A walk in San Francisco

A Pedestrian Study of Valencia St. and Leland Ave.

For the Planning Department of the City and County of San Francisco

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I would like to thank Adam Varat and Neil Hrushowy for the many hours they spent guiding me throughout this study.

Furthermore, I would like to thank the many staff of the Planning Department of the City and County of San Francisco who made my short time there an invaluable learning experience and opportunity to see planning at work.

Table of Contents

Introduction

Streets are most often seen serving the role of a travel corridor. Streets act as access ways permitting people to access goods and services, whether out of necessity or for pleasure. For residents and merchants along its length, streets are the first and most easily accessible public spaces. They can be like plazas and parks, serving both as spaces for individual activities such as rest, repose, and people watching, or as spaces of gathering, socializing, interaction and recreation. Ultimately, streets can be spaces which offer a sense of place, security, and identity for its users within the urban environment. The fact that streets can take on all these functions does not imply that streets will automatically do so.

Urban planning plays a major role in improving the quality and character of the urban environment. Urban planning works to affect change through physical interventions. It has little direct control over the types of human activities or social interactions that can or cannot occur in a public space. However, since the physical condition of public spaces is one of the factors that influences the types of activities that can occur within them, planning has a role to play in setting the social dimensions and qualities of the urban environment.

There are two goals for this study. The first is to establish a data set for future comparisons of pedestrian activity along streets under study to see whether physical changes through the form of streetscape improvements have the effect of encouraging greater and more diverse street activities. Secondly, this study aims to understand the current perceptions and opinions of street users on these two particular streets to evaluate their success as urban public spaces.

The two streets under study are in neighbourhood commercial districts. They mix commercial, institutional, and residential land uses that require streets to serve many of the necessary and optional needs of residents, merchants, and street users outlined in the preceding paragraphs. The diversity of land uses, as well as the physical design of streets in these districts have the potential to encourage a broad spectrum of human activities that make public spaces attractive, interesting, and inviting.

Study Area

The two streets under study are the 500 to 800 block of Valencia Street, located between 16th and 19th Streets, and the 1 to 200 block of Leland Avenue, between Bayshore Boulevard and Rutland Street. Both of these streets were selected because they are both neighbourhood commercial districts with streetscape improvement plans in place. These two areas serve as points of comparison to assess how future changes to their streetscapes influence the character, use and perception of these streets.

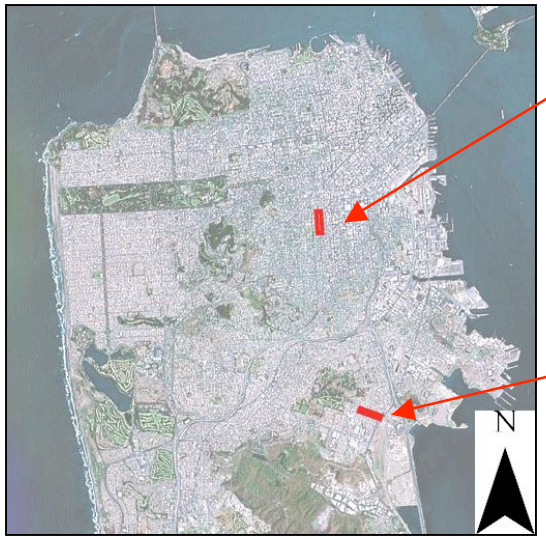
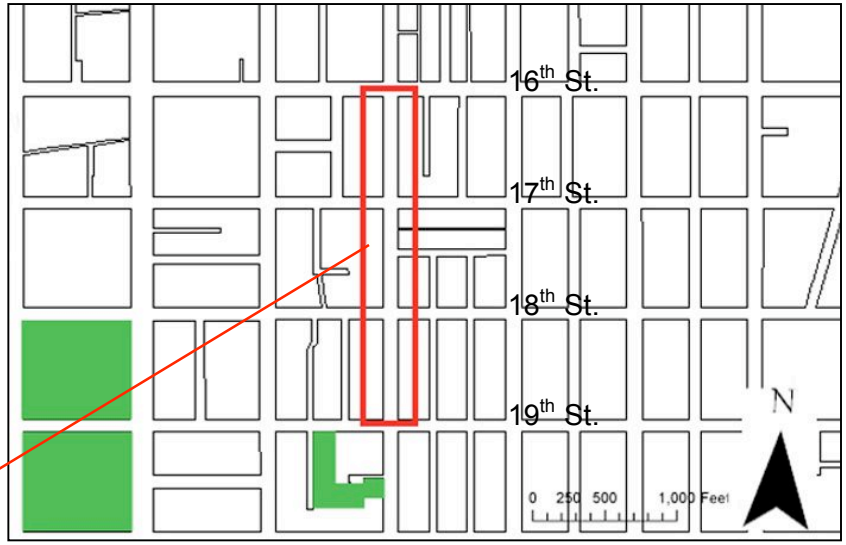


Fig. 1 Valencia St. study segment



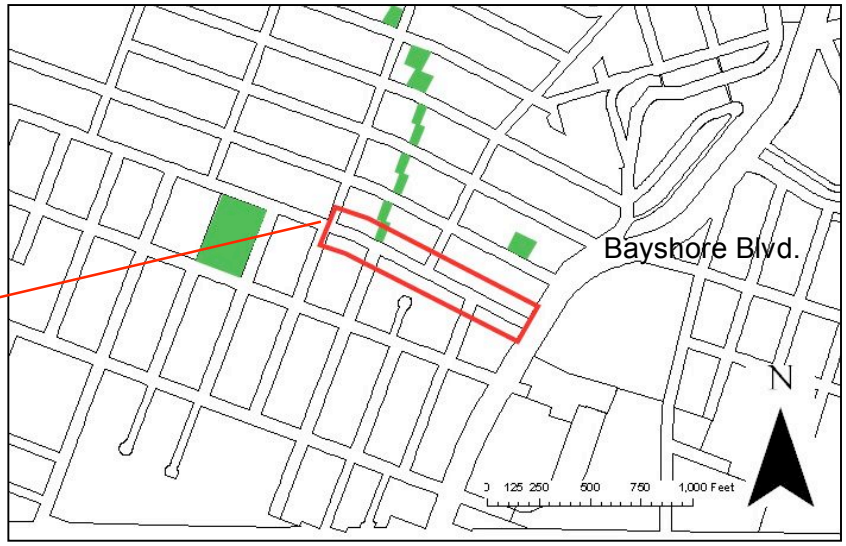


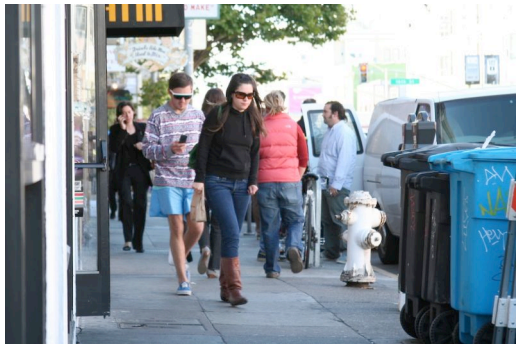
Fig. 2 Leland Ave. study segment

Methodology

Pedestrian counts, stationary counts and observations are used in tandem with a short pedestrian survey to achieve this project's goals.

Pedestrian counts

Pedestrian counts were conducted in June and July, on Tuesdays through Thursdays, and on Saturday when the weather was generally nice (see Appendix 1 for details of each count day). Counts were taken at or near midblock sections on Valencia St. between 16th and 17th St., and 18th and 19th St., from 10am to 10pm. An extended time period was used for Valencia St. to assess evening street activity due to the number of eating and drinking establishments present along the study area. Pedestrians were counted at three locations on Leland Ave.,



between 10am to 6pm. Count data from the two locations closest to Bayshore Blvd. were averaged. This was done because counting could not be done at the appropriate mid-block section due to the intersection of Desmond St. on one side of Leland Ave. The averaged data from the two count locations on either side of Desmond St. are believed to be more representative of pedestrian traffic. Averaged count data represents the segment of Leland Ave. bound by Bayshore Blvd. and Alpha St., here in referred to as Lower Leland Ave. Upper Leland Ave. refers to the segment of the street between Alpha St. and Rutland St.

Fifteen minute count intervals were taken sometime within each hour and multiplied by four to represent the pedestrian flows for that hour.

Stationary counts

Once during each hour of the sampled day, stationary activity on the street was also recorded. This was done by rapidly walking from one end of the block to the other and recording observed stationary activities. Typically, this walkthrough required no more than two to three minutes, and represents a snapshot of stationary activities during the sampled hour.

Observations

During the time spent on the street, qualitative observations were made of pedestrian activity. Specifically, this involved watching people's behavior and recording activities that demonstrated symptoms of sidewalk crowding, adaptive reuse of street objects, or a deficiency in physical design of the pedestrian realm in accommodating pedestrian needs. Behaviors ranged from very obvious activities such sitting or leaning on objects that were not designed for seating to more subtle activities such as waiting or eating ice cream in parked cars because there was no where to wait on the street.

Pedestrian surveys

To obtain information regarding the purpose of people's visit and their perception and satisfaction with the street's design, 100 and 93 surveys were conducted on Valencia St. and Leland Ave respectively. Surveys were carried out from Monday through Saturday, with the majority coming from weekdays. Randomness in the survey sampling was attempted by asking every person who

walked by to respond to the survey until a willing respondent stopped. Each survey took anywhere between five to fifteen minutes, after which attempts were made again to solicit responses from every passer-by. With regards to questions of satisfaction, respondents were given a 7-point scale on which to respond, where 1 represented unsatisfied, 7 represented satisfied, and 4 represented neither unsatisfied nor satisfied. In other words, values of 1 to 3 represented some level of dissatisfaction while values from 5 to 7 represented some level of satisfaction regarding the subject. Survey responses were analyzed using a statistical package and are summarized below.

Sample representation

The generalizability of survey results is addressed in the following section. Fig. 3 shows the hour at which surveys were collected for each street. The data can be said to represent afternoon street users of each street well. The pedestrians who commute by foot in the morning during normal working hours and people who come to the street for evening and nighttime activities would not be well represented by the sample.

On Leland Ave., all surveys were collected between noon and 7pm. The number of pedestrians are low in the morning, and decreases after the close of the bank, postal outlet, and grocery stores around 6pm. These observations are supported by commentary from local residents and shop owners obtained during surveying. As such, I believe that the surveys are representative of most street users on Leland Ave.

Total responses by gender were roughly equal (50% male, 47% female). The age profiles of respondents from the two streets are shown in fig. 4. On Valencia, people below the age of 40 represented 60% of the respondents, while on Leland Ave. people over 40 represented approximately 62% of respondents. The fact that more respondents were under the age of 40 on Valencia St. somewhat mitigates the fact

Fig. 3 Hour of survey collection

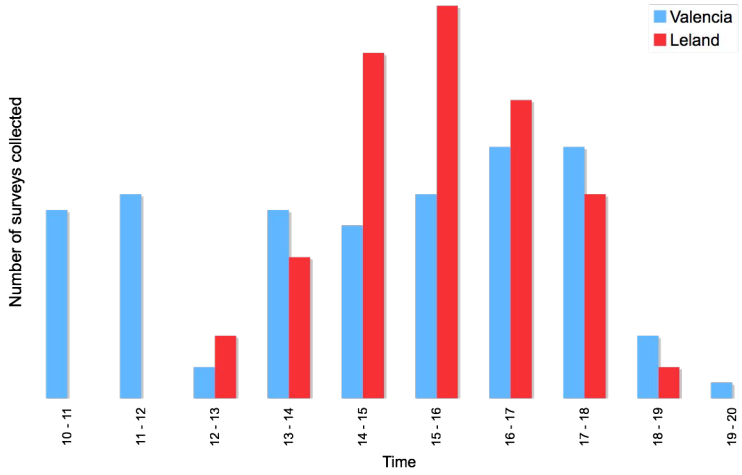
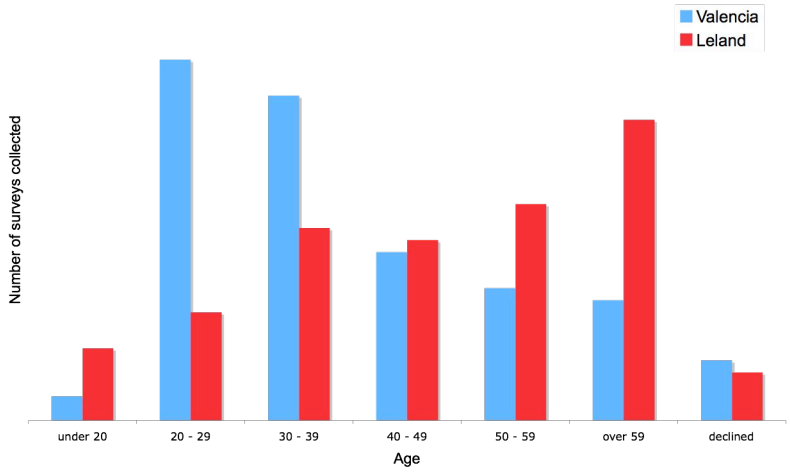


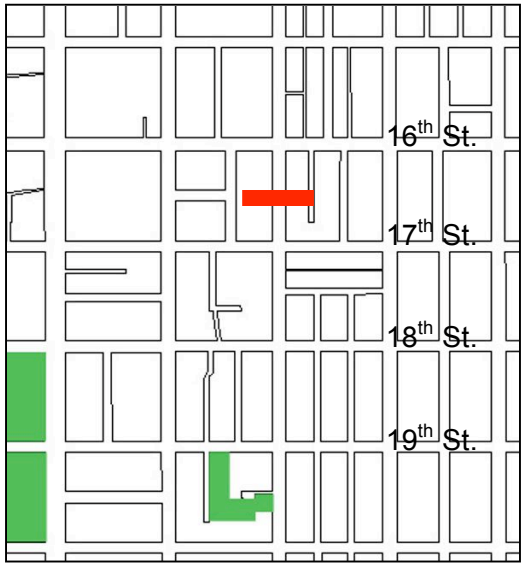
Fig. 4 Age of survey respondents



that surveys were not collected in the evening. Since a younger crowd is generally expected to frequent evening and late night establishments, their opinions are likely already reflected by the sample. On Valencia St. 80% of respondents were residents of San Francisco, while on Leland Ave. almost 91% of respondents were residents of San Francisco.

Since the survey was conducted in English, non-English speakers were excluded from the sample. An attempt was made to reach Chinese-only speakers on Leland Ave. through a translated survey towards the end of the study period. However, only six Chinese speaking responses were obtained. Unfortunately, no attempt was made to reach non-English speakers on Valencia St. due to study constraints. It is not known to what degree ethnic populations are adequately represented in the sample and future work should look to collect race or ethnicity in order to make comparisons with census data and further establish sample representation.

Store signs in Chinese are indicative of the ethnic Chinese population living in the area

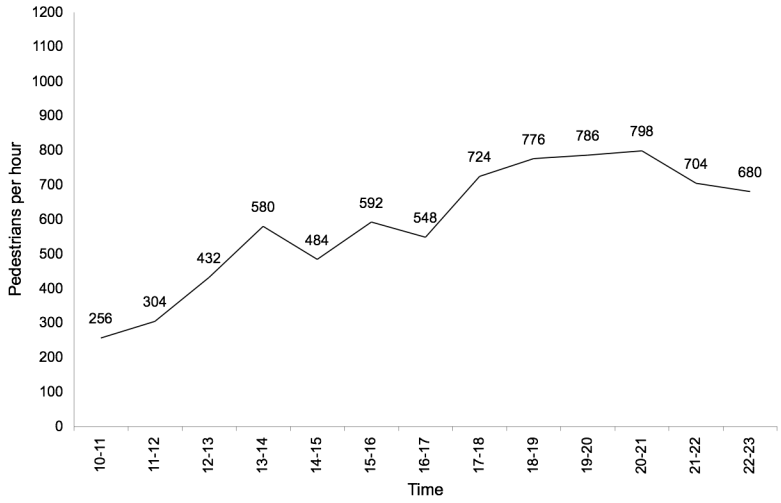


Pedestrian Traffic

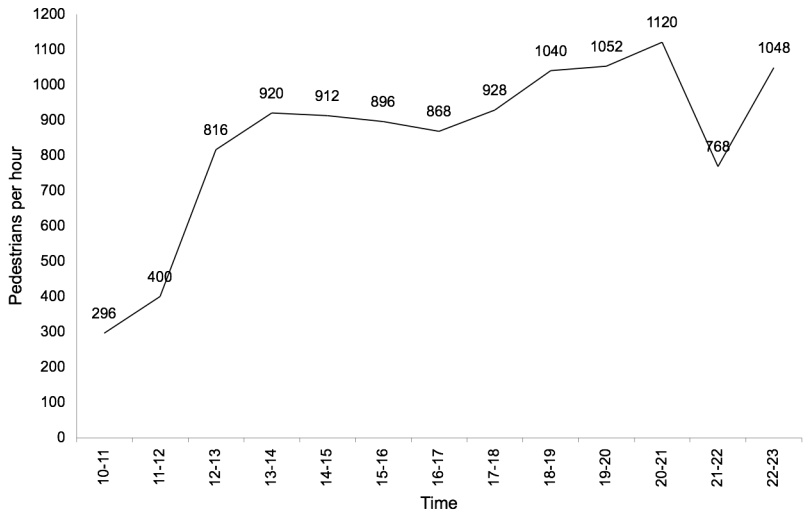
Valencia St. between 16th to 17th St.

Pedestrian traffic on this section of Valencia St. generally rises towards lunch time. Levels tend to remain constant until around dinner time when traffic rises again. This trend is generally true for both the weekday and Saturday. Saturday counts differ from the weekday because the volume of people who come out is greater. Weekday pedestrian traffic also decreases after 21h as crowds head home sooner than they would on Saturdays. This street section sees the highest pedestrian traffic in this study as the block is almost entirely devoted to dining and retail space. Bars and restaurants are more prevalent closer to 16th St. while furniture shops are more common towards 17th St.

*Weekday pedestrian traffic, Total: 7,664 (3,920)**



*Saturday pedestrian traffic, Total: 10,990 (5,962)**

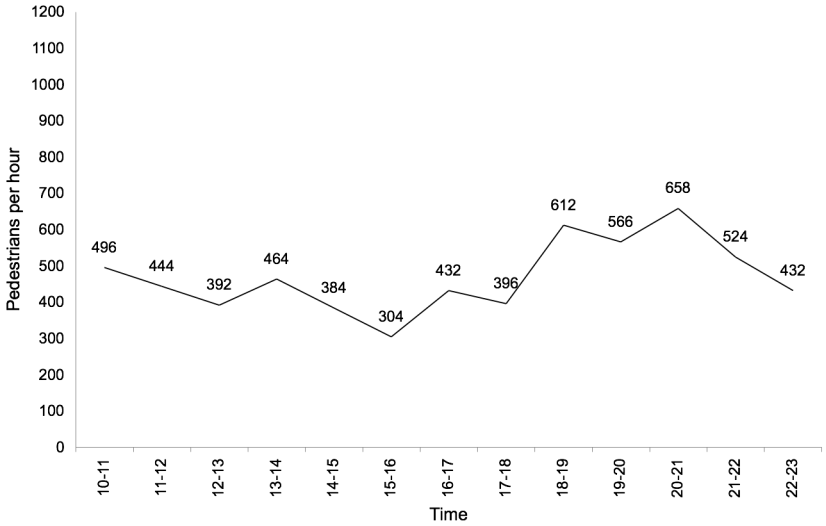


**Value* for comparable time period as Leland Ave. counts from 10h to 18h

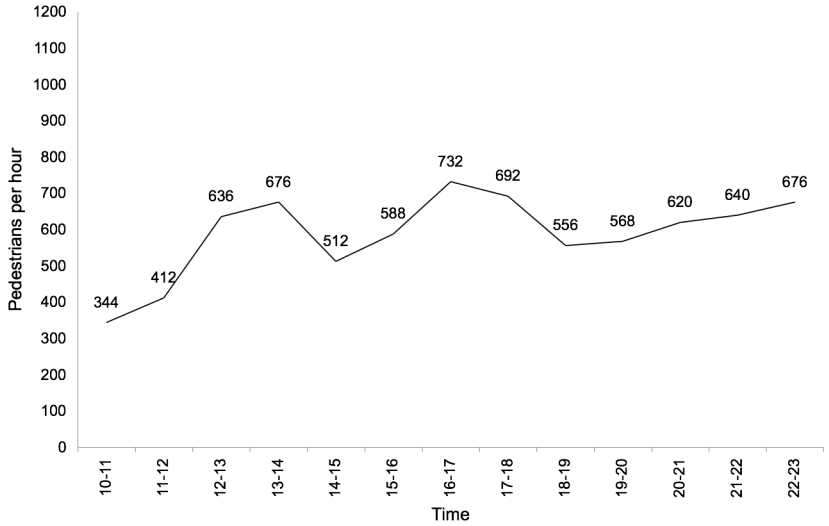
Valencia St. between 18th to 19th St.

In comparison with the 16th to 17th St. section, the traffic flows on this section of the street are lower. The land uses on this section of the street are also marked different; there are several parking and vacant lots, New College (with 1300 students enrolled), vacant shops, an automotive garage, and businesses or services not generally oriented towards walk-in clients. Establishments, such as the Mission Pet Hospital, Cherin's Appliances, and an office for a food export company, do not have elaborate window displays if any at all. There are three restaurants located towards 19th St. which do attract lunch and evening crowds. Students attending classes at New College is one likely cause for higher volumes on weekday mornings on this section of the street as compared with Valencia St. between 16th and17th St. While the lunch and dinner peaks are still visible, they are not as pronounced as on 16th to 17th St. segment of Valencia St.

*Weekday pedestrian traffic, Total: 6,104 (3,312)**



*Saturday pedestrian traffic, Total: 7,652 (4,592)**

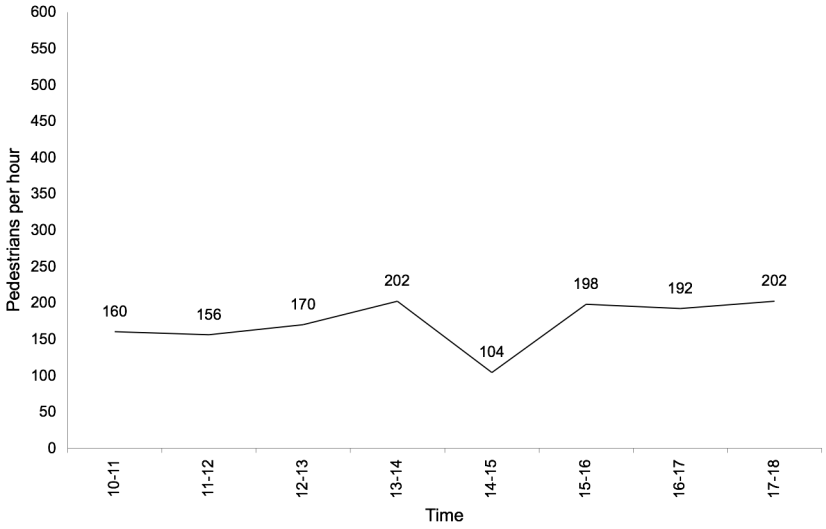


**Value for comparable time period as Leland Ave. counts from 10h to 18h*

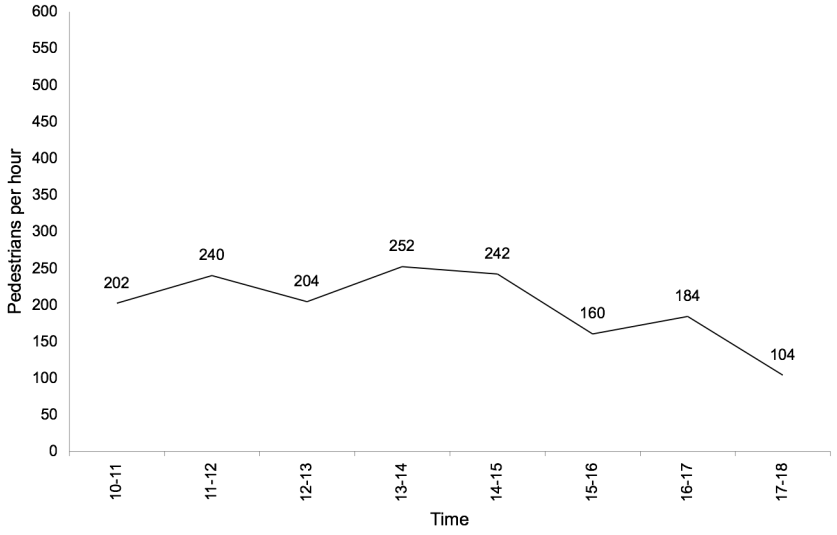
Lower Leland Ave

Lower Leland Ave. sees approximately one third of the pedestrian flows of Valencia St. This is likely due to the street's many fewer retail and dining outlets. Most of the retail and service establishments are also located in this portion of the street. The post office, Bank of America, two grocery stores, health clinic, library, and pharmacy serve as the major destination anchors for Leland Ave. Weekday volumes reach their highest levels around lunch time and at the end of the afternoon; shoppers come out to purchase goods or run errands on their lunch break or on their way home. By comparison, the number of pedestrians on Saturday is generally higher in the morning and early afternoon, and decreases towards the end of the day. The close of the post office at 15h is likely one of the reasons for the drop in pedestrian traffic. These counts likely under represent the number of people who choose to visit the street. The number of people who drive to Leland Ave. is proportionately greater than on Valencia St. As drivers tend to park as close to their destination as possible, many people who came to the street by car were not counted even though they were observed because they did not cross the count line.

Weekday pedestrian traffic, Total: 1,384



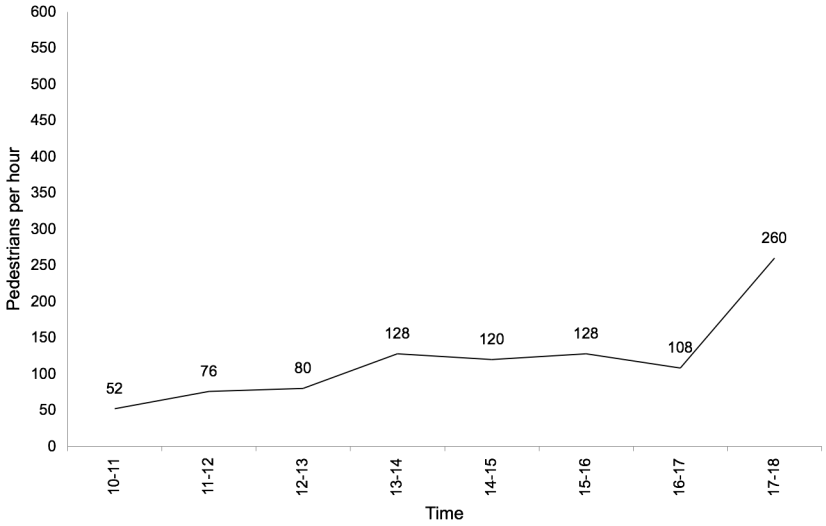
Saturday pedestrian traffic, Total: 1,588



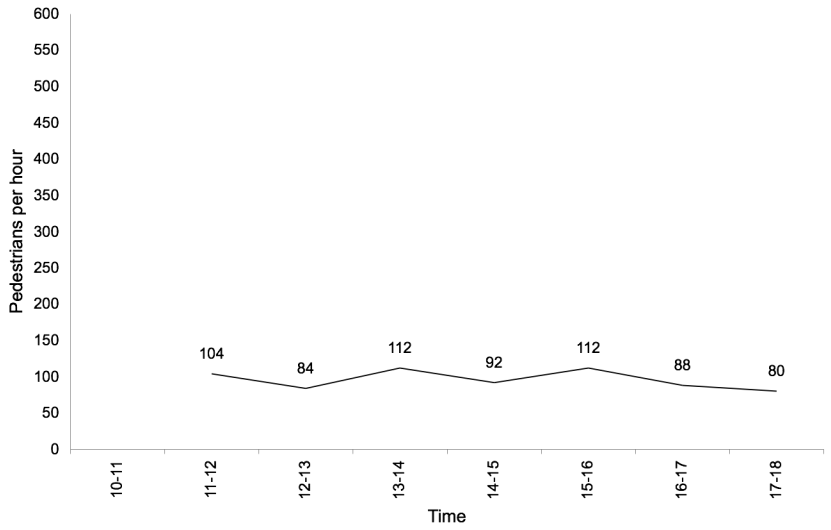
Upper Leland Ave.

Pedestrian traffic on upper Leland Ave. is the lowest of all the study segments. This section of the street is largely residential, with only a few businesses and services located along its length. The peak at the end of the weekday is due to a large group of parents and their young children attending a parenting workshop at the Visitacion Valley Community Centre towards the end of the count hour. However, this peak is likely not a representative pattern of pedestrian traffic on this segment of the street.

Weekday pedestrian traffic, Total: 952



Saturday pedestrian traffic, Total: 672



Stationary Activity

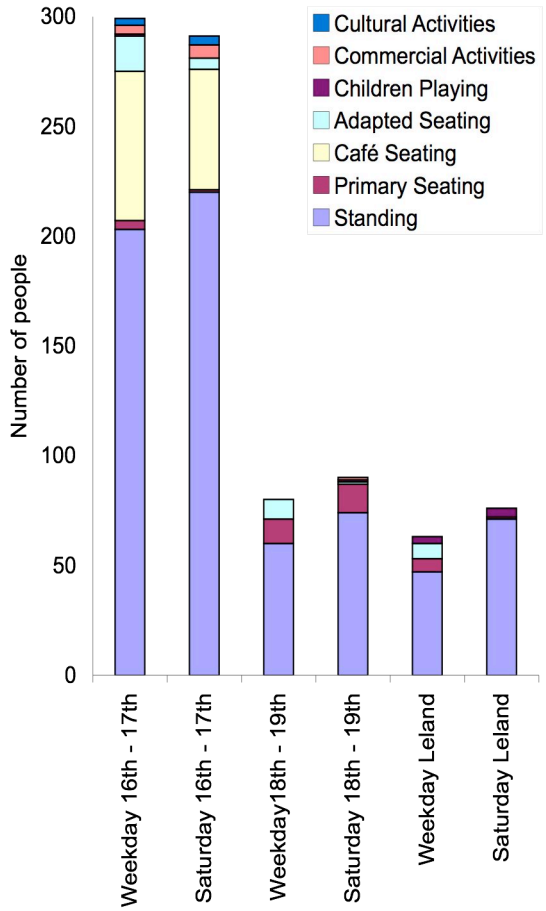
The type and frequency of stationary activity can be a strong indicator how attractive and successful a street serves as a public space. Fig. 5 on the right clearly shows that Valencia St. between 16th to 17th St is a much more popular space to stop and spend time on the street. It also sees the most diverse types of activities among all study areas. A greater diversity of land uses and establishments that are inviting to people also contribute to the higher levels of stationary activity on Valencia St. between 16th and 17th St.

The majority of stationary activity observed was people standing. This is of no surprise as there are few benches for seating along Valencia St. and no benches along Leland Ave. The lack of bench seating was also observed through people's behaviours; people were observed sitting on ledges below windows or against walls, fire hydrants, bike racks, planter boxes as well as on their own private vehicles. With less certainty, it is suggested that people who sat in their own parked vehicles and ate ice cream or waited for passengers running errands also suggested that there was a lack of seating on the street.

Counts along Leland Ave. are not divided between upper and lower Leland Ave. Stationary activity levels on the street were low in comparison with Valencia St. and it was decided that the data should be merged. On Leland Ave., stationary activity was also almost entirely standing. Most stationary activities tended to concentrate towards lower Leland Ave. In fact, during certain hours, there were no observed stationary activities along upper Leland Ave. This is likely due to the area's more residential nature. Surprisingly, few people were observed to use the Hans Schilier Plaza. Commentary from surveys indicated that the park was not conveniently located in relation to the majority of pedestrian traffic along lower Leland Ave., that people sometimes felt unsafe in the park, that it was blocked physically and visually by its walls and gate from the street, and that it was used by drug addicts and the homeless.

As the principal stationary activity observed, some comment must be made about the number of standing activities and what it can tell us about the success of a street. From observations, the primary reasons for people to stand included smoking, talking on cell phones, waiting for the bus, socializing with one another, or, on Valencia St., waiting in line for restaurants. Many of these standing

Fig. 5 Summary of stationary activities



activities are typically derived from physical constraints or from other primary activities. For example, one has to smoke outdoors because doing so indoors is prohibited. Some may talk on a cell phone outdoors due to a noisy indoor environment or out of politeness to others. Standing in line for restaurants or waiting for the bus are secondary activities that do not reflect a choice to spend time on the sidewalk. While these activities are no less important as activities a street can accommodate, they comprise a lower tier of stationary activities which are less indicative of the success of a street. On the other hand, standing activities such as socializing demonstrate a choice to remain in the street and serve as better indicators of quality of the physical street design.

No effort was made in the present study to quantify the number of each of these standing activities. Addressing this shortcoming in future would afford one a better and more meaningful understanding from stationary count data.

Some examples of stationary activities

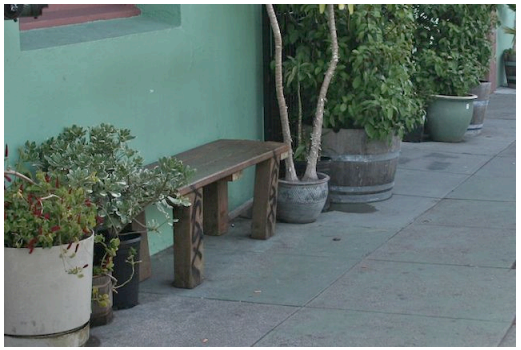
Cultural activities

Café seating

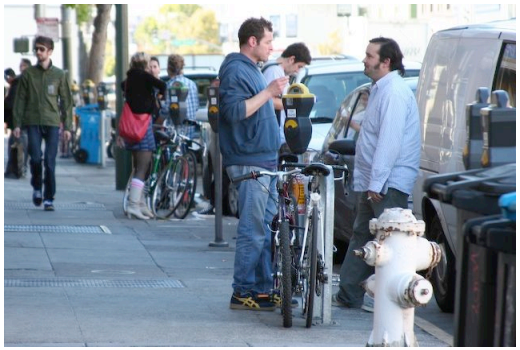
Standing (and browsing)

Adapted seating

Primary seating



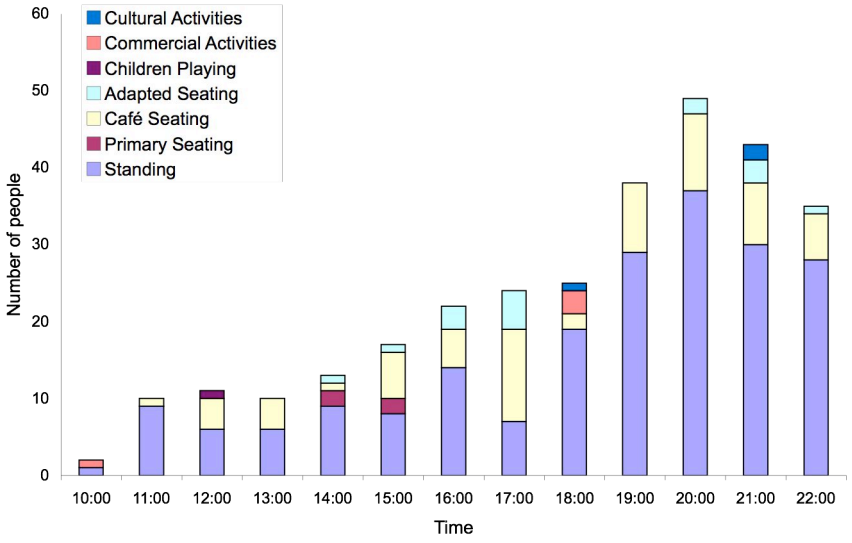
Standing (and socializing)



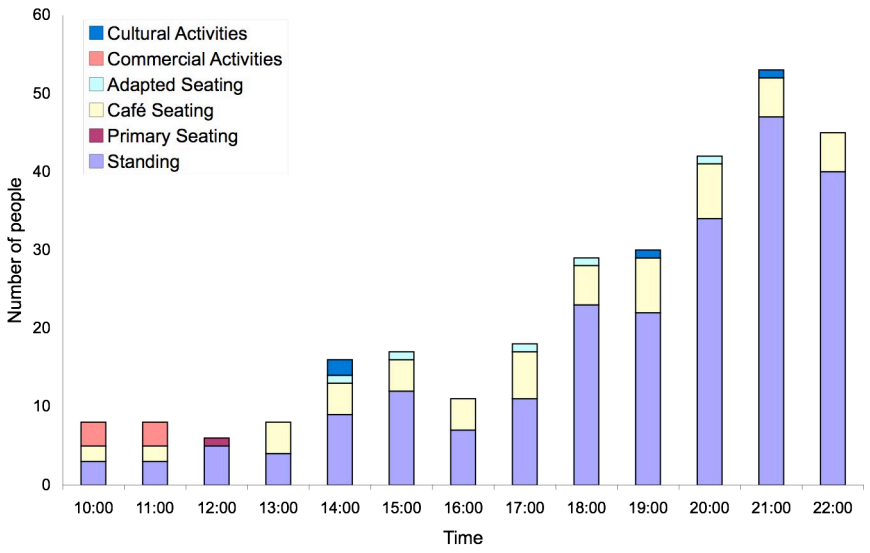
Valencia St. between 16th to 17th St.

This segment of Valencia St. is the only area with outdoor café seating. Furthermore, the presence of bars and restaurants along its northern portion was the principal cause in the rise of stationary activity around dinner time; many of the people standing during these hours were waiting to enter one of the drinking or dining establishments. The café seating outside Muddy Waters café was almost always occupied, while the outdoor seating at Blondie's Bar tended to be occupied after work hours. Stationary activity patterns and volumes are similar between the weekday and weekend for the same reasons just outlined. On Saturday, the peak number of activities occurred one hour later than on weekdays, likely due to the fact that people stay out later on the weekend.

Weekday stationary activity, Total: 299



Saturday stationary activity, Total: 291

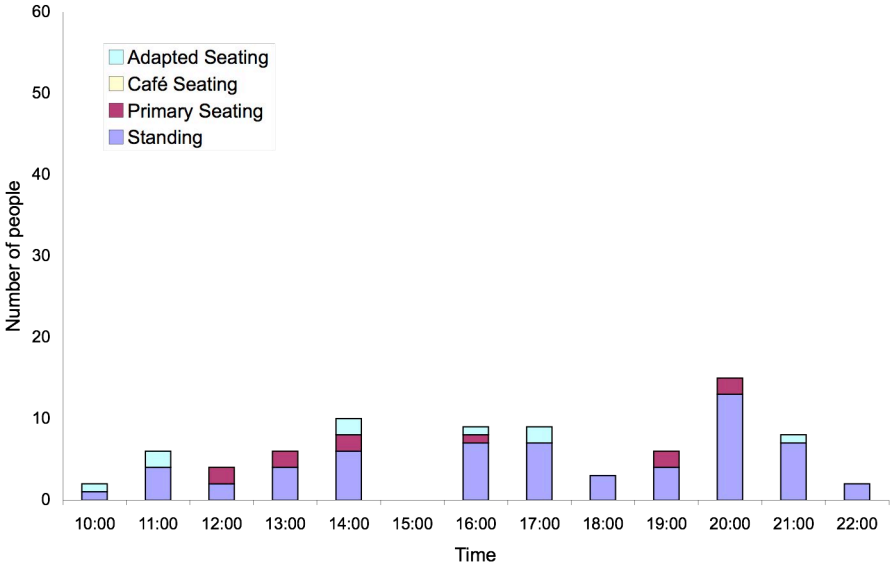


Valencia St. between 18th to 19th St.

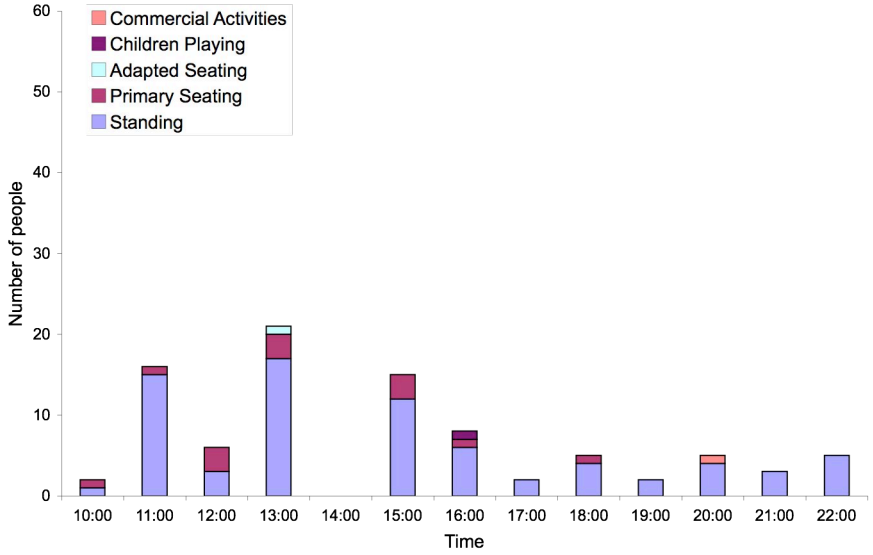
While this segment of the street saw activities such as smoking and waiting for the bus, the majority of the stationary activity on this street concentrated outside New College or the Cha-ya restaurant. At New College, people were observed to be socializing in large groups on the street for short periods from late morning through to the end of the afternoon. The variation during the weekday morning and afternoon hours, and the short but intense intervals of street usage can be attributed to whether students were in classes or not at the time the walk through was conducted. While some people were observed waiting outside Cha-ya restaurant for a table, evening stationary activity on this street is generally low compared with Valencia between 16th to 17th St. due limited number of restaurants and bars.

Stationary activity outside of New College

Weekday stationary activity, Total: 80



Saturday stationary activity, Total: 90



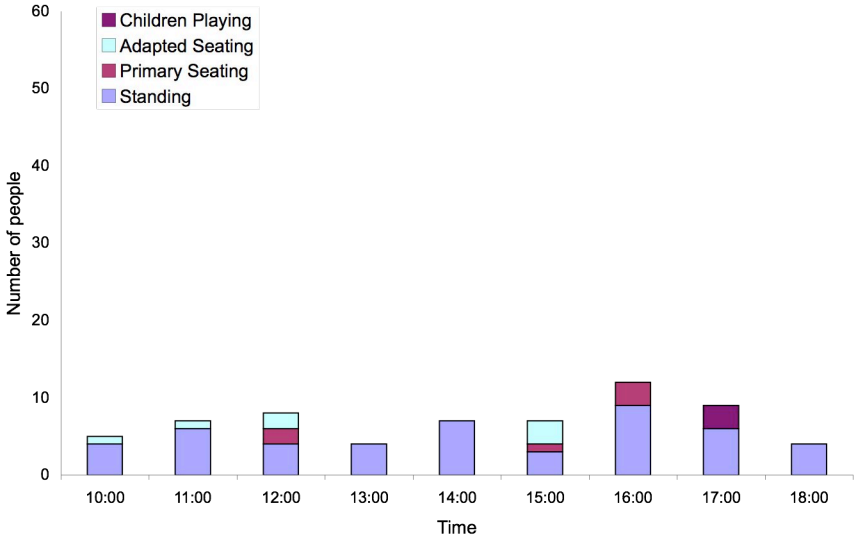
Leland Ave.

The majority of stationary activities along Leland Ave. are found on lower Leland Ave. They consist of individuals smoking, talking on cell phones, and to a lesser degree, pairs or groups of people socializing. The degree and satisfaction to which people enjoy and do socialize on the street is discussed below. The only other stationary activities along Leland Ave. observed were some children playing, primary seating, and some adapted seating on the street.

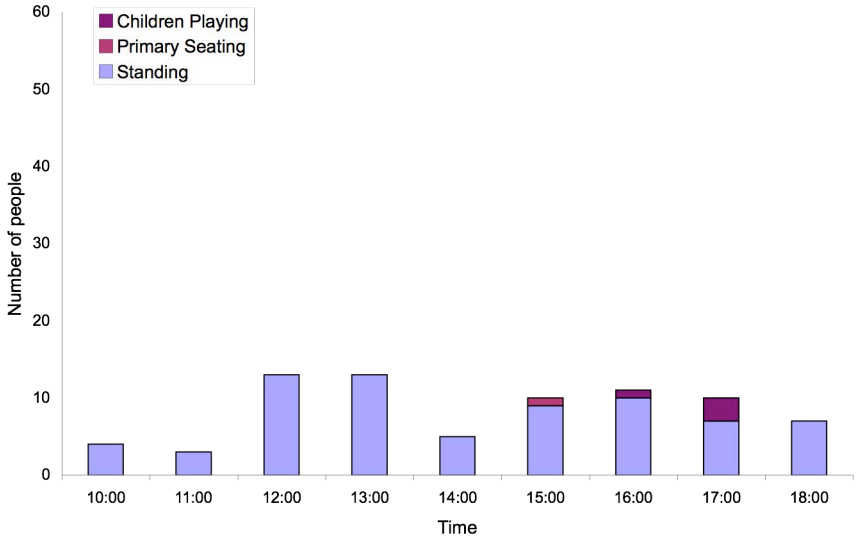
Stationary activity on Leland Ave.

The entrance to Hans Schiller Plaza, a possible space for seating and recreation that was observed to be rarely used

Weekday stationary activity, Total: 63



Saturday stationary activity, Total: 76



Cycling

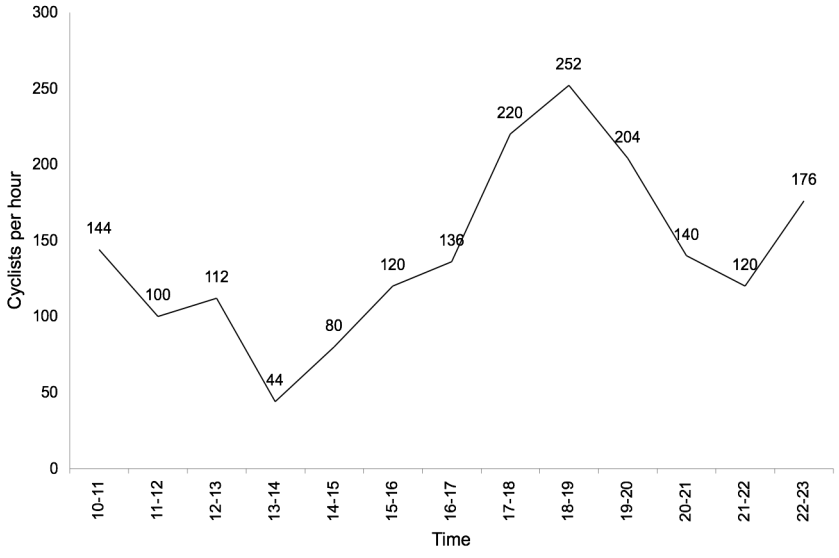
Valencia St.

Weekdays see peak cyclist flows around the evening commute. On Saturday, peak cycling volumes are observed from 2pm to 3pm. The pattern of cycling traffic passing through all study segments of Valencia St. showed much less variation than patterns of pedestrians traffic. This is likely because Valencia St. bike lanes serve a regional commuter function, the pattern is more indicative of cyclists passing through than cyclists coming to Valencia St. as their destination. This is likely to apply to both weekday and Saturday cycling traffic.

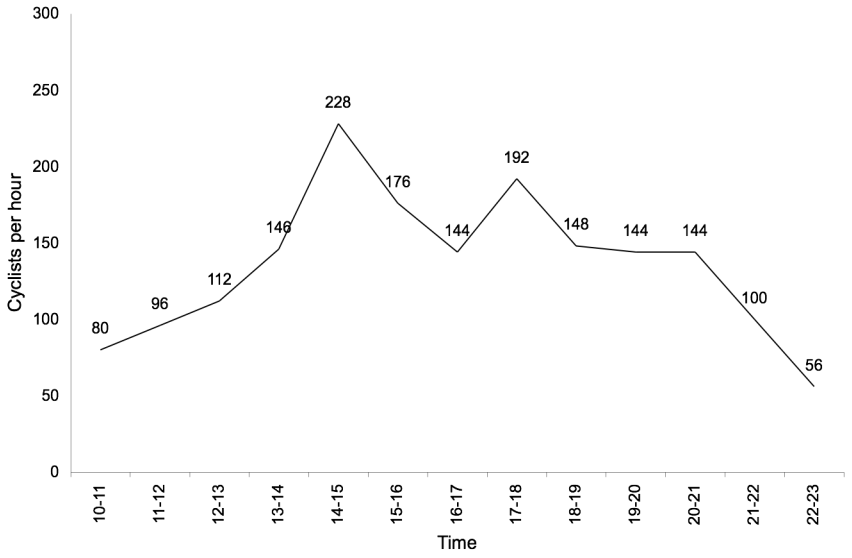
Leland Ave.

People do not tend to come to Leland Ave. by bicycle. No chart is included in this section because the number of cyclists observed on count days ranged from only one to five. Most of these cyclists were children riding on the sidewalk.

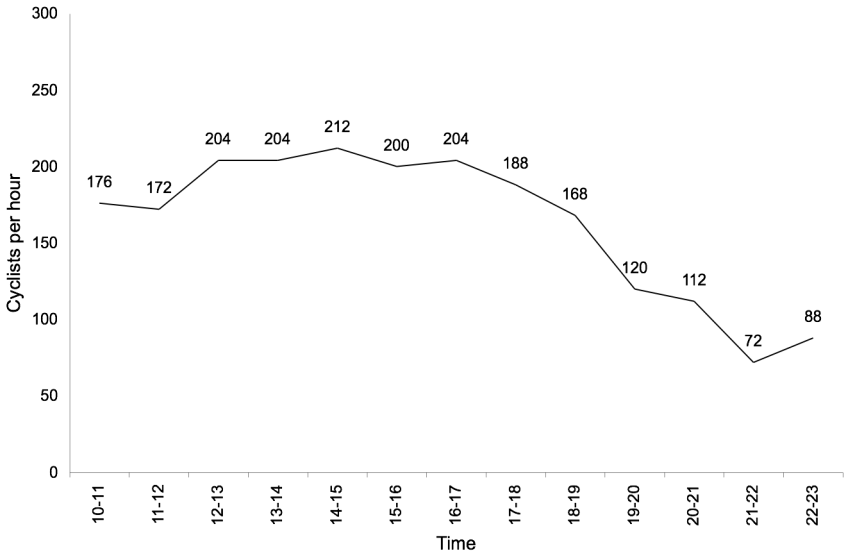
Weekday cycling traffic, Valencia St. between 16th and 17th St.
Total: 1,848



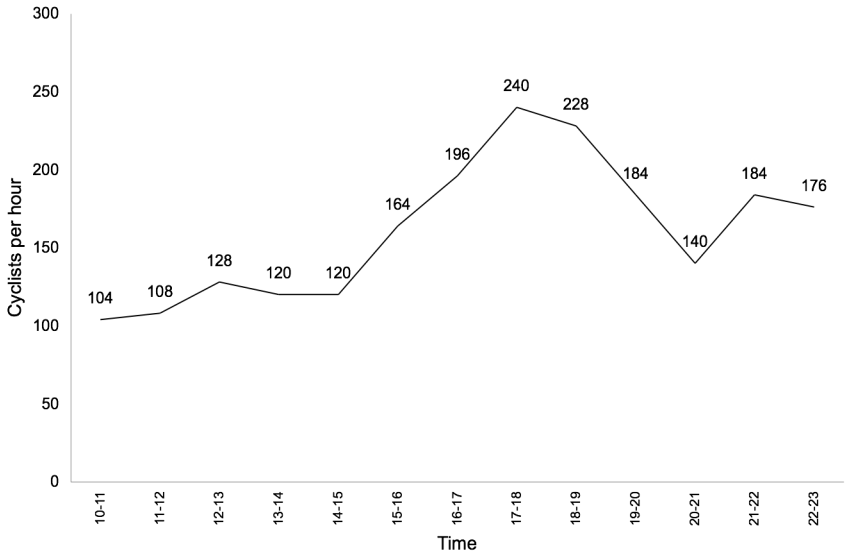
Saturday cycling traffic, Valencia St. between 16th and 17th St.
Total: 1,880



Weekday cycling traffic, Valencia St. between 18th and 19th St.
Total: 2,092



Saturday cycling traffic, Valencia St. between 18th and 19th St.
Total: 2,120



Survey Findings

Counts, while valuable measures in quantifying activity levels of streets, tell us little about the perceptions of street users, the purpose of their visits, and their satisfaction with their experience on the street. The next section presents and discusses results from surveys conducted on both Valencia St. and Leland Ave. Aspects of the attractiveness of the pedestrian realm[i], personal safety, sidewalk condition, cleanliness, and ease of walking tell about the opinions of people regarding the physical conditions of the street.

Factors that tell about the street's role in people's lives are elaborated through a discussion of the purpose of their visit, opportunities to stop, to relax, and to socialize on the street, and their overall satisfaction with their walking experience. Commentary and personal observations will be used to support the findings of this study.

Fig. 6 summarizes the opinions of street

Fig. 6 Summary table of responses to survey questions from 100 surveys from Valencia St. and 93 surveys from Leland Ave.

Survey Question, satisfaction with:	***Mean response***	*Valencia 95% confidence interval of mean*		***Mean response***	*Leland 95% confidence interval of mean*	
Attractiveness of pedestrian realm[i]	**3.70**	3.38	4.02	**3.89**	3.54	4.23
*Condition of sidewalk**	**3.60**	3.28	3.92	**4.29**	3.93	4.64
*Cleanliness of sidewalk**	**3.37**	3.07	3.68	**3.89**	3.49	4.29
Safety from vehicles	**4.77**	4.45	5.09	**4.51**	4.13	4.89
Safety from other people	**5.39**	5.12	5.66	**4.96**	4.59	5.32
Ease of Walking	**5.00**	4.72	5.28		**Not asked**	
*Opportunities to stop, relax, socialize**	**4.78**	4.43	5.14	**4.15**	3.72	4.58
Overall walking experience	**5.61**	5.35	5.87	**5.26**	4.93	5.59

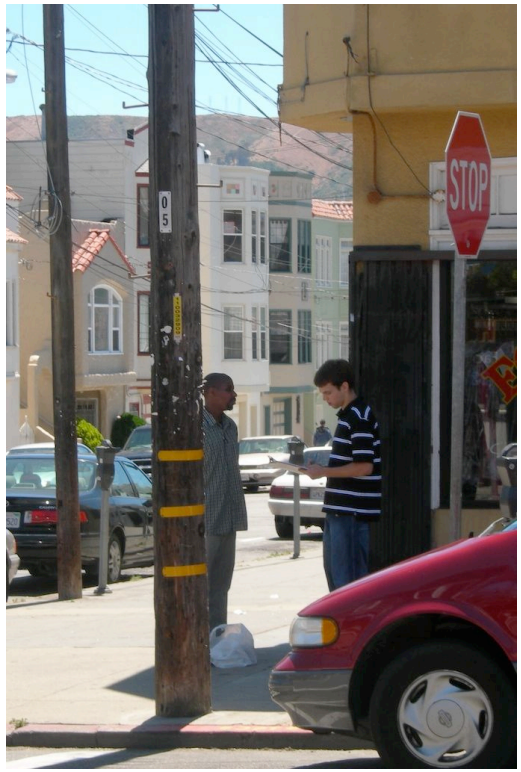
**statistical differences found between mean response values between Valencia St. and Leland Ave. at p = 0.05*

[i]The pedestrian realm generally refers to the pedestrian right on way on a street, which are principally sidewalks and intersection crosswalks. However, this study only considers the sidewalk with respect to the question of attractiveness. While both sidewalk and crosswalks are essential to pedestrian circulation, crosswalks cannot accommodate the same design elements as sidewalks, such as trees and benches which were key in the investigation of attractiveness. Crosswalks are a different element that warrants separate investigation and discussion that this study does not undertake.

users on Valencia St. and Leland Ave. to the list of survey questions asked. When the mean values are compared between both streets, only three questions show any statistical difference between the opinions of respondents of both streets at $p = 0.05$ level. These are regarding respondents' satisfaction with the condition of the sidewalk, cleanliness of the sidewalk, and the opportunities to stop, relax, and socialize on the street.

On both streets, no statistical differences were found at the $p = 0.05$ level when mean values of responses to each question were broken down by age groups or gender. In other words, all age groups and both genders showed similar levels of satisfaction to each question.

The following section discusses the responses to each question in detail from both study streets.



How satisfied are you with the attractiveness of this street regarding sidewalk materials, lighting, benches, trees and greenery?

In this question, respondents were asked to focus upon the physical elements of the pedestrian realm, such as the sidewalk and not the road surface or buildings. Furthermore, clarification was often necessary to try to focus respondents on the physical design of the sidewalks rather than on questions of sidewalk condition and cleanliness which were dealt with in subsequent questions. The presence of homeless people, drug addicts, or vagrants, as well as the pollution and congestion by vehicle traffic also had an influence on the opinions of some respondents. The commentary returned by some respondents demonstrated that all of these issues were not disassociated from the intent of the question, the attractiveness of the physical design of the pedestrian realm. Future work should devise means to ensure a clearer separation of the issues.

An attractive segment of Valencia St. with planters, a row of trees, bench, and fairly consistent sidewalk paving materials

From fig. 6, respondents on Valencia St. and Leland Ave. were generally dissatisfied with the attractiveness of the pedestrian realm, with mean response values to this question of 3.70/7 and 3.89/7 respectively. The difference between the mean response values from the two streets was not statistically significant at the p = 0.05 level.

In terms of physical attractiveness, both Valencia St. and Leland Ave. have attractive and unattractive stretches. Portions of each street have a row of trees, planters, and more consistently paved sidewalks. However, these stretches tend to be short. Rather, the sidewalks on both streets tended to be a patchwork of surfaces, materials, and designs, and lacked trees and greenery. As many respondents pointed out, there are few if any benches on the sidewalk. The only benches out on Valencia St were actually put out by store owners.

A segment of the sidewalk on Valencia St. showing a mosaic of paving materials and public utility access panels

Unsightly powerlines and a lack of trees marks a view along Leland Ave.

Planter boxes along Leland Ave.

A missing tree

On Valencia St. many respondents called for more trees and greenery, better lighting at night that did not intrude into people's homes, and for more benches. Similar comments were also heard from respondents on Leland Ave, though some respondents also commented on the need to remove unsightly power lines.

How satisfied are you with the condition of the sidewalk (regarding maintenance, cracks, and evenness)?

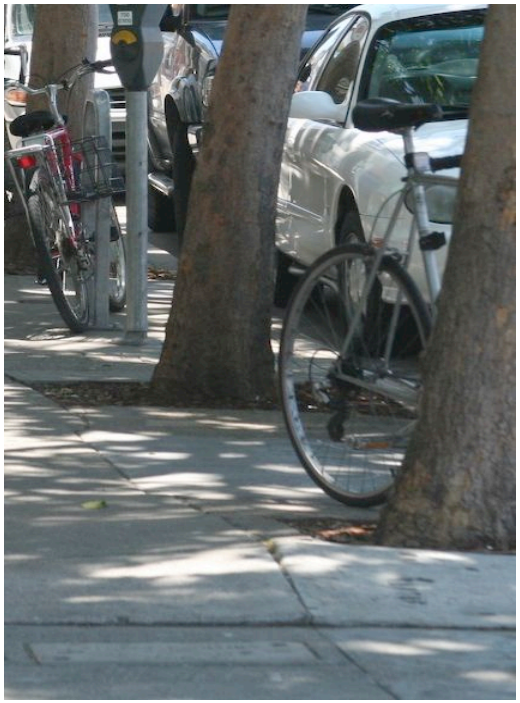
To this question respondents on Valencia responded more negatively than respondents on Leland Ave. (3.60/7 versus 4.29/7 respectively). While no effort was made to quantify the number of cracks or degree of unevenness of sidewalks between Valencia St. and Leland Ave., it was noted that sidewalks on Leland Ave. were generally in better condition, less disrupted by public utility access panels, and less frequently interrupted by different paving materials or designs.

Respondents who volunteered commentary generally talked about need to fix cracks and unevenness, especially those caused by tree roots.

Cracks…

More cracks…

And unevenness



How satisfied are you with the cleanliness of the sidewalk?

With respect to the cleanliness of the sidewalk, respondents registered a statistically significant and greater dissatisfaction with the cleanliness of Valencia St. compared with Leland Ave. even though both mean values are below 4. Reasons for respondent dissatisfaction included the amount of trash, cigarette butts, littering, smell of urine, garbage, and bubblegum stains on the sidewalk. While many respondents commented on how Valencia St. was a cleaner street than Mission St., the proximity of the two streets may have contributed to respondents carrying a general sense that they were in a physically dirtier neighbourhood than other parts of the city. Some store owners place their own garbage cans on the sidewalk in response to the lack of city garbage cans on both study streets. While these may help people to better dispose of their garbage, such solutions can be unsightly, sometimes overflow, or allow garbage such as paper napkins to fly onto the sidewalk because of the wind.

Merchants sometimes put out their own trash bins

Bubble gum stains on the sidewalk are ubiquitous

The sidewalk is stained and dirty in many places

How satisfied are you regarding your personal safety from vehicles?

This question attempted to assess people's level of satisfaction with their own safety as they walked on the sidewalk or crossed the street at intersections. On both streets, average values of all respondents were leaning towards satisfaction with their personal safety from vehicles.

On Valencia St. pedestrians generally felt safe walking down the sidewalk. Short blocks generally do not permit drivers to obtain significant speeds. During most of the observation period, the presence and use of the center median as a place of temporary parking or passing around double parked vehicles, the presence of cyclists, cars parking and pulling out, and delivery trucks on the street creates a somewhat chaotic and unpredictable environment which likely causes both drivers and pedestrians to take care when travelling down the study section of Valencia St. Pedestrians that did volunteer commentary expressed concerns about drivers trying to turn at intersections in between pedestrians crossing from one corner to the next.

On Leland Ave. respondents who volunteer comments noted speeding drivers, failure to stop at stop signs, and double parking as their concerns about safety. Interestingly, the short blocks along the study portion of Leland Ave. also do not permit drivers to pick up much speed. Furthermore, during the afternoon hours when the surveys were being conducted, drivers were observed to be generally respectful of the stop signs at Desmond St. and Leland Ave, one of the main intersections for lower Leland Ave. It is suspected that the negative perceptions of personal safety from vehicles carries over from a general impression of unsafety in a car-dominated society, but not specifically to Leland Ave. Many cars were observed to make u-turns across the intersection at Desmond St. and Leland Ave., a potentially dangerous maneuver.

Double parked cars and trucks were very common occurrences on both study sites. Double parking not only forces vehicles to pass in oncoming lanes, but is potentially very dangerous to pedestrians who jay-walk because they can suddenly appear from behind parked vehicles.

Intersection safety are some of the expressed concerns

Double parking forces cars to pass in the oncoming traffic lane

U-turns are frequent at the intersection of Leland Ave. and Desmond St.

How satisfied are you with your personal safety from other people?

It was expected that Valencia St. would be perceived as being safer than Leland Ave. due to the constant and greater pedestrian traffic along the study length. While respondents on Valencia St. were generally more satisfied (with an average response of 5.39/7 compared with Leland with 4.96/7) the average responses from each street are not statistically different ($p = 0.52$). However, as a point of comparison, only 10% of respondents on Valencia St. expressed dissatisfaction (1 – 3) and 79% expressed satisfaction (5 – 7) with their personal safety while on Leland Ave. the number of respondents were 20% and 64% respectively.

The sense one obtains from respondents' commentaries on Leland Ave. is that they generally feel safe during the day but unsafe after dark. A combination of factors likely contributes to this view. A lack of night time pedestrian activity on the street makes it appear more dangerous. This is combined with a sense of insecurity due to a collective memory of violent incidents in the area in the past and their association with the area's promixity to housing projects, notwithstanding whether this negative association is correct or not.

How satisfied are you with the ease of walking down the sidewalk (regarding sidewalk width, objects in the way, or other people)?

This question was initially asked on Leland Ave. although it was quickly realized that this question was not pertinent to this street. The sidewalk on Leland Ave. is wider than on Valencia St. and has many fewer obstructions and people on the sidewalk. This means that the ease of walking down sidewalks was not a concern on Leland Ave. For these reasons and for expediency of the survey, this question was removed from the surveys conducted on Leland Ave.

It has been suggested that if the number of people walking on a sidewalk exceeds 13 people/min•metre (4 people/min•ft), crowding is experienced[1]. Crowding is defined as when the number of people walking on the sidewalk exceeds the number of people it was designed to carry. On Valencia St, if we were to take the highest recorded pedestrian traffic, 1,120 people/hour or 18.67 people/min on a Saturday night, and that the walking space between store fronts and parking meters, bike racks, or fire hydrants is approximately 7 feet, then pedestrian flows on Valencia, 2.67 people/min•ft is under values for crowding. However, observations on Valencia St. show that along many portions of the study area, the sidewalk is frequently narrowed by household garbage and recycling bins, newspaper boxes, planter boxes, occasional sidewalk seating, unwanted furniture and other refuse, street maintenance signs, and groups of people engaged in stationary activities. Comments from surveys acknowledge that it is difficult to walk two or three abreast down the sidewalk, that people with strollers, carts, bicycles and dogs present obstacles that make it more difficult to walk down the sidewalk, and that the sidewalk could be wider. It is then somewhat surprising that the average response to this question was 5.00/7 (95% confidence interval = 4.72 to 5.28). Furthermore, only 13% of respondents expressed any degree of dissatisfaction with the ease of walking down the sidewalk. This suggests that while there were obstacles to walking down the sidewalk, people perceived them as minor inconveniences that could easily be sidestepped or patiently negotiated. While pedestrians were observed to step off the sidewalk to get around crowds waiting to get into restaurants, the presence of parked cars and generally slow traffic do not make such detours dangerous. Furthermore, most of these events tend to occur closer to when pedestrian traffic and stationary activities peak on Valencia St., that is to

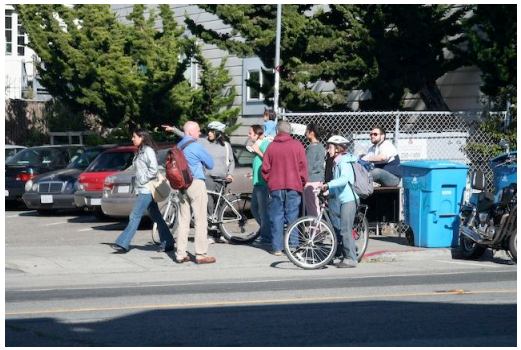
say towards the evenings. As people generally come out in the evenings for pleasure, the opinions of these people, which should be most dissatisfied by crowding, are tempered by the positive atmosphere and attitudes. It should be noted that few surveys were conducted in the evening, although as mentioned in the methodology section, the opinions of evening crowds are not expected to differ from the surveyed sample.

Crowding was also observed during count and survey hours on Valencia St. at the entrance to New College and Cha-ya restaurant. Once again, it would be expected that this might affect people's perceptions of the ease of walking down the sidewalk. However, no statistical difference is discernable between the responses to ease of walking when separated spatially according to whether the survey conducted at or near one of these crowded choke points along Valencia St. Either people do not see such crowds as a major impediment, or that not enough responses were collected to show statistically significant differences spatially.

Wide sidewalks on Leland Ave. and low pedestrian traffic means that ease of walking is generally not a concern on Leland Ave.

Pedestrians are forced to either walk on the street or slowly push their way through crowds along Valencia St.

Sidewalk obstructions create bottlenecks along Valencia St.



How satisfied are you with the opportunities to stop, relax, and socialize on the street?

On Valencia St., a common response was to give this question a satisfactory rating. In their commentary, respondents would say that there were many shops, cafes, and restaurants in which to stop, relax, and socialize. When pursued further about the opportunities that did not involve private establishments or the need to spend money to sit down, respondents changed their opinions recognizing that the street offered few if any opportunities to stop and relax. Some survey respondents did immediately recognize that there was no place to sit down in the public realm. As mentioned earlier, Valencia St. has few benches in the study section on which to sit, and benches that were available were furnished by private property owners.

On Leland Ave. the level of satisfaction with this question was slightly lower than on Valencia St. (4.15/7 versus 4.78/7, p-value of the difference between means = 0.024). Some of the commentary from respondents on Leland Ave. mirror those seen on Valencia St., that their level of satisfaction is related to the presence, or in this case, absence of stores, cafés, and restaurants. Like Valencia St., Leland Ave. has, with the exception of Hans Schiller Plaza, no outdoor seating, few opportunities for adapted seating, and no sidewalk cafés or other physical elements that would suggest that the street was a place to stop, relax, or socialize. One respondent commented that the "street is not a social hangout. I run errands and keep on going". Another respondent said "I come to the street for a specific purpose, but I do not think to socialize." In spite of these comments, the mean value response to this question was neither satisfied nor dissatisfied. A question was introduced into the surveys conducted on Leland Ave.[ii] to try to determine whether the frequency with which respondents encountered people they recognized, which in turn measures the potential for social interaction, had any effect on their satisfaction with the opportunities to stop, relax, and socialize. From fig. 7, we can see that there is a statistically significant difference between responses based upon how frequently respondents encountered someone they knew on the street. The more often a respondent encountered someone she knew, the more likely she was to be satisfied in response to this question.

Fig. 7 Satisfaction with opportunities to stop, relax, and socialize based upon frequency of encountering someone they knew on the street in a general week

Frequency of encounters in a week	***Mean response***	*95% confidence interval for mean*	
*At least once a day**	**5.04**	4.27	5.80
Several times	**4.28**	3.52	5.04
Once	**3.00**	1.52	4.48
*Didn't encounter**	**3.59**	2.74	4.43

**statistical differences found between mean response values at p = 0.05*

Such a relationship in fact highlights another shortcoming of this study. With even the most basic of physical conditions in place, such as a safe sidewalk or a decent weather day, social interaction can occur, and will happen largely independently of the quality of the physical setting. The positive relationship between

[ii] Unfortunately almost all of the 100 surveys on Valencia St. had already been completed by the time surveying began on Leland Ave., so this question was not incorporated into the Valencia St. survey.

frequency of encounters and one's level of satisfaction with respect to this question suggests that responses were not solely due to the physical environment, but as well as the quality of one's social network. The value of asking respondents for the frequency of encountering someone they knew in fact demonstrates that future work needs to address this question in a manner that does a better job of attributing responses solely to the physical environment.

On both study streets, the frequency of one's visit showed no statistical relationship with one's level of satisfaction with respect to this question.

As a measure of the quality of public space and public life it supports, both Valencia St. and Leland Ave. do poorly in terms of offering the opportunities to stop, relax, and socialize on the street. The commentary obtained in these surveys suggest that street users who frequent the study areas are generally not accustomed to socializing on the sidewalk, because the spaces on these streets do not suggest or facilitate these activities; either the sidewalk is narrow or the spaces to stop are limited or uncomfortable. Many people surveyed also did not recognize the street as a potential place to stop, relax, and socialize. This question would take people by surprise and sometimes require clarification suggesting that the concept of socializing on the sidewalk was foreign to many people.

While many people do undoubtedly encounter one another on the sidewalk and feel comfortable enough to socialize on the street, currently these instances are more likely to be brief than extended. People's commentary suggests that socializing usually takes place within establishments over coffee or meals. The presence of more of these establishments on Valencia St. in comparison with Leland Ave. likely offers some reason for the statistically significant and greater degree of satisfaction with Valencia St. Furthermore, the lack of cafés and outdoor seating, lower levels of pedestrian activity, and the perception of insecurity after dark makes street users on Leland Ave. reticent to use the public space for relaxation and socializing, especially after dark.

The responses from Leland Ave. do suggest that social relationships that people have with one another have a strong role to play in people's level of satisfaction with the opportunities to stop and socialize in public spaces. While the question of satisfaction with the opportunities to stop, relax and socialize intended to obtain people's responses with respect to the sidewalk's physical design, social relationships clearly played a role in influencing people's responses. Future work should try to obtain a clearer separation of these issues.

People socialize while waiting to enter a restaurant on Valencia St.

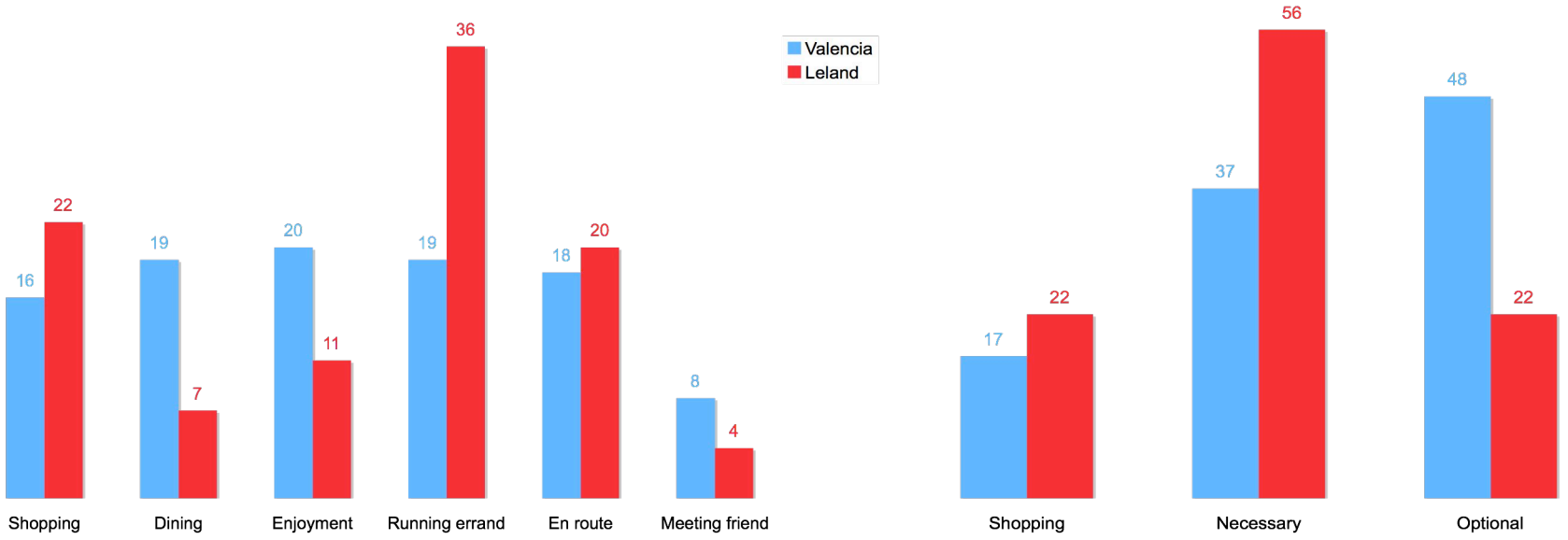
People also socialize in front of New College Campus on Valencia St. in between classes

How satisfied are you with your overall walking experience? What is(are) the purpose(s) for your visit to the street?

In the preceding discussion, the physical quality of the sidewalk on Leland Ave. is in many ways betters than on Valencia St. The sidewalks on the former are wider and less crowded, and the intersection crossing widths are narrower than on Valencia St. By many accounts, it is easier to physically walk along Leland Ave. than on Valencia St. Sidewalks on Leland Ave. are perceived to be in better physical condition, slightly cleaner, and as equally attractive, or unattractive, as Valencia St. Yet Valencia St. sees higher pedestrian traffic and a greater amount of stationary activities. Furthermore, to the question, how satisfied are you with your overall walking experience today, 78% of respondents from Valencia St. answered with some degree of satisfaction as compared to only 67% on Leland Ave. The average value of responses to this question on Valencia St. and Leland Ave. are 5.61/7 and 5.26/7 respectively, though the difference is not statistically significant ($p = 0.094$).

Another telling element is the reason for respondents' visits to the streets. The left side of fig. 8 shows the reasons for people's visit according to six predefined categories. Chi-squared tests indicate that average values of responses between both streets in two categories, dining and running errands, statistically differ from one another at the $p = 0.05$ level. 36% of respondents on Leland Ave. said that running errands is one of the purposes for visiting the street as compared to only 19% on Valencia St. The right side of fig. 8 reclassifies five of these categories into reasons that suggest a necessary activity

Fig. 8 Purpose of respondents' visits, shown as percentages of total responses



A view of Valencia St. between 16th and 17th St. The street frontage is almost entirely occupied by businesses

(running an errand or in transit to another destination) or optional activities (dining, out for enjoyment, or meeting a friend).

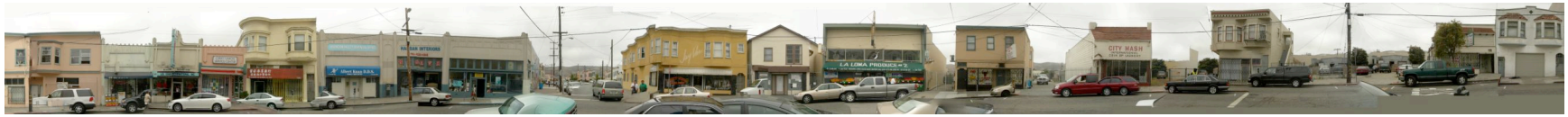
Necessary activities are those in which participants "are to a greater or lesser degree required to participate"[2]. On the other hand, optional activities take place when the physical and environmental conditions are appropriate. Optional activities demonstrate a higher degree of quality in the urban environment because they invite people to spend more time in public spaces, and makes possible a wider range of human activities that make these spaces attractive, interesting, and inviting[3]. Hence, the reclassification of these categories is meant to serve as an indicator of the quality of the physical environment. Shopping is left as a category in of itself because it could not be discerned whether one was shopping out of leisure or necessity. From right side of fig. 8, we can see that 48% of respondents on Valencia were visiting the street for optional activities, compared with only 22% on Leland Ave. Chi-squared tests also indicate these values are statistically different from one another at $p = 0.05$.

When asked the question, what is your favourite neighbourhood commercial street in San Francisco, 42% of respondents on Valencia St. listed Valencia St. as their favourite neighbourhood commercial street, versus only 11% citing Leland Ave. among respondents there. Furthermore, on Valencia St, not one single respondent listed Leland Ave. as their favourite street, while 2% of respondents on Leland Ave. listed Valencia St. as being their favourite neighbourhood commercial street.

All of this suggests that in spite of the physical design shortcomings of Valencia St.'s sidewalk, many more people frequent Valencia St. at all times of the day and many more users of the street also came for pleasure or optional activities. While density of the surrounding neighbourhood, or quality of access to public transit, which were not examined in this study, may explain some of the differences in volumes of pedestrian traffic and stationary activity, it does not account for differences in terms of the purposes for visits.

One very frequent comment from Leland Ave. was the need for more shops, restaurants, and cafés on the street. Currently, the street has a proportionately greater number of vacant lots and vacant shops and a disproportionate number of laundromats and dry cleaners for its length

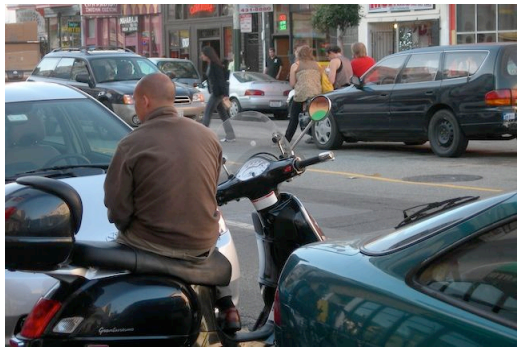
A view of Leland Ave. where pedestrian activity is concentrated. The street frontage is interspersed with vacant shops and parking lots



when compared with Valencia St. Leland Ave. only has a few self-service restaurants, one café, and two grocery stores. On the other hand, survey respondents on Valencia St. cited the diversity of the stores, restaurants, as well as street users as some of the reasons they enjoy visiting the street. The study portion of Valencia St. is populated by a diversity of shops ranging from used clothing to cellular phone outlets, furniture shops, and even an adult sex-toy shop. Its dining options range from a self-service tacquerias and pizza parlours to full service restaurants of various ethnic cuisines, wine bars, and late night drinking establishments.

This brief summary of land uses on Valencia St. only serves to highlight the fact that the diversity of establishments along Valencia St. gives it an ambiance that makes it a more popular destination than Leland Ave. Certainly, both streets can benefit from a host of streetscape improvements such as more trees and benches, and a wider sidewalk in the case of Valencia St. The city could do more to ensure better consistency in sidewalk paving, cleaning, and maintenance. However, Leland Ave. will likely benefit most at this time by encouraging a greater diversity of shops, eating establishments and services to locate along its length. It is not the goal of this study to suggest how economic development should be promoted along Leland Ave. This study wishes to highlight that physical design of the public space, while important, is secondary to encouraging greater pedestrian activity on Leland Ave.

There must be reasons for people to visit a street and spend time in this public space. Necessary activities, like running errands, shopping for necessities, and passing through are some of those reasons. However, these types of activities tend not to create a vibrant street life; people tend to go home rather than spend time on the street. A greater diversity of business establishments that encourages different kinds of people to come out at different times of day provides many other reasons for visiting a street, and seeds the potential for a wider range of activities that make a street an attractive destination to occur.



People wouldn't have to sit on the on their cars or scooters if there were benches on the sidewalk.

Conclusion

The present study has collected data on pedestrian volumes, stationary activities, and cycling traffic on portions of Valencia St. and Leland Ave. It has also solicited the opinions of street users on a host of issues regarding the quality of the pedestrian environment. This study serves as the basis for comparisons of future studies of these streets and in investigating how streetscape improvements affect the perceptions and use of the pedestrian realm.

Both streets would benefit from a host of streetscape improvements such as improving the attractivess, condition, and cleanliness of the sidewalks. However, on Leland Ave., it is important to note that encouraging more and varied types of establishments and services to locate along Leland Ave. would be of greatest benefit to improving the quality and vibrancy of pedestrian activity on this street.

Future work

GIS data was collected regarding people's origins and destinations. However, time did not permit an analysis of any of this data.

Efforts should be made in future studies, especially in comparative studies after streetscape improvements, to address the shortcomings of the present survey. Methods should be devised to address the misunderstanding or misinterpretation of survey questions, as discussed above. Furthermore, it would be interesting to look in greater detail as to how land-use along the streets, types, qualities, and diversity of stores, affects people's level of satisfaction. While the current scope of this work targeted the space of the public realm, it is suggested that people's satisfaction with the public realm has as much to do with why people come to streets as it has to do with their interaction with its physical design once they get there.

Appendix 1 Count day details

Date	*Street Name*	*Weather*	*Temperature*	*Wind*
Wednesday June 6	*Valencia St.*	*Generally sunny with a few clouds*	*High 58 F*	*W 18 mph*
Saturday June 9	*Valencia St.*	*Sunny with a few clouds*	*High 63 F*	*W 21 mph*
Wednesday June 13	*Valencia St.*	*Sunny*	*High 68 F*	*No to Light winds*
Thursday June 7	*Leland Ave.*	*Mostly sunny*	*High 66 F*	*NW 6 – 10mph*
Saturday June 30	*Leland Ave.*	*Sunny with a few clouds*	*High 64 F*	*W 20 – 24mph*

Endnotes

[1] Towards a Fine City for People, Public Spaces and Public Life – London, Copenhagen, Denmark, Gehl Architects, 2004.

[2] Gehl, Jan, "Life between Buildings, Using Public Space", Skive, Denmark. Danish Architectural Press, 2001, p. 11.

[3] Gehl, Jan, "Life between Buildings, Using Public Space", Skive, Denmark. Danish Architectural Press, 2001.