- **Year Built:** 1979
- **Transit Index:** 4
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Marina, Gaslamp District
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions
Nearby Public Parking Facilities	3 hour free validated parking at Horton Westfield Mall across G Street
Number of Transit Lines within 1/4 mile	19

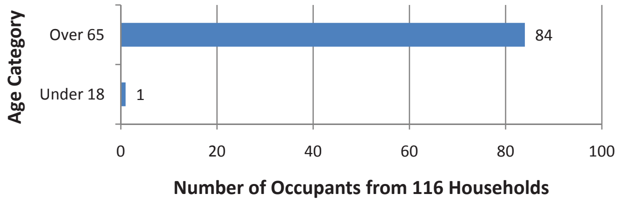
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	17 spaces
Parking Occupancy Rate	85%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday midday
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	Downtown

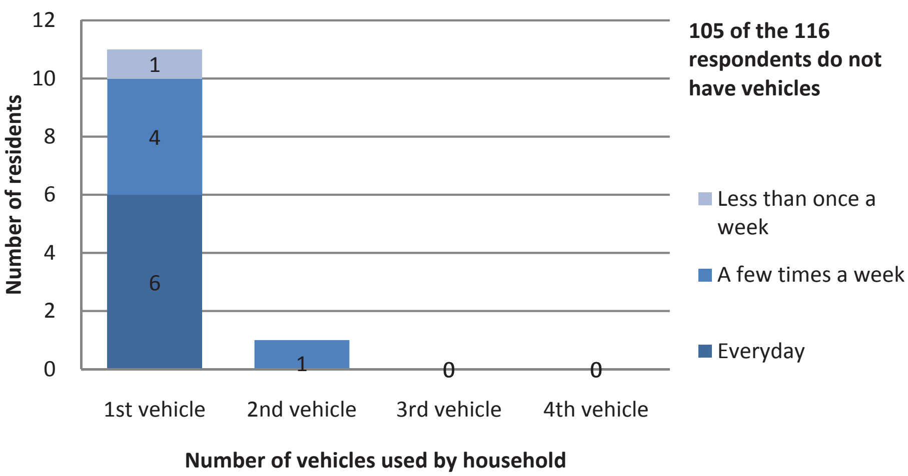
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	76%
Average Household Size (# of persons)	1.18
Average Number of Visitors per Household per Week	0.89
Percentage of Households with No Vehicles	91%
Average Vehicles per Household	0.10

AGE DISTRIBUTION

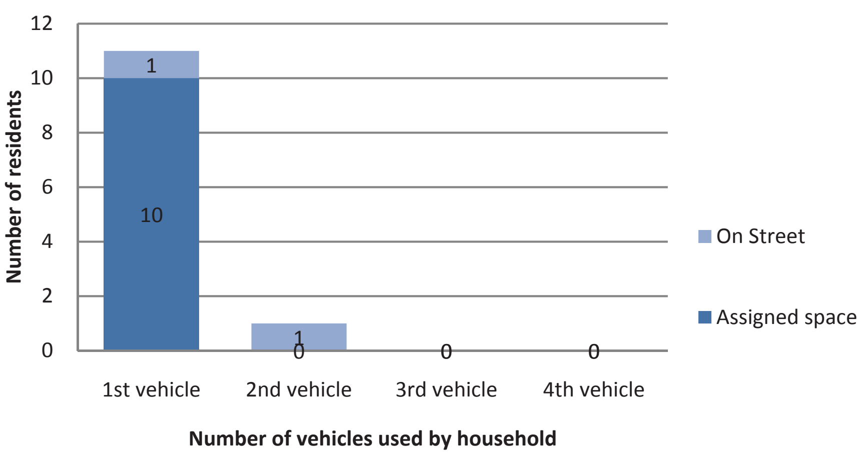


VEHICLE USE

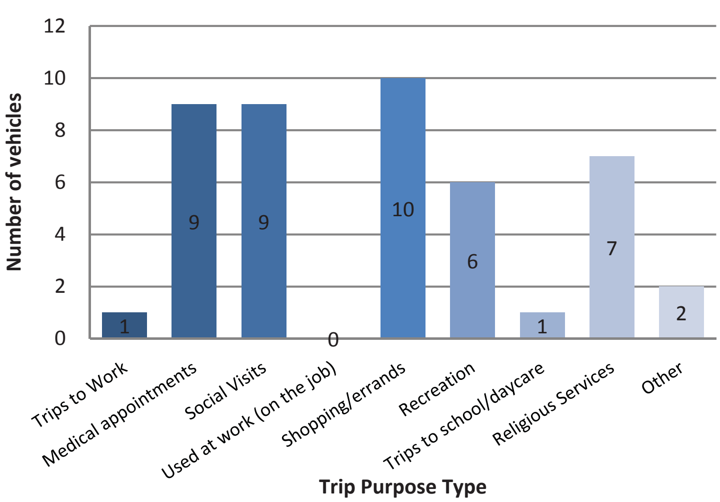


105 of the 116 respondents do not have vehicles

LOCATION OF PARKED VEHICLE AT COMPLEX

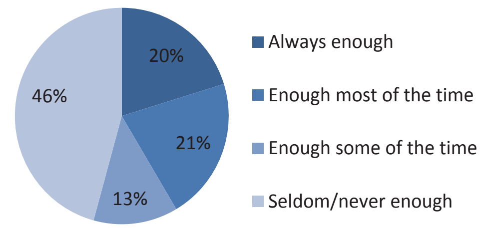


RESIDENTS' TRIP PURPOSE

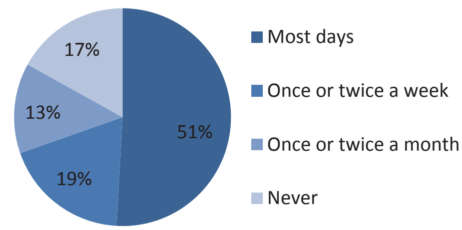


Respondents were able to select multiple trip purposes

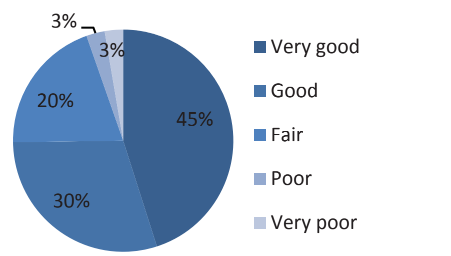
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY

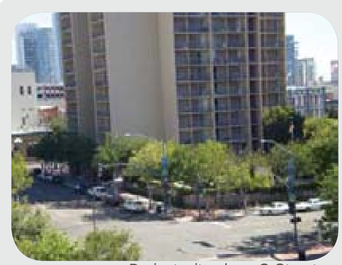


RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT





Project site along G Street

On-site parking conditions

Island Inn

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 202 Island Avenue
- **Housing Type:** Single Room Occupancy
- **Number of Units:** 197
- **Year Built:** 1992
- **Transit Index:** 2
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Marina
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, some free 9 hour parking available
Nearby Public Parking Facilities	5 Star Parking lot at Island and 2nd
Number of Transit Lines within 1/4 mile	4

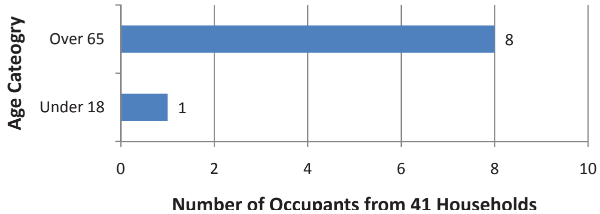
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage
Parking Quantity	86 spaces
Parking Occupancy Rate	60%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	Yes
Free or Discount Transit Passes Available?	No
Regulatory Zones	Downtown

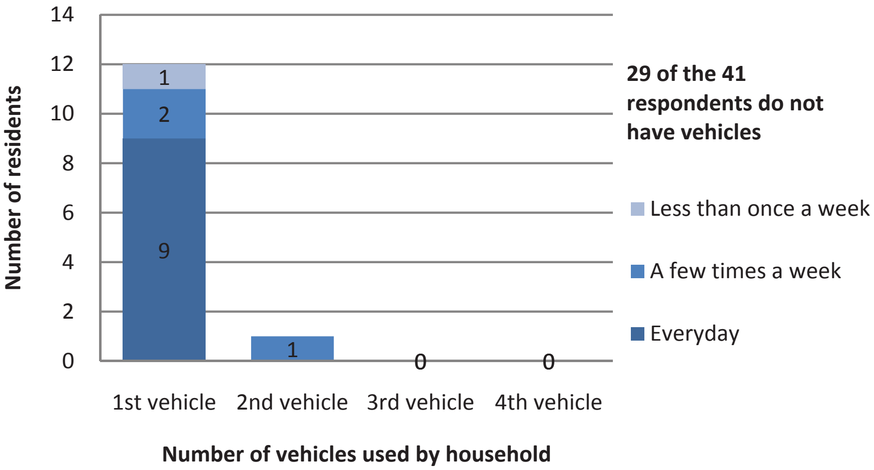
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	21%
Average Household Size (# of persons)	1.15
Average Number of Visitors per Household per Week	0.65
Percentage of Households with No Vehicles	71%
Average Vehicles per Household	0.30

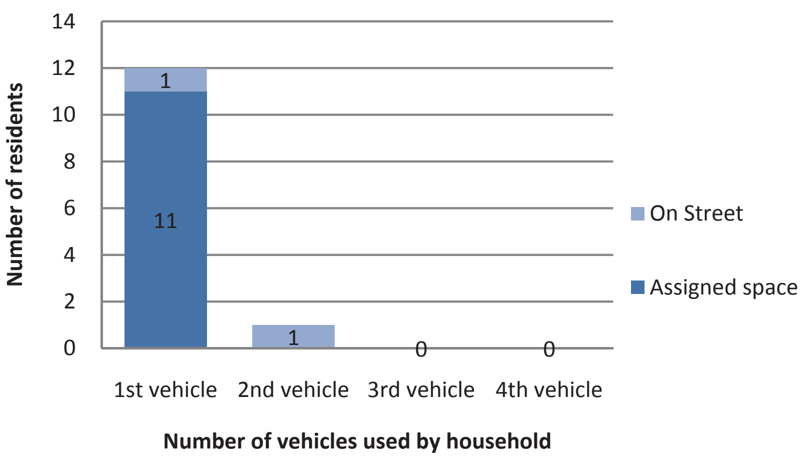
AGE DISTRIBUTION



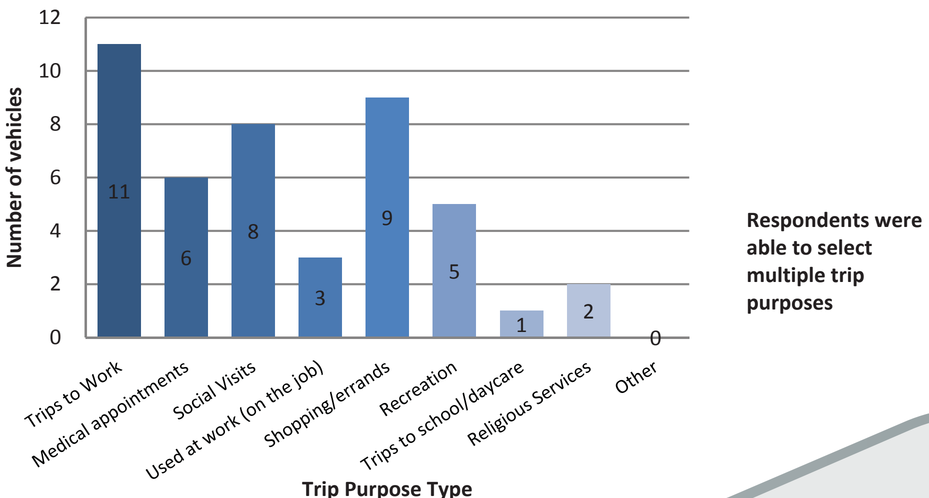
VEHICLE USE



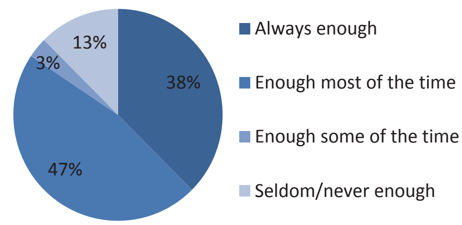
LOCATION OF PARKED VEHICLE AT COMPLEX



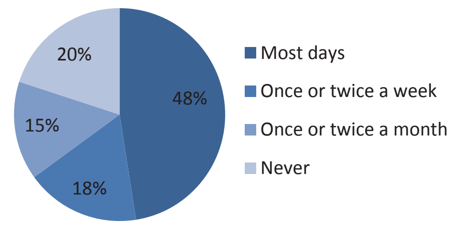
RESIDENTS' TRIP PURPOSE



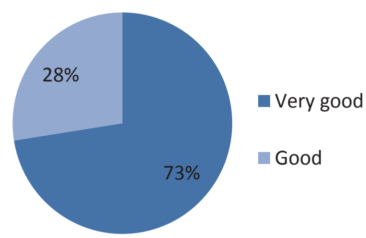
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



3rd Avenue northeast of project site

Internal garage conditions

Island Village Apartments

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 1245 Market Street
- **Housing Type:** Single Resident Occupancy
- **Number of Units:** 281
- **Year Built:** 2003
- **Transit Index:** 3
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	East Village
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	2 hour parking from 8 AM - 6 PM $1.25/hour, some 15 minute parking along Market Street
Other Restrictions	Street Sweeping restrictions, some free parking available
Nearby Public Parking Facilities	5 Star Parking lot at Market and 13th
Number of Transit Lines within 1/4 mile	8, including 2 rail lines (Blue/Orange)

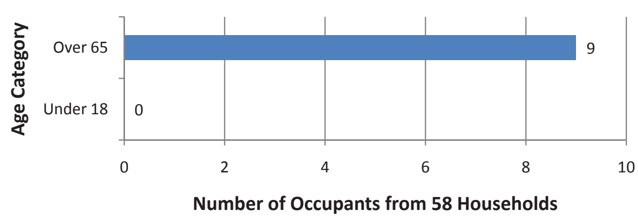
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage, with tandem parking
Parking Quantity	80 spaces
Parking Occupancy Rate	66%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday midday
Bike Parking Available?	Yes
Free or Discount Transit Passes Available?	No
Regulatory Zones	Downtown

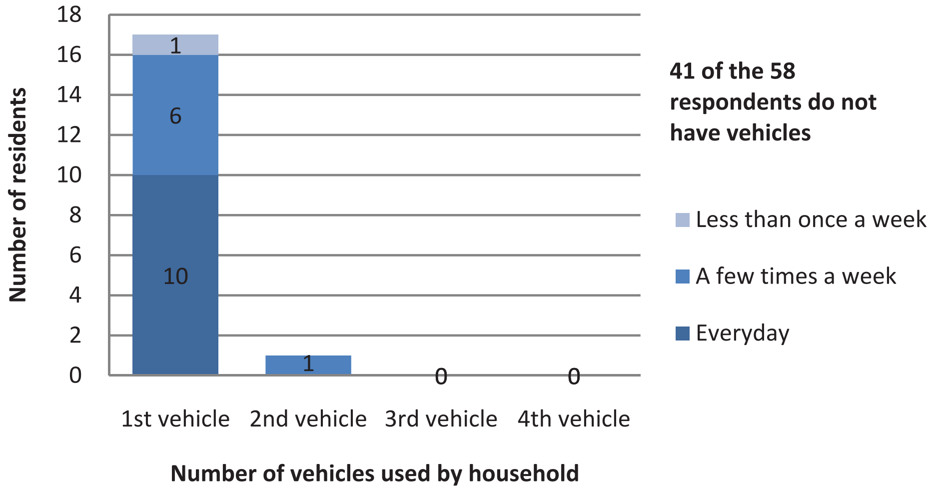
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	21%
Average Household Size (# of persons)	1.00
Average Number of Visitors per Household per Week	1.05
Percentage of Households with No Vehicles	71%
Average Vehicles per Household	0.31

AGE DISTRIBUTION

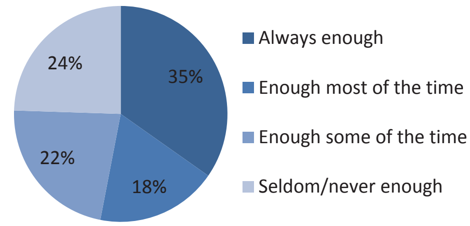


VEHICLE USE

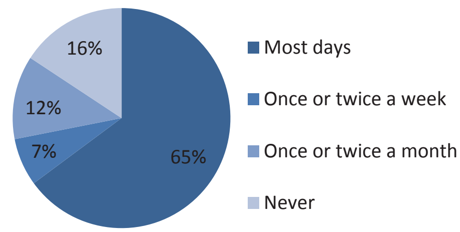


41 of the 58 respondents do not have vehicles

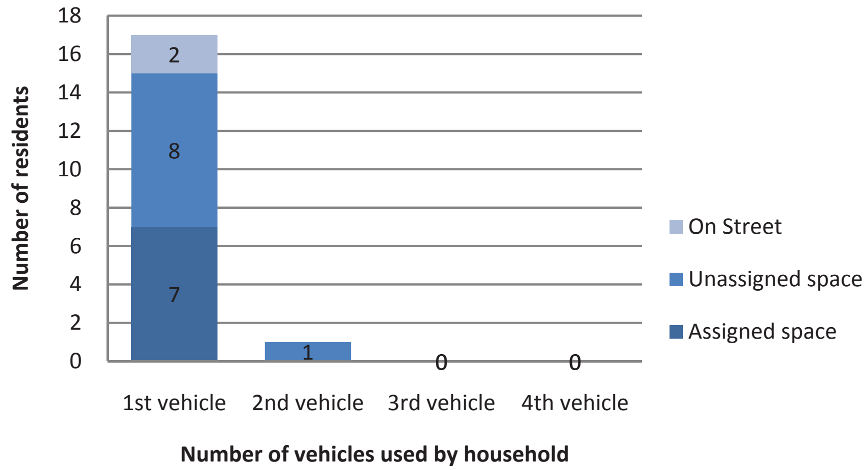
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



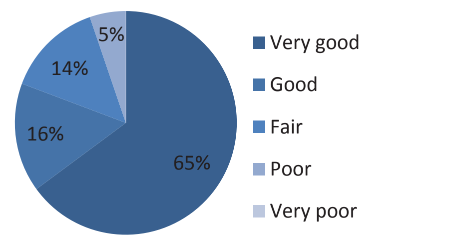
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



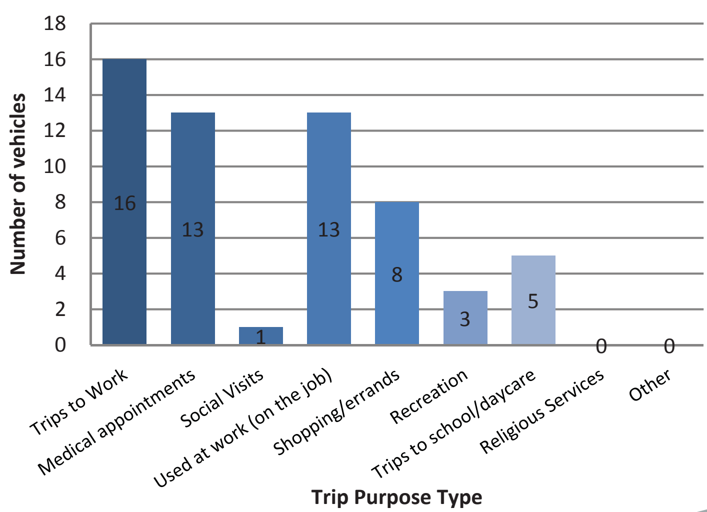
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT

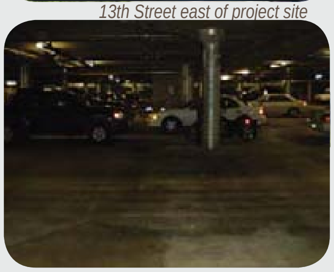


RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

13th Street east of project site



Internal parking conditions (including tandem)

Josue II House

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 5126 70th Street
- **Housing Type:** Transitional
- **Number of Units:** 6
- **Year Built:** 1994
- **Transit Index:** 1
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	College East
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	2

HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

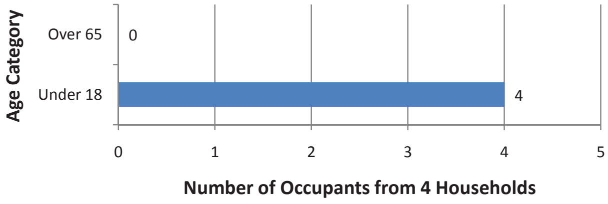
Type of Parking	Open Lot
Parking Quantity	5 spaces
Parking Occupancy Rate	60%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	Yes
Free or Discount Transit Passes Available?	No
Regulatory Zones	Mid-City

HOUSEHOLD CHARACTERISTICS

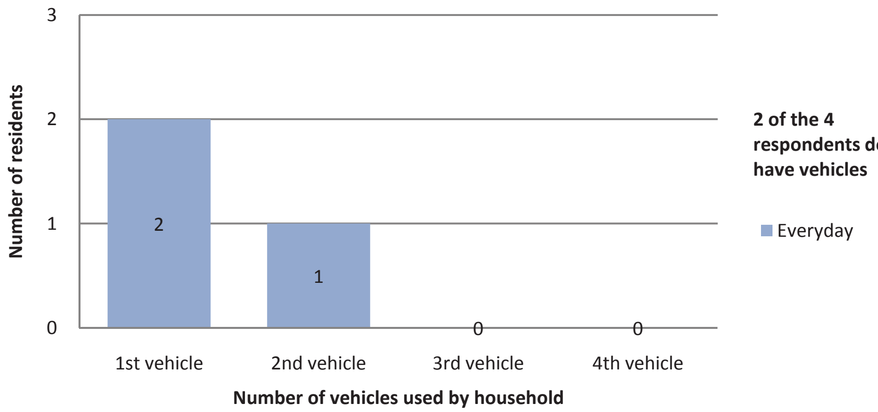
Survey Response Rate	67%
Average Household Size (# of persons)	6.00*
Average Number of Visitors per Household per Week	1.25
Percentage of Households with No Vehicles	50%
Average Vehicles per Household	1.50

*Refers to size of house, each resident has a room

AGE DISTRIBUTION

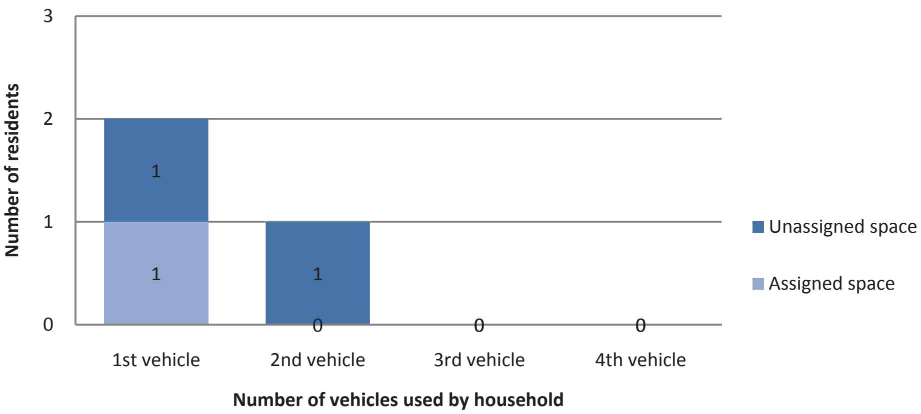


VEHICLE USE

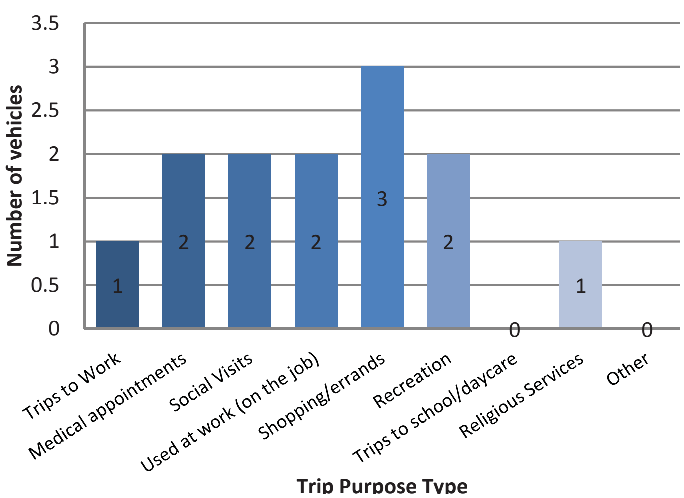


2 of the 4 respondents do not have vehicles

LOCATION OF PARKED VEHICLE AT COMPLEX

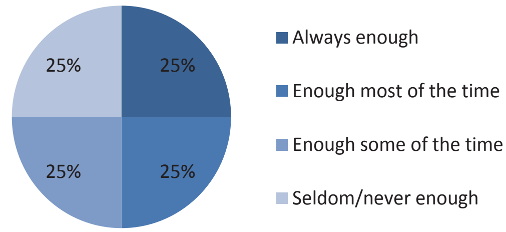


RESIDENTS' TRIP PURPOSE

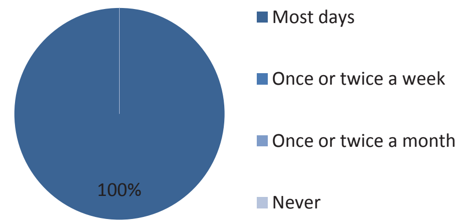


Respondents were able to select multiple trip purposes

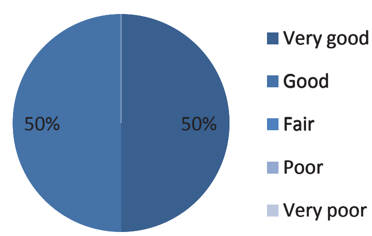
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



70th Street north of project site

On-site parking conditions

Mission Terrace Apartments

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 10210 San Diego Mission Road
- **Housing Type:** Large Family
- **Number of Units:** 77
- **Year Built:** 1996
- **Transit Index:** 1
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Grantville
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	3

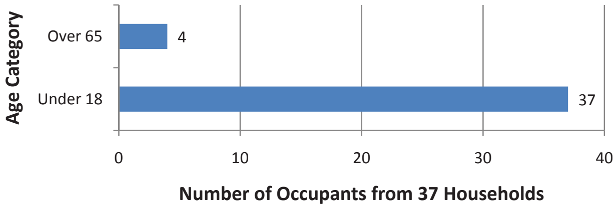
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage
Parking Quantity	88 spaces
Parking Occupancy Rate	75%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

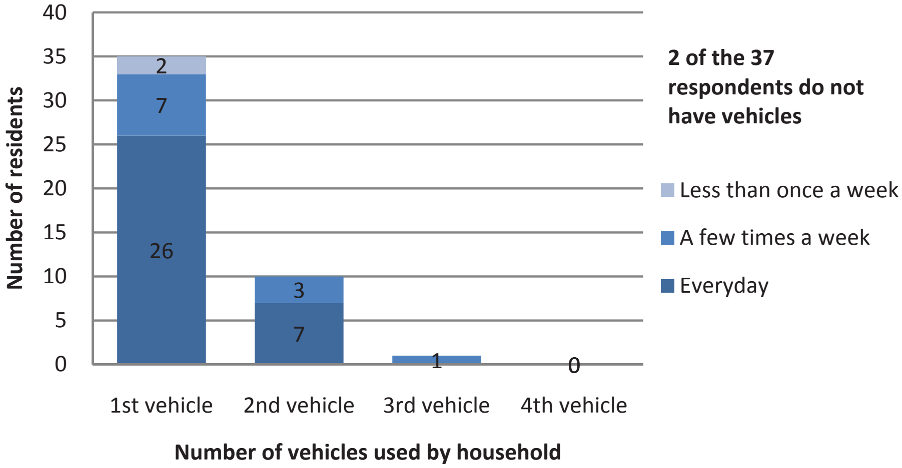
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	48%
Average Household Size (# of persons)	2.49
Average Number of Visitors per Household per Week	1.03
Percentage of Households with No Vehicles	5%
Average Vehicles per Household	1.27

AGE DISTRIBUTION

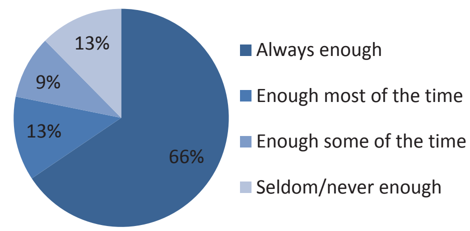


VEHICLE USE

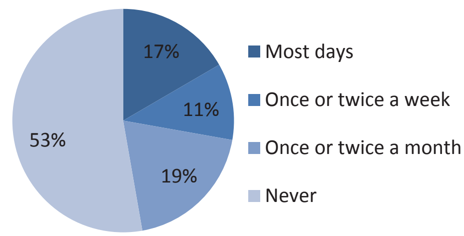


2 of the 37 respondents do not have vehicles

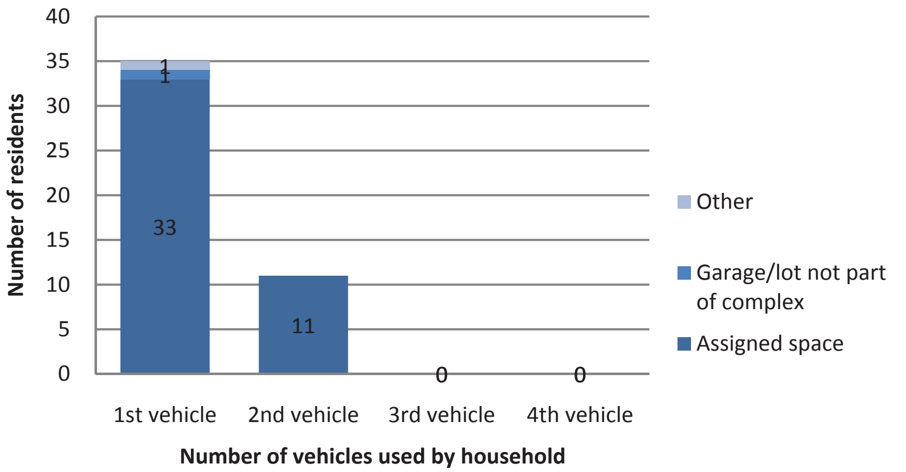
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



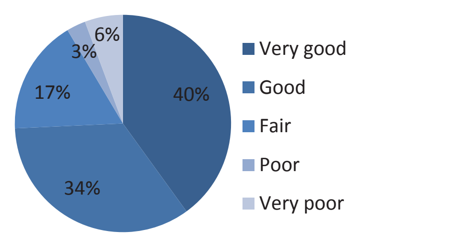
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



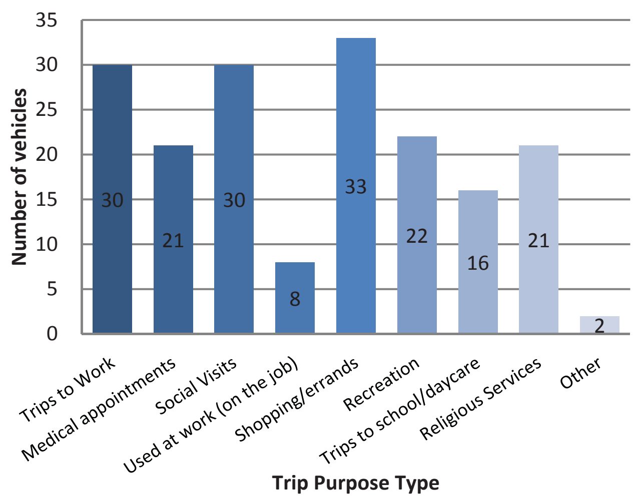
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT

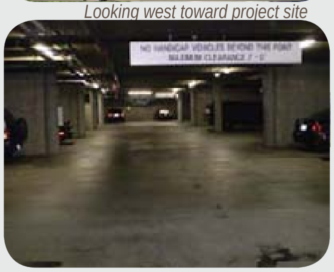


RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

Looking west toward project site



Internal garage conditions

Parkway Manor

PROFILE

- **Location:** 3778 35th Street
- **Housing Type:** Small Family
- **Number of Units:** 20
- **Year Built:** 1997
- **Transit Index:** 1
- **Land Use Index:** 2

Project site area and surveyed on-street blockfaces

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Cherokee Point
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	Street Sweeping restrictions
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	3

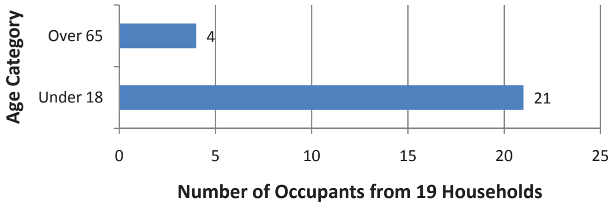
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	20 spaces
Parking Occupancy Rate	82%
Assigned Parking?	Yes
Peak Parking Time - Manager survey	Weekend midday
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	Mid-City

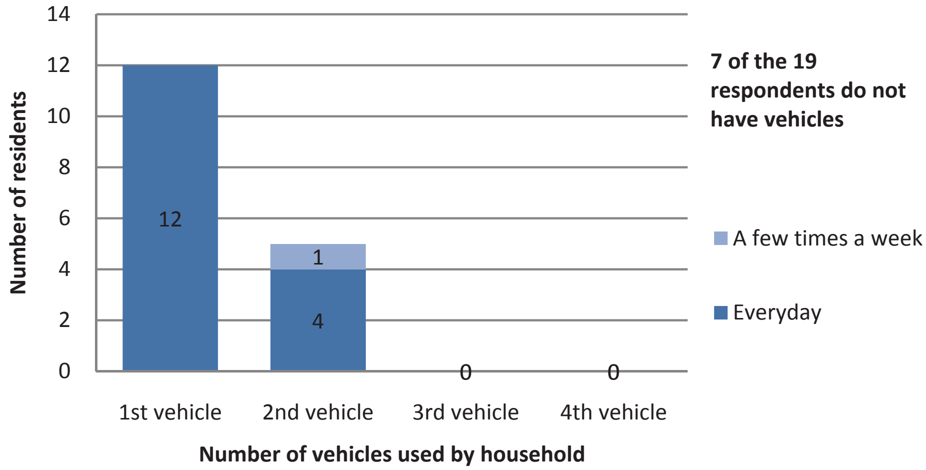
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	95%
Average Household Size (# of persons)	3.05
Average Number of Visitors per Household per Week	1.37
Percentage of Households with No Vehicles	37%
Average Vehicles per Household	0.95

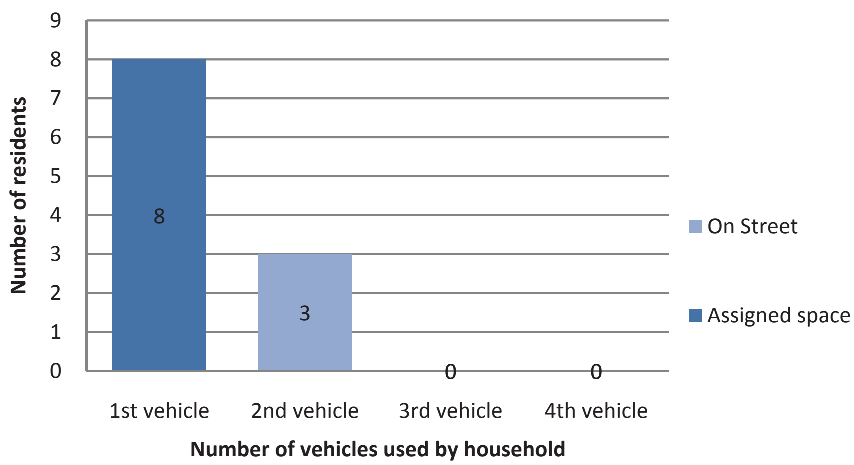
AGE DISTRIBUTION



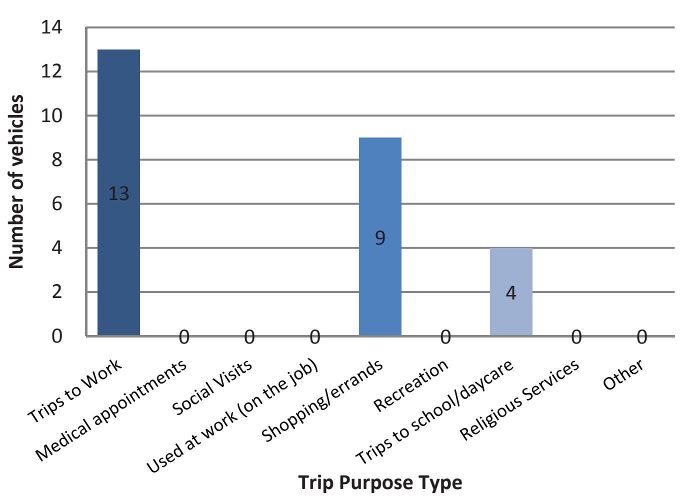
VEHICLE USE



LOCATION OF PARKED VEHICLE AT COMPLEX

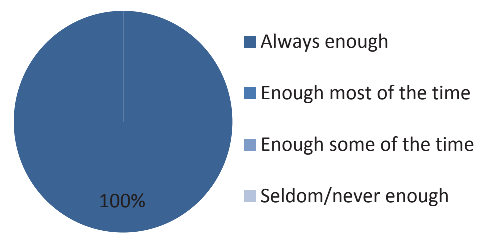


RESIDENTS' TRIP PURPOSE

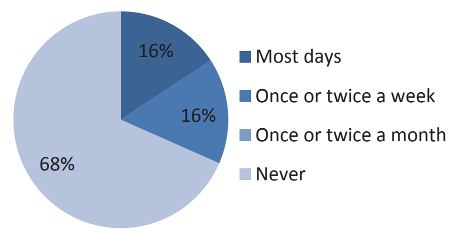


Respondents were able to select multiple trip purposes

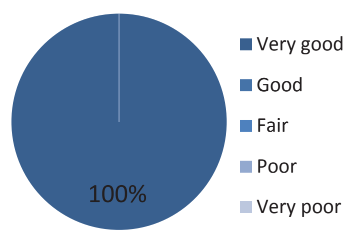
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



35th Street south of project site

Alley-side on-site parking conditions

Rancho Del Norte Apartments

Project site area. No on-street blockfaces surveyed

PROFILE

- **Location:** 16775 Saintsbury Glen
- **Housing Type:** Large Family
- **Number of Units:** 118
- **Year Built:** 2005
- **Transit Index:** 1
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Black Mountain Ranch
On-Street Parking Available?	No
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	0

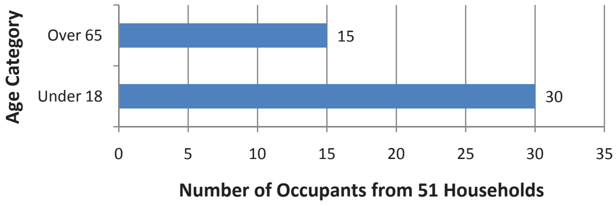
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	214 spaces
Parking Occupancy Rate	78%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

HOUSEHOLD CHARACTERISTICS

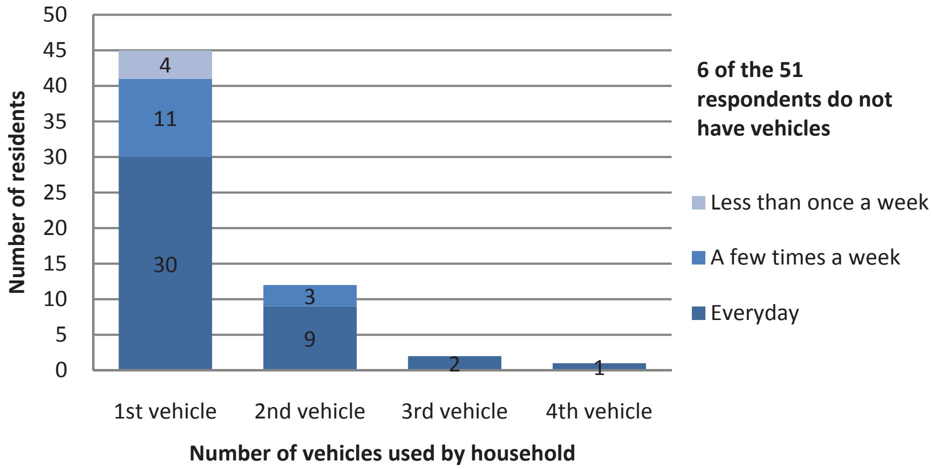
Survey Response Rate	43%
Average Household Size (# of persons)	2.20
Average Number of Visitors per Household per Week	1.31
Percentage of Households with No Vehicles	12%
Average Vehicles per Household	1.19

AGE DISTRIBUTION

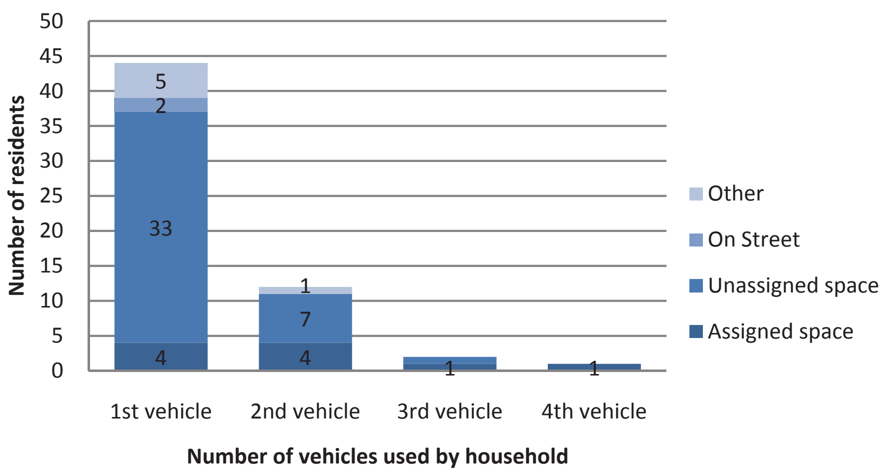


VEHICLE USE

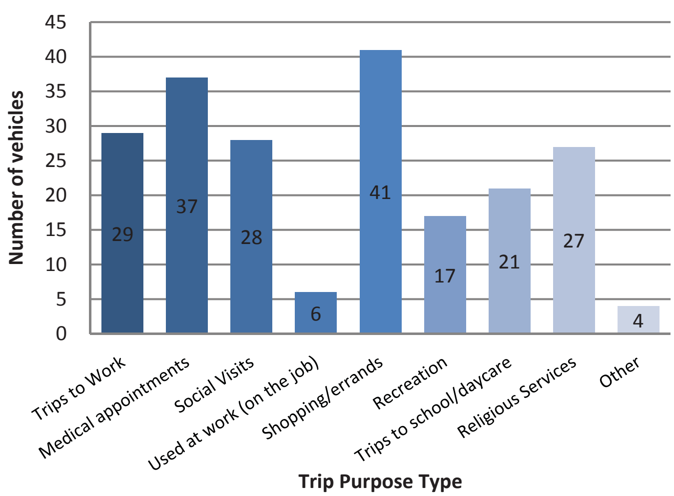
6 of the 51 respondents do not have vehicles



LOCATION OF PARKED VEHICLE AT COMPLEX

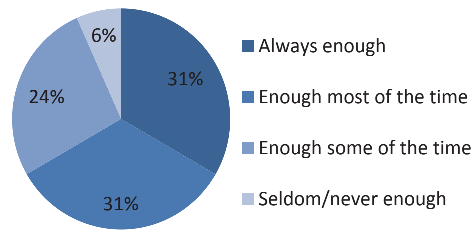


RESIDENTS' TRIP PURPOSE

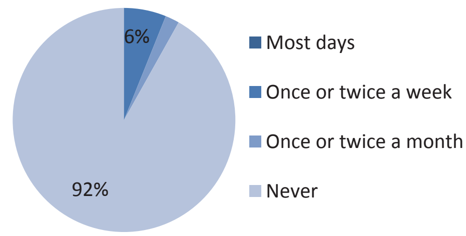


Respondents were able to select multiple trip purposes

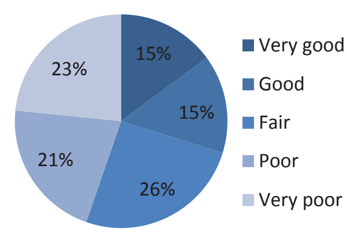
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



Rancho Bernardo Rd. south of project site

On-site parking conditions

Renaissance Seniors

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 4330 30th Street
- **Housing Type:** Senior
- **Number of Units:** 96
- **Year Built:** 2006
- **Transit Index:** 2
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	North Park
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	30 minute and 2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, mostly free parking available
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	5

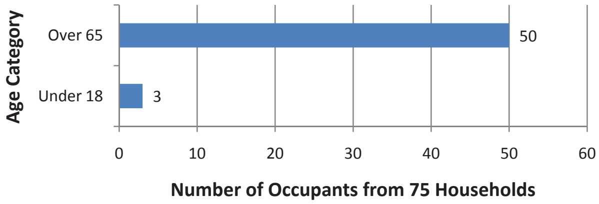
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Garage
Parking Quantity	103 spaces
Parking Occupancy Rate	50%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekend morning
Bike Parking Available?	Yes
Free or Discount Transit Passes Available?	No
Regulatory Zones	Mid-City

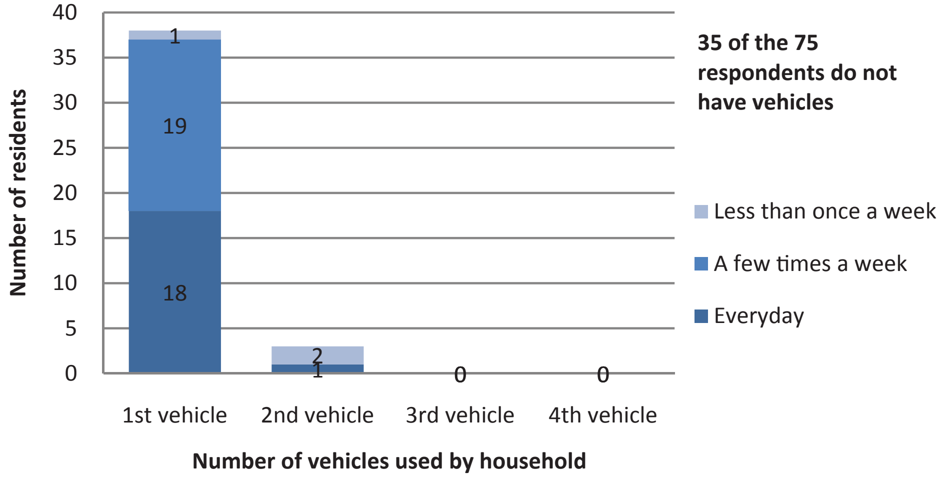
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	78%
Average Household Size (# of persons)	1.13
Average Number of Visitors per Household per Week	1.47
Percentage of Households with No Vehicles	47%
Average Vehicles per Household	0.65

AGE DISTRIBUTION

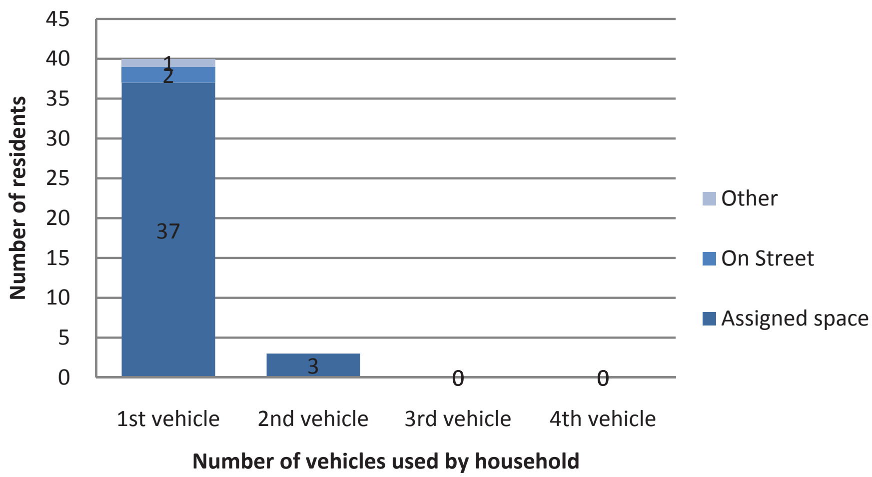


VEHICLE USE

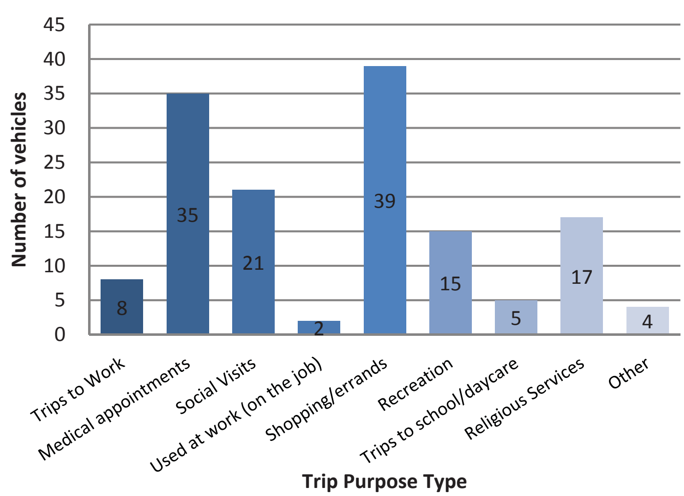


35 of the 75 respondents do not have vehicles

LOCATION OF PARKED VEHICLE AT COMPLEX

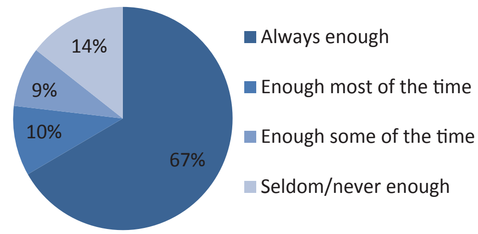


RESIDENTS' TRIP PURPOSE

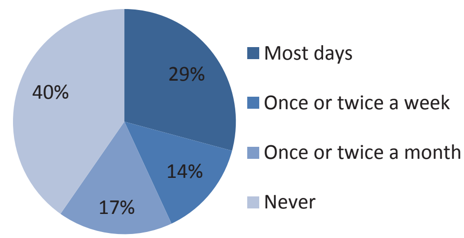


Respondents were able to select multiple trip purposes

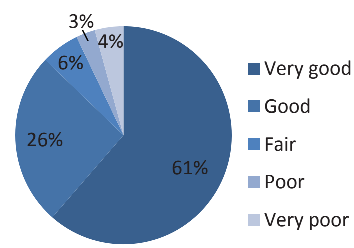
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



30th Street north of project site

On-site retail parking lot

Sunburst Apartments

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 1640 Broadway
- **Housing Type:** Special Needs
- **Number of Units:** 25
- **Year Built:** 2006
- **Transit Index:** 4
- **Land Use Index:** 4

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	East Village
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	1 and 2 hour parking from 8 AM - 6 PM $1.25/hour along 16th and Broadway
Other Restrictions	Street Sweeping restrictions, some free parking available
Nearby Public Parking Facilities	City College parking garage behind complex
Number of Transit Lines within 1/4 mile	5

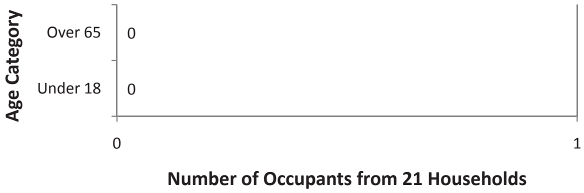
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	None
Parking Quantity	N/A
Parking Occupancy Rate	N/A
Assigned Parking?	N/A
Peak Parking Time - Manager survey	Weekday morning
Bike Parking Available?	No
Free or Discount Transit Passes Available?	Yes
Regulatory Zones	Downtown

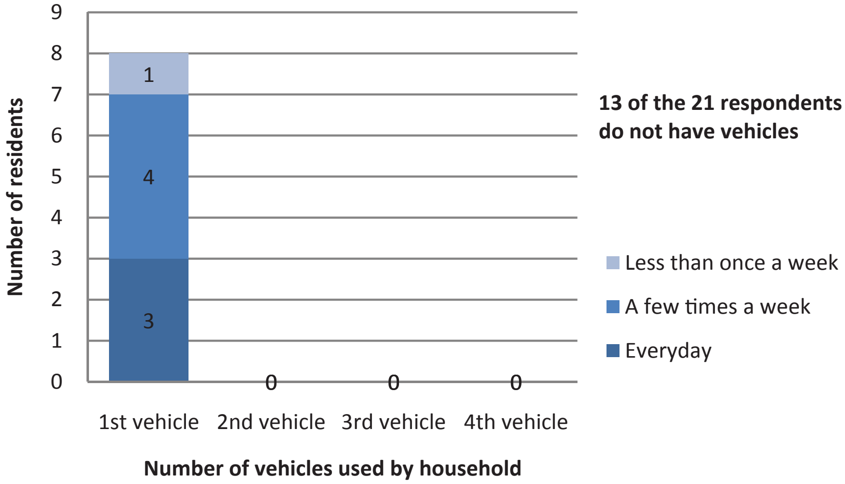
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	84%
Average Household Size (# of persons)	1.00
Average Number of Visitors per Household per Week	1.50
Percentage of Households with No Vehicles	62%
Average Vehicles per Household	0.29

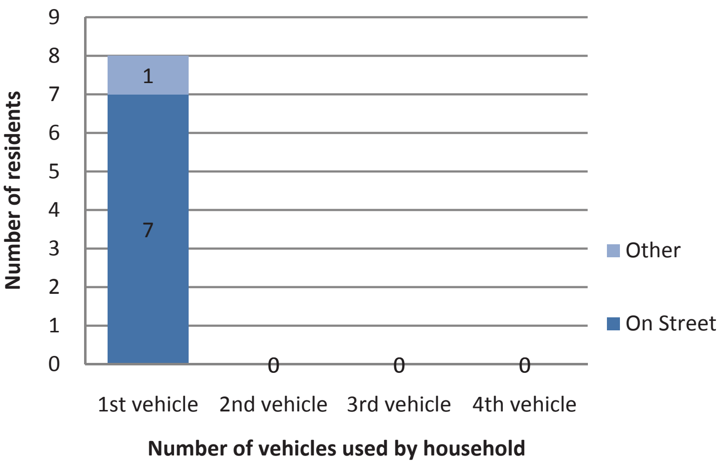
AGE DISTRIBUTION



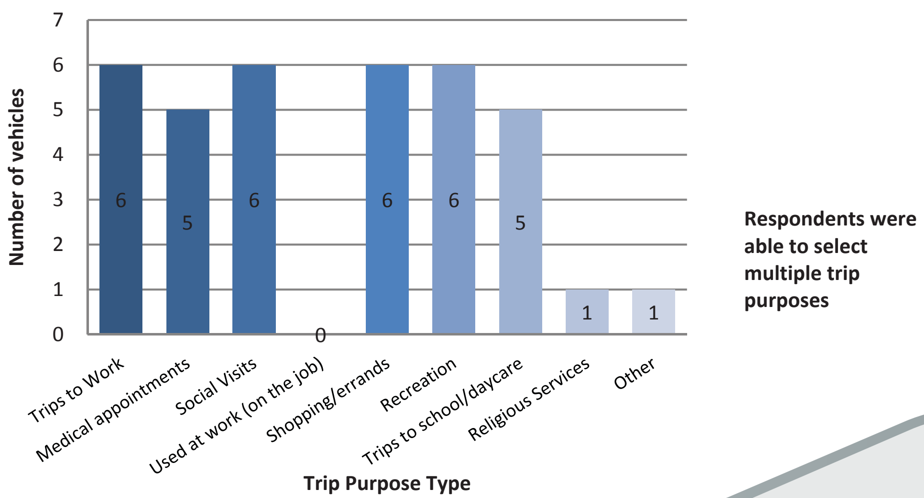
VEHICLE USE



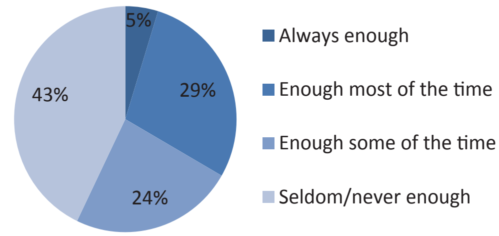
LOCATION OF PARKED VEHICLE AT COMPLEX



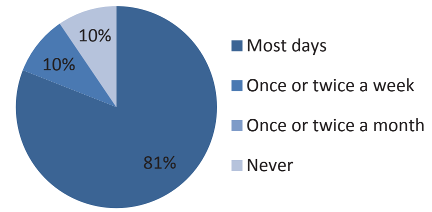
RESIDENTS' TRIP PURPOSE



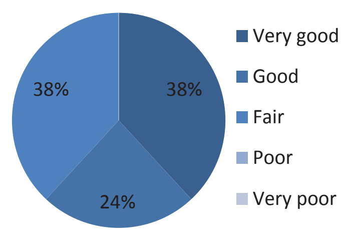
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



17th Street northeast of project site

Housing project on Broadway

The Cove

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 5288 El Cajon Blvd
- **Housing Type:** Single Room Occupancy
- **Number of Units:** 20
- **Year Built:** 2008
- **Transit Index:** 1
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Talmadge
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, mostly free parking available
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	3

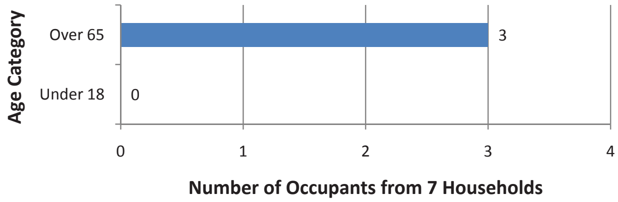
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	13 spaces
Parking Occupancy Rate	46%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	Mid-City

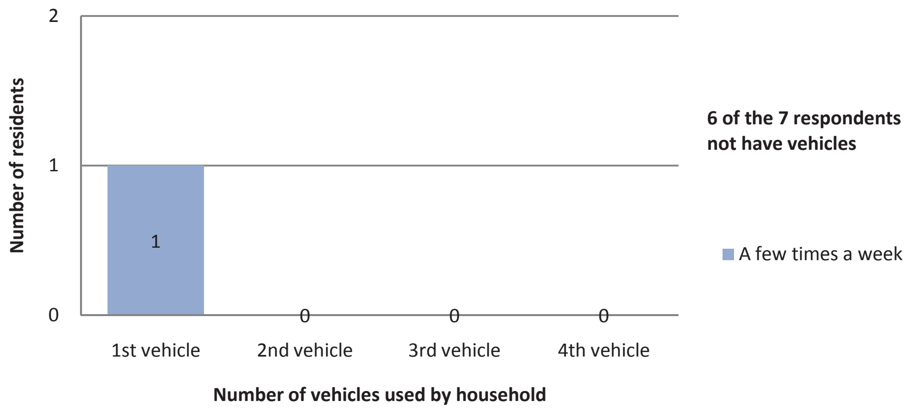
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	35%
Average Household Size (# of persons)	1.00
Average Number of Visitors per Household per Week	0.86
Percentage of Households with No Vehicles	86%
Average Vehicles per Household	0.14

AGE DISTRIBUTION

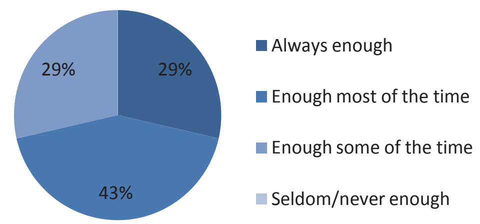


VEHICLE USE

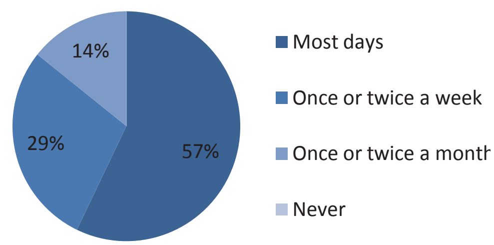


6 of the 7 respondents do not have vehicles

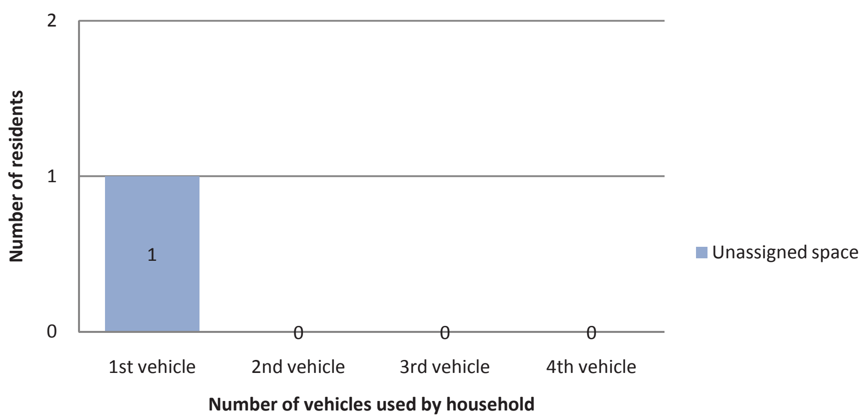
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



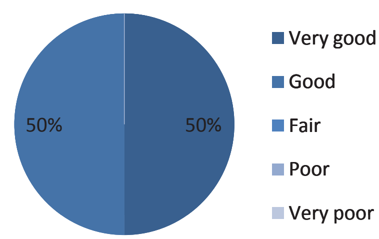
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



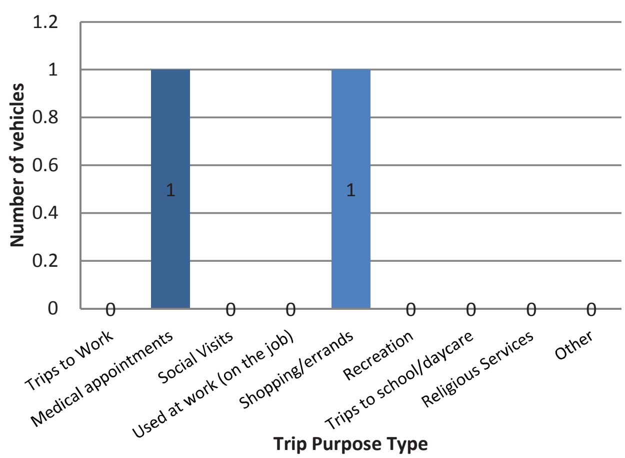
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

El Cajon Boulevard south of project site

On-site parking conditions

The Crossings

Project site area. No on-street blockfaces surveyed

PROFILE

- **Location:** 13545 Zinnia Hills Place
- **Housing Type:** Large Family
- **Number of Units:** 108
- **Year Built:** 2006
- **Transit Index:** 1
- **Land Use Index:** 1

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	North City
On-Street Parking Available?	Yes, limited
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	0

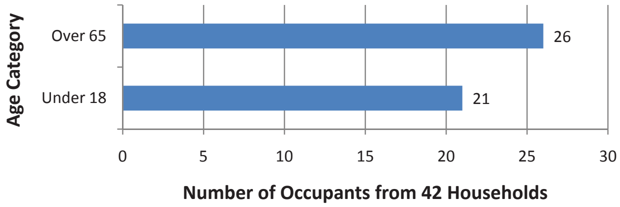
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open lot + unit garage/ driveways
Parking Quantity	173 spaces
Parking Occupancy Rate	47%
Assigned Parking?	Yes
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

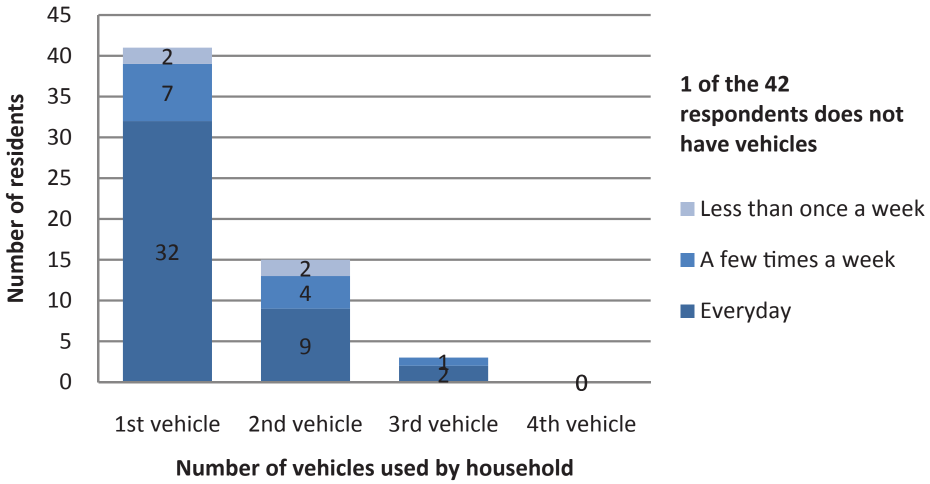
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	40%
Average Household Size (# of persons)	2.33
Average Number of Visitors per Household per Week	1.37
Percentage of Households with No Vehicles	2%
Average Vehicles per Household	1.50

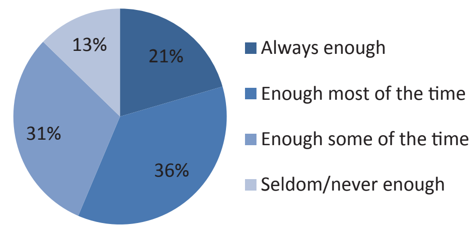
AGE DISTRIBUTION



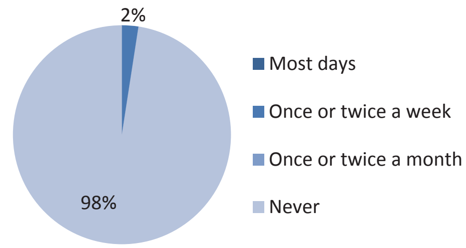
VEHICLE USE



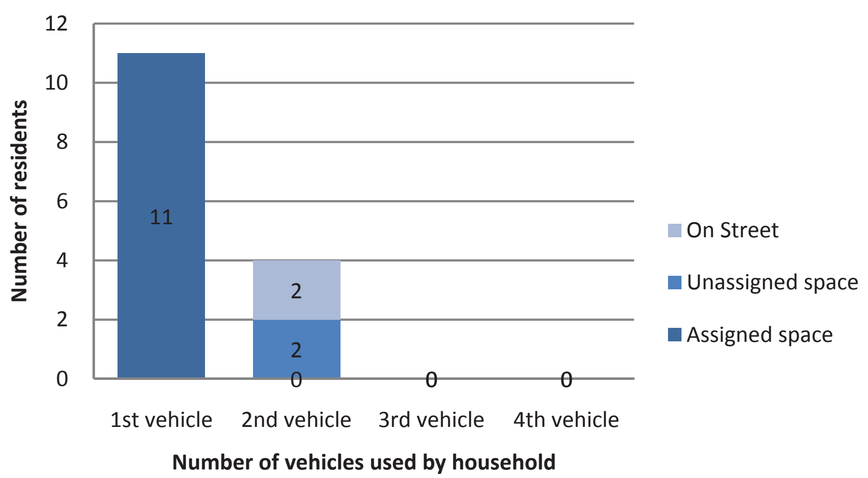
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



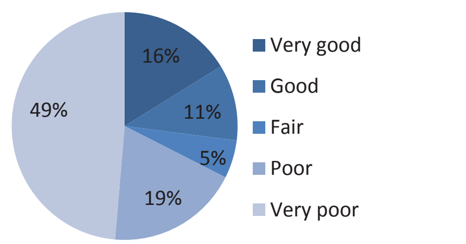
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



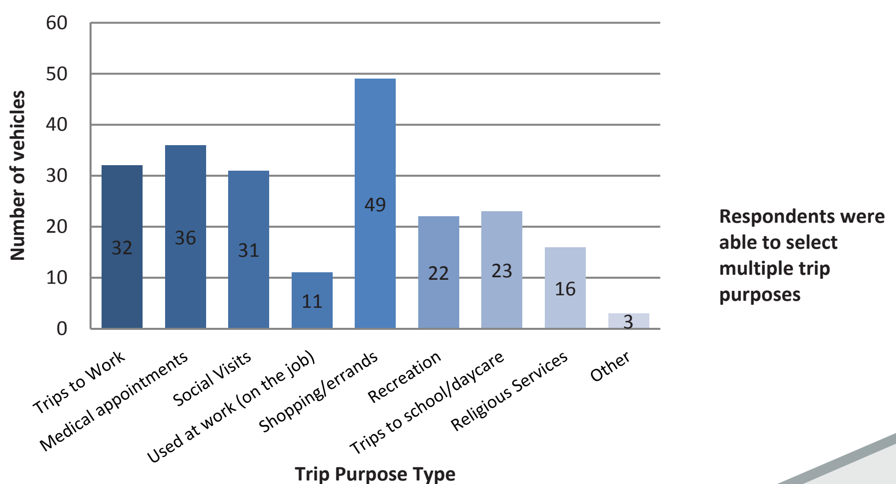
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



RESIDENTS' TRIP PURPOSE



Northeast corner of project site

On-site parking conditions

Villa Andalucia

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 6595 Rancho del Sol Way
- **Housing Type:** Large Family
- **Number of Units:** 32
- **Year Built:** 2003
- **Transit Index:** 1
- **Land Use Index:** 0

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Carmel Valley
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	0

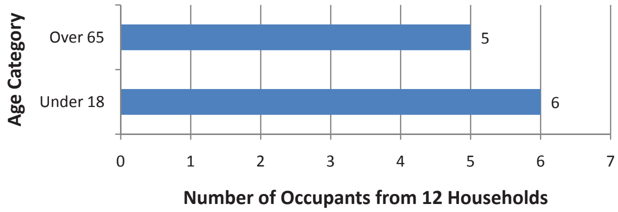
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	51 spaces
Parking Occupancy Rate	91%
Assigned Parking?	Yes
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

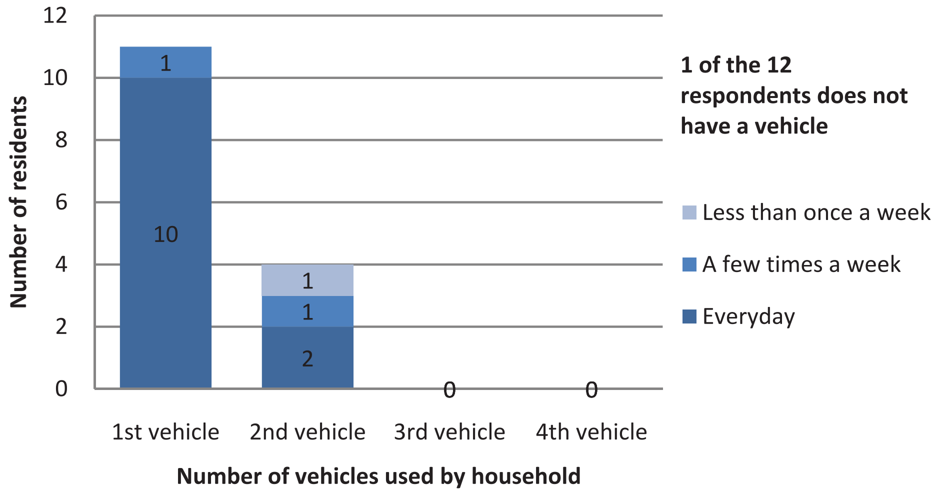
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	38%
Average Household Size (# of persons)	2.08
Average Number of Visitors per Household per Week	1.55
Percentage of Households with No Vehicles	8%
Average Vehicles per Household	1.33

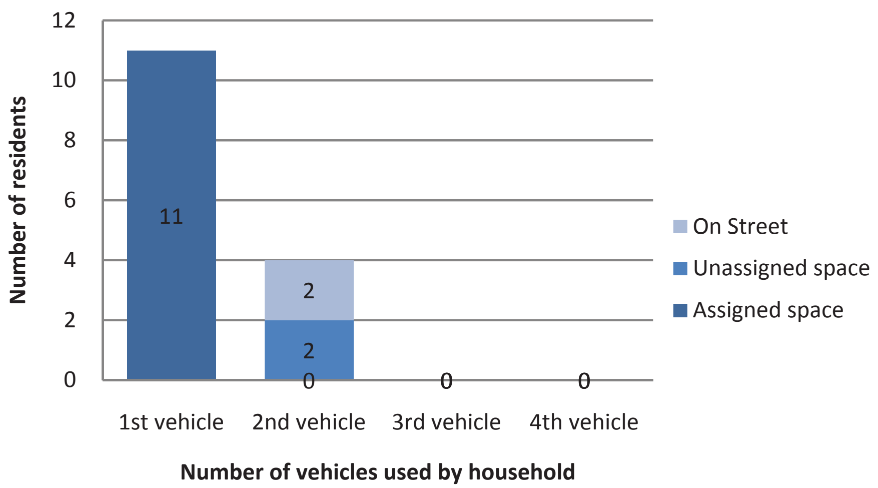
AGE DISTRIBUTION



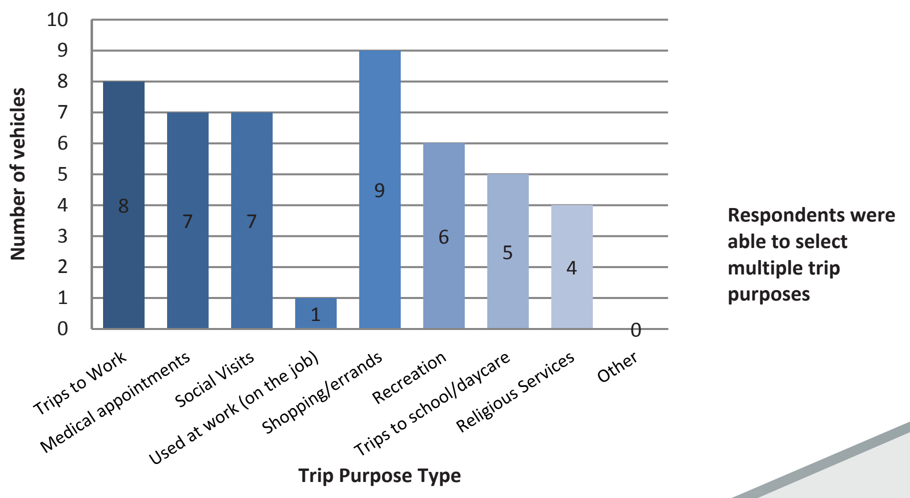
VEHICLE USE



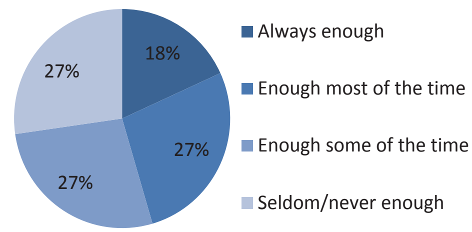
LOCATION OF PARKED VEHICLE AT COMPLEX



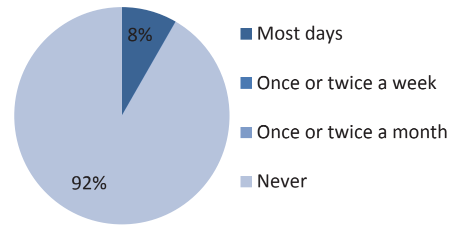
RESIDENTS' TRIP PURPOSE



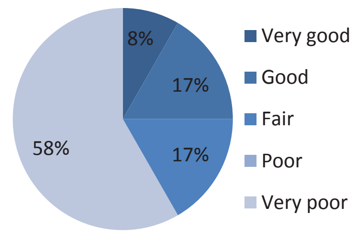
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



Looking southwest towards project site

On-site parking conditions

Villa Harvey Mandel

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** 72 17th Street
- **Housing Type:** Single Resident Occupancy
- **Number of Units:** 90
- **Year Built:** 2003
- **Transit Index:** 2
- **Land Use Index:** 2

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	East Village
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	2 hour parking from 8 AM - 6 PM $1.25/hour
Other Restrictions	Street Sweeping restrictions, mostly free parking available
Nearby Public Parking Facilities	Ace lot, City lot, 5 Star Parking lot near 14th and Imperial
Number of Transit Lines within 1/4 mile	4

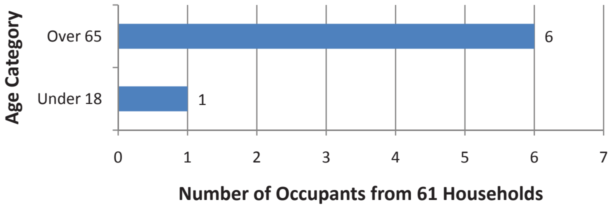
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Partially covered Lot
Parking Quantity	26 spaces
Parking Occupancy Rate	75%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday morning
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	Downtown

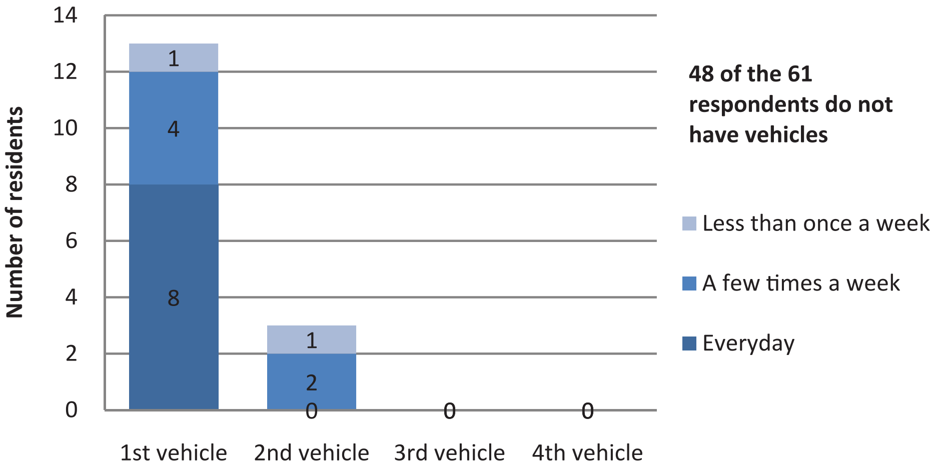
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	68%
Average Household Size (# of persons)	1.11
Average Number of Visitors per Household per Week	1.05
Percentage of Households with No Vehicles	79%
Average Vehicles per Household	0.22

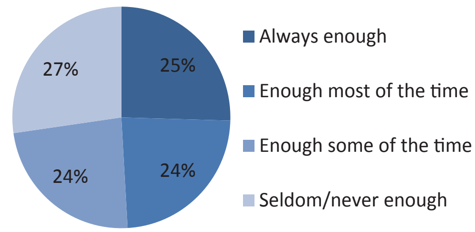
AGE DISTRIBUTION



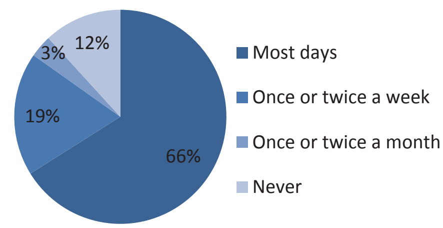
VEHICLE USE



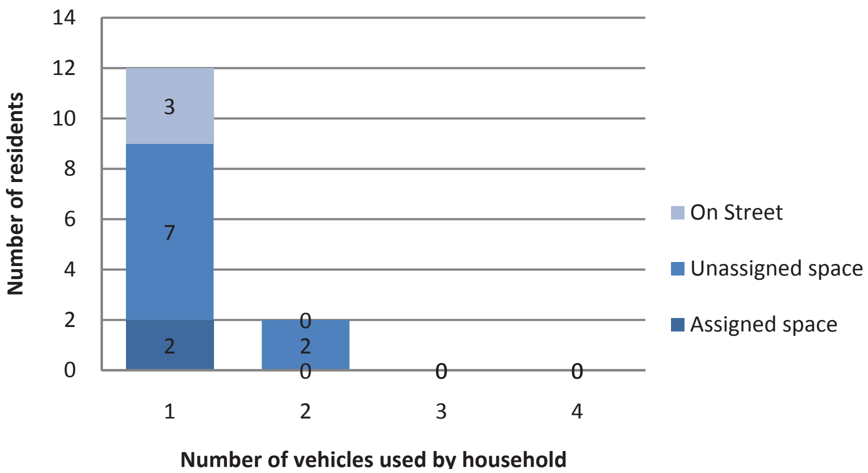
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



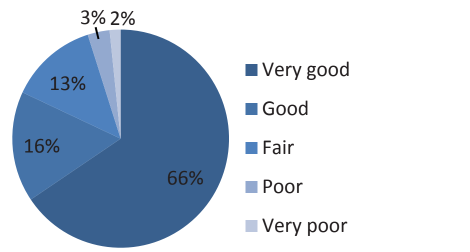
RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



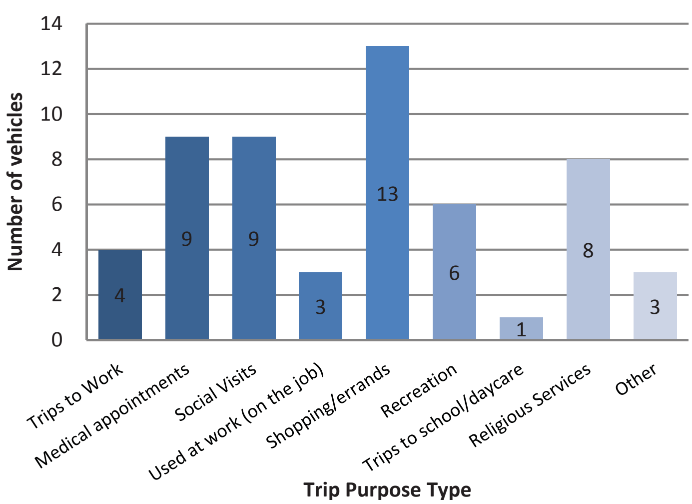
LOCATION OF PARKED VEHICLE AT COMPLEX



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



RESIDENTS' TRIP PURPOSE



Respondents were able to select multiple trip purposes

17th Street south of project site

On-site parking conditions

Stork Street Apartments

PROFILE

- **Location:** 550 Stork Street
- **Housing Type:** Small Family
- **Number of Units:** 15
- **Year Built:** 2005
- **Transit Index:** 1
- **Land Use Index:** 2

Project site area and surveyed on-street blockfaces

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Encanto
On-Street Parking Available?	Yes
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	Park-and-ride facility for trolley at 62nd and Akins
Number of Transit Lines within 1/4 mile	5, including 1 rail line (Orange)

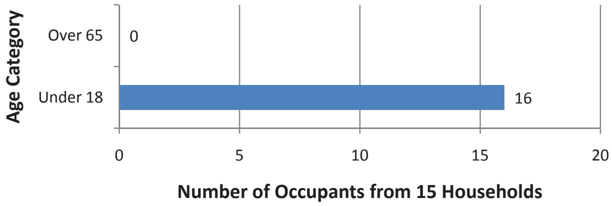
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Partially covered/ gated lot
Parking Quantity	19 spaces
Parking Occupancy Rate	82%
Assigned Parking?	Yes
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

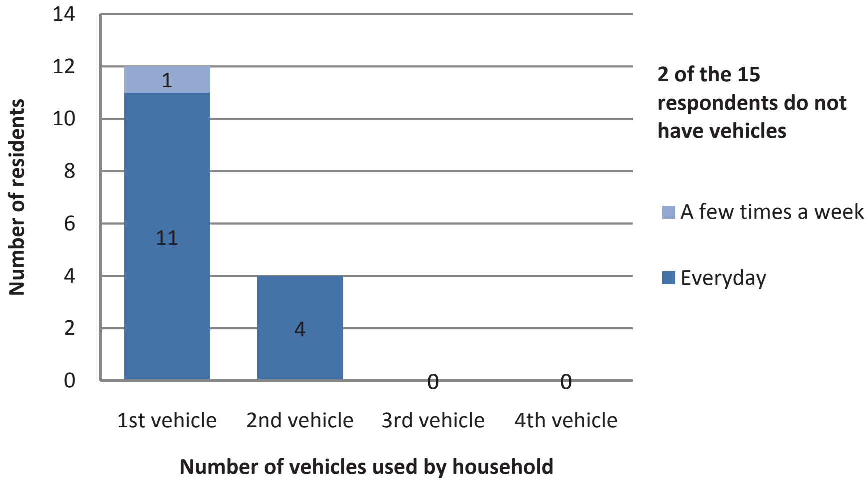
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	100%
Average Household Size (# of persons)	2.67
Average Number of Visitors per Household per Week	1.40
Percentage of Households with No Vehicles	13%
Average Vehicles per Household	1.27

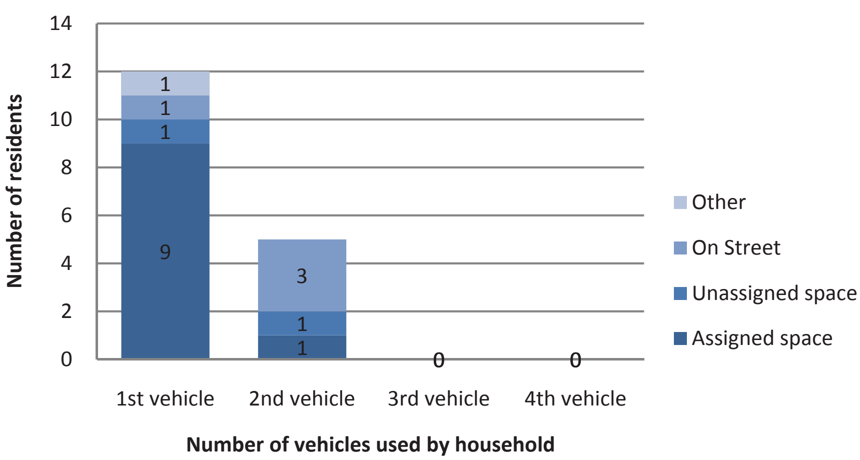
AGE DISTRIBUTION



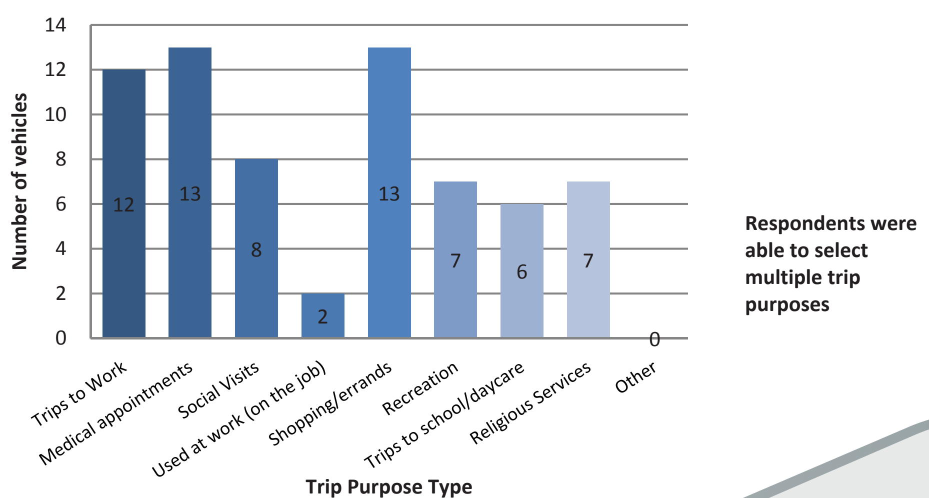
VEHICLE USE



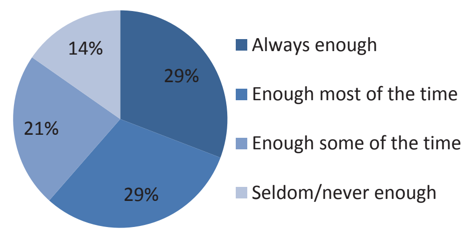
LOCATION OF PARKED VEHICLE AT COMPLEX



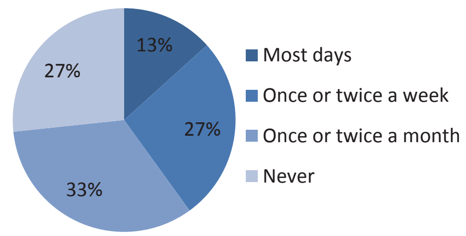
RESIDENTS' TRIP PURPOSE



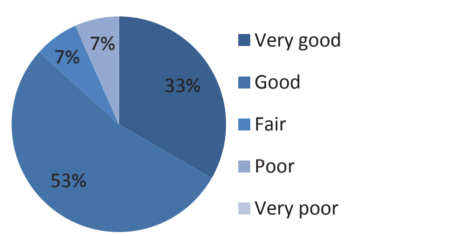
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



Stork Street north of project site

On-site parking conditions

Windwood Village Apartments

Project site area and surveyed on-street blockfaces

PROFILE

- **Location:** Briarcrest Place
- **Housing Type:** Large Family
- **Number of Units:** 92
- **Year Built:** 2003
- **Transit Index:** 1
- **Land Use Index:** 1

NEIGHBORHOOD CHARACTERISTICS

Neighborhood	Carmel Valley
On-Street Parking Available?	Yes, limited
Meter Pricing/Restrictions	None
Other Restrictions	None
Nearby Public Parking Facilities	None
Number of Transit Lines within 1/4 mile	0

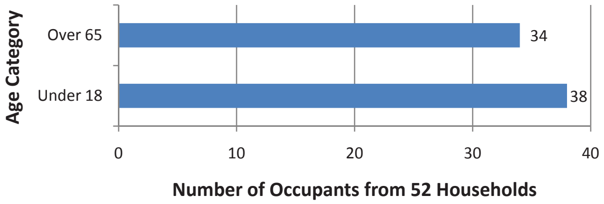
HOUSING COMPLEX PARKING FACILITY CHARACTERISTICS

Type of Parking	Open Lot
Parking Quantity	195 spaces
Parking Occupancy Rate	74%
Assigned Parking?	No
Peak Parking Time - Manager survey	Weekday evening
Bike Parking Available?	No
Free or Discount Transit Passes Available?	No
Regulatory Zones	None

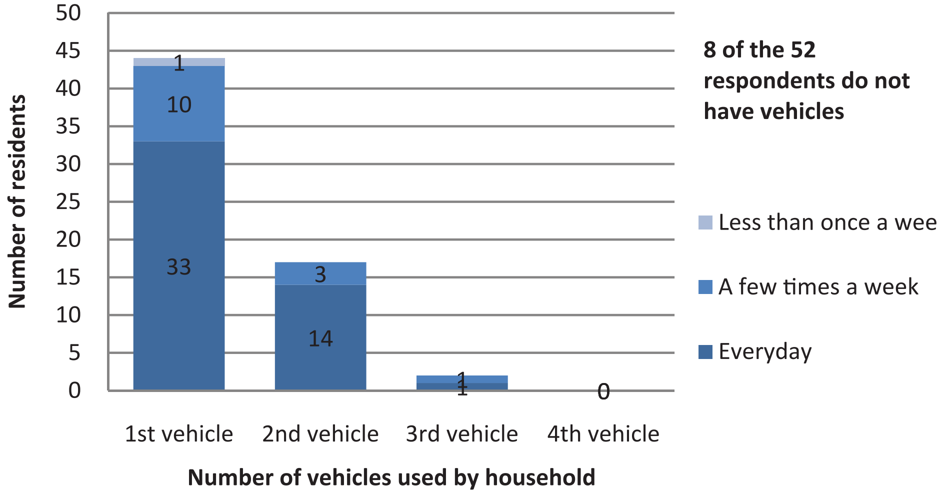
HOUSEHOLD CHARACTERISTICS

Survey Response Rate	58%
Average Household Size (# of persons)	2.40
Average Number of Visitors per Household per Week	1.55
Percentage of Households with No Vehicles	15%
Average Vehicles per Household	1.19

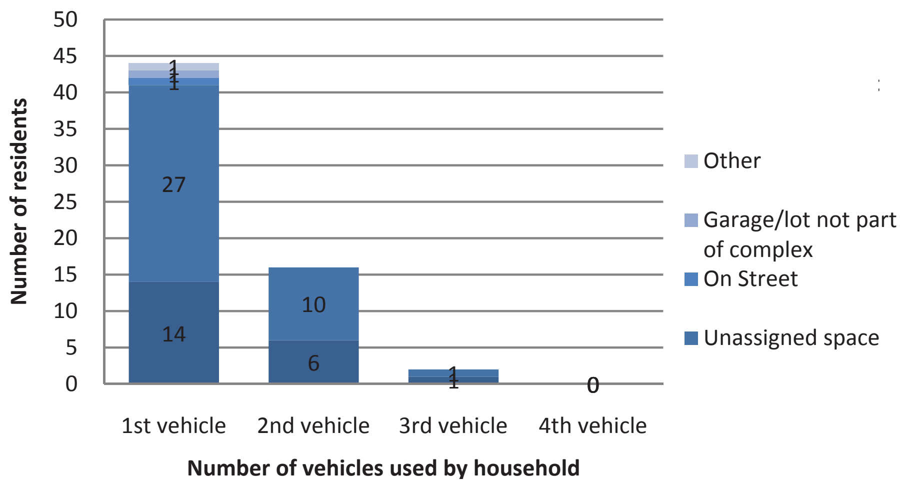
AGE DISTRIBUTION



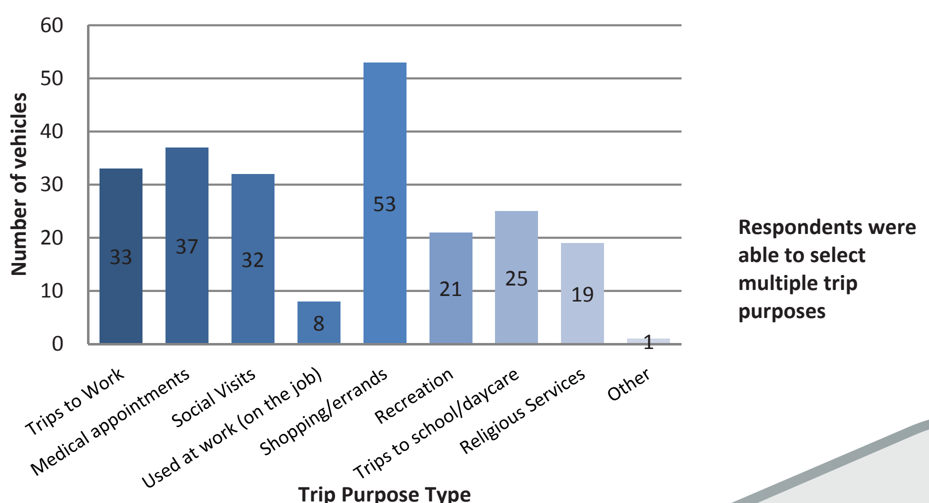
VEHICLE USE



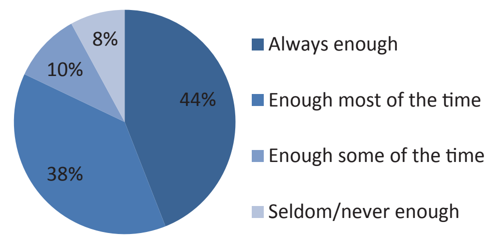
LOCATION OF PARKED VEHICLE AT COMPLEX



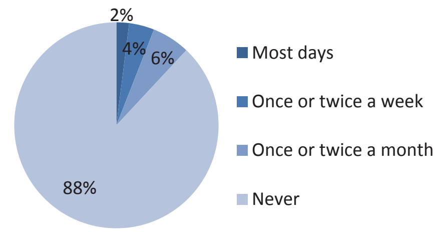
RESIDENTS' TRIP PURPOSE



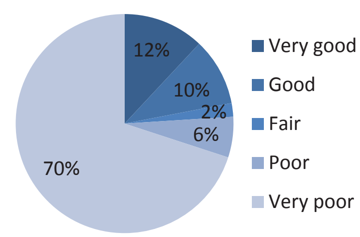
RESIDENT OPINION ON HOUSING COMPLEX PARKING SUPPLY



RESIDENTS' TRANSIT RIDERSHIP FREQUENCY



RESIDENTS' OPINION ON QUALITY OF NEARBY TRANSIT



Old Carmel Valley Rd. north of project site

Internal on-site parking conditions

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Appendix 5.3 Walkability/Transit Scores

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Appendix 5.3 Walkability / Transit Scores

Legend
Variable Not Used in Development of Indeces
Variable used in Development of Indeces
Calculation used to develop Index
Key Index

Neighborhood Level Variables																							
Project Name	Rail Routes (1/4 mile)	Peak hour Rail trips (1/4 mile)	Rail Routes (1/2 mile)	**Peak hour Rail trips (1/2 mile)**	Bus Routes (1/4 mile)	**Peak hour Bus trips (1/4 mile)**	Bus Routes (1/2 mile)	Peak hour Bus trips (1/2 mile)	Miles of Bike Facility (1 mile)	Commercial businesses (1/2 mile)	Grocery stores (1/2 mile)	Schools (1/2 mile)	Housing Units per Acre (1/2 mile avg)	Intersections (1/2 mile)	Transit Overlay Zone	**"Commercial" (Sandag LU 5000 series) parcels within 1/2 mile**	**"Office/Civic/Institutional" (Sandag LU 6000 series) parcels within 1/2 mile**	**Raw Land Use Index(1) (see formula note)**	**Adjusted Land Use Activity Index(2)**	**pk hr bus w/in 1/4 + pk hr rail w/in 1/2 mile**	**Transit score**	**Walkability/ transit score**
Rancho Del Norte Apartments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.4	0.0	0.0	0.0	2.3	86.0	No	14	2	2.0	2.0	0.0	1	1.5
Regency Centre Apartments	0.0	0.0	0.0	0.0	1.0	2.0	1.0	2.0	0.4916	40	2	0.0	18.5	179	No	11	4	2.0	2.0	2.0	1	1.5
Renaissance Seniors	0.0	0.0	0.0	0.0	5.0	17.9	6.0	23.3	2.4	566.0	7.0	3.0	38.9	206.0	Yes	219	38	3.0	3.0	17.9	2	2.5
San Diego Apartments	0.0	0.0	0.0	0.0	3.0	14.4	7.0	24.3	0.8436	619	18	5.0	36.9	210	Yes	208	53	4.0	4.0	14.4	1	2.5
Seabreeze Farms	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.7983	5	0	1.0	5.4	83	No	0	1	1.0	1.0	0.0	1	1
Stork Street Apartments	1.0	4.0	1.0	4.0	4.0	6.5	4.0	6.5	2.6	79.0	3.0	2.0	9.3	123.0	No	25	19	2.0	2.0	10.5	1	1.5
Studio 15	2.0	12.6	2.0	12.6	4.0	15.3	7.0	27.3	2.3355	420	12	1.0	8.7	173	Yes	111	72	3.0	3.0	27.9	2	2.5
Summit Crest/Mayberry Townhomes	0.0	0.0	0.0	0.0	1.0	4.0	4.0	14.3	0.491	130	8	0.0	18.3	177	No	33	26	2.0	2.0	4.0	1	1.5
Sunburst Apartments	0.0	0.0	2.0	12.6	5.0	22.0	18.0	68.2	2.2	507.0	7.0	4.0	18.3	155.0	Yes	180	55	4.0	4.0	34.6	4	4
The Cove	0.0	0.0	0.0	0.0	3.0	10.9	3.0	10.9	2.1	297.0	5.0	6.0	29.8	189.0	Yes	95	18	2.0	2.0	10.9	1	1.5
The Crossings	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.0	2.0	0.0	0.0	2.0	86.0	No	0	0	0.0	1.0	0.0	1	1
Villa Andalucia	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	4.4	3.0	0.0	0.0	6.4	53.0	No	0	0	0.0	1.0	0.0	1	1
Villa Harvey Mandel	0.0	0.0	2.0	12.6	4.0	15.3	7.0	27.3	2.5	402.0	16.0	2.0	10.5	173.0	Yes	105	40	2.0	2.0	27.9	2	2
Villa Maria	2.0	10.2	3.0	14.2	13.0	42.8	20.0	72.2	0.217	1772	5	5.0	14.1	159	Yes	179	174	4.0	4.0	57.1	4	4
Village Green Apartments	0.0	0.0	0.0	0.0	3.0	10.4	6.0	16.4	1.1167	193	3	2.0	16.1	123	Yes	60	2	2.0	2.0	10.4	1	1.5
Vista Serena Apartments	1.0	4.0	1.0	4.0	1.0	2.0	4.0	14.0	1.0095	256	9	3.0	15.2	210	No	75	53	3.0	3.0	6.0	1	2
Windwood Village Apartments	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	5.0	5.0	0.0	1.0	4.2	64.0	No	0	1	1.0	1.0	0.0	1	1

Footnotes:

1. 1 point for commerical parcel present, 1 point for over 120 commercial parcels, 1 point for office/civic parcel present, 1 point for over 50 office/civic parcels
2. To maintain a 1-4 scale, a score of 1 was set as a minimum, including the two projects that failed to earn any points under a direct calculation

General Notes:

Land Uses included in Analysis (http://www.sandag.org/resources/maps_and_gis/gis_downloads/downloads/codes/Land_Use_Definitions.html):

1. 5000 Series (wholesale trade, regional shopping center, community shopping center, neighborhood shopping center, specialty commercial, automobile dealership, arterial commercial, service station, other retail/commercial)
2. 6000 Series (high-rise, low-rise, government office/civic center),
3. 6100 Series (cemetery, religious facility, library, post office, fire/police/ranger station, mission, other public),
4. 6500 Series(military/VA hospital, hospital/general, other health care)
5. 6700 Series (military use, military training, weapons facility)
6. 6800 Series (Schools: SDSU/CSU/UCSD, Other University/College, JC, Senior HS, JHS/MS, ES, Shool District office, Other Schools)

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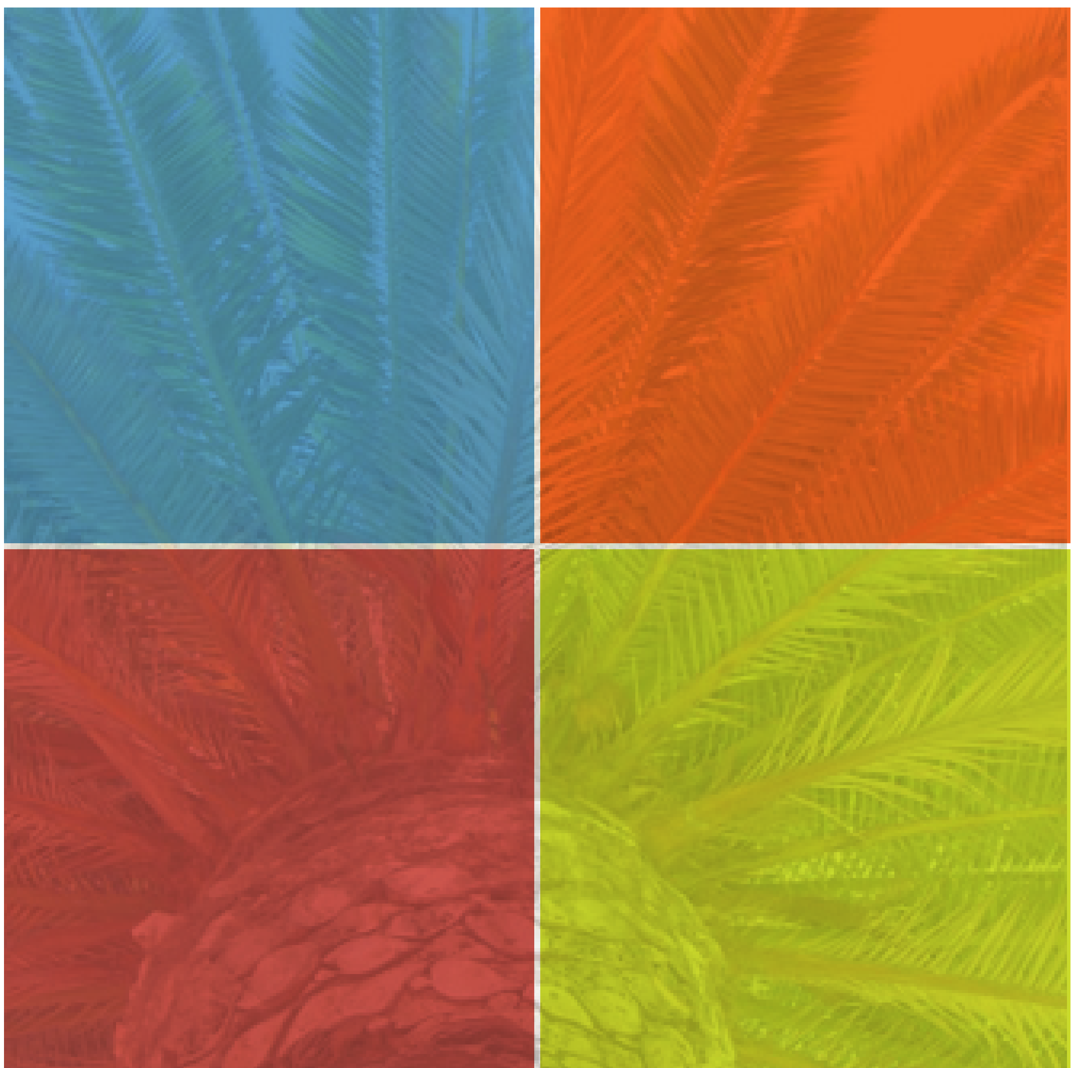
CHAPTER 6.0

Correlation of Project Variables and Parking Demand



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Statistical Analysis of Parking Demand

Introduction and Purpose

An essential step in creating parking requirements for future projects is to understand parking demand in existing affordable housing developments. This work product uses multiple data collection and analysis techniques to understand the level of parking demand in San Diego's affordable housing. It is important to note that decisions on future parking requirements should not be solely based on observed demand levels, but should consider the broader policy objectives. For example, City agencies and decision makers could chose to require less than existing demand levels if they prioritize the development of alternative transportation modes. Similarly, if the policy decision was made to maximize the number of units delivered per subsidy dollar, projects could be constructed with less than expected demand as long as appropriate on-street parking management procedures were in place.

The data collection methods include household surveys, surveys of property managers, field studies, and analysis of published data. Table 1 summarizes the main data collection efforts.

Table 1. Data Collection Methods

Focus	Method	Source/Instrument
Resident characteristic	Household survey, administered by property manager	WS-designed survey, refined by Parking Working Group after pre-test
Project characteristics – project type and regulation	Tabulation of data by consulting team	WS analysis
Project characteristics- details and operations	Property manager survey distributed by City	WS –designed survey
Property characteristics – field data	Parking counts, on site and on-street in the vicinity by consulting team	WS field work
Neighborhood characteristics – land use and transportation	Tabulation of data by consulting team	WS compilation of City data
Neighborhood characteristics – field data	Observe on-street parking regulations by consulting team	WS field work

The first part of this technical memo provides a step-by-step examination of the primary determinant of residential parking demand – household vehicle availability – considering both the level of household vehicle availability and factors that affect it. The factors explored are those most likely to be useful in establishing future parking requirements. For example, the number of bedrooms in a unit is part of project planning and regulatory procedures, while factors related to personal characteristics of residents, such as preferences or attitudes, are not amenable to the development of code-based parking requirements.

In most instances, the multiple factors that predict parking demand are related, such as the number of bedrooms and number of residents in the unit. In those cases, the best and most zoning-applicable measures are selected. The analysis of household vehicle ownership and factors affecting it is followed by the testing of multiple factors in modeling specifications. The final section of the memo explores other important information collected as part of the process, including property manager perceptions and field studies of projects and their context.

The methods used to analyze household-level responses to the survey include descriptive statistics such as mean and frequencies, crosstabulations (chi square tests), comparisons of means (ANOVA), and exploration of logit modeling approaches. In addition, regression analysis is used to analyze project-level characteristics. Comparisons are also made between household survey responses on vehicle availability and parking occupancy information gained through field study to provide multiple sources for understanding parking demand.

The second part of this memo describes a parking demand model that was developed to assist in setting parking requirements for future affordable housing projects. The narrative explains how the model works and makes reference to a separate spreadsheet model.

Analysis of Survey and Fieldwork

Household Survey Response Rate

The household survey produced a total of 1,110 responses from the residents of 34 projects, a 40% response rate. This response rate is higher than normally achieved for household surveys, the result of the efforts of City staff and on-site property managers. As part of the site selection process for on-site field work, 21 projects from that list that had the highest response rates were selected for further study. Field studies resources were available for the study of 21 projects, e.g., parking occupancy counts, on-street parking regulations, tabulation, etc.

The analyses provided here examine the subset of household responses from the 21 sites that were selected for analysis. Those responses comprised 875 household responses, a robust sample size for analysis.

To test for a possible impact of deleting those household responses for projects that were not selected for field studies, a comparison was made of responses for a key survey question - the number of vehicles available to members of the household – for the full 1,110 responses and the 875 responses. The average household automobile availability for the 1,110 response sample is 0.65 (n=1,091), with a standard deviation of 0.75. In comparison, the average household vehicle availability for the 875 response household sample is 0.68, with a standard deviation of 0.76. Because these two averages are similar, we can conclude that the use of the 875 sample does not skew the results. Therefore, the analysis that follows uses 875 as the household sample.

Analysis of Household Vehicle Availability

Overview

As noted previously, residents reported an average vehicle availability of 0.68 vehicles per household (n=875). The standard deviation is 0.76, with the minimum level of zero vehicles and a maximum level of four vehicles.[1] As expected, this is significantly lower level of vehicle availability than the general housing characteristic for San Diego rental units. The 2005-09 estimates from the U.S. Census *American Community Survey* indicate that rental housing units in the City of San Diego have an average automobile availability of 1.44 vehicles per household.

Conclusion #1: household vehicle availability among survey respondents is just below one-half the rate for all the rental housing units in San Diego, justifying the use of different parking requirements for affordable housing.

Table 2 summarizes the distribution of the vehicle availability data. Household vehicle availability is the analytic basis for understanding residential project parking demand. It provides the maximum potential accumulation of vehicles if all residents' vehicles are at home and parked on-site. Of course, other factors influence observed overnight parking utilization, such as visitor parking, use of on-street parking, and overnight work shifts. These factors are addressed in later sections. As well, the question of how much parking to provide in affordable housing projects should also consider broad policy objectives, parking pricing, on-street parking regulations, and lease terms.

Table 2. Distribution of Residents' Household Vehicle Availability

Vehicles Available	Frequency	Percent	Cumulative Percent
0	416	47.5	47.5
1	339	38.7	86.3
2	104	11.9	98.2
3	15	1.7	99.9
4	1	.1	100.0
Total	875	100.0	

[1] The standard deviation reported is at the household level where the variable in question, household vehicle availability, is a discrete choice (e.g., 0, 1, 2 or 3). Standard deviation is not normally used to represent dispersion in categorical data such as this, so while it is shown as part of the statistical output, its use is limited. Chi square analysis could be used to see if there are differences in patterns of vehicle ownership (0, 1, 2, or 3 vehicles) among different housing descriptors. In any given housing complex, the standard deviation of vehicle availability at the building-wide level is more appropriate because those households with fewer and more vehicles average out over the complex and average complex vehicle availability is a continuous variable. The standard deviation when the 21 complexes are considered the unit of analysis is lower, reflecting this phenomenon.

Alternative Measures of Vehicle Availability

Vehicle availability can also be measured in terms of vehicles available per resident and vehicles available per licensed driver. These variables are derived from household survey responses. Table 3 summarizes those alternative measures.

Table 3. Vehicles Available per Resident and Per Licensed Driver

Measure	Vehicles Available per Resident	Vehicles Available per Licensed Driver
Mean	0.39	0.80
Median	0.25	1.0
Standard Deviation	0.45	0.49
Range	0 – 2.0	0 – 3.0

Table 3 shows that vehicle availability per resident and per licensed driver varies considerably, with a standard deviation of 0.49. This is expected since many types of affordable housing are represented in the sample.

Housing Type

Household vehicle availability is related to the type of affordable housing being considered. This sample includes a wide variety of affordable housing types. Table 4 shows the mean household vehicle ownership broken down by nine housing types included in the survey. Large family and small family housing have vehicle availability rates above 1.0 (1.2 and 1.17 respectively), while all the other types are below 1.0. ANOVA is a statistical procedure used to determine if the observed differences between means of multiple groups is statistically significant. ANOVA for these means reveals that the differences are statistically significant (F test = 52.0, probability .000, meaning a significant difference).

Table 4. Household Vehicle Availability by Housing Type[2]

Housing Type	Mean Vehicle Availability	Number	Standard Deviation
Large Family	1.20	316	.743
Living Unit	.31	58	.503
Senior Housing	.32	319	.500
Small Family	1.17	48	.808
Special Needs	.38	21	.498
SRO	.34	41	.530
Studio - 1 bedroom	.26	61	.545
Total	.68	875	.756

[2] The category "individuals" had seven responses with a mean vehicle availability of 0.14. The category "transitional housing" had 4 responses and a mean vehicle availability of 0.75. The small number of responses for these categories means that these results are unlikely to be representative. They are, however, included in the total shown for all housing types.

Conclusion #2: household vehicle availability varies significantly among housing types, justifying type-specific requirements or the use of adjustment factors.

Unit Size

Household vehicle availability is also associated with unit size. Larger units are likely to have more residents, more drivers, and more vehicle availability. In this case, a variable for the number of bedrooms is created, with a studio unit is coded as 0, a one-bedroom unit as 1, and so on. Table 5 shows the average household vehicle availability for different sized units.

Table 5. Household Vehicle Availability and Unit Size

Number of Bedrooms	Mean Vehicle Availability	Number	Standard Deviation
0	.23	248	.453
1	.51	340	.587
2	1.23	158	.676
3	1.56	88	.800
Total	.68	834	.750

Table 5 shows differences in vehicle availability by number of rooms, but also reflecting difference in the number of occupants, the likely type of household (e.g., senior housing versus family housing), and possible income effects. An ANOVA test for these means reveals that the differences are statistically significant (F test = 122.4, probability .000).

Conclusion #3: household vehicle availability varies significantly among the number of rooms in units, justifying requirements based on unit size or the use of adjustment factors.

Housing Type and Unit Size

Table 6 (next page) combines the data presented in the two previous tables to indicate average vehicle availability by housing type and by number of rooms. Once again, the differences are statistically significant, showing increased vehicle availability among housing types serving families and among larger unit sizes. Such a table can be used as the basis for setting parking requirements, along with adjustment factors reflecting the effect on land use and transportation on these rates.

Table 6. Household Vehicle Availability and Household Type, by Number of Rooms

Housing Type	Number of Bedrooms	Mean Vehicle Availability	Number	Standard Deviation
Large Family	1	.78	87	.579
	2	1.21	121	.648
	3	1.56	87	.803
	Total	1.19	295	.741
Living Unit	0	.30	57	.499
	Total	.30	57	.499
Senior Housing	0	.20	74	.405
	1	.39	232	.522
	2	.80	5	.447
	Total	.35	311	.503
Small Family	1	.86	14	.864
	2	1.34	32	.787
	3	1.00	1	N/A
	Total	1.19	47	.825
Special Needs	0	.21	19	.419
	1	1.00	1	N/A
	Total	.25	20	.444
SRO	0	.32	37	.530
	Total	.32	37	.530
Studio - 1 bedroom	0	.18	56	.431
	1	.75	4	.957
	Total	.22	60	.490
Total (including "Transitional Housing" and other categories not shown above because of small sample size)	0	.23	247	.453
	1	.51	341	.587
	2	1.23	158	.676
	3	1.56	88	.800
	Total	.68	834	.750

Household Income

Annual household income is a reliable predictor of household vehicle availability in the general population. Table 7 displays the relationships between reported household income and vehicle availability.

Table 7. Household Vehicle Availability and Annual Income

Income Range	Mean Vehicle Availability	Number	Standard Deviation
$0 – $10,000	.30	70	.521
$10,001 - $20,000	.47	443	.625
$20,001 - $30,000	.90	153	.736
$30,001 - $40,000	1.31	87	.720
$40,001+	1.72	32	.772
Total	.68	785	.751

Table 7 shows that vehicle availability is higher with higher annual income. An ANOVA test for these means reveals that the differences are statistically significant (F test = 60.8, probability .000).

Conclusion #4: household vehicle availability varies significantly with income; however, income may be correlated with other project characteristics, such as project type and size.

The age structure of a household is likely to affect vehicle availability. The survey instrument asked the respondent for the number of household members under 18 and over 65. It is not possible to calculate average household age from this data, but the presence of young and old members of the household can be examined. Table 8 shows that households with children have higher vehicle availability. Household vehicle availability more than doubles when household members under 18 are present.

Table 8. Household Vehicle Availability and Household member Under 18

Under 18	Mean	Number	Standard Deviation
0	.51	678	.651
1	1.27	77	.772
2	1.44	72	.710
3	1.46	26	.811
4	1.00	5	1.000
Total	.69	858	.757

Table 9 shows that households with one resident over 65 have lower vehicle availability (0.47) than those with no household members over 65 years of age (0.79). Vehicle ownership rises in households with two rather than one resident over 65 years of age (0.68), but that is still less than households with no residents over 65 years of age. The single household with three residents over 65 years of age is an outlier.

Table 9. Household Vehicle Availability and Household member Over 65

Over 65	Mean	Number	Standard Deviation
0	.79	545	.817
1	.47	252	.581
2	.68	59	.681
3	1.00	1	.
Total	.69	857	.759

Land Use Activity Index

The land use context for a housing development may influence vehicle ownership levels by necessitating or alleviating the need for a vehicle for common trip purposes. A land use activity index was developed to capture both the categories of activities happening near a site and their prevalence. Using SANDAG[3] and SanGIS[4] data, land uses were first superimposed over parcels and then the number of parcels of each type that fell within a distance buffer was tabulated. Certain thresholds (>120 commercial parcels and > 50 office, civic, or education parcels) were developed based on natural breaks observed within the distribution of results across all sites. The land use activity index assigns one point for each of four factors: commercial uses present within ½ mile; >120 commercial parcels present; office, civic, or education uses within ½ mile; and > 50 such office, civic, or education parcels are present. A score of zero has the fewest walkable destinations, while a score of 4 meets all four thresholds and is considered to have the most walkable destinations. Table 10 shows how vehicle availability varies with land use context.

Table 10. Household Vehicle Availability and Walkability

Land Use Activity Index	Mean Vehicle Availability	Number	Standard Deviation
0 – poor walkability	1.33	12	.492
1	1.33	94	.724
2	.97	250	.816
4 – high walkability	.42	509	.592
Total	.69	865	.757

[3] SANDAG 2009) Existing Land Use data (http://www.sandag.org/resources/maps_and_gis/gis_downloads/land.asp)
[4] SanGIS 2010 Parcel data (http://www.sangis.org/Download_GIS_Data.htm)

Table 10 shows that vehicle availability is higher in areas with a lower walkability score. These are traditional suburban areas with separated land uses. ANOVA shows an F score of 72.8 and a probability of .000.

Conclusion #5: Walkability characteristics in the project context are relevant to predicting vehicle availability.

Transit Availability

A transit availability score is computed using two factors: 1) the number of peak hour rail trips within ½ mile of the site; and 2) the number of peak hour bus trips with ¼ mile of the site. The half-mile radius for rail was used since rail stations generally have a larger catchment area. Points are assigned based on the sum of these two factors, with 1 point assigned to a total number of between 0 and 15 transit trips per hour, 2 points assigned to 16-30 trips per hour, 3 points assigned to 31-45 trips per hour, and 4 points assigned to 45+ trips per hour. Table 11 shows the relationship between vehicle availability and transit service.

Table 11. Household Vehicle Availability and Transit Services

Transit rating	Mean Vehicle Availability	Number	Standard Deviation
1.00 - low	1.02	363	.770
2.00	.53	231	.658
3.00	.58	155	.720
4.00 - high	.10	116	.333
Total	.69	865	.757

Conclusion #6: Household vehicle availability varies with transit accessibility; there are large differences between the lowest and highest ratings (F = 62.4, significance .000). The two middle categories – peak hour transit services between 16 and 45 trips per hour - are quite similar.

Combined Walkability/Transit Service Index

The walkability index shown on Table 10 is combined with the transit index shown on Table 11 to produce a combined index (sums of the score on the walkability and transit indices divided by two). The possible index ratings fall between 0.0 and 4.0. Table 12 shows the relationship between household vehicle availability and the combined index.

Table 12. Household Vehicle Availability and Combined Walkability/Transit Service Index

Index Value	Mean Vehicle Availability	Number	Standard Deviation
.50	1.33	12	.492
1.00	1.33	94	.724
1.50	1.20	154	.753
2.00	.59	96	.776
2.50	.45	103	.519
3.00	.48	135	.558

3.50	.58	155	.720
4.00	.10	116	.333
Total	.69	865	.757

Table 12 shows that household vehicle availability falls within three clusters with respect to the combined walkability/transit service index; the index values .5 – 1.5, 2.0-3.5, and 4.0. In subsequent analyses, the eight scores are combined into these three groups used to denote suburban, urban, and core land use and transportation contexts.

Conclusion #7: A walkability/transit availability index has promise for distinguishing between vehicle availability in different locations.

The offer of free or discounted transit passes could have an influence on household vehicle availability by reducing the need to own a vehicle. Table 13 shows that the vehicle availability rate for households that are offered transit passes is lower. The mean for the total is close to that for the "No" responses because the number of "Yes" responses is so low. These households are in one downtown project, the Sunburst Apartments, which is a Special Needs housing project. This result, while showing a difference, includes the effect of the project location and population. Accordingly, this result is not likely to be robust enough to include in a protocol for requirements.

Table 13. Household Vehicle Availability and Offer of Free Discount Passes

Free/discounted Transit Passes?	Mean	Number	Standard Deviation
No	.70	844	.761
Yes	.29	21	.463
Total	.69	865	.757

Comparison of Utilization Rates with Household Survey Results

The analysis in the previous section used respondents' self-reporting of the number of vehicles available to the household. These responses give an indication of maximum resident parking demand, if *all* residents' vehicles are at home during the peak overnight parking utilization period.[5] This information is translated to potential peak parking accumulation by multiplying the average household vehicle availability by the number of units in the complex.

[5] The strength of household survey data is that it captures all vehicles, regardless of parking location and whether those vehicles were parked on site the day of occupancy surveys. The response rate varied between 21% and 100% across the projects, accordingly, there is a possibility that some rates are not fully representative of that project's automobile vehicle availability (a possible non-response bias). In addition, vehicles owned by residents could be stored at another location, temporarily or on a regular basis and therefore not represented in the field counts.

The study also included overnight field counts of parking occupancy, on-site and in the surrounding on-street parking areas. The on-site parking counts indicated the maximum vehicle accumulation on the evening studied.[6] This includes any overnight, on-site visitor parking and, of course, excludes residents' vehicles absent because of night shift work, overnight trips, and any other reason why a resident's vehicle was not on-site the evening of the field counts.

The two data sources provide an opportunity to compare results. Table 14 shows the aggregate results for peak utilization based on field counts, and the implied residential demand based on the household survey (based on reported vehicle availability), and the total on-site parking supply.

Table *14. On-site Peak Accumulation, Implied Utilization, and Supply*

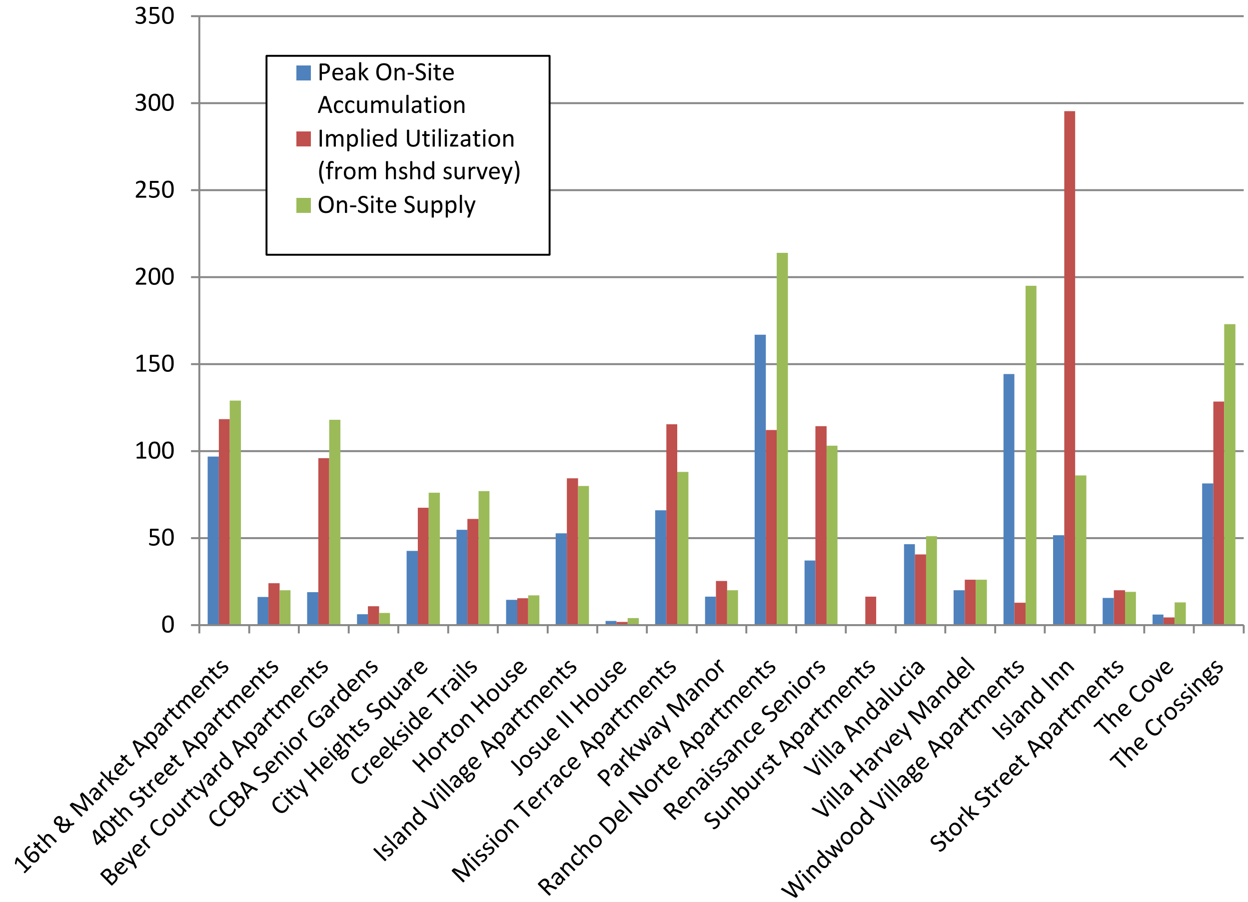
	Measured Peak Accumulation	**Implied Utilization Based on Household Survey**
Parking Spaces	956	1,390
% Utilization of Total On-site Supply (1,516 spaces)	63.1%	91.7%

The general conclusion from this comparison is that on-site parking is oversupplied in the aggregate. The measured peak overnight on-site utilization is about two-thirds of the supply. The household survey based results imply a somewhat higher demand, but are still less than the supply. The policy question raised by this portion of the analysis is the tradeoff between requiring parking and building more affordable housing units. Building the projects studied with a somewhat lower parking supply may have allowed the construction of more units and/or reduced the development cost.

Figure 1 shows the same data on a project level, comparing measured accumulation, implied utilization, and total parking supply. Caution should be exercised in interpreting the "Implied Utilization" data for any given project since response rates on individual projects may not be statistically significant in themselves.

[6] The strength of field counts is that they indicate actual conditions, overcoming any response rate issues or possible misreporting that can occur in household surveys. On the other hand, it is possible that the evening these counts were completed were atypical, even though the survey dates were selected to be representative. In addition, they exclude parking by those with night work shifts, out-of-town, hospitalized, or some other regular or infrequent event.

Figure 1. Comparison of Parking Demand and Supply



Multivariate Analysis

The preceding sections show that household vehicle availability varies according to many factors, such as type of project, number of rooms, location of the site, etc. Each household level factor was explored separately to understand whether it has an impact, but it is obvious that a single measure may be representing more than one influence. This section explores multivariate techniques for understanding how combinations of variables affect vehicle ownership. While such approaches are not used in developing parking requirements for codes, they provide insight into the combination of factors that should be used. Two approaches are used, a logit analysis of vehicle availability (yes/no) at the household level and a regression analysis of average vehicle availability across the 21 complexes.

Binomial Logit Analysis

A binary logit model specification can be used to predict vehicle availability (0 = no vehicle, 1 = 1 or more vehicles). A model is tested with a combination of independent variables, including number of bedrooms, respondents over 65 years of age, and the combined walkability/transit index. The equation predicts the vehicle availability 76% percent of the time. The coefficients on the variables are the expected sign: vehicle availability is positively related to number of bedrooms, negatively related to a respondents being over 65 years of age, and negatively related to higher levels of walkability and transit in the project area.

Regression Analysis at the Building Level

The preceding analyses are conducted at the household level. Analysis of household vehicle availability can also be undertaken with the unit of analysis being the housing complex, i.e., using the average levels of household vehicle availability and the independent variables for each complex. For this analysis, the unit of observation is the complex, so n = 21.

Regression analysis allows the study of the relationship of multiple independent variables to the dependent variable, average household vehicle availability. Based on the exploration of the household data, the following variables were selected for the regression analysis: number of bedrooms, percentage of respondents over 65 years of age, income, and the combined walkability/transit index. While project type was a powerful predictor in the household level analysis, it cannot be an independent variable in the regression because it is a categorical variable not suitable for regression specification.

A measure of the overall performance of the equation is the percent of variation predicted by the independent variables, as measured by R^2. The R^2 value is 0.585, with the adjusted R^2 0.474 (Standard Error of Estimate = 0.39). This indicates that the equation explains about half of the variation in the average household vehicle availability for each building. Table 15 shows the coefficients for the equation.

Table 15. Regression Coefficients

Coefficients					
Independent variable	Non-standardized Coefficients		Standardized Coefficients		
	B[1]	Standard Error[2]	Beta[3]	t[4]	Significance[5]
Constant	1.206	.528		2.282	.038
# Bedrooms	.123	.128	.203	.962	.351
% Over 65	-.071	.343	-.037	-.207	.839
Household Income	1.371E-5	.000	.204	1.170	.260
Walkability/ Transit Index	-.486	.206	-.540	-2.355	.033

Dependent Variable: Vehicle availability
1. B are the values in the equation to predict the dependent variable from each independent variable
2. Standard error is a form of confidence interval for the parameter.
3. Beta is the standardized regression coefficient. It is used to compare the relative strength of the various predictors within the model.
4. t is used the test the null hypothesis that the coefficient is zero .
5. Significance levels lower than 0.05 are considered stasticially significant.

The coefficients show the expected signs – average building vehicle availability rises with higher bedroom counts, decreases with a higher percentage of residents over 65, increases with higher incomes, and decreases in areas having higher walkability/transit indexes. The bedroom count, % over 65 years of age, and income variables are not individually significant at a P <.05 confidence level. This is likely due to the fact that project type (as reviewed previously) is correlated with the independent variable being tested here. For example, a senior housing complex is likely to have a lower number of bedrooms and more residents over 65 years of age.

Discussion of Factors Affecting Household Vehicle Availability

The binary logit model tested for vehicle availability (yes/no) and supported the analysis of individual factors. The regression analysis was completed at the building complex level, on average vehicle availability. Both multivariate approaches pointed to a combination of factors that explain variation in vehicle availability that can be used to develop a table of parking requirements.

The key issue in developing a model to predict parking demand is to consider the interrelatedness of the independent variables. For example, if family housing frequently has a higher number of bedrooms, the effect of the two variables is somewhat overlapping.

The purpose of this analysis, in addition to providing a better understanding of the characteristics of existing affordable housing residents, is to provide a basis for establishing future parking requirements for affordable housing. It is important, therefore, to select a limited number of variables that represent, to the extent possible, unique influences on household vehicle availability. In addition, the variables selected should be appropriate for use in developing parking requirements that are part of codes or regulations. In other words, the variables should be factors that are an integral part of the project development approval process, such as unit size, project location, and/or other variables.

The analysis that follows uses three variables to understand the variation in household vehicle availability:

- Housing type – reflects the intended resident profile of the project
- Number of bedrooms – reflects the likely household residential occupancy
- Walkability/transit index – reflects the land use and transit service context for the project, which influences the need for a vehicle

A three-way table is developed to show the variation in household vehicle availability. Table 16 (next pages) presents the average household vehicle availability in a chart that allows the reader to review the rate for each housing type, for all combinations of bedroom size, and for three walkability/transit rating levels.

Appendix 6.0 shows a different way of cutting the data. That three-way table shows vehicle availability by income category, number of bedrooms, and walkability/transit index. It clearly shows that vehicle availability increases with income, as high income affordable housing households have more vehicles. It would be possible to construct parking requirements around income rather than affordable housing type. This report suggests using housing type because it is a clearly defined element of project approval and regulation, and housing type explains a portion of the difference in incomes. For example, family housing has higher incomes than SRO housing. The income table is provided for background information and reference should a different basis for the requirement be preferred.

Table 16. Household Vehicle Availability by Housing Type, Number of Bedrooms & Walkability/Transit Index

Housing Type	# of Bedrooms	Walkability/Transit Index	Mean Veh. Availability	Number	Standard Deviation
Large Family	1	Suburban	**.94**	49	.517
		Urban	**.58**	38	.599
		Total	**.78**	87	.579
	2	Suburban	**1.27**	86	.602
		Urban	**1.09**	35	.742
		Total	**1.21**	121	.648
	3	Suburban	**1.67**	55	.747
		Urban	**1.37**	32	.871
		Total	**1.56**	87	.803
	Total	Suburban	**1.30**	190	.682
		Urban	**.99**	105	.803
		Total	**1.19**	295	.741
Living Unit	0	Urban	**.30**	57	.499
		Total	**.30**	57	.499
	Total	Urban	**.30**	57	.499
		Total	**.30**	57	.499
Senior Housing	0	Urban	**.27**	37	.450
		Core	**.14**	37	.347
		Total	**.20**	74	.405
	1	Urban	**.54**	153	.538
		Core	**.09**	79	.328
		Total	**.39**	231	.522
	2	Urban	**.80**	5	.447
		Total	**.80**	5	.447
	Total	Urban	**.49**	195	.531
		Core	**.10**	116	.333
		Total	**.35**	311	.503

Housing Type	# of Bedrooms	Walkability/Transit Index	Mean Veh. Availability	Number	Standard Deviation
Small Family	1	Suburban	**.86**	14	.864
		Total	**.86**	14	.864
	2	Suburban	**1.34**	32	.787
		Total	**1.34**	32	.787
	3	Suburban	**1.00**	1	N/A
		Total	**1.00**	1	N/A
	Total	Suburban	**1.19**	47	.825
		Total	**1.19**	47	.825
Sp. Needs	0	Urban	**.21**	19	.419
		Total	**.21**	19	.419
	1	Urban	**1.00**	1	N/A
		Total	**1.00**	1	N/A
	Total	Urban	**.25**	20	.444
		Total	**.25**	20	.444
SRO	0	Urban	**.32**	37	.530
		Total	**.32**	37	.530
	Total	Urban	**.32**	37	.530
		Total	**.32**	37	.530
Studio - 1 bdrms.	0	Urban	**.18**	56	.431
		Total	**.18**	56	.431
	1	Urban	**.75**	4	.957
		Total	**.75**	4	.957
	Total	Urban	**.22**	60	.490
		Total	**.22**	60	.490

The results provide a basis for creating new parking requirements for affordable housing projects. Note that the level of household vehicle availability is not the only factor to be considered in setting requirements, but it is a starting point. Also, some cells have either small sample sizes or large standard deviations, suggesting caution in applying the measured vehicle availability. The parking model developed as part of this task, takes these factors, along with expert judgment on setting parking requirements, into account when recommending demand factors.

Residents' Parking Perceptions and Patterns

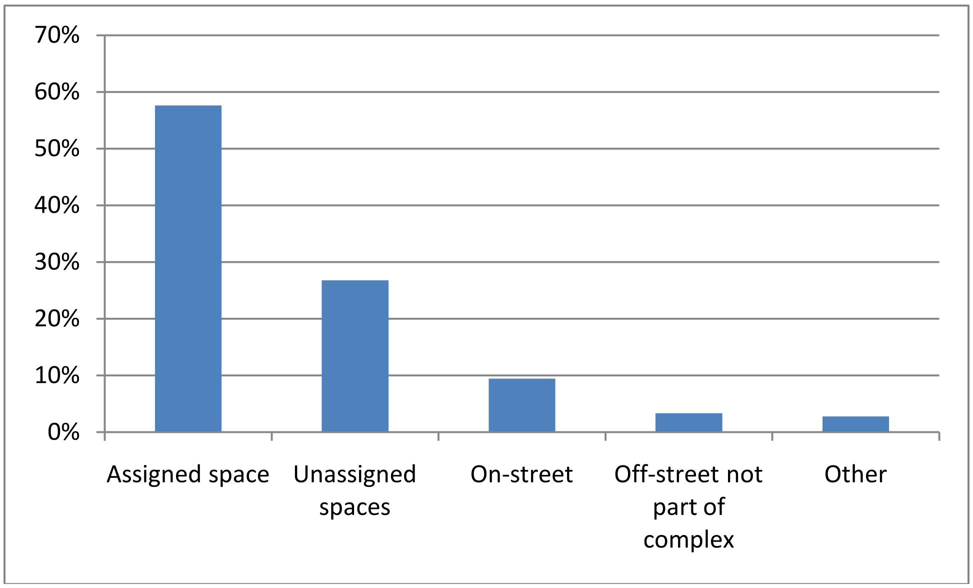
Residents were asked a series of questions about their parking perceptions and patterns. The following summarizes the aggregate responses.

- Of the total households surveyed, 35.3% indicated that they had one or more assigned parking spaces. The rest parked in unassigned spaces, other locations, or did not have a vehicle to park.
- Most residents (59%) said that their complex has enough parking "always" or "most of the time".

- The average number of visitors per week per unit is 1.28.
- Most visitors parked on-street (54.5%); 16.7% parked in designated visitor parking.

Residents were asked where they parked their vehicles as part of a series of questions on trips. Figure 2 shows that this subset of the sample *who parked a vehicle* indicated that their parking locations are primarily parking on-site, either in assigned or unassigned spaces. Slightly less than 10% of the responses indicated on-street, with a very small number indicating off-street parking that is not part of their complex.

Figure 2. Parking Location



Property Manager Perspectives and Practices

Property managers were asked for their perceptions about project parking. The following summarizes their perceptions.

- With one exception, the complexes do not charge a fee for an additional parking space (Stork Street Apartments does).
- All but two of the complexes require residents to register the vehicle (40^{th} Street Apartments and Sunburst Apartments do not).
- Most (13) property managers reported that the peak parking demand was in the weekday evening. Weekday morning (5) and weekday midday (3) peaks were also reported

Table 17 (next page) summarizes property manager perceptions and practices about parking. The responses are displayed by project, listed in order by the type of project. On-site and on-street peak parking utilization, as measured in field counts, are listed to provide context for the property manager responses.

Table 17. Property Managers Perceptions and Practices

Project	Type	On-Site Peak Utilization	On-Street Occupancy Rate	Allocation of Parking Spaces vsitior, resident, staff)?	Parking Sufficient (property manager perception)	Parking Spaces Assigned?	Problems with residents using visitor/ other residents' spaces?	How often do residents complain about lack of parking?	Complaints from neighbors about resident parking?
The Cove	Individuals	46%	82%	Yes	Mostly sufficient	No	No	Almost never	No
16th & Market Apartments	Large Family	75%	57%	No	Mostly sufficient	No	No	Occasionally	No
Beyer Courtyard Apartments	Large Family	16%	**n/a**	Yes	Mostly sufficient	Yes	Yes	Occasionally	No
Creekside Trails	Large Family	71%	21%	Yes	Sometimes sufficient	Yes	Yes	Occasionally	No
Mission Terrace Apartments	Large Family	75%	100%	Yes	Always sufficient	No	No	Occasionally	No
Rancho Del Norte Apartments	Large Family	78%	**n/a**	No	Mostly sufficient	No	No	Almost never	No
Villa Andalucia	Large Family	91%	50%	Yes	Mostly sufficient	Yes	No	Occasionally	No
Windwood Village Apartments	Large Family	74%	0%	No	Always sufficient	No	No	Almost never	No
The Crossings	Large Family	47%	**n/a**	Yes	Never sufficient	Yes	Yes	Frequently	Yes
Island Village Apartments	Living Unit	66%	71%	No	Never sufficient	No	No	Frequently	No
CCBA Senior Gardens	Senior Housing	88%	25%	Yes	Sometimes sufficient	No	No	Occasionally	Yes
City Heights Square	Senior Housing	56%	83%	Yes	Always sufficient	No	No	Occasionally	No
Horton House	Senior Housing	85%	51%	Yes	Mostly sufficient	No	No	Almost never	No
Renaissance Seniors	Senior Housing	36%	62%	Yes	Always sufficient	No	No	Almost never	Yes
40th Street Apartments	Small Family	81%	32%	No	Always sufficient	No	No	Almost never	No
Parkway Manor	Small Family	82%	93%	Yes	Always sufficient	Yes	No	Almost never	No
Stork Street Apartments	Small Family	82%	46%	No	Mostly sufficient	Yes	No	Frequently	No
Sunburst Apartments	Sp. Needs	n/a	26%	No	Never sufficient	No	No	Frequently	No
Island Inn	SRO	60%	35%	Yes	Always sufficient	No	Yes	Almost never	No
Villa Harvey Mandel	Studio + 5 - 1 bdrms.	77%	61%	No	Never sufficient	No	No	Occasionally	No
Josue II House	Transitional Housing	60%	27%	No	Always sufficient	No	No	Almost never	No

Note: "n/a" indicates there were no relevant on-street parking data to collect. WSA made the determination in advance during a site visit and directed the data collection firm on where to collect on-street data.

The following observations are made based on Table 17.

- *Parking Utilization*. Only two projects (Villa Andalaucia and CCBA Senior Gardens) display an overnight utilization rate of more than 85%, meaning that the rest of the projects appear to have a sufficient supply. Vacancy rates on the surrounding on-street parking vary widely from zero to 93%. On-site and on-street occupancy were not correlated; on-street occupancy relates to other uses in the project vicinity and variations in regulations concerning on-street overnight parking. Only one project (Parkway Manor - Small Family housing) has both on-site and on-street utilization rates of over 80%.
- *Allocation of Parking Spaces between Residents, Visitors, and Staff.* Projects have varied practices with regard to allocating spaces to specific uses (e.g., visitor, resident, staff, etc.). Twelve of the 21 projects allocate spaces; there is not clear pattern of this varying with affordable housing type.
- *Property Manager Perceptions of Parking Sufficiency.* Most property managers believe that parking is "mostly" or "always" sufficient. Four property managers believe that parking is "never sufficient" (The Crossings – Large Family housing, Island Village Apartments – Living unit housing, Sunburst Apartments – Special Needs housing, and Villa Harvey Mandel – Studio + 1 bedroom housing). Sunburst Apartments has no off-street parking. The overnight occupancies of the other three projects are less than 85%, which does not suggest a parking shortage. It may be that there is a daytime parking problem at these projects, or that the property managers' perceptions are not consistent with actual overnight parking occupancy. Three of the four property managers reported that residents complain about parking "frequently", so it may be that there are on-site parking management issues that are generating complaints and a perceptions that parking is not sufficient.
- *Practice in Assigning Spaces to Units.* More than half of the projects (15) do not assign spaces to residents. The practice of unassigned parking spaces helps increase the efficiency with which

the parking supply is used, because a space left empty by one resident on an overnight trip or work shift can be used by other residents.

- *Conflicts between On-Site Parking Uses*. Most property managers do not report problems with residents using visitor spaces. Four property managers indicated that this was a problem.
- *Resident and Neighbor Complaints about Parking.* Four property managers report that residents "frequently" complain about parking – the remainder heard complaints "occasionally" or "almost never". Only three projects report that neighbors complain about parking problems associated with the affordable housing project.

Discussion of Projects Where Property Managers Report Complaints about Parking

The following provides discussion about the four projects where property managers reported frequent complaints about parking.

- *Island Village Apartments* is a 280-unit Living Unit development with 80 on-site parking spaces. Although the overnight parking occupancy was 66%, the property owner reported the peak parking demand as weekday midday. This may be due to visitor demand. The complaints received by the property manager may have been due to the fact that some residents are not allowed to register a vehicle to park on site since there is less than one space per unit.
- *The Crossings* is a 180-unit Family Housing development with 173 on-site parking spaces. The overnight parking occupancy was 47%. The property manager reports problems with residents using visitor parking and receiving parking complaints from neighbors and residents. The project is predominantly 2- and 3-bedroom units, so higher-than-normal resident occupancy per unit may explain the complaints. The low overnight parking occupancy suggests that a better process for allocating spaces to units may help reduce complaints.
- *Sunburst Apartments* is a 25-unit Special Needs development with no parking. The property manager indicated that the peak demand is on weekday mornings. There does appear to be on-street capacity overnight, but this may not be the case in the daytime.
- *Villa Harvey Mandell* is a 90-unit studio – 1 bedroom project that is primarily studios. The project has 26 parking spaces. It has a 77% overnight occupancy of on-site parking. The property manager indicates that residents "occasionally" complain about insufficient parking. It is located in the Centre City Planned District.

Conclusions from the Property Manager Survey

Overall, the property manager responses do not show a pattern of widespread parking problems. Three of the four projects where complaints were reported and that also provided parking for residents did not have overnight parking occupancies more than 85%, which suggests that parking management techniques have potential to reduce complaints. Only one complex had spaces marked for tandem parking (Island Village). However, this site did not actively use the tandem parking spaces.

Conclusions from Analysis

The project team collected detailed data on 21 San Diego affordable housing projects distributed throughout the City, including parking demand and conditions through surveys of residents and property managers, parking occupancy counts in projects and surrounding areas, and studies of land use and transportation characteristics.

The data was analyzed using qualitative and quantitative methods, using descriptive and statistical procedures. Analysis of household vehicle availability, the core predictor of parking demand, revealed the following:

- Parking demand for affordable projects is about one half of typical rental units in San Diego; almost half the units surveyed had no vehicle.
- Parking demand varies with type of affordable housing (i.e., Family Housing versus SRO); higher demand is also associated with larger unit size and higher income.
- Parking demand is less in areas with many walkable destinations and more transit.
- In all of the projects studied, the amount of peak overnight parking used was less than the amount supplied.

The Parking Model

The Process for Developing Requirements

The data analysis presented previously provides insights into a variety of factors that can be considered in creating affordable housing parking requirements. Traditionally, parking requirements are based on measurements of observed demand for certain land uses. Analysts collect data on the peak demand for particular land use on a square foot or per unit basis, considering either the mean (average) level or a percentile value, such as 33rd or 85th percentile. Adjustments are sometimes made for locational attributes, such as an urban or suburban location, visitor parking (if applicable), and a vacancy factor (to ease circulation).

The study process for this project provides a variety of information that is useful in setting requirements, including measured parking occupancy, reported vehicle availability by residents, and property manager perspectives. In moving from the research mode to the practical task of developing proposed requirements, the following considerations are taken into account:

- Use detailed local information provided in the study to craft requirements that better match project conditions, i.e., moving away from national standards to locally-based standards.
- Use information on parking demand at different types of affordable housing in San Diego to produce requirements that better fit those different types of affordable housing.
- Ensure that any proposed parking requirement system is easy to interpret and appropriate for inclusion into the City's ordinances.
- Ensure that the factors that are used to tailor the requirements are part of the development approval process (such as number of bedrooms), not individual characteristics of residents that are not controlled by the approving body (such as individual characteristics of resident that are not part of the process for allocating units).

Parking requirements are a policy choice, not the direct result of an analytic procedure. The local jurisdiction must consider planning goals, such as walkability or vehicle miles travelled (VMT) reductions, in deciding on future requirements. It must weigh the convenience provided in requiring a certain amount of parking against the cost burden that such a requirement creates for the provision of affordable housing. Finally, it must consider its philosophy as to whether market mechanisms or public regulation should determine parking creation.

A final consideration is that the California Government Code compels local governments to make certain provisions in regard to parking requirements in the case of the State's density bonus provisions (Government Code 65915").

> "(p) (1) Upon the request of the developer, no city, county, or city and county shall require a vehicular parking ratio, inclusive of handicapped and guest parking, of a development meeting the criteria of subdivision (b), that exceeds the following ratios:
>
> (A) Zero to one bedrooms: one onsite parking space.
> (B) Two to three bedrooms: two onsite parking spaces.
> (C) Four and more bedrooms: two and one-half parking spaces.

Table 18 outlines a sequence of factors involved in moving from occupancy or household vehicle ownership data to establishing minimum parking requirements.

Table 18. Sequence of Factors Involved in Setting Minimum Requirements

Factor	Example policy choice
1. Aligning requirement with type of housing	Distinguishing between senior and family units, or between income restriction on units
2. Use of mean or percentile measurement/ vacancy factor	Using mean versus 85th percentile measurement of demand Inclusion of a vacancy factor to allow for higher than average demand and assist in finding spaces
3. Future walkability and transit conditions	Enhanced walkability/transit as reflected in a transit index
4. Pricing/unbundling policy	Yes/no - unbundling parking (may be prohibited in affordable housing)
5. Space assigned or unassigned	Mandating that a portion of spaces are not assigned to units (increasing utilization)
6. Visitor parking	Yes/no - requiring accommodation of visitor parking on-site or using on-street inventory
7. Staff parking	Yes/no – requiring accommodation of staff parking on-site
Net Peak Demand Generated	*Baseline, plus or minus above factors*
9. Tandem parking	Allowing tandem parking for units with 2 or more parking spaces
Net land and/or building area required for parking	*Net Demand Accommodated On-Site (sf), adjusted by space/aisle efficiencies and tandem parking*

This section assumes that the City and its partner agencies wish to continue requiring parking for affordable housing. An alternative approach, of course, is to *eliminate* parking requirements for affordable housing projects. This would reduce development costs, permit increases in density, and further contribute to affordability. If such a path were taken, the vehicle ownership of residents would likely be lower and measures would have to be taken to manage of the use of on-street and other off-street parking by those affordable housing residents who chose to own a vehicle. Such techniques include on-street parking pricing and time limits and neighborhood parking permits.

In short, the approach to minimum parking requirements is becoming more varied across the country, not more standardized. Cities tailor requirements to project and neighborhood conditions, and local policies. The parking requirement approach discussed below seeks to provide a basis for new affordable housing requirements for San Diego, keeping in mind that local officials may need to deliberate in more detail each of the factors outlined in Table 18 before making a decision.

Considerations in Selecting Demand Levels as a Basis for Parking Requirements

The following discusses the options in the factors identified in Table 18.

Part A: Basic requirements per unit

1. Types of affordable housing to be included

The suggested types of affordable housing to be considered include senior housing, living unit/SRO housing, family housing, and studio. Other types of affordable housing such as transitional and individual housing are recommended to be determined on a case-by-case basis.

2. Demand measurement - use of mean or percentile measurement of demand, vacancy factors, and household surveys versus parking utilization counts

An important consideration in recommending parking requirements is the way in which basic demand data is used. The analysis in the previous section reported the mean (average) level of vehicle availability at the household level. Using the average level of vehicle availability strikes a balance between the risk of providing less parking than demanded (if a specific project had higher than average demand) and increasing costs by building more parking than required (if a specific project had less than average demand). It would ensure the right amount of parking for the average project of a particular type.

The Institute of Transportation Engineers (ITE) *Parking Generation Informational Report* is a widely used source on parking demand. This ITE handbook provides information on project-level parking demand for a wide range of uses, but it does not provide rates for affordable housing. This is one of the reasons that original data collection was undertaken for this study. For all the uses provided in the ITE, the handbook displays the information in terms of average peak parking demand, 85th percentile demand, and 33rd percentile demand. A percentile is the value below which a certain percentage of observations fall. For example, all but 15 percent of observations fall below the 85th percentile. The ITE counsels that professional judgment is needed to determine which type of measurement should be used in developing requirements.

The previous analysis showed the mean household vehicle availability to be 0.68 vehicles per household. Since household vehicle availability is a discrete choice (0, 1, 2, etc.) percentile analysis is not informative. Such analysis can, however, be performed at the project level.

In order to provide an example of how the percentile rankings differ from the mean, the project level vehicle availability is used for analysis (21 sites). It shows the following:

- Mean = 0.86 vehicles per household - straight (unweighted) average;
- 85^{th} percentile value = 1.5; and
- 33^{rd} percentile value = 0.39.

If a city's policy was to require parking requirements that would exceed demand in all but 15 percent of the time, an 85^{th} percentile demand could be used as base demand. The difference in the percentiles is large because, as has been shown previously, household vehicle availability is associated with project type, number of bedrooms, and location, and other factors.

The consulting team recommends that the City base parking requirements for affordable housing projects on the mean level of parking demand. This allows the use of individual household level data in calculating vehicle availability and supports a policy suggestion to avoid overbuilding parking because of the impacts of housing affordability. A vacancy factor can be used to provide a cushion of supply above the mean demand.

The parking rates in the spreadsheet model are based on the average parking demand observed (rounded up). As mentioned, where the sample is small or non-existent, rates are estimated.

A final factor in considering demand levels is whether to rely on data from the household survey or overnight occupancy counts. The overnight occupancy counts completed for this study were generally less than the potential parking utilization implied by the household survey. The policy decision on which to emphasize comes down to whether the jurisdiction wants to require parking for the maximum potential utilization (all vehicles on-site at the same time), or the typical condition (measured peak occupancy overnight).

The consulting team recommends basing rates on the results of the household surveys, since they more likely represent the greatest potential vehicle accumulation by residents.

3. Future walkability and transit conditions

The parking model differentiates between three levels of a combined land use walkability/transit availability measure, taking that combined indicator as representing future walkability and transit conditions (as shown in Table 12). This method provides a research-based method of distinguishing between vehicle availability in different land use and transit contexts. Use of this method would require the availability of GIS resources that would permit project applicants to know in which category their project falls (core, urban, or suburban), based on land use and transit characteristics in the project vicinity. Alternatively, the City could develop a new transit/land use overlay system to categorize projects.

Part B: Adjustments to Base Demand and Ancillary Parking

4. Pricing/unbundling

All the projects provided residents parking free of charge, with only one project charging a fee for an additional parking space. The vehicle availability results, therefore, reflect demand when parking is free. Charging for parking is an emerging practice for residential developments that can limit parking demand to the level that residents are willing to pay for, and to provide fairness to those without cars, who receive no corresponding financial subsidy to alternative forms of transportation. For example, under the current arrangement, there is no disincentive for a resident to keep a seldom-used or inoperative car stored in a complex.

Most affordable housing projects are restricted in their ability to charge for parking because funding sources stipulate that no additional charges beyond rent can be levied. That means that parking charges or unbundling are not an option unless those stipulations change. Therefore, the discussion that follows provides information on how charging for parking could affect demand, but such charges or unbundling are not feasible for most affordable housing projects at this time.

The impact of charging for parking is to reduce parking demand. The general rule of thumb for parking pricing is that a 10 percent increase in price produces a three percent reduction in demand. In situations where the prior condition is free parking, the introduction of parking prices of $30- $50 per month can produce reductions in vehicle availability. Litman (2011) illustrates the impact of a $25, $50 and $75 per month parking charge on residential vehicle ownership, using elasticities of -0.4, -0.7, and -1.0. These rates produce parking reductions of between 4% and 23%.[7] Because affordable housing residents would experience parking charges as a larger percentage of their income, they are likely to be more sensitive to pricing. Therefore, their elasticity is more likely to be at the -1.0 level, which would mean a $30 per month parking charge would likely bring about a 10% decrease in demand.

The parking model illustrated here has default values of 1.0, meaning that no reduction is being made to account for parking pricing because of the restrictions mentioned previously. If pricing was permitted, then a percentage would be entered in the model, e.g., 90 percent to account for the reduction in demand at a $30 per month rate. The recommended factor for a $50 per month rate is 85 percent, while a 77 percent factor is recommended for a $75 per month rate.

5. Parking spaces assigned or unassigned

Parking requirements often include a vacancy factor (an amount above and beyond predicted demand) to account for that fact that in some land uses it is unlikely that all spaces will be completely filled because of inefficiencies in the parking space search process or restrictions on space use. An example of inefficiency in search process tends to occur in land uses such as large shopping centers that have high space turnover. Parkers have a hard time finding available spaces in these large facilities. An example of a restriction on space use is the use of assigned parking in residential complexes. In such an instance, for example, a daytime visitor to the complex cannot use an assigned resident space even if that resident's vehicle is at work and the space is empty. A vacancy factor provides some extra parking

[7] Litman, Todd. (2011) "Parking requirement impacts on housing affordability." Victoria Transport Institute. Victoria, Canada. Accessed at http://www.vtpi.org/park-hou.pdf on 4/23/11.

spaces to help residents, visitors and staff to find convenient spaces. A second justification is that the extra parking provides for unique times (or unique projects) when parking demand is higher than normal. This would occur if the residential occupancy per unit was higher than normal, leading to an increased parking demand.

Weant and Levinson (1990) suggest a 10 percent vacancy factor[8] but the appropriate vacancy factor should be considered by project planners on a case-by-case basis. Factors to be considered assigned versus unassigned parking and special project characteristics that may increase demand. A base 10% vacancy rate is applied in the model, but this should be adjusted to project circumstances. If parking is not assigned to users or specific units, for example, there may be a justification to reduce the vacancy factor, since sharing can occur between residents, visitors, and staff parking uses.

6. Visitor parking

The parking model/look-up table includes an input variable for visitor parking. The visitor parking rate from the *ULI Shared Parking* model is applied in most situations in the parking model (0.15 spaces per unit).[9] This is somewhat lower than the approach in the existing City code, Section 142.0525, which specifies that 20 percent of off-street required parking spaces be provided as “Common Area” parking in Planned Urbanized Communities.

The parking model/look-up table sets visitor parking demand estimates for some types of housing in the Core Walkability/Transit index to zero since in dense urban areas parking resources act as a shared parking pool, and visitors will park in on-street and other off-street parking facilities or use transit.

Visitor parking requirements can also be reduced if parking is not assigned to specific units, because visitors can use spaces vacated by residents when they are on vehicle trips outside their complexes.

7. Staff Parking

A staff parking rate of 0.05 spaces per unit is used in the parking model/look-up table (the average number of staff parking spaces assigned per unit among the projects that did assign staff parking is 0.051). This rate may vary, depending on the level of staff provided in different types of housing. For example, senior or special needs housing may have nursing staff not found in other affordable housing. It is recommended that staff parking be considered on a case-by-case basis in all projects, with a 0.1 staff parking rate considered for staff intensive affordable housing developments.

8. Tandem Parking

Tandem parking in affordable housing faces challenges because most units do not have two parking spaces assigned to them. That said, tandem parking if it were to be successful, would need to be in larger projects (i.e., family) that had more than one space assigned per unit. This would have the effect of reducing the square footage devoted to parking, not the number of spaces required.

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[8] Weant and Levinson. (1990) *Parking.* Westport, Connecticut: Eno Transportation Foundation.
[9] Smith, Mary. (2005) *Shared Parking, Second Edition.* Washington DC: Urban Land Institute and International Council of Shopping Centers.

A Spreadsheet for Calculating Parking Requirements

The following describes the basis for creating a spreadsheet-based parking model that can be used to predict parking demand for new affordable housing projects. This section presents an illustration of the model (provided as a spreadsheet), intended to show how demand data and policy choices about parking can be translated into requirements. Such requirements can be used in determining the required parking for individual projects or to develop new code requirements for affordable housing types. The code could be revised to specify that parking requirements will be established on a case-by-case basis through the use of the parking model, or as an alternative, the results of the model could be embedded in new requirements in the code, in a lookup chart format.

The parking model provides empirically-based rates for four types of affordable housing: Family, Living Unit/SRO, Senior Housing, and Studio/ 1 Bedroom. These categories were developed based on similarity in parking demand patterns and goal of having at least 50 observations for each category. The model structure can be used to analyze any type of affordable housing project if new housing types emerge or additional data is available—such analysis would apply new rates in the appropriate area of the model. Special Needs Housing is also shown in the tables that follow, but the number of observations is too low to provide reliable guidance for this type of parking (n = 20).

The following describes the primary elements of the model. The model assumes in most cases that the goal is to accommodate resident parking demand on-site. In selected situations, such as visitor parking in core areas, the suggested rates assume that some of all of visitor parking would be accommodated in on- and off-street parking in the project vicinity.

As shown previously, the primary basis of parking demand is household vehicle availability. The model includes a series of per-unit rates developed based on the results in Table 16, which shows household vehicle availability by housing type, unit size (number of bedrooms), and walkability/transit context (suburban, urban, and core). The analysis showed that these factors are the primary drivers of vehicle availability. The categories of housing types are collapsed for the purpose of the model.

The sample, while large overall, did not produce a large number of observations for *every* combination of housing type, number of bedrooms, and transit context. As a result, estimates are provided for residential parking demand in categories where observations are not available or where small in sample size.

The survey produced small numbers of responses from the following housing types: Individuals (n = 7) and Transitional Housing (n = 4). These sample sizes are too low to produce reliable demand estimates and therefore are not used in the demand-based parking demand model that follows. It is suggested that these categories be addressed through specialized studies.

The modeling analysis completed for the project includes the development of an index of walkability and transit access, as described in the text preceding Table 12. That index includes the categories of suburban, urban, and core to describe progressively more walkable and transit-rich environments. Those results are shown by detailed categories in Table 16 and in a collapsed form on Table 19.

Table 19. Household Vehicle Availability by Housing Type, Number of Bedrooms & Walkability/Transit Index, Collapsed Housing Type Categories

Housing Type	Number of Bedrooms	Transit Index	Mean	N	Standard Deviation
Family	1	Suburban	.92	63	.604
		Urban	.58	38	.599
		Total	.79	101	.622
	2	Suburban	1.29	118	.655
		Urban	1.09	35	.742
		Total	1.24	153	.679
	3	Suburban	1.66	56	.745
		Urban	1.37	32	.871
		Total	1.56	88	.800
	Total	Suburban	1.28	237	.712
		Urban	.99	105	.803
		Total	1.19	342	.752
Living Unit/SRO	0	Urban	.31	94	.509
		Total	.31	94	.509
	Total	Urban	.31	94	.509
		Total	.31	94	.509
Senior Housing	0	Urban	.27	37	.450
		Core	.14	37	.347
		Total	.20	74	.405
	1	Urban	.54	153	.538
		Core	.09	79	.328
		Total	.39	231	.522
	2	Urban	.80	5	.447
		Total	.80	5	.447
	Total	Urban	.49	195	.531
		Core	.10	116	.333
		Total	.35	311	.503
Studio – 1 bedroom units	0	Urban	.18	56	.431
		Total	.18	56	.431
	1	Urban	.75	4	.957
		Total	.75	4	.957
	Total	Urban	.22	60	.490
		Total	.22	60	.490

Housing Type	Number of Bedrooms	Transit Index	Mean	N	Standard Deviation
Special Needs	0	Urban	.21	19	.419
		Total	.21	19	.419
	1	Urban	1.00	1	N/A
		Total	1.00	1	N/A
	Total	Urban	.25	20	.444
		Total	.25	20	.444

Tables 20 through 24 that follow show illustrations of a 75-unit hypothetical project using the combined walkability/transit parking model for each housing type. The examples show how the model could be used with project with different bedroom configurations and other adjustment factors. The "suburban" category refers to areas with index score values of 0 -1.5; "urban" refers to scores of 2.0 – 3.5, and "core" refers to areas with a score of 4.0. Note that Table 24, Special Needs Housing is based on only 20 survey responses, which means that additional studies should be conducted for Special Needs housing. This use may have higher mid-day parking demand associated with staff and caregiver parking.

Table 20 illustrates model results associated with 75 family units in a suburban context.

Table 20. Family Housing Illustration

Type:	Family							
Number of Units	Unit Composition				Parking Rate			Parking Spaces
	Suburban	Urban	Core		Suburban	Urban	Core	
1 Bedroom	5	0	0		1	0.6	0.33	5
2 Bedroom	20	0	0		1.3	1.1	0.5	26
3 Bedroom	50	0	0		1.75	1.4	0.75	88
4 Bedroom	0	0	0		2	1.5	1	0
Total units	75	0	0	Visitor parking rate	0.15	0.15	0.05	11
				Staff parking rate	0.05	0.05	0.05	4
Notes:	Total n = 342				Parking demand assuming free parking			134
		= input area			Vacancy factor			1.10
		= no data, estimate			Pricing factor			1.00
					Parking supply recommended			147

Table 21 illustrates model results associated with 75 Living Unit/SRO housing in an urban context.

Table 21. Living Unit/SRO

Type:	Living Unit/SRO							
Number of Units	Unit Composition				Parking Rate			Parking Spaces
	Suburban	Urban	Core		Suburban	Urban	Core	
Studio	0	75			0.5	0.3	0.1	23
Total units	0	75	0	Visitor parking rate	0.15	0.15	0.05	11
				Staff parking rate	0.05	0.05	0.05	4
Notes:				Parking demand assuming free parking				38
	Minimal observations for 1 bedroom+			Vacancy factor				1.10
	Total n = 94			Pricing factor				1.00
		= input area		Parking supply recommended				41
		= no data, estimate						

Table 22 illustrates model results associated with 75 senior units in a core area context.

Table 22. Senior Housing

Type:	Senior Housing							
Number of Units	Unit Composition				Parking Rate			Parking Spaces
	Suburban	Urban	Core		Suburban	Urban	Core	
Studio	0	0	50		0.5	0.3	0.1	5
1 Bedroom	0	0	25		0.75	0.6	0.15	4
2 Bedroom	0	0	0		1	0.85	0.2	0
Total units	0	0	75	Visitor parking rate	0.15	0.15	0.1	8
				Staff parking rate	0.05	0.05	0.05	4
Notes:	Total n = 311							
		= input area		Parking demand assuming free parking				20
		= no data, estimate		Vacancy factor				1.10
				Pricing factor				1.00
				Parking supply recommended				22

Table 23 illustrates model results associated with 75 studio – 1 bedroom in an urban area context.

Table 23. Studio – 1 bedroom

Type:	Studio - 1 bedroom							
Number of Units	Unit Composition				Parking Rate			Parking Spaces
	Suburban	Urban	Core		Suburban	Urban	Core	
Studio	0	75	0		0.5	0.2	0.1	15
1 Bedroom	0	0	0		0.75	0.5	0.1	0
Total units	0	75	0	Visitor parking rate	0.15	0.15	0.05	11
				Staff parking rate	0.05	0.05	0.05	4
Notes:	Total n = 60							
		= input area		Parking demand assuming free parking				30
		= no or minimal data, estimate		Vacancy factor				1.10
				Pricing factor				1.00
				Parking supply recommended				33

Table 24, Special Needs Housing, is based on only 20 responses, which means that additional studies should be conducted for Special Needs housing. This use may have higher mid-day parking demand associated with staff parking. The table illustrates 75 units in the urban area context.

Table 24. Special Needs Housing Illustration

Type:	Special needs							
Number of Units	Unit Composition				Parking Rate			Parking Spaces
	Suburban	Urban	Core		Suburban	Urban	Core	
Studio	0	75	0		0.5	0.2	0.1	15
1 Bedroom	0	0	0		0.75	0.5	0.1	0
Total units	0	75	0	Visitor parking rate	0.15	0.15	0.05	11
				Staff parking rate	0.15	0.15	0.1	11
Notes:	Total n = 60							
		= input area			Parking demand assuming free parking			38
		= no or minimal data, estimate			Vacancy factor			1.10
					Pricing factor			1.00
					Parking supply recommended			41

Table 25 summarizes parking demand projections shown in the previous series of tables, using the walkability/transit index to differentiate between projects. It indicates clearly that parking demand varies greatly for different types of affordable housing, in different walkability/transit contexts. This suggests that future code revisions should distinguish between these factors. A "one-size-fits all" affordable housing requirement would not well capture the differences shown here.

Table 25. Parking Model Results for Five Affordable Housing Types

	Walkability/Transit Index	**Unit mix (studio/1 bed, 2 bed, 3 bed)**	**Pricing**	**Total spaces**
Family	Suburban	0/5/20/50	No	147
Living unit/SRO	Urban	75/0/0/0	No	41
Senior Housing	Core	50/25/0/0	No	22
Studio – 1 bedroom	Urban	75/0/0/0	No	33
Special Needs	Urban	75/0/0/0	No	41

Using the Model

The spreadsheet model is intended to support the development of parking requirements for affordable housing. Its first use will be to illustrate the parking requirement implications of ten affordable housing projects under Task 8 of this project. It will be used to compare the model's predictions with existing requirements, to understand the alignment of those requirements with actual demand levels. Subsequent use for project level or land development code analysis can use the following step-by-step guide.

1. Open the spreadsheet file and select the spreadsheet tab for the type of project being considered (Family, Special Needs/SRO, Senior Housing, Studio /1 bedroom, Special Needs).
2. Identify the walkability/transit context for the project being considered (suburban/urban/core context variable).
3. Determine the distribution of bedroom size in the complex.

4. Enter the number of bedrooms in the appropriate walkability/transit context column.
5. Review the parking rates supplied for that type of project, noting those based on empirical observation and those made with expert judgment. Those made with expert judgment are shown in shaded cells. If the project being considered is a good fit with the projects studied, then make no changes to the rates. If there is something unique about the project, then make changes in the parking rates cells. For example, if a senior housing project is expected to have a higher level of medical staff than normal, an upward adjustment to the staff parking rate could be made.
6. Review the vacancy factor assumption in the model (1.1, or 10%). This factor is intended to account for a higher than normal occupancy pattern in a particular project and/or unusual peaks in demand on particular days. Determine if the standard factor is appropriate for the project. If an adjustment is needed, enter that new number in cell associated with the vacancy factor (likely 1.0 to 1.25). For example, if the project does not designate parking spaces to particular units, it will achieve a more efficient use of parking overall and may not require a vacancy factor.
7. Review the pricing assumption in the baseline model (1.0 = free parking). If the project will involve priced parking for tenants, then a reduction factor (likely 0.77 to 0.9) should be entered in the cell associated with the pricing factor to reflect the effect of pricing on reducing vehicle availability.
8. Note the recommended parking supply and compare with code, building plans, and other relevant factors.

Conclusions about the Spreadsheet Model

This task describes a spreadsheet model that can be used as a tool in setting new affordable housing parking requirements or analyzing parking for specific projects. The parking demand model is developed based on the demand information gleaned from the household surveys. The model accounts for resident parking (based on household vehicle availability), visitor parking, staff parking, a desired parking vacancy rate, and parking pricing. The requirements generated by the model vary with the three factors found to influence vehicle availability: type of affordable housing, number of bedrooms, and land use and transit context. The model is intended to illustrate the impacts of the assumptions made about pricing, vacancy rates, and other issues. Confirmation that the assumptions made in the model are consistent with the City's policy preferences is required in order for this model, or one with modified parameters, to be adopted.

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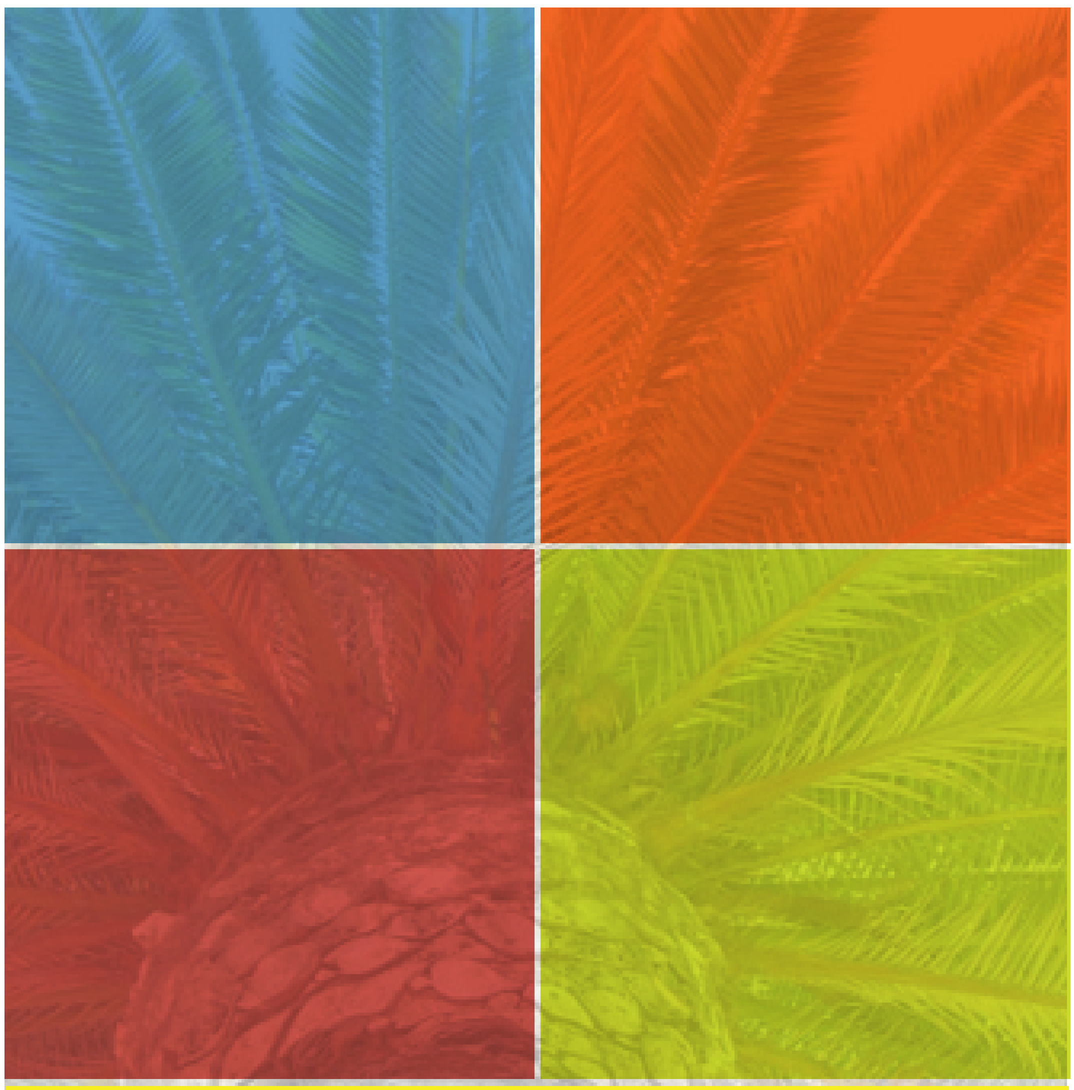
Appendix 6.0 **Alternative Parking Model Formulation**



Appendix 6.0 Alternative Parking Model Formulation

The analysis presented in Chapter 6 provides information on the relationship between household vehicle availability and a variety of factors. It concludes by providing an analysis of mean household vehicle availability by three factors: housing type, number of bedrooms, and the walkability/transit index. The table below provides an alternative formulation for information purposes. Instead of housing type, it provides the mean vehicle availability for income group, number of bedrooms, and the walkability/transit index. It confirms the basic relationship between vehicle availability and income shown on Chapter 6 - Table 7, but provides a further breakdown in regard to number of bedrooms and the walkability/transit index. This table cannot also include housing type as the data would become extremely disaggregated and the sample size would be too small to yield any meaningful results.

Income Group	Number of Bedrooms	Walkability/ transit index	Mean Vehicle Availability	N	Std. Deviation
0 - $10,000	0	Suburban	.00	3	.000
		Urban	.28	25	.542
		Core	.00	11	.000
		Total	.18	39	.451
	1	Suburban	.50	2	.707
		Urban	.67	6	.516
		Core	.00	12	.000
		Total	.25	20	.444
	2	Suburban	1.00	7	.577
		Total	1.00	7	.577
	3	Suburban	1.00	1	.
		Urban	.33	3	.577
		Total	.50	4	.577
	Total	Suburban	.69	13	.630
		Urban	.35	34	.544
		Core	.00	23	.000
		Total	.30	70	.521

Income Group	Number of Bedrooms	Walkability/ transit index	Mean Vehicle Availability	N	Std. Deviation
$10,001 - $20,000	0	Suburban	.00	1	.
		Urban	.19	116	.394
		Core	.19	26	.402
		Total	.19	143	.393
	1	Suburban	.83	36	.609
		Urban	.51	117	.551
		Core	.08	63	.272
		Total	.44	216	.559
	2	Suburban	1.11	54	.718
		Urban	.87	16	.719
		Total	1.06	70	.720
	3	Suburban	1.50	6	.548
		Urban	.67	3	.577
		Total	1.22	9	.667
	Total	Suburban	1.02	97	.692
		Urban	.39	252	.535
		Core	.11	89	.318
		Total	.47	438	.622
$20,001 – 30,000	0	Urban	.34	35	.539
		Total	.34	35	.539
	1	Suburban	.85	13	.555
		Urban	.66	35	.591
		Core	.00	3	.000
		Total	.67	51	.589
	2	Suburban	1.39	31	.558
		Urban	1.13	15	.640
		Total	1.30	46	.591
	3	Suburban	1.57	14	.756
		Urban	1.29	7	.756
		Total	1.48	21	.750
	Total	Suburban	1.31	58	.654
		Urban	.66	92	.668
		Core	.00	3	.000
		Total	.90	153	.736

Income Group	Number of Bedrooms	Walkability/ transit index	Mean Vehicle Availability	N	Std. Deviation
$30,001 - 40,000	0	Urban	.60	10	.516
		Total	.60	10	.516
	1	Suburban	1.09	11	.539
		Urban	.89	9	.601
		Core	2.00	1	.
		Total	1.05	21	.590
	2	Suburban	1.44	16	.512
		Urban	1.29	7	.951
		Total	1.39	23	.656
	3	Suburban	1.60	20	.681
		Urban	1.69	13	.751
		Total	1.64	33	.699
	Total	Suburban	1.43	47	.617
		Urban	1.15	39	.812
		Core	2.00	1	.
		Total	1.31	87	.720
$40,001-50,000	0	Urban	1.00	2	.000
		Total	1.00	2	.000
	1	Suburban	1.67	3	.577
		Total	1.67	3	.577
	2	Suburban	1.88	8	.354
		Urban	1.00	1	.
		Total	1.78	9	.441
	3	Suburban	1.85	13	.899
		Urban	1.60	5	1.140
		Total	1.78	18	.943
	Total	Suburban	1.83	24	.702
		Urban	1.38	8	.916
		Total	1.72	32	.772

Income Group	Number of Bedrooms	Walkability/ transit index	Mean Vehicle Availability	N	Std. Deviation
Total	0	Suburban	.00	4	.000
		Urban	.26	188	.464
		Core	.14	37	.347
		Total	.24	229	.446
	1	Suburban	.91	65	.605
		Urban	.57	167	.565
		Core	.09	79	.328
		Total	.52	311	.595
	2	Suburban	1.28	116	.654
		Urban	1.05	39	.724
		Total	1.22	155	.677
	3	Suburban	1.63	54	.734
		Urban	1.35	31	.877
		Total	1.53	85	.796
	Total	Suburban	1.23	239	.719
		Urban	.53	425	.655
		Core	.10	116	.333
		Total	.68	780	.750

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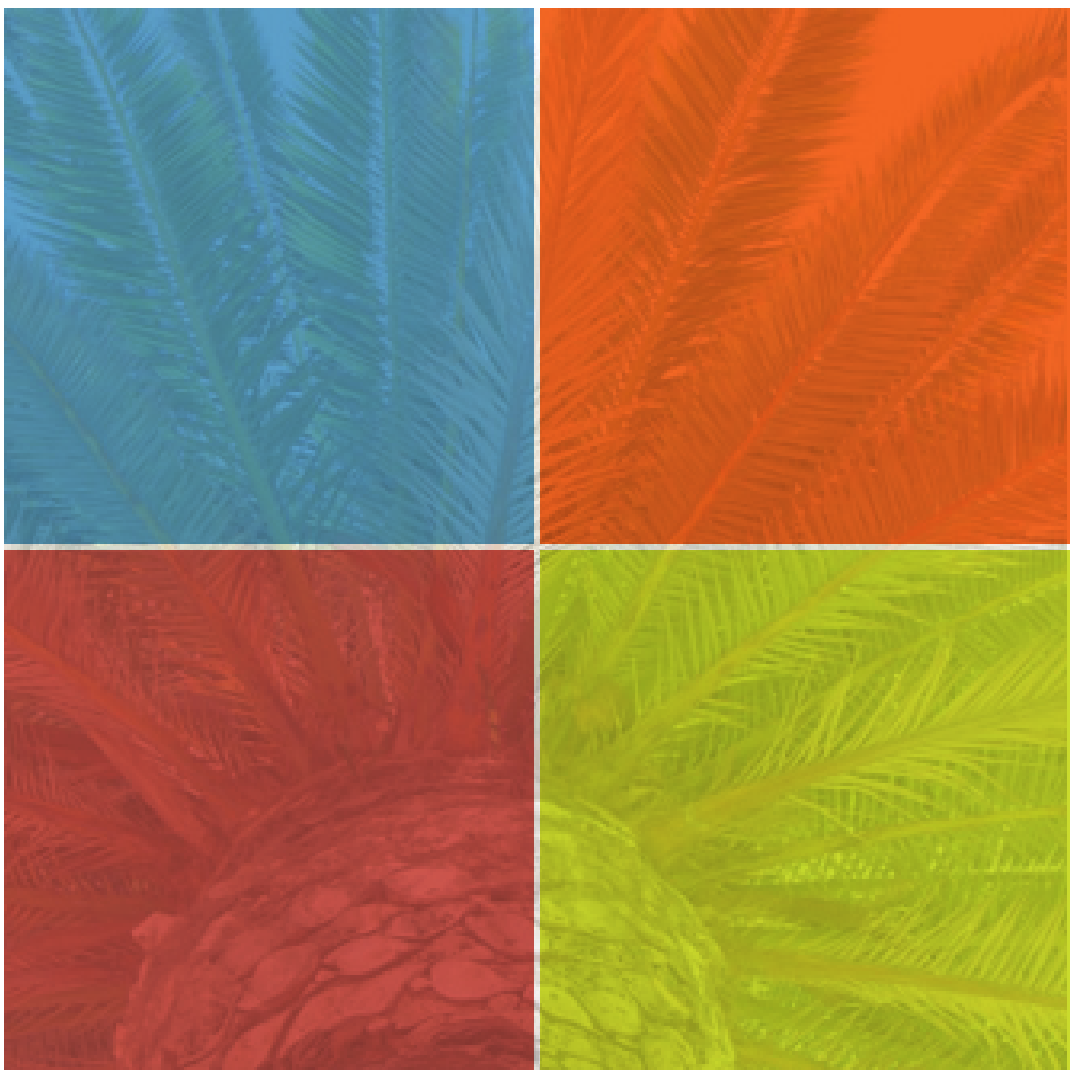
CHAPTER 7.0 Best Practices and Case Studies



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7.0 Best Practices and Case Studies

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7.0 Best Practices and Case Studies

Introduction

Parking is an important issue in the provision of affordable housing. Affordable housing units are subject to an affordability restriction recorded against the property deed. These restrictions can be related to rent, sales price, household size, targeted rental or ownership household and time period.

Often times, too much or too little parking can negatively affect or limit affordable housing opportunities. High parking requirements may drastically increase the cost of building housing and result in less affordable housing opportunities. Too little parking may result in neighborhood spillover or low marketability. It is important to understand parking demand and consider creating demand based parking requirements to support affordable housing opportunities.

Cities often avoid neighborhood spillover through a tendency to require excess parking. This imposes additional development costs for affordable housing units, which require less parking than market rate housing. [1] This creates inaccurate and outmoded parking requirements making production of affordable housing significantly more expensive. Policies that require overbuilding of parking result in added parking construction costs, resulting in larger and less affordable housing units, further harming housing affordability .[2,3,4] Typical affordable housing development costs, one parking space per unit, may increase total development costs by approximately 12.5%. Two parking spaces per unit may increase costs by about 25%.[5] This increase in costs contributes to a decrease in affordable urban housing.[6,7]

As stated in Task 6, previous studies have demonstrated the correlation between income and vehicle ownership, suggesting that parking requirements should be lower for affordable housing developments. Data indicates that affordable housing parking requirements can also be reduced in communities that are walkable and have good transit accessibility. This task focuses on best practices and case studies, looking at examples related to demand, location, cost and supply of parking at affordable housing developments. It will also look for examples of how transit and pedestrian solutions can further reduce parking demand at affordable housing developments.

Recommendations include consideration of household income, walkability and transit accessibility, linking them to modify affordable housing parking requirements in San Diego.

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[1] Southern California Association of Non-Profit Housing. 2004. Parking requirements Guide for Affordable Housing Developers. Los Angeles, CA.

[2] Willson, Richard. 2005. Parking Policy for Transit Oriented Development: Lessons for Cities, Transit Agencies, and Developers. Journal of Public Transportation. Volume 8, Number 5.

[3] Hitchcock, M. 1999. *Parking in the Bay Area.* California Planner. November/December: 8-9.

[4] Litman, Todd, 2010. Parking Requirement Impact on Housing Affordability. Victoria transport Policy Institute. Victoria, BC.

[5] Litman, Todd. 2010.

[6] Litman, Todd. 2010.

[7] Shoup, Donald. 2005. The High Cost of Free Parking. American Planning Association.

Affordable Housing Parking Requirements

A report to the San Diego City Council (July 20, 2007) provides information on parking requirements in San Diego. The report also discusses development of a new long term approach based on development of efficiency-based parking standards.[8]

The existing City of San Diego parking code allows a 0.25 parking space reduction per dwelling unit for the lowest Income households. Many studies have concluded that affordable housing projects may need less parking than market rate projects (Litman, 2010). Studies have concluded that affordable housing projects located within ¼ mile of transit routes may require even less parking.[9]

An October 2002 study[10] recommended an additional 0.25 parking space reduction per unit. However, the study recommended that a larger sample size and continued analysis of parking demand related to the size of dwelling units would be beneficial and provide a more accurate recommendation.

The majority of cities determine parking requirements from national studies, comparing their requirements with neighboring cities or perhaps examining similar projects. Culver City, California was one of the first cities to reform parking requirements, conducting a parking inventory, occupancy and turnover study to recalibrate the downtown Culver City parking requirement.[11,12]

In a study consisting of over 90% of the cities within the South Coast Air Basin (Orange and the urban portions of Los Angeles, San Bernardino and Riverside Counties), cities have parking requirements that:[13,14]

- Compete with other cities
- Prevent spillover
- Plan for future uses

Many cities allow for a reduction in parking requirements for affordable housing. Some of these are described in the table below. The City of Los Angeles allows a reduction of 0.5 spaces per unit for deed-restricted affordable units and additional reductions for units within 1500 feet of a transit line. The City of Santa Monica, California reduces parking from 2 spaces per unit to 1.5 for two bedroom affordable housing units. In Kirkland, Washington, the required parking may be reduced to 1.0 space per affordable housing unit. If parking is reduced through this provision, the owner of the affordable housing unit shall sign a covenant restricting the occupants of each affordable housing unit to a maximum of one car.

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[8] City of San Diego. July 20, 2007. Report to Council: Parking Workshop. Land Use and Housing Council Committee and Planning Commission Joint Meeting. Report No. 07-132. San Diego, CA.

[9] Litman, Todd. 2010.

[10] Katz, Okitsu & Associates. October, 2002. City of San Diego Multi-Family Residential Parking Study. San Diego, CA.

[11] Kodama, Michael, Richard Willson and William Francis. June 1996. Using Demand based Parking Strategies to Meet Community Goals. Mobile Source Air Pollution Reduction Review Committee of the South Coast Air Quality Management District. Diamond Bar, CA.

[12] Willson, Richard 2000. Reading Between the Regulations: Parking Requirements, Planners' Perspectives and Transit. Journal of Public Transportation. Volume 3, Number 1. Center for Urban Transportation Research.

[13] Kodama, et al 1996.

[14] Willson, 2000.

Table 1: Affordable Housing Requirement

City	Description	Affordable Housing Requirement
Berkeley, CA	Berkeley gives preference for affordable housing as it applies to Senior or Disabled housing by offering a 75% parking reduction for those uses. Berkeley uses square feet to determine parking requirement.	• 1 space per unit if complex has less than 10 units. If senior /disabled living structure then 0.25 space per unit • 1 space per 1200 sq ft of GFA for complexes with more than 10 units. If senior/disabled living then 0.25 space per 1200 sq ft of GFA.
Boulder, CO	Boulder, CO has a very broad affordable housing parking policy. It uses the TOD specific zones to augment the existing affordable housing policy. Affordable housing uses parking minimums to establish required parking. Boulder is developing new parking management zones for TOD sites that will use parking maximums and reductions based on conditional use, which can further reduce parking for affordable housing near transit.	• 1 space per single dwelling unit, 1 or 2 bedroom dwelling unit • 1.5 space per 3 bedroom dwelling unit • 2 spaces per 4+ bedroom dwelling unit • 1 space per two person affordable housing dwelling unit
Eugene, OR	Eugene requires developers to guarantee the units remain affordable for a minimum amount of 10 years when building affordable housing or senior/disabled living. Once established, the city reviews each development case by case to determine parking reduction.	• 0.67 per affordable housing habitable room or 3 spaces total for dwelling unit, whichever is greater based on total available units • 0.33 per Senior or Disabled habitable room or 3 spaces total for dwelling unit, whichever is greater based on total available units
Denver, CO	Denver uses parking requirements as an incentive to consider building more affordable housing. Denver has developed a strategic parking plan that recognizes the importance of parking in determining transportation choices. The study looked at 11 Denver neighborhoods and concluded that at least 25% of the parking spaces in each area are vacant. This plan allows for parking requirements designed to meet needs of individual neighborhoods, combining on-street and off-street parking resources with a reduction in communities with more transit options.	Every housing project that provides 1 Affordable Housing Unit for each 10 market rate housing units can receive a 20% reduction in parking requirement

City	Description	Affordable Housing Requirement
Long Beach, CA	Long Beach requires 1 space per unit less than 450 square feet, 1.50 spaces (2 spaces in a Coastal zone) for units with 1 or more bedrooms, 2 spaces for units with 2 bedrooms or more and 1 guest parking space per 4 units. Long Beach has reduced parking requirements for housing that meets the needs of senior living and disabled living units. It also has a method for reducing parking requirements in a Planned Development District.	• 1 space for every 2 units of senior or disabled living • Parking reductions may be available in a Planned Development District. For example, Long Beach Boulevard has provisions to reduce parking through a Site Plan Review Process or through an Administrative Use Permit Process (up to 20% of required parking may be reduced if a parking study can demonstrate the use will generate less parking through a joint use parking facility or other parking management program). Downtown Long Beach has provisions to reduce or eliminate required parking.
Los Angeles, CA	City of Los Angeles uses affordable housing as a density bonus tool and gives special parking reductions for units that are below market rate price or near transit	• 1 parking space per unit, for a project located within 1,500 ft of transit • 1 parking space per 1 or 2 habitable room unit • 1.5 parking space per 3+ habitable room unit • 0.5 parking space per disabled/senior living housing unit
Santa Barbara, CA	Santa Barbara allows affordable housing units to use a parking maximum of 1 space per dwelling unit. Santa Barbara gives preferences to non car owners seeking affordable housing.	• All affordable housing has a 1 space per unit parking maximum
Pasadena, CA	Pasadena provides affordable housing through inclusionary zoning and has an alternative parking requirement for all developments that contain affordable housing units. The City of Pasadena encourages developers in Parking Benefit Districts to develop affordable housing units because the parking costs are higher in parking benefit district areas and the revenue collected from the parking is redirected to improve pedestrian and transit infrastructure.	• 1 parking space per each 0-1 Bedroom Unit • 2 parking spaces per each 2-3 Bedroom Unit • 2.5 parking spaces per each 4+ bedroom units
Seattle, WA	Seattle places affordable housing units in urban areas to attract mixed income individuals, increase density and leverage transit investment. Parking requirement is	• 1 parking space per two affordable housing single dwelling unit

City	Description	Affordable Housing Requirement
	reduced in these areas.	
San Leandro, CA	San Leandro incorporates affordable housing with their TOD projects by offering extra parking reductions for affordable housing and/or senior/disabled living dwelling units near TOD sites.	• 1.25 spaces per dwelling unit • 1 space per Affordable Housing dwelling unit • 0.75 space per Senior Living/Disabled living dwelling unit
Santa Clara, CA	Santa Clara offers all new development the ability to reduce parking requirements by 25% if the site is located near transit, implements a TDM program, utilizes shared parking, or is mixed use. Santa Clara encourages affordable housing through inclusionary zoning by requiring all new residential development with more than 10 units to reserve 10% as affordable housing. To help developers save cost for AH units, Santa Clara has a transit subsidy program that qualifies as a TDM program.	• 1 parking space per dwelling unit • 1.5 parking space per 1 bedroom dwelling unit • 2 parking spaces per 2+ bedroom dwelling unit • 0.75 parking space per 1 dwelling unit + TDM plan • 1 parking space per 1 bedroom dwelling unit + TDM plan • 1.5 parking spaces per 2+ bedroom dwelling unit + TDM plan
Portland, OR	Portland uses affordable housing as a mixed income catalyst in its urban areas. Rather than develop reductions strictly for affordable housing, Portland zones its downtown and transit zones to accommodate affordable housing by removing parking minimums and implementing parking maximums.	• No parking minimums for sites within 500 ft of transit service that has less than 20 minute headways • Parking maximums for urban or high density areas are 0.7 spaces per 1,000 square feet

Sources: Cities of Berkeley, Boulder, Denver, Eugene, Long Beach, Los Angeles, Portland, San Leandro, Santa Barbara, Santa Clara, Seattle (2011).

The City of San Diego adopted in 1987, and updated in 1994 and 2001, the Transit Area Overlay Zone (TAOZ) to allow an approximate 15% reduction in parking requirements for areas with high levels of transit service. Cities such as Los Angeles, Denver, Long Beach and Seattle reduce parking requirements for new development with adjacent transit service. Other cities have developed similar policies related to transit oriented development. As part of its TOD strategy, Portland, Oregon eliminated parking requirements for any sites within 500 feet of transit service with 20 minute or less peak hour headway (Portland, 2011). Portland has also established maximum parking requirements at selected locations.

For example, Downtown Portland has a maximum parking requirement of 0.7 spaces per 1,000 square feet.[15]

In San Diego, another area for parking research investigates parking regulations, on-street parking management and smart growth areas. Efforts from this investigation resulted in simplified parking regulations and on-street parking management strategies which consider demand, location, time and price of parking. It has also resulted in the creation of smart growth concepts that are supported by parking management strategies resulting in more efficient transportation and land use patterns. These included policies, programs and strategies to reduce auto dependency, increase shared parking and encourage more use of alternative modes.

Affordable housing units have a significantly lower level of vehicle availability than the general rental housing characteristic for San Diego. The 2005-09 estimates from the U.S. Census *American Community Survey* indicate that rental housing units in the City of San Diego have an average automobile availability of 1.44 vehicles per household. This 2011 Wilbur Smith study conducted for the City of San Diego indicates that affordable housing is just under ½ the rate compared to all the rental housing units in San Diego. The 2011 study data supports the development of demand based parking requirements that are lower than market rate housing. That data along with the investigations of parking management strategies and smart growth concepts represents an opportunity for the City of San Diego to link affordable housing with parking management strategies.

Parking Management Strategies

Development of affordable housing parking strategies assumes that a substantial portion of household income is spent on transportation. This includes purchase of extra cars and the development of parking facilities to store cars. The highest percentage of household income is spent on; 1) housing 2) transportation and 3) food.[16]

Many communities use parking requirements to prevent spillover while not understanding that this may also result in more cars, lower land values, reduction in site density, and less transit use.[17,18] Many people are not aware of the impact of parking cost, convenience and availability. They may perceive that there is a lack of parking when it may be there is a lack of free and convenient parking right in front of their home or destination. This attitude and perception about parking spaces is a barrier to effective parking management.

An appropriate parking management program for affordable housing will evaluate the impact of parking management strategies that include Demand, Location, Time, Price and Supply Strategies. Strategies can

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15 Wilbur Smith Associates, Michael R. Kodama Planning Consultants, Richard Willson, Rick Williams et al. (2007). Reforming Parking Policies to Support Smart Growth. Metropolitan Transportation Commission. Oakland CA.

16 Arrington G.B and Robert Cervero. 2008. Effects of TOD on Housing, Parking, and Travel. Transportation Research Board. Washington DC.

17 Kodama et al, 1996.

18 Willson, 2000.

be implemented sequentially, building upon demand, then location, then time and finally price and supply strategies.

- Manage Parking Demand
- Manage Parking Location
- Limit Parking Time
- Price Parking
- Expand Parking Supply

Manage Parking Demand

Once on-street utilization reaches 85% to 90% (which is considered full), the competition for parking spaces becomes more intense creating an incentive to reduce the demand for parking spaces by combining parking strategies with transportation alternatives strategies (such as programs to encourage employees to use alternative modes).

Recently cities have begun to develop demand based parking requirements and study parking inventory, occupancy, turnover and pricing to determine parking requirements. This new approach has allowed cities to implement demand based parking requirements based on utilization. This creates an opportunity to create more accurate parking requirements. For example, in 2010, the City of Ventura conducted a comprehensive parking study that determined the current downtown requirement of 2.0 spaces per 1,000 square feet is above the current utilization of 1.5 spaces per 1,000 square feet. In Los Angeles, Central City Neighborhood Partners (CCNP) conducted a study looking at parking around the MacArthur Park Red Line Station and determined the current utilization of 0.5 spaces per 1,000 square feet is even lower than the 1.0 space per 1,000 square feet currently recommended by the City of Los Angeles.[19]

Some cities use demand based strategies to reduce parking demand. Specifically related to affordable housing, this includes recognizing transit and transportation demand management strategies as viable strategies to reduce parking requirements for affordable housing projects. The City of Denver, Colorado, has gathered data in order to develop specific plans with specific parking requirements based upon the demand and data collected for that area, which creates a unique parking management program that can be a catalyst for affordable housing.[20] Other examples include transportation demand management policies combined with reductions in parking requirements in Boulder, CO, Seattle WA and Santa Clara, CA.

Manage Parking Location

Another way to maximize parking resources is to create incentives to share parking and shared use of location strategies to spread out the peak parking demand over a greater area reducing parking demand

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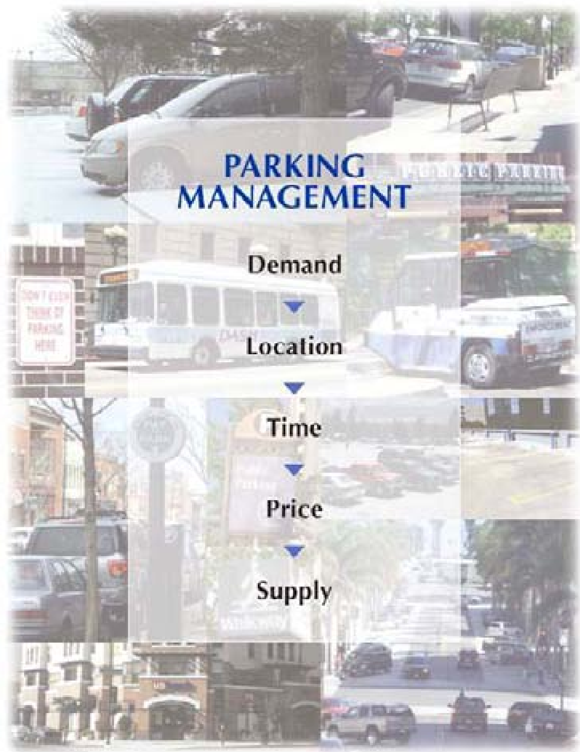
[19] Central City Neighborhood Partners and Michael Kodama. 2010. Planning To Stay. California Department of Transportation and the Los Angeles Department of Transportation. Los Angeles CA.

[20] City and County of Denver. 2010. Strategic Parking Plan. City and County of Denver.

in prime parking areas. The cities of Seattle, Washington and San Francisco, California use shared parking strategies to reduce minimum parking requirements for affordable housing developments, and for developments located near transit lines or stations. Location strategies involve the shared use of parking resources that allows for timed differential use of shared parking resources. These include the allocation of on-street parking resources or agreements with nearby locations (shared parking) that have excess capacity. As most affordable housing demographics tend to have different travel patterns and are more likely to have only one vehicle or are transit dependent, the parking requirements can reflect these lifestyle differences.

Limit Parking Time

As demand increases further, time strategies will need to be considered. This may include time limits that can be used to create short term parking supply for visitors. This may be combined with other parking restrictions to alleviate parking demand and protect residential parking areas such as residential parking permits.



Price Parking

As demand for free parking spaces increases, it may become reasonable to implement paid parking programs. This can include unbundling and pricing to reduce parking demand in an area. Unbundling pricing only works if the area has high on-street and off-street demand. In some early projects, the requirement of unbundled and priced parking resulted in empty structures and people parking on-street in free parking spaces. Many affordable housing developments or units which meet the inclusionary zoning requirement are required to unbundle the parking from the dwelling units in order to reduce the rental cost.

If demand, location, and time strategies are properly implemented and there is still high occupancy, pricing strategies can then be implemented. Pricing parking not only manages parking, but also creates parking revenues that can be used to enhance other options, such as paying for transit passes, sidewalk improvements, bicycle infrastructure or additional enforcement and security.

Boulder, Colorado and Denver, Colorado have developed comprehensive parking management programs that use transit, smart growth and transportation demand management to better use parking resources. In Boulder, Colorado, the revenue from the parking program is used to operate the transportation demand management program. This revenue source pays for transit passes, bicycle infrastructure, and pedestrian infrastructure. In Denver, Colorado, development of a strategic plan will be used to manage on-street and off-street parking. The Denver program will be neighborhood based and follow parking principles and processes developed in this plan.

Expand Parking Supply

Once an area has an established on-street and off-street price for parking, it becomes much easier to use this revenue to build additional parking facilities. Supply based strategies better use the supply of parking spaces. It also creates an incentive to share parking or to encourage new development that can use existing parking. In New York, there are current discussions regarding how parking requirements and parking supply are reducing the availability of affordable housing. This can apply to many other areas that have underutilized properties or development projects that can develop affordable housing units.

Central City Neighborhood Partners (CCNP) is a community based organization in Los Angeles that recognizes the value of parking in the development of affordable housing. The CCNP has issued recommendations to reduce parking requirements in their neighborhood to facilitate the development of more affordable housing. CCNP supports shared use of parking and strategic placement of parking structures in their community. CCNP recommends that some of the cost savings be reinvested into the community, supporting affordable housing and a more walkable and transit friendly community.[21]

The Daly Group (2009) is working with the City of Oxnard to create the Village Specific Plan. This is a 63-acre pedestrian and transit oriented development located in the Wagon Wheel area of Oxnard, California. Planned uses include retail, restaurants, commercial office, residential, recreational and transit opportunities. It provides a variety of housing types to attract a wide range of household types

[21] Central City Neighborhood Partners et al, 2010.

and income levels. The plan has an innovative program that combines a reduction in parking requirements with added transit incentives and “first right of refusal” for affordable housing units.[22]

While tandem parking has been considered in some cities as a solution to expand supply or optimize the use of existing space, it has not been found to be used extensively in affordable housing applications due to site constraints and the need to actively manage on-site parking. The Appendix for Chapter 7.0 provides some more detailed information about tandem parking practices and examples where it has been used/applied in affordable housing.

The following table summarizes how some of these strategies can work to support affordable housing.

[22] Daly Group. January 2009. Village Specific Plan. City of Oxnard. Oxnard, CA.

Table 2: Parking Management for Affordable Housing

Parking	Existing Affordable Housing	Incentives and Planning for New Affordable Housing	Comments
Demand: 85% occupancy; TDM strategies including bikes, walking, car sharing etc.	Demand can be higher than expected in areas with multiple families sharing housing with limited walkability and transit options; Demand can be managed in areas that are walkable and transit accessible	Set on-street and off-street demand targets (85%); create incentives to use alternative modes;	Use off-street and on-street demand (85%) to determine parking needs
Location: Shared parking incentives; off-street and on-street system	Residents prefer to park off-street in a secure area; visitors can park on-street; excess cars can be parked on-street	Design for primary vehicle off-street and on-site; excess cars can be priced or parked on-street; visitors can park on-street	Use on-street available parking
Time: 2 hour time limits except residential parking permit (fee based with limit per unit or address)	Time limits can be used to encourage turnover and provide visitor parking spaces; however – incur cost of enforcement	Can be used to encourage turnover and create on-street visitor parking; valuable in mixed use areas (retail parking) or in combination with residential parking permit (RPP) programs	Use RPP and time limits in appropriate residential locations
Price: 85% on-street utilization; unbundle 2nd space; residential transit pass program; enhanced transit and TDM incentives	Pricing can be used if parking is unbundled from lease and off-street and on-street demand is high	If demand is high enough, pricing strategies may become effective; Create incentives to unbundle parking; this may start with 2nd car. Price on-street parking to encourage turnover	Price on-street and excess residential parking (unbundle); unbundled parking needs to be tied to comprehensive parking system. Pricing creates potential financial resource and incentive to share parking resources and improve alternative mode options.
Supply: demand based parking requirements; tandem; parking reductions for affordable housing near transit and in walkable communities	Residents park off-street; visitors park on-street; extra household vehicles park on-street	Residents primary vehicle park off-street; visitors park on-street; extra household vehicles park on-street or are unbundled and priced on-site	Create demand based parking requirements based upon average household vehicles , household income, walkability and transit access

Conclusions

Parking is a critical component of affordable housing, because required parking minimums can heavily impact the overall cost of development. Cities and localities that offer reduced parking minimums for affordable housing can better attract developers to build affordable housing, because the overall cost of the project can be reduced.

Depending on the locality, inclusionary zoning policies can impact the total number of affordable dwelling units for a project. This results in a balancein the cost savings from reduced parking minimums, to determine a variety of different financing and cost options. When done correctly, affordable housing policy, inclusionary zoning policy, parking requirements, transit overlay zones, smart growth, transportation demand management or other specific plan policies, can result in a planning process that lets the policies build upon one another and strike a balance of parking, development costs, alternative modes of transportation and affordable housing dwelling units.

Regardless of the parking policies for any city, when the parking requirements complement the inclusionary zoning policy, the city can use the parking requirements to influence the development pattern for an area. These policies combined with the appropriate data, can result in a parking program that works in conjunction with the other policies (inclusionary zoning, specific plans, transit area overlay zones, etc.) to define the character of a community, or neighborhood and enhance affordable housing opportunities.

Development of the affordable housing parking program requires:

- Extensive data and information (parking inventory, demand, turnover, price).
- Development of demand based parking requirements based upon parking studies.
- Transit, smart growth, parking management and transportation demand management programs, policies and strategies.
- Utilization of appropriate parking demand, location, time, price and supply strategies.

Table 3 represents some of the best practices that cities have incorporated when developing parking policies and affordable housing. The key finding from the review of parking management best practices was that the cities that have the most successful affordable housing policies were those that layered parking management and travel demand management (TDM) strategies. Due to the layering of these strategies, affordable housing developments or developments with inclusionary housing are located in high density, high transit areas with a higher probability of success.

Table 3: Best Practices of Affordable Housing and Parking

Strategy	City	Description
Reduced Parking Minimum	**Berkeley, CA**	75% parking reduction for senior or disabled living
	Boulder, CO	Reduction in parking minimum for affordable housing based on site
	Eugene, OR	0.67 per affordable housing habitable room or 3 spaces total for dwelling unit, whichever is greater based on total available units
	Denver, CO	25% parking reduction for affordable housing units
	Long Beach, CA	20% of required parking may be reduced if a parking study can demonstrate the use will generate less parking through a joint use parking facility or other parking management program
	Los Angeles, CA	Up to 50% reduction in parking for affordable housing units
	San Leandro, CA	25% parking reduction for affordable housing units and 50% parking reduction for senior or disabled living
	Santa Barbara, CA	1 space per dwelling unit for affordable housing parking maximum
	Santa Clara, CA	25% parking reduction for affordable housing units for developments near transit stations, have mixed use, or participate in a TDM plan
	Seattle, WA	Parking maximum of 1 parking space per two affordable housing single dwelling unit
	Pasadena, CA	25% parking reduction for affordable housing units
Inclusionary Housing	**Eugene, OR**	Eugene requires developers to guarantee the units remain affordable for a minimum amount of 10 years when building affordable housing or senior/disabled living before granting reduced parking minimum.
	Denver, CO	Denver asks developers to agree to include a minimum of 10% (up to 20%) of all housing units to be labeled as affordable housing, and ties parking reductions to inclusionary zoning.
	Santa Clara, CA	Requires all housing units with over 10 units to provide 10% of the dwelling units to be affordable housing units and leverages the reductions in parking minimums from TDM participation, building near transit, and mixed use developments as incentives for developers to follow.
Inclusion of TDM Strategies	**Boulder, CO**	Comprehensive plan that will integrate housing and parking demand with a residential bus pass program, required bicycle parking, district based car sharing, and local transportation management associations.
	Seattle, WA	Developments can receive reductions in parking minimums if they include bicycle parking and car sharing on site.
	Santa Clara, CA	Santa Clara partnered with the local transit agency to develop a residential bus pass program so that all residents can be provided with a free bus pass that is

Strategy	City	Description
		either paid for by the developer or property manager. Various passes are available and vary in price and distance.
Proximity to Transit	**Los Angeles, CA**	Reduces parking minimum to 1 parking space per unit, for a project located within 1,500 ft of transit
	Portland, OR	No parking minimums for sites within 500 ft of transit service that has less than 20 minute headways
	San Leandro, CA	San Leandro incorporates affordable housing with their TOD projects by offering extra parking reductions for affordable housing and/or senior/disabled living dwelling units near TOD sites.
	Santa Clara, CA	Reductions in parking minimums granted to developments that are near transit.
	Seattle, WA	Requires bicycle parking and offers a 20% reduction in parking minimums if development is located within 80 feet of a transit station
Comprehensive	**Boulder, CO**	Boulder is developing new parking management zones for TOD sites that will use parking maximums and reductions based on conditional use, which can further reduce parking for affordable housing near transit.
	Denver, CO	Denver (2010) has developed a strategic parking plan that recognizes the importance of parking in determining transportation choices. The study looked at 11 Denver neighborhoods and concluded that at least 25% of the parking spaces in each area are vacant and will now use the findings to better balance affordable housing, transit, and parking.
	Portland, OR	Portland uses affordable housing as a mixed income catalyst in its urban areas. Rather than develop reductions strictly for affordable housing, Portland zones its downtown and transit zones to accommodate affordable housing by removing parking minimums and implementing parking maximums.
	Seattle, WA	Seattle places affordable housing units in urban areas to support a mix of income levels, increase density and leverage transit investment. Parking requirement is reduced in these areas.
	Pasadena, CA	Pasadena provides affordable housing with inclusionary zoning and has an alternative-parking requirement for all developments that contain affordable housing units. The City of Pasadena encourages developers in Parking Benefit Districts to develop affordable housing units because the parking costs are higher in parking benefit district areas and the revenue collected from the parking is redirected to improve pedestrian and transit infrastructure.

It should be noted, that while many cities have implemented parking strategies for affordable housing projects as discussed above, no city has conducted as comprehensive a data collection and statistical analysis to determine the link between parking behavior and affordable housing as has the City of San Diego. That said, the City of San Diego is in a unique position to understand the relationships and nuances in order to develop a more robust and realistic set of affordable housing parking policies that can positively impact affordable housing.

The city now has a solid foundation of data that clearly links parking demand to affordable housing project types and characteristics, land use and transportation infrastructure which can be used to support, refine and update policies that the city already has in place.

This will create an opportunity to provide affordable housing projects with a higher probability of success in areas encouraging increases in density, transit use, and walkability, which are catalyst for successful smart growth implementation.

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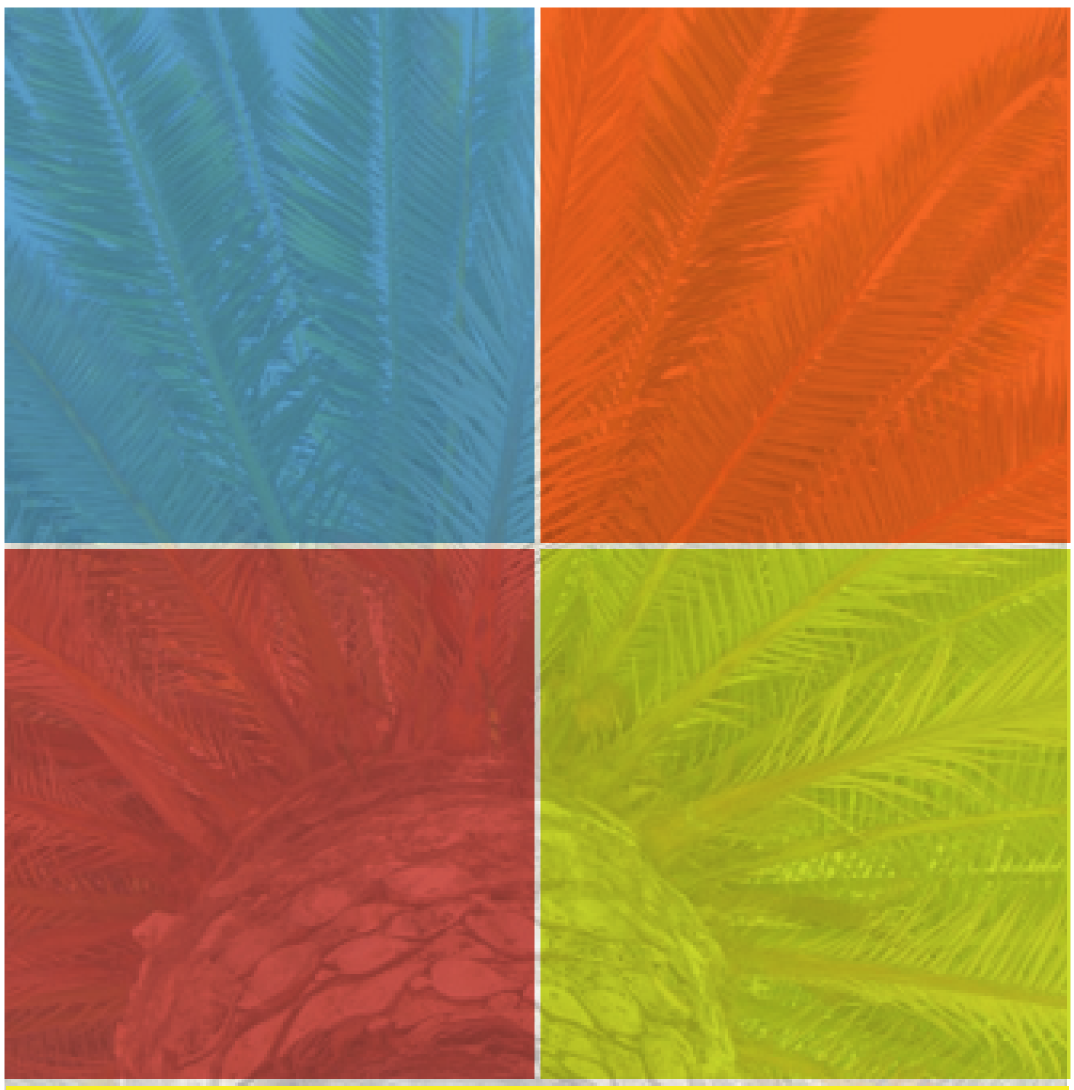
Appendix 7.0 Tandem Parking and Affordable Housing



Appendix 7.0 Tandem Parking and Affordable Housing

Introduction

Tandem Parking is defined as when two motor vehicles are parked nose-to-end facing in the same direction. The first vehicle does not have independent access, and the second vehicle must move to provide access. The purpose of tandem parking is to maximize the number of motor vehicles that can be parked in a limited space. The practice of tandem parking works differently for different land use types.

In buildings of commercial, and or public use, this arrangement generally requires the service of a valet or attendant to access the vehicles parked in tandem. In some cases, tandem parking is used sparingly, and may be used as storage or for only one vehicle.

The success rate of using tandem parking in a residential lot depends on the density of the area. For multiple car owning families, tandem parking assigned to the same unit can reduce parking shortages and maximize use of sites with difficult design issues. For families, students or individuals unrelated to each other with different schedules, the problem with tandem parking is that someone is boxed in and cannot move their vehicle.

Tandem Parking in Affordable Housing

Studies have shown that income and vehicle ownership are strongly correlated, with the likelihood of owning one or more vehicles increasing with income. The likely residents of affordable housing do not require as much parking. The parking needs of residents in a dense urban environment near transit may also be decreased. Some projects allow for use of tandem parking which results in a more efficient use of land and parking spaces. Tandem parking can be a creative tool used to meet parking demand and may be applicable to affordable housing projects with multiple bedrooms that anticipate more than one car per household and are developed in an area with very limited space. Current city practices regarding tandem parking requirements can be found in the parking code or in specific plans and generally seem inconsistent and confusing. The following are examples of tandem parking and affordable housing requirements and options.

- The City of Carson allows tandem parking for affordable housing developments and projects located in a Mixed-Use Overlay District, with a maximum of 25% of the parking to be provided as tandem for qualifying projects. The project providing two parking spaces in tandem must have a combined minimum dimension of 9 feet by 36 feet.
- The City of Pasadena uses tandem parking for multi-family and mixed use projects as a developer option for affordable housing projects. Tandem parking is allowed (up to a maximum

of 30% of the parking requirement) for projects that contain affordable housing. These spaces must be assigned to same unit and have a combined minimum dimension of 9' x 34'.

- The City of Long Beach has a variety of different neighborhood districts that offer different incentives for affordable housing. The most unique tandem parking service offered for developers in Long Beach affordable housing districts is valet tandem parking.
- The City of Phoenix offers tandem parking as an option if it is a multi family project and a total of 20% of the units are affordable housing.
- The City of Denver waives 10 required parking spaces for each additional affordable unit. This can reduce up to a total of 20 percent of the original parking requirement. While tandem parking for a single unit can be part of the solution, Denver considers 2 tandem spaces to be the equivalent of 1.5 parking spaces, thereby actually becoming a disincentive for tandem parking because the developer would still need to supply more parking to meet the parking requirement. This is dependent upon location and only applicable in certain affordable housing districts.

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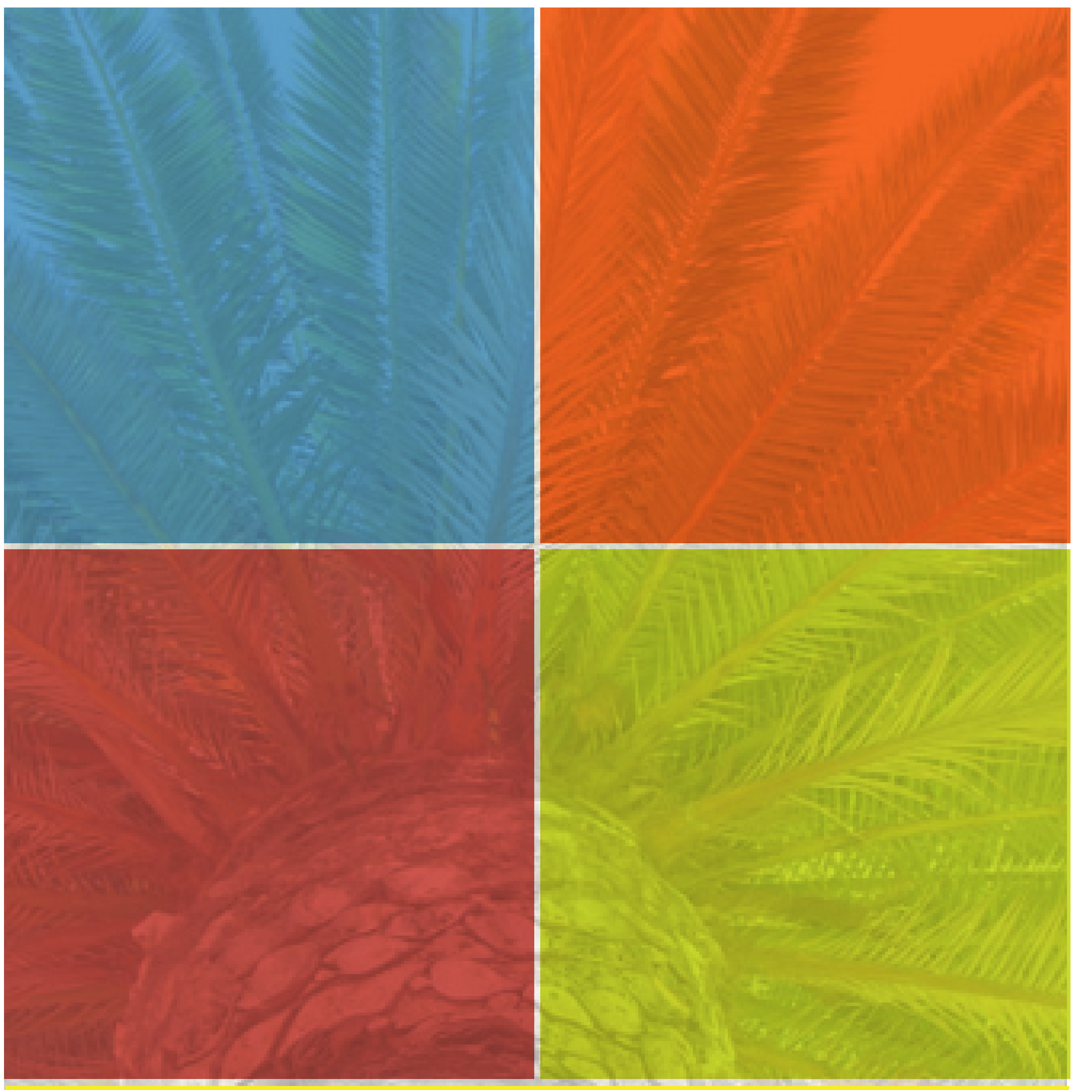
CHAPTER 8.0 Illustrating the Impacts of Proposed Requirements



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8.0 Illustrating the Impacts of Proposed Requirements

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Tables and Figures

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8.0 Illustrating the Impacts of Proposed Requirements

Parking Model in Application

Eleven projects are selected to illustrate the implications of the proposed requirements, six of which were surveyed as part of the project, and five of which were identified as candidate sites but not surveyed. The projects are intended to represent a variety of project types, bedroom mixes and transit contexts. Table 1 lists the projects and their characteristics.

The parking model uses a combined walkability/transit index to represent three different environments: suburban areas, urban areas, and core areas. The assumptions in it represent the preferences gleaned by the consultant team from an assessment of housing and transportation issues in San Diego, interactions with stakeholders, examination of other local policies, etc. The purpose of examining real projects is to help decision-makers understand the practical implications of the parking model, in terms of the parking supply and impacts on the cost of providing affordable housing. As shown previously, the model can be adjusted for assumptions about the desired vacancy rate and parking pricing.

Table 1. Projects Selected to Illustrate Proposed Requirements

Type	Project	Number of Units	Bedroom Mix	Walkability/ transit index classification	City GIS land use characterization	Surveyed?
Studio	Via Harvey Mandel	90	85 studio/ 5 1-bedroom	Urban	Downtown	Yes
Family (large)	Beyer Courtyard	60	30 2-bdrm., 30 3-bdrm.	Suburban	Pre-World War II (pre-1945)	Yes
	Windwood Village	92	12 1-bdrm., 48 2-bdrm., 32 3-bdrm.	Suburban	Master Planned Suburban (1970 – Present)	Yes
	Seabreeze Farms	38	21 2-bdrm., 17 3-bdrm.	Suburban	Master Planned Suburban (1970 – Present)	No
	Gateway Family	42	17 2-bdrm., 25 3-bdrm.	Urban	Pre-World War II (pre-1945)	No
Family (small)	Regency Center	100	1 studio, 68 1-bdrm., 31 2-bdrm.	Suburban	Pre-World War II (pre-1945)	No
SRO	Island Inn	197	197 studio	Urban	Downtown	Yes
	Studio 15	275	273 studio, 2 other	Urban	Downtown	No
Senior	Renaissance Seniors	96	87 1-bdrm., 9 2-bdrm.	Urban	Pre-World War II (pre-1945)	Yes
	San Diego Apartments	16	2 studio, 14 1 bdrm.	Urban	Pre-World War II (pre-1945)	No
	Horton House	153	49 studio, 102 1-bdrm., 2-2bdrm.	Core	Downtown	Yes

Table 2 shows the calculated parking requirements for the eleven projects under a variety of methods and approaches. The first calculation is the number of spaces required under normal code requirements or the special Centre City Planned District (CCPD) requirements, if the projects are so located. Column C shows these baseline requirements. These calculations are estimates based on straight application of the per-unit and visitor or common area parking requirement. These estimates do not reflect case file research about particular project characteristics, but are provided to show the general application of existing parking requirements.

Column D shows the number of spaces required if the code reductions for "very low income" or "transit area overlay zone" (TAOZ) are applied to the column C estimates. Column E shows the requirements under the City's density bonus provisions, which start with a lower base rate and offer additional transit area and very-low income reductions. These calculations assume that all reductions are applied and that standard City common area parking requirements apply. Column D and E show N/A for projects in the CCPD, since those requirements supersede city-wide requirements.

Column F shows the spaces required applying the parking model developed in Chapter 6.2.[1] And finally, Column G shows the actual spaces supplied at each site and Column H shows the actual peak overnight occupancy measured at each site (where available).

Table 2. Comparison of Spaces Required Under Different Standards

A. Type	B. Project, # of units, special district (if any)	C. Spaces required under current code with no reductions for increases, or Centre City Planned District (if applicable)	D. Spaces required if reduction for "very low income" or "transit area adjustment" is applied	E. Spaces w/ all density bonus 143.0790 adjustments (transit area + very-low income)	F. Spaces required under Chapter 6 parking model, including visitor, staff and vacancy factor	G. Actual spaces supplied	H. Peak overnight parking occupancy (surveyed projects)
Studio	Via Harvey Mandel, 90 units, CCPD	22[2]	N/A	N/A	33	26	20
Family (large)	Beyer Courtyard, 60 units	153	136	108	114	118	19
	Windwood Village, 92 units	223	196	151	149	195	144
	Seabreeze Farms, 38 units	96	85	68	65	73	N/A
	Gateway Family, 42 units	108	96	76	62	92	N/A
Family (small)	Regency Center, 100 units	198	168	97	142	100	N/A
SRO	Island Inn, 197 units, CCPD	87[3]	N/A	N/A	43	86	52
	Studio 15, 275 units, CCPD	85[4]	N/A	N/A	61	55	N/A
Senior	Renaissance Seniors, 96 units	178	149	68	87	103	37
	San Diego Apartments, 16 units	28	23	10	13	4	N/A
	Horton House, 153	Conditional use	N/A	N/A	48	17	14

[1] The model assumed that the desired vacancy rate is 10%.
[2] Assuming classified as living unit, 50% AMI, or 0.2 spaces per unit; requirement for less or equal to 40% AMI is zero spaces.
[3] Assuming classified as living unit, 50% AMI or 0.2 spaces per unit; requirement for less or equal to 40% AMI is zero spaces.
[4] Assuming classified as living unit, 50% AMI or 0.2 spaces per unit; requirement for less or equal to 40% AMI is zero spaces.

	units, CCPD						

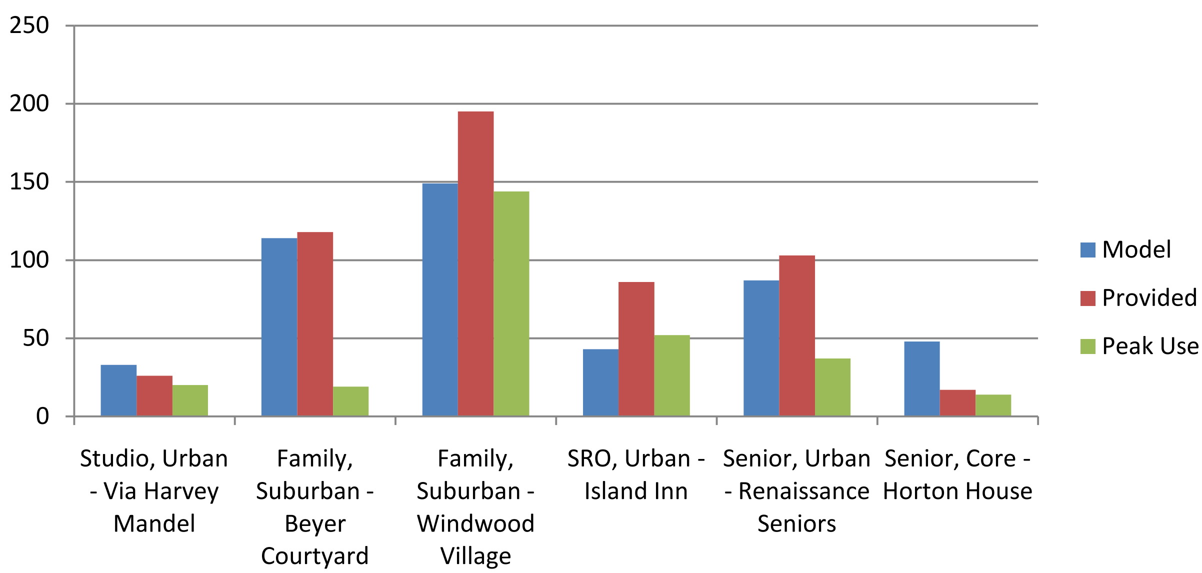
A review of the results shows that the City's parking requirements can vary considerably for a single project, depending on whether parking reduction measures are applicable. The number of spaces required under the proposed parking model are generally lower than normal code (non-CCDC) provisions (Column C) and the normal city adjustment for "very low income" or "development within the TAOZ". However, in a number of cases, the actual parking supplied was less than these provisions, suggesting that modifications were made in the development approval process.

In the CCDC, the model predicts demand levels that are similar to what is required under Section 156.0313 CCDC provisions. These projects reflect a City policy choice to reduce requirements to support a transit and walking-focused area. This is appropriate in areas where there are on-street parking controls, such as time limits and pricing.

Applying the Code's full density bonus provisions in Section 143.0790 produces a requirement and parking supply that are reasonably close together.

Figure 1 uses the data provided in Table 2 to summarize the amount of parking demand estimated by the model, the amount actually supplied, and the peak use measured in overnight counts for the six of the projects where *all* of that data is available. Note that this is not the average data for the affordable housing category, but the results for specific projects.

Figure 1. Comparison of Number of Spaces under Parking Model, Actual, and Peak Overnight Use



The general implications from the previous tables and Figure 3 are the following:

- There is similarity between the *actual parking supplied*, as the result of existing codes, and the *model prediction* based on household surveys. In other words, the current City of San Diego code and code adjustment mechanisms, which account for geographic area, transit proximity, and income characteristics, are resulting in parking supplies built in rough proportion to the model prediction based on vehicle availability reported by households. Exceptions to this conclusion include the Family Windward Village (suburban) and SRO Island Inn (urban) projects where parking provided exceeded the model prediction. In the Horton House project (core area and CCDC), the model predicted more than what was provided, in part because a policy decision has been made to deemphasize automobile access in favor of other modes.

- The *actual peak overnight use*, as measured by field counts, is generally somewhat less than both the *model prediction* and the *amount provided* based on the code. As noted before, this occupancy measurement represents a snapshot in time rather than the total parking occupancy potential of residents and it excludes those who may be away overnight or who parked a vehicle on the street. The levels are similar in the case of the Studio Via Harvey Mandel (urban), Family Windwood Village (suburban), and SRO Island Inn (urban) projects. The Beyer Courtyard project had very low occupancy on the day of survey. The consulting team considers this project as an outlier rather than a reliable indication of demand for family suburban housing.

A caveat to the previous observations is that we are examining the parking model's demand predictions and actual overnight parking occupancy under conditions where parking is not priced or otherwise restricted. Should a policy decision be made to restrict parking availability to residents and/or price parking, observed demand levels would be less. Such decisions could follow policies that emphasize alternative travel modes and maximize the amount of affordable units produced for the subsidy dollar.

If parking is overbuilt for affordable housing projects, this practice comes at a cost of higher project development costs and/or lower density. The previous analysis suggests that significant overbuilding of parking is not occurring in most of the projects studied. Should overbuilding occur, however, Table 3 summarizes the difference in project development costs associated with different levels of overbuilding. The impact on the cost of project is illustrated for surface parking ($5,000 per space, including land) and podium parking ($15,000 per space, exclusive of land). These costs are for illustrative purposes; site specific land and construction costs should be used for analysis concerning individual projects.

Table 3. Impacts of Revised Parking Requirement on Project Costs

Number of excess parking spaces required	**Cost @ $5,000 per spaces**	**Cost @ $15,000 per space**
50	$ 250,000	$ 750,000
100	$ 500,000	$ 1,500,000
150	$ 750,000	$ 2,250,000
200	$ 1,000,000	$ 3,000,000

Table 2 shows that significant cost savings are possible if parking requirements can be lowered while still meeting the objectives of the project and the community. This economic burden may be considered in the context of other project features that could be included, such as open space, childcare facilities, or design enhancements. On tight or difficultly configured sites, excess parking requirements can reduce the amount of units that can be built, further affecting the cost structure of the project.

Conclusions from Model Tests on Existing Projects

This task tests the parking model using eleven real projects in the City of San Diego. The results of the model are compared with existing code requirements, including special provisions for geographic location and project characteristics. The model shows that the existing San Diego code, with the current adjustment procedures for transit access, income, and special zones, requires parking levels that are in the same order of magnitude as those predicted by the model.

The main conclusion from these tests is that current requirements *do not* require significantly more parking than the household survey-based parking model would suggest. The actual overnight parking occupancy in projects (where that data was available) was less than the current requirements and the model prediction, but overnight parking counts do not account for visitor parking, overnight trips by residents, and some other aspects of demand.

Decisions about *how* parking requirements should relate to the demand-based model are fundamentally policy decisions. Some cities reduce residential parking requirements below demand to support transit and housing affordability goals; others want parking supply to match demand or exceed it by a modest degree. Which direction San Diego takes depends on overarching land use, community development, and transportation goals.

There are a number of options for using the parking model, listed as follows:

- Continue existing code provisions; use the model for case-specific variance studies for affordable housing. This use could account for variation in the parking demand of individual affordable housing projects noted in the surveys. The model allows the analyst to specify unique factors for parking rates, vacancy rates, etc.
- Use the model to create a lookup table of new affordable housing parking requirements to replace existing code provisions, creating requirements for each housing type, by bedroom count and walkability/transit context (see Chapter 9). This would require new land use definitions for affordable housing in the parking requirements, and applicants would have to determine their walkability/transit category by referring to information on land use and transit service in their project vicinity. Alternatively, the City could produce a GIS map that shows the walkability and transit service rating (core/urban/suburban) for each parcel.
- Re-specify the model with new walkability/transit area definitions at such time as a comprehensive revision to the transit accessibility provisions of the City's parking requirements is made. This would ensure geographic consistency (i.e., the same boundaries) among parking reductions for walkability and transit across all land uses.

The decision about which of the three options for changing affordable housing parking requirements, as listed above, pertain to the City's preferences for comprehensive versus land use-specific reform to parking requirements, and its overall work program regarding ordinance reform.

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CHAPTER 9.0 **Recommendations**

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9.0 Recommendations

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Tables

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9.0 Recommendations

The Process for Developing Requirements

Chapter 6 details the statistical analysis and outlines the policy choices that should be considered in creating affordable housing parking requirements. As cities assess local demand factors and their policy goals, minimum parking requirements are becoming more varied. Cities tailor requirements to project and neighborhood conditions, and local policies. The parking requirement approach discussed in Chapter 9 illustrates the basis for new affordable housing requirements for San Diego. Chapter 9 outlines recommendations that the City and its partner agencies may adopt so they can refine the process of mandating minimum parking requirements for affordable housing.

Key Findings and Uses of the Model

The analysis of San Diego's existing parking requirements for affordable housing reveals that current parking requirements, which account for differences in transit access, Centre City locations, and income characteristics of residents result in parking amounts that are generally consistent with the predictions of the model. There are a number of options for using the parking model developed here, listed as follows:

1. Continue to use the existing parking regulations; use the model for case-specific variance studies for affordable housing.
2. Use the model to create a lookup table of new affordable housing parking requirements based on each housing type, bedroom count and walkability/transit context.
3. Re-specify the model with new walkability/transit area definitions at such time as a comprehensive revision to the transit accessibility provisions of the City's parking requirements is made.

It is recommended that the City pursue the second approach because it offers the most accurate method of accounting for the range of variables which have been shown by this analysis to influence the parking demand. The recommendations that follow assume that the City decides to proceed with the second approach.

Recommendations

The following process develops a new parking model for affordable housing. This parking model/look up table is based on data from the statistical model developed from the study data, as well as current research and best practices from similar communities.

1. Types of affordable housing to be included

The statistical analysis for this study showed that household vehicle availability is related to the type of affordable housing being considered, justifying specific requirements based on type of housing. Based on these results, the consulting team recommends the requirements be developed based on the following affordable housing types:

- Family Housing: Housing designed to meet the needs of families, usually providing two or more bedrooms in each unit, with full kitchen and bathroom facilities in the unit.

- Senior Housing: Housing designed to meet the needs of senior citizens. As defined by HUD, senior housing can be occupied solely by persons who are 62 or older or, it can house at least one person who is 55 or older in at least 80 percent of the occupied units and adhere to a policy that demonstrates intent to house persons who are 55 or older.

- Living Unit/SRO Housing: SRO *hotel room* means a single room occupancy *guest room* or efficiency unit, as defined by California Health and Safety Code section 17958.1, intended or designed to be used, or which is used, rented, or hired out, to be occupied, or which is occupied, as a primary residence by guests. CA H&S Code Section 17958.1 states in part, that an efficiency unit is used by no more than two persons, has a minimum floor area of 150 square feet and may also have partial kitchen or bathroom facilities.

- Studio/1-Bedroom: Housing designed to meet the needs of an individual, usually providing one bedroom or less, with full kitchen and bathroom facilities in the unit.

  Special Needs: Housing linked to supportive services for homeless, at-risk of homelessness, mentally ill or dually diagnosed, physically disabled or other special needs populations.

Other types of affordable housing such as transitional housing should be determined on a case-by-case basis. With regard to income as an influence on parking demand, Chapter 6 found that income and parking demand were positively correlated, but that housing type captured much of the same impact. In other words, the incomes in family housing were higher than those in SRO housing. Housing type is suggested here instead of income because it is better to base parking requirements on building characteristics than demographic factors that could change over time. Appendix 6.0 shows a different way of slicing the data. The analysis clearly shows that vehicle availability increases with income, as high income affordable housing households have more vehicles. As such, it would be possible to construct parking requirements around income rather than affordable housing type. The income table is provided for background information and reference should a different basis for the requirement be preferred.

2. Demand measurement - use of mean measurement of demand

Mean Vehicle Availability

An important consideration in recommending parking requirements is the way in which basic demand data is used. The statistical analysis conducted in support of this study reported the mean (average) level of vehicle availability at the household level. Using the average level of vehicle availability strikes a balance between the risk of providing less parking than demanded (if a specific project had higher than average demand) and spending money building more parking than required (if a specific project had less than average demand). This approach is most likely to ensure the right amount of parking for the average project of a particular type.[1]

The statistical analysis for this study showed the mean household vehicle availability to be 0.68 vehicles per household. Since household vehicle availability is a discrete choice (0, 1, 2, etc.) percentile analysis is not informative. Accordingly, the consulting team recommends using the mean to develop requirements.

This section illustrates parking requirements based on the mean level of parking demand. This allows the use of individual household level data in calculating vehicle availability and would support a policy seeking to avoid overbuilding parking because of impacts on housing affordability. A parking vacancy factor can be used to provide a cushion of supply above the mean demand. The parking rates in the spreadsheet model are based on the average parking demand observed (rounded up). As mentioned, where the sample is small or non-existent, rates were estimated.

3. Future walkability and transit conditions

The parking model differentiates between three levels of a combined walkability/transit availability measure, taking that combined indicator as representing future walkability and transit conditions. This method provides a research-based method of distinguishing between vehicle availability in different land use and transit contexts. Use of this method would require the availability of GIS resources that would permit project applicants to know in which category their project falls. In Chapters 6 and 8, the terms *suburban, urban and core* were used in the analysis to describe land use and transit context for each project. Suburban indicated a low density, limited mix of uses and low transit service, Urban indicated medium density, moderate mix of uses and medium transit service and core indicated high density, diverse mix of uses and frequent transit service. For code implementation, we recommend a simplified approach for index assignment for land use and transit characteristics in the project vicinity (low, medium, high).[2] The Walkability/Transit Index is developed as follows:

Walkability/Transit Index for Affordable Housing

The walkability index is calculated by assigning one point to each of the following land use characteristics:

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[1] It should be noted that The Institute of Transportation Engineers (ITE) *Parking Generation Informational Report* does not provide rates for affordable housing. The ITE counsels that professional judgment is needed to determine which type of measurement should be used in developing requirements. This is one of the reasons that original data collection was undertaken for this study.

[2] Suburban, urban and core walkability/transit indices have been simplified to low, medium and high, respectively.

- Commercial uses present within ½ mile
- Greater than 120 commercial parcels present within ½ mile[3]
- Office, civic or education uses present within ½ mile
- Greater than fifty (50) office, civic or education parcels present within ½ mile

The transit availability index is calculated by assigning the points indicated to each of the following factors:[4]

- 1 point - 0-15 peak hour rail or bus transit trips/hour
- 2 point - 16-30 peak hour rail or bus transit trips/hour
- 3 point - 31-45 peak hour rail or bus transit trips/hour
- 4 point - Over 45 peak hour rail or bus transit trips/hour

The combined walkability/transit index is calculated by taking a straight average of the walkability and transit indices and looking for natural break points in the data to reflect different walkability/transit conditions. The index ranges are as follows:

- Low: 0.0-1.99
- Medium: 2.0-3.99
- High: 4.0

Currently, the City can apply these ratings on a site by site basis. If the City wishes to undertake a revision to its existing Transit Area Overlay Zone or Centre City Planned District exceptions areas, it could create a GIS map of areas falling in the three categories noted above and compare it to the existing boundaries of current exception areas. If new boundaries are adopted, the model could be re-specified with those boundaries instead of the walkability/transit index provided here.

4. Parking pricing/unbundling

Parking pricing/unbundling for tenants is not currently supported by the City due to rental covenants applied to affordable housing developments. Certain funding sources used in constructing projects provide that there cannot be additional charges beyond rent in deed-restricted affordable housing. All the projects surveyed for this study provided residents parking free of charge, with only one project charging a fee for an additional parking space.

While charging for parking is an emerging practice for residential developments that can limit parking demand, the restriction noted above rules out this option.

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[3] The number of businesses were not considered as part of the analysis and is not the recommended approach. Total parcels are recommended. It was assumed more parcels in a project area signified greater density and this greater walkability. One multi-use commercial parcel is only one physical destination and the purpose of the walkability index is to identify multiple walkable destinations. Additionally, it was important that this approach de-emphasize the impact of larger destinations due to their auto-orientation. Big box retail (Walmart/Kmart) located within the ½ mile project radius are counted by parcel only. Measurement by square footage would significantly overemphasize their impact on walkability.

[4] Please note for trip assignment, a half-mile radius for rail service is recommended since rail stations generally have the largest catchment area of forms of transit. A ¼ mile radius is recommended for bus since it is less of a premium service than rail and bus stops normally have greater frequency.

The parking model has default values of 1.0, meaning that no reduction is being made to account for parking pricing. If conditions change and pricing of parking is allowed, then a percentage is entered in the model, e.g., 90 percent to account for the reduction in demand at a $30 per month rate.[5]

5. Spaces assigned or unassigned and vacancy factor

Parking requirements often include a vacancy factor (an amount above and beyond predicted demand) to account for that fact that in some land uses it is unlikely that all spaces will be completely filled because of inefficiencies in the parking space search process or restrictions on space use. An example of inefficiency in search process tends to occur in land uses such as large shopping centers that have high space turnover. Parkers have a hard time finding available spaces in these large facilities. An example of a restriction on space use is the use of assigned parking in residential complexes. In such an instance, for example, a daytime visitor to the complex cannot use an assigned resident space even if that resident's vehicle is at work and the space is empty. A vacancy factor provides some extra parking spaces to help residents, visitors and staff to find convenient spaces. A second justification is that the extra parking provides for unique times (or unique projects) when parking demand is higher than normal. This would occur if the residential occupancy per unit was higher than normal, leading to an increased parking demand.

Weant and Levinson (1990) suggest a 10 percent vacancy factor[6] but the appropriate vacancy factor should be considered by project planners on a case-by-case basis. Factors to be considered include assigned versus unassigned parking and special project characteristics that may increase demand. A base 10% vacancy rate is applied in the model, but this should be adjusted to project circumstances. If parking is not assigned to users or specific units, for example, there may be a justification to reduce the vacancy factor, since sharing can occur between residents, visitors, and staff parking uses.

The consultant team recommends instituting a practice of unassigned parking to optimize use of the entire on-site supply.

6. Visitor parking

The parking model/look-up table includes an input variable for visitor parking. The visitor parking rate from the *ULI Shared Parking* model is applied in most situations in the parking model (0.15 spaces per unit).[7] This is somewhat lower than the approach in the existing City code, Section 142.0525, which specifies that 20 percent of off-street required parking spaces be provided as "Common Area" parking in Planned Urbanized Communities.

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[5] See Chapter 6.0, page 6-24.

[6] Weant and Levinson. (1990) *Parking.* Westport, Connecticut: Eno Transportation Foundation.

[7] Smith, Mary. (2005) *Shared Parking, Second Edition.* Washington DC: Urban Land Institute and International Council of Shopping Centers.

The parking model/look-up table sets visitor parking demand estimates for some types of housing in the High Walkability/Transit index to zero since in dense urban areas parking resources act as a shared parking pool, and visitors will park in on-street and other off-street parking facilities or use transit.

Visitor parking requirements can also be reduced if parking is not assigned to specific units, because visitors can use spaces vacated by residents when they are on vehicle trips outside their complexes.

7. Staff parking

A staff parking rate of 0.05 spaces per unit is used in the parking model/look-up table (the average number of staff parking spaces assigned per unit among the projects that did assign staff parking is 0.051). This rate may vary, depending on the level of staff provided in different types of housing. For example, senior or special needs housing may have nursing staff not found in other affordable housing. It is recommended that staff parking be considered on a case-by-case basis in all projects, with a 0.1 staff parking rate considered for staff intensive affordable housing developments.

8. Tandem parking

One site surveyed in the study had spaces marked for tandem parking (Island Village). However, this site did not actively use the tandem parking spaces. Additionally, when questioned in focus group session, developers indicated that tandem parking has not been a useful tool to meet on-site parking requirements. In most cases this was due to site design constraints and the need to assign and actively manage parking. That said, tandem parking would need to be in larger projects (i.e. family) that have more than one space assigned per unit in order to be successful. The parking model/look-up table does not include tandem parking because it affects the square footage of building or land area devoted to parking, not the number of spaces required.

9. Parking Model/Look-Up Table

The look-up table on the following page is based upon the recommendations discussed in this section. It is recommended that this table be used as the zoning code tool for determining the appropriate parking requirements for affordable housing projects.

The look-up table can be used by City staff and applicants to determine a project's parking requirement. The shaded cells are completed by the user, first identifying the affordable housing type (e.g., family housing, living unit, etc.) and the number of bedrooms (Columns B – E). Based on the location of the project (in low, medium, or high area), the user multiplies the number of units by the respective parking rate in Row 2. A subtotal of unit requirements is entered in Column F. Then requirements for visitor and staff parking are calculated in Columns G and H, and a subtotal of unit, staff and visitor parking is calculated in Column I. Finally, adjustment factors for pricing (if any) and a vacancy factor are determined in Columns J and K.

The housing types listed in the lookup table are not currently defined in parking requirements. This approach would involve creating these categories in the City's parking requirements. The current parking requirements, as mentioned previously, define some affordable housing categories and a very low income and TAOZ adjustment. The rates shown in Columns B – E are based on the vehicle household availability determined in the household survey as described in Chapters 6 and 8. Those data are rounded up and in some cases estimated where sample size was small.

Parking Management

Parking management may be a useful supplement to reforms of minimum parking requirements. The parking management best practices review found that the cities that have the most successful affordable housing policies were those that layered parking management and travel demand management (TDM) strategies.

The consultant team recommends parking management tools should be considered in the context of individual developments, drawing on best practice as appropriate. For example, sites could be required to have a transportation demand management plan (TDM).

Lookup Table Illustrating Affordable Housing Parking Requirements

Type of project		A. Total units	B. Studio Low/Med /High	C. 1 BR Low/Med /High	D. 2 BR Low/Med / High	E. 3 BR Low/Med / High	F. Subtotal for units (sum B3 – E3)	G. Visitor parking (G2*A1)	H. Staff parking (H2*A1)	I. Subtotal w/ staff + visitor (F3+G3+H3)	J. Total requirement with vacancy factor adjustment (I3*J2) Vacancy adj./no vacancy adj.
Family Housing	1. Units										
	2. Rate		N/A	1.0/0.6/ 0.33	1.3/1.1/ 0.5	1.75/1.4/ 0.75		0.15	0.05		1.1/1.0
	3. Spaces										
Living Unit/ SRO	1. Units										
	2. Rate		0.5/0.3/0.1	N/A	N/A	N/A		0.15	0.05		1.1/1.0
	3. Spaces										
Senior Housing	1. Units										
	2. Rate		0.5/0.3/ 0.1	0.75/0.6/ 0.15	1.0/0.85/ 0.2	N/A		0.15	0.05		1.1/1.0
	3. Spaces										
Studio – 1 bed-room	1. Units										
	2. Rate		0.5/0.2/ 0.1	0.75/0.5/ 0.1	N/A	N/A		0.15	0.05		1.1/1.0
	3. Spaces										
Special Needs	1. Units										
	2. Rate		0.5/0.2/ 0.1	0.75/0.5/ 0.1	N/A	N/A		0.15	0.10		1.1/1.0
	3. Spaces										

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WilburSmith
ASSOCIATES