CITY COUNCIL MEETING

TUESDAY, SEPTEMBER 19, 2017

DOCUMENTS RECEIVED AFTER PUBLISHED AGENDA

QUESTIONS & ANSWERS

Item #7 and #15

AGENDA QUESTIONS & ANSWERS MEETING DATE: September 19, 2017	
Item #7: Re-Execution of Revised Cooperation Agreement for FYs 2018-2020 Between the City of Hayward and the County of Alameda to Participate in the Alameda County HOME Consortium.	
Q: What was wrong with the City's previous resolution passed in June? Why did the USBR require re-authorization?	A: There was nothing wrong with the resolution passed in June. In fact, Alameda County circulated Hayward's resolution among other County jurisdictions as a sample to model their resolutions by. As mentioned in the report, HUD reviewed the requalification package submitted by the County and it identified deficiencies in two areas: a) in the resolutions of some jurisdictions (not Hayward's), and b) in the Consortium Agreement. The County must now resubmit the package with the corrected resolutions and revised Agreement but HUD is adamant about having new resolutions approved. HUD's reasoning behind this is that the governing body approved the execution of one agreement and now needs to approve the execution of a different agreement (or, at least, an agreement with different/new language).
Item #15: Hayward Shuttle Study – Findings and Draft Final Recommendations	

Q: For the Shuttle Study, was the feasibility and cost for contracting with an existing service like AC Transit or San Leandro Links explored?	A: Staff has been working with AC Transit but have not collaborated with the San Leandro Links shuttle other than using their Shuttle service for comparison purposes. AC Transit was involved throughout the shuttle feasibility analysis as part of the Technical Advisory Committee (TAC). Staff has discussed a number of options including collaborating and jointly managing the City's shuttle service. Generally speaking, their cost of operating a shuttle is significantly higher than all alternatives we have evaluated. AC Transit was asked for their proposal on how they can assist the City in operating the shuttle service but staff have not received anything from them so far. Collaboration with San Leandro has been limited given that the distance between the two jurisdictions won't allow for service overlap or joint shuttle operations. Hayward's potential implementation plan was compared to their route, ridership and costs for comparison purposes. Staff is currently working with Alameda County to identify possible alternatives of jointly operating a shuttle that they are currently operating for County employees. In this scenario, their route will be incorporated into Hayward's larger recommended route.

WORK SESSION

Item #15 WS 17-044

Hayward Shuttle Study

From: Sherman Lewis
To: List-Mayor-Council
Subject: Shuttle study
Date: Monday, September 18, 2017 4:52:12 PM
Attachments: Walking Oriented Development.docx
BART Walk .docx

In previous comments I've expressed concern that the shuttle concepts had the same problems as AC Transit--long routes, slow run times, headways over ten minutes, lack of land use support, lack of land-based financing and ecopass, lack of parking pricing reforms, and in general a failure to understand the difference between transit as a heavily subsidized social service with poor ridership and transit in a systemic context based on places where it does work.

Fehr Peers clearly has competency as a consultant in the American transit culture, but that culture has fallen behind more progressive countries.

If I were on Council, I would want to know when the AC Transit special tax expires, what the existing cost per rider is on AC's less patronized routes, why AC has such a high cost structure relative to contract bus operators, and how the AC tax could be spent more efficiently. It might involve getting out out of the AC district like Union City has, or contracting with AC for only those routes that have enough riders to justify. I suspect that if you expect the fare box to recover even half of the operating cost, let alone capital cost, no routes will qualify. You should look at the feasibility of Lyft and Uber vouchers to provide better service for qualified persons at less cost. Find out how the CSU East Bay and Union City bus services work to add to Table 4-1. AC Transit Operating Expenses per Bus Revenue Hour were $178.92 in 2014 and Operating Expenses per Unlinked Passenger Trip were $5.24. Union City is $83.10 and $6.64 respectively. My look at the Palo Alto Shuttle indicated $72 per revenue hour; $58 seems way too low. As I recall TransMetro for the campus costs about $62 per hour; you can ask Derrick Lobo.

The City, the consultant, and American culture in general don't understand modern transit, exemplified in the city's lack of interest in the failings of AC in Hayward and the large amount of funds being wasted on empty seats. MTC, which should be the leader, has spent more and more money on transit with fewer and fewer riders, in contrast to places that know how it works.

It would be nice if the shuttle study could be tweaked, but the City is planning to build a parking structure in the middle of the best route that could connect Lincoln Landing with BART using a one-bus, low cost, 7 minute headway shuttle. The City is looking at AC Transit-style routes--long, slow, circuitous, infrequent--a route up 2nd street and back on Carlos Bee? A St. to D St. separation and B St. to Meek separation loops? How can the City succeed where AC Transit has failed?

There is no consideration of short corridor high speed low cost frequent no fare service to Lincoln Landing, the campus, and Chabot, which are the three that have the best chance if supported by the many policies that create a system. I attach a summary of concepts.

I also sent you several times "Ideas for Downtown Hayward," a larger set of ideas within which transit can work. The City has shown no interest in these ideas and HAPA failed to have much if any influence on the Maple Main and Lincoln Landing projects, so the prospects for a high quality walking

environment downtown are diminished. HAPA is now likely to work only on stopping subsidized parking structures and on using the currently available $35 million to reform the loop with a low cost approach, not the big peanut.

I support the use of a contract operator.

I find the Feasibility Study devoid of real economics. It uses, amazingly, a survey as a basis for ridership, when behavior actually determines ridership. Likely riders from an employee survey? It doesn't hurt but it's not real; it's not car travel time vs. drive-park-walk-wait-in-vehicle-time-walk total=total stages for total trip time. The Winton Loop has a round trip run time of 48 minutes, so the one way might be 20 minutes. If drive-park is not a stage the times might be 10+7+20+3= 40 minutes. The average travel time to work in the Bay

Area is about 28 minutes.

At $70 per hour for 40 hours per day the cost is $2800. For 184 riders on the A/D loop the cost is $15.22 per rider. On the campus route for 214 riders the cost is $13.08 per rider. BART to campus on Lyft is about $8.

I think you are planning a high cost, low ridership service comparable to AC Transit.

You need to use the central county trip table to see if a shuttle can beat the car. The study seems to think that awareness of transit can increase ridership. There is a study out of Perth, Australia, that shows that an education program can work, but for the most part ridership depends on attractiveness relative to alternative modes, i.e., elasticity.

I could not find the word "elasticity" in the report. I could not find one-way run time, specific dwell time, signal preference, queue jumping, proof of purchase, low floor, no step, dual mode, diesel, or electric. These and related items I would look at to get faster service more frequently over a shorter router with dense development and ecopass. You seem to be trying to make an urban service work in a dispersed suburban area.

People like transit, they believe in transit, they think they want to ride transit. But they don't ride transit until it beats their car.

Timing to meet BART trains is more complicated than it looks. Are you trying to meet northbound or southbound? You need to look at the mid-county am trip table to know. Richmond or San Fransisco trains? What is the walk time from bus door to platform? How reliable are the buses and the trains? When I worked on this a few years ago I threw up my hands and gave up. This problem is very different from hard-wired meets at MacArthur BART.

Figure 3-28 seems incorrect as to walkability to a BART station. First, the bar chart is not helpful. Walk to BART is best understood as a function of decline with distance. Second, the average walker walks about .52 miles to the station, so under a half mile is simply incorrect. Planners should go out to almost a mile to capture over 80 percent of riders. I attach my paper on this issue.

First mile/last mile is fairly useless; the behavioral research shows that travel time relative to the purpose for the trip to be the most important factor for mode choice. For only a few trips, monetary cost of tolls, parking ,and transit are important. I will spare you my paper on this subject.

I don't like to see so much time and money going into planning something that I don't think really works, instead of what will work, which you are not studying.

--
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Walking-oriented development has:

General

Walking-oriented development is near high-quality transit with access to a job center and within 15 minutes total travel time of a good grocery store. Walking oriented development densifies a center or along a short corridor without adding subsidized parking. Pricing, density and design replace car trips with walking trips for more efficiency and better health.

Affordable and Sustainable Site Development

The residential building for a walking-oriented development is affordable and sustainable, which is best accomplished by:

- Mid density: about 50 to 100 persons per neighborhood acre
- Four square construction for major savings
- Three-story building height for insulation, human scale, and active solar energy
- Net zero on the grid (roof-top PV and thermal solar energy, three stories optimal)
- Parking cost paid by parkers, reducing unit cost by 15% to 20%.
- A resident association must have procedures to foster community and maintain value.
- Built to condo standards and registered as condo properties even if rented.

Green Mobility

The Bay Area has wasted almost $200,000,000 on 3,882 unused parking in affordable housing projects. See http://database.greentrip.org/.

Walking-oriented development uses green mobility:

- Parking
  - Surface parking; no structured parking unless it pays its own way (land, construction, operating, external costs) with parking charges.
  - Reduced parking ratio for initial phase of residential development.
  - Parking management on public streets to prevent spillover parking from new development.
- Parking charges
  - Unbundled parking, charged like living space rent to make a profit on the parking (for example, $2,930 rent and $370 for two parking spaces, $3,300 if bundled)
  - Market parking charges at 85% occupancy; no time limits; efficient fare collection/no currency; use of funds for local improvements; involvement of local people in deciding use of funds, free parking nearby, signage (see HAPA detailed proposal).
- Public autos: Carshare/rental; taxi; ehail (Uber, Lyft); paratransit
  - Dedicated curb space based on use for public cars
  - Arrangements with providers
  - Easy pick up, drop off, payment
  - Guaranteed ride home voucher for residents from BART for taxi/e-hail when the BART Shuttle is not running.
  - A limited number of taxi/e-hail vouchers for healthcare when other modes are inefficient.
- Rapid Shuttle; rapid bus concepts
  - Short corridor, less than two miles, allowing frequent service with one or two buses, with one end of route at high quality transit like BART.
  - **Frequent**: every ten minutes or more frequently most of the day
  - **Fast**: Uses rapid bus concepts: maneuverable bus—30 feet long or less, dual mode motor for fast acceleration, hill climbing, and regenerative braking; low floor bus, elevated sidewalk stops with no step entry; guided docking for fast roll-on, no fare collection, "proof of purchase" fare enforcement, signal preemption, right lane bypass.
  - **Free:** Residents have eco-pass; students have class pass

- Land-based finance: Developers, CSU, and property owners provide capital at time of development or as buy-in; residents provide operating as part of rent or HOA dues.
- **Ownership** by capital contributors, management by RFP and contract operator.
- **Hayward downtown BART Shuttle**: with Loop reform, BART to Lincoln Landing via A St. and Maple Court; back via Maple Court and B St. (See HAPA detailed proposal.)
- **BART to CSUEB** Hayward: to campus via C St., Mission, Bee, to upper PE Building; back same except Fletcher Watkins B St. until Loop is fixed, then via Mission and B St. (See HAPA detailed proposal.)

- Easy, safe, attractive walk paths to important destinations, like a downtown and transit.
- Bike share and supporting facilities for easy one-way bike trips
- Multimodal Centers where dense housing, shuttle, shared ride, and retail are concentrated.
- Special carts for groceries.
- Walk route improvements for attractive and safe crossing of streets.
- Education for residents in green mobility.
- Deparking incentives.

Financial feasibility

- Estimate absorption rate for new markets—rail transit riders, corridor workers, retired, work at home using travel diaries and focus groups.
- Deparking incentives: financial incentives for residents to not park their car on site (saving money on no car or reduced car use, parking charge savings, possible additional inducements).
- Project has mobility education and services for residents to have mobility without parking a car on site.
- As residents transition away from parking a personal car on site leaving unused parking spaces, new phases are built following the same concepts.
- This kind of housing costs about 15% less than automobile-based housing, making it very competitive in the marketplace.
- As surface parking is freed up, it is used for the next stage. The amount of parking to be built can be adjusted to reflect the demand for unbundling. Developer has incentive to reduce parking on site in order to get more units.

Walking-oriented development can revitalize downtown and make Hayward a leader in the state.

Definitions

Densities:
Can be by units or persons.
Can be by various kinds of area:

Lot only
Lot plus street
Lot plus street plus integral neighborhood serving land uses (neighborhood density)
Neighborhood plus non-neighborhood land uses over a large area (urban density)

Low density: 50 persons or fewer per neighborhood acre
Mid density: 50 to 100 persons per neighborhood acre
High density: 100 persons per neighborhood acre

Low-rise: 1 to 2 stories
Mid-rise: 3 to 7 stories
High-rise: 8 stories on up

Related issues

Funding

The California Strategic Growth Council (SGC) has $400 million to award to housing and non-auto transit access projects in 2016 in the Affordable Housing and Sustainable Communities (AHSC) program. In 2016, the Notice of Funding Availability (NOFA) came out in January, so the same may occur in 2017. Projects following the principals of Walking Oriented Development will score well.

Regulation

Current Hayward zoning requirements mandate building large amounts of free and bundled parking, thus subsidizing more cars and more traffic at the expense of affordable housing and less car dependency. Zoning should go the other way, for example, by allowing no more than one parking space per ten units and requiring market-rate unbundling.

Current Hayward parking regulations allow free use of expensive public parking paid for by tax payers. Parking is so over-supplied that much of it goes unused where there could be productive development, and some of it is in high demand with no turnover for efficient use. In some areas, the city has neighborhood parking permit requirements and time limits that help to some extent, but are inefficient. Parking management can prevent parking spillover into existing neighborhoods and can generate funds for downtown improvements. (See Parking Fee Pilot Project and Parking Management in Ideas for Downtown Hayward.)

Economics

Many people tend to be unrealistic about how much retail downtown can support. New space seems more viable than space in old buildings. Retail requires a large residential population to be viable. Consultants can provide ideas about what is realistic, so the city does not withhold land from residential development hoping for retail when it is not realistic.

The value for real estate developers of revitalizing old centers is promoted by Smart Growth America. “Walking oriented development” focuses on nearby neighborhoods and supplements revitalizing employment in old centers.

Walk Access to BART and Residential Density

Introduction

How far are riders willing to walk from home to urban rail transit stations? Given the high cost of urban rail, walk access is important for planning rail transit routes and stops. Walk access research can help planners improve transit service and walkability. Research may also help reduce auto dependency, lower carbon emissions, promote a more sociable urban alternative to suburbia, improve pedestrian safety, and increase walking for health.

This paper focuses on walk distance from home to urban rail stations and the correlation of number of walk accesses (riders walking from home to urban rail transit stations) to residential density around the stations. This research led to the broader issue of means of transportation from home to work and how it correlates with density around transit stations.

This paper uses previously unpublished data from a large survey by BART (Bay Area Rapid Transit) of home origin walk distance to each of its 44 stations (BART 2008). This paper reports walk distances in more detail than other papers, including a list of stations, the number of survey respondents, the mean, median, and standard deviation walk time from home. It reveals large variation in amount of walk access and walk distance that is often hidden in aggregate data in other papers.

The data support using "decline with distance" for planning and using longer walk distances—over half a mile.

Literature review

The BART data reported here can be compared to that reported by other papers with survey data on walk distance to urban rail stations. Few papers have original reports of specific home to rail station walking distances based on surveys or map measurement of actual accesses. Table 1 summarizes seven aspects of the 18 papers that were found. The papers are diverse. Some are based on surveys, others on measured distances, stated preferences, ridership predictions, planning guidelines, or planning assumptions about "zone of influence." Some are unclear about the kind of distance, whether average, median, "maximum" or some other distance. Some use radial distance from a station; others use road network distance.

Table 1: Literature Reviews, home to rail transit station walk distances here

Some papers used walk access mode share rather than distance walked. Mode share is different from number of walk accesses. Mode share can be high, typically in high density areas, but the number of walk accesses can be low if the total number of accesses is low. In fact, walking can dominate the total mode share yet be low in number for station access because people don't need transit for most travel—they are walking directly to nearby destinations.

Some papers reported mean walk distances; others, median; and a few, both. Mean distances ranged from 0.35 to 0.75 miles. Some papers were not clear, reporting a distance people are "willing to walk" without giving an empirical basis.

Agrawal et al. (2006) had a useful comparison of self-reported vs. map-measured walk distances. The measured distances were considerably shorter than those self-reported. For the 75th percentile, for example, the reported distances were about 0.95 miles and the measured distance, about 0.68 miles. The BART data used measured distance from the street intersection closest to respondent's home.

Many papers used the concept of catchment areas, defined as a fixed distance from a station which people are willing to walk and that should be used for planning. A half mile is the standard, even though extensive data indicates little basis for it. Various studies use a quarter-mile, two-fifths-of-a-mile, and from 0.19 to 0.56 miles (Guerra et al., 2011, p.2).

Cervero et al. (1995; pp. 40-42, 45-46, Table 20) used the largest catchment area definition in the literature: "The catchment areas for walk-on trips to BART stations were defined as the census tracts encompassing the origins of 90 percent of all access trips made by foot." The definition meant that the walk distance to the station would vary, and it did, from 0.69 to 2.43 kilometers (0.42 to 1.51 miles). They used 90 percent to capture "the vast majority of access trips."

This paper, instead, uses the concept of "decline by distance." The paper closest to the approach used here is Ewing (1996, p. 13) using national data. He converted walk trip times from the 1990 Nationwide Personal Transportation Survey (NPTS) into distances and plotted a frequency curve by distance. He found a median walk distance of .28 miles, but "walking distances to/from transit routes" seemed to include bus access and walk trips not from home. The focus here is on the home to station walk distance. Ewing's curve had a high peak and long tail to longer distances, which also was found in the BART data.

Crowley et al (2009, Figure 5a) have a chart with a similar frequency curve by distance. They studied North York City Centre, a low density Toronto suburb, which had increased transit ridership because of transit-oriented development with short walking distances to stations on the Yonge subway line. They found that the walking distance mode was 200 to 400 meters, with shorter walks less than half that number shown on the left. For longer walks, shown on the right, the next longer distances numbered about two-thirds of the peak, with steadily descending numbers for longer walks.

This paper is more comprehensive in covering its focus on walk access than the papers shown in Table 1. It includes data on home origin walk distance for all stations in a system, including sample size, median distance walked, mean distance walked, and standard deviation. This level of detail allows a better appreciation of variation than summary data.

The only paper that covered residential density around stations was Cervero et al. (1995). They used population per square kilometer in census tracts and block groups within half a mile of the station. This paper used population per acre in block groups also within the half mile. However, Cervero et al. reported access by walking as a percent of access by all modes, rather than the number of accesses used in this paper.

Findings

Walk distance

BART's research department provided us with previously unavailable rider survey data on median, mean, and standard deviations of walk distance from home origins to all BART stations in Table 2. In 2008, 31 percent of BART riders walked to stations, with a median distance of 0.540 miles and a mean distance of 0.598 (BART 2008).

Comparing the BART data to other survey results shows that BART's findings are inconsistent with research showing walks of a quarter to half a mile, but consistent with five papers showing over half a mile (Table 1). The study with results closest to BART's was Bergman et al. (2011), who found that the median walk distance was 0.54 miles for the WES commuter rail in Portland, Oregon.

Table 2: Survey results, home to rail transit station walk distance here

Decline with distance

Walk access does not end at some fixed distance, but declines gradually, and with much variation among stations. To illustrate the rate of decline in the number of walkers with distance

walked, station by station walk distances were plotted by distance. Figure 1 shows the amount of variation by station from three perspectives: the mean walk distances minus half a standard deviation, the mean distances, and the mean distances plus a standard deviation. The number of even longer walk distances dwindled to a very small number.

Figure 1: Decline with distance, walk from home to BART by station here

The range of distances is quite large. The shortest distance was .226 miles for half the standard deviation for the station with the shortest walk distances. The longest distance was 1.165 miles for the median plus one standard deviation for the longest walk station. The implication is that from about a quarter mile to 1.2 miles, factors other than distance determine the attractiveness of walking to the station.

Density and walk access

To look at density around stations with high walk access, the sixteen stations with the highest walk access were selected. Each station had more than 100 respondents who walked from home to the station. Census data on block group population was used to determine residential density around BART stations. (Census tracts were not used because they are often too large to be useful for walking distances.)

A half mile circle around stations was used to identify block groups, not strict walking distances. The block groups often extend beyond half a mile. Block groups are lumpy; they are irregularly shaped and meander in and out of the circle. Block groups more than half within the circle were selected, so the density estimate is accurate for the block groups, but approximate for the half mile circle.

Functional density is diluted by non-residential land uses that intervene between housing and the station. Non-neighborhood uses include parking lots, offices, and institutions. By the same token, land uses that do not affect walking distance do not affect density. Google maps satellite view was used to determine land uses within the block groups. If most pedestrians had to walk through a mostly non-residential block group to reach a station, it affected the functional density of the station area and those block groups were kept in the density estimate. By contrast, a few mostly non-residential block groups did not affect common walking routes to the station, so they were not included in the density estimate. They were, for example, the University of California campus near the Downtown Berkeley Station, Glen Canyon Park near Glen Park Station, the Westfield Shopping Center near Powell Station, and the City College of San Francisco campus near Balboa Park Station. The map showed that these areas did not affect walking routes to the station.

Table 3 has station data and Table 4 has the block group data.

Table 3 Station data, 16 highest walk access stations here
Table 4 Census 2010 residential density within 0.5 miles of BART stations here

There was no correlation of residential density at stations and number of walk accesses. See Figure 2. Some station areas had dense neighborhoods with high walk access, some with high density neighborhoods and low walk access, and low density neighborhoods with high walk access.

Another explanation is a large number of jobs in the station area, discussed below.

Figure 2: Walk Access by Residential Density here

The lack of correlation was caused in part by three BART stations with very high employment. These Central Business District (CBD) stations were Civic Center, Powell, and 12th Street Oakland. The low correlation was probably due to the fact that many residents were already close to where they needed to go. These three stations served the largest employment centers in the Bay Area, so many nearby residents were likely to walk to work and did not need rail transit to get there. The two BART stations with the highest densities – Powell and Civic Center – had very few pedestrians

going to BART and a longer than average walk distance. Large, dense populations near transit do not guarantee that many people will walk from home to transit.

Figure 3 removes these outliers to see if the correlation improves. It does. Without Civic Center, Powell, and 12th Street Oakland, there is a correlation of 0.709 between density and walk access, a modest improvement. See Figure 3.

Figure 3: Walk Access by Residential Density Revised here

CBD stations can be identified and quantified because they flip the balance of entries from residential stations. CBD stations have a low number of entries in the morning compared to exits and a high number of entries in the afternoon, with residential station having the reverse. For all three downtown stations about 70 percent of total afternoon accesses were entries—predominately being riders heading home from work.

Means of Transportation to Work

Residential density is not related to walk to urban rail transit, but does seem to be related to an increase in non-auto modes, especially at densities about 50 persons per neighborhood acre. Data on travel modes for census block groups does not exist in public databases, but the Census does report on means of transportation to work. Public transit, bicycle, and walk were combined into non-auto modes and measured as a percent of non-auto modes plus car modes. The percent of non-auto modes was plotted against density to see what the correlation might be. Figure 4 shows the result.

The correlation is 0.847 for the 16 stations, an improvement over using walk access to BART minus the three CBD stations and is, in fact, a high correlation. It is interesting to get a good correlation with density data alone despite lumpy geography and some margin of error in block group populations. See Figure 4.

Figure 4: Residential Density and Non-Auto Journey to Work here

Planning Guidelines

Urban planning considers empirical data regarding walk distances and policy ideas about how to improve transit ridership. There is, however, no agreement on guidelines about the walk trip planning area. Empirical data showing short walks favor certain policies in response, such as closer transit stops to reduce walk distances, or increased density within one-fourth mile to increase riders. Empirical data showing longer walks favor policy affecting a larger land area and improving the walk experience. Crowley et al. (2009) recommend a planning area of a quarter to half mile from the station. Daniels and Mulley (2011) cite Agrawal et al. (2008), Alshalalfah and Shalaby (2007), and Ker and Ginn (2003) in support of walk distances over half a mile.

Catchment areas vs. decline with distance

Small catchment areas risk limiting planning to small areas. A fixed area connotes a cliff where walk access drops off sharply at the distance, such as half a mile or a quarter mile. Using half a mile to plan for BART, whose median walk is.52 miles, would overlook half of walk access riders. The BART walk access distribution curve is skewed to the right. A rough estimate indicates that about 84 percent of walk access goes out about 0.89 miles from the station, a longer distance than is commonly accepted.

A flexible and large catchment, like the 90th percentile or the mean plus a standard deviation includes more potential riders while avoiding the extreme tail of the distribution with few riders and extra distance. BART, for example, had a few people walking over two miles to reach a station, but these outliers are not useful for understanding walk access for planning purposes.

Large catchments still fail to indicate how much walk access declines with distance. The rate of decline with distance measures how the attractiveness of walking diminishes gradually with length,

allowing consideration of more possible opportunity for development at a greater distance balanced against fewer probable riders.

Planning guidelines should indicate where to look for opportunities, with decisions guided by cost-effectiveness, which varies among situations. Close-in densification seems sure to work for short walking distances and better competition with other modes, but may not be viable. Planning for a longer walk may allow consideration of more available land, but would need attractive walk paths and management of autos.

Geography

The use of census tracts is not useful for all stations due to the large size of some tracts and the implication of longer walk-in distances. In the case of Pleasant Hill, the map shown by Cervero et al. (1995; PDF p. 119) shows a long area extending south beyond another BART station, too far to walk and therefore illogical. The authors themselves discussed the problem (p. 41), such as inaccurate walk distances using census tracts and block groups with large areas not used for walk access. As discussed above, this paper deducted certain block groups that were misleading for walk access.

Research should use blocks rather than block groups in dense areas. Even block groups can be too big, combining blocks of employment with residential blocks. Blocks allow a finer grained analysis of walk distances and densities.

Further Research

The commute vs. other purposes

Many variables besides those discussed here help explain walk access to urban rail transit.

People have personal travel time budgets for various purposes, one of the most important being the trip to work. Commuters are willing to spend more time to get to work than for any other common travel purpose, including a long walk distance. Commuters are the major purpose for using urban rail; the economic value of the work trip supports the expense of urban rail. Commuters have to optimize among travel time, job income, and housing amenity, and seem to minimize time and expense regardless of mode. Usually, drive alone is the dominant mode, but in many dense areas urban rail transit may be faster and less expensive than driving due to congestion, bridge tolls, and parking costs. In this context, walk to a rail station is one stage in a multi-stage trip from door to door where total costs in time and money drive the mode choice.

Commuting supports longer travel times than trips for other purposes such as for routine shopping, services, socializing and recreation, as characterized by the Walk Score (https://www.walkscore.com/). Therefore, planning for walking in general has to use much shorter walk distances than the commute, distances probably closer to a quarter mile.

Enough seems to be known about auto trips in suburbia. Research should focus on household surveys in dense neighborhoods served by urban rail and on on-board surveys. Walk to station is just one stage in the decision.

Research could revisit the issue of density and walk access using new BART data. Since the 2008 survey, BART completed a new survey of 44,000 riders in the spring of 2015. The walk distance findings are not on the web but could be available form BART, like the similar data used in this paper. The research could consider land use around all stations, use the ratio of morning boarding to exits for a ranking of stations from residential to CBD, adjust for parking availability around the station, and even consider the quality of the walk path. Barriers to walking and a lack of safety discourage walking, and a pleasant, safe walking environment encourage it, making distances over half a mile quite feasible.

Research on walk access in general should become more systematic. Computational advances

based on computer models and large databases are helpful, but, as shown in Table 1, the variables covered are all over the map, with no systematic accumulation of knowledge. Everything overlaps; nothing gets replicated. This paper is no exception. Variable proliferation will persist, but it would be helpful to establish a set of core variables to analyze walk access and related issues and to develop a systematic database. Data could be accumulated in a federal database, similar to the transit database maintained by the Federal Transit Agency.

At least some research should have normative values in mind, particularly sustainability, understood as economy, equity, and environment. Walk to transit, and walking and transit in general, are more sustainable than auto dependency, and some variables, like density, parking, and pricing incentives, can be more influenced by planning than others.

Conclusions

Walking from home to urban rail transit stations is a legitimate but very small piece of the larger puzzle of how far people are willing to walk in general and of how to transition to sustainable urban systems.

Previously unreported BART survey data support several papers with mean walk distances over half a mile, challenging pessimistic assumptions about the willingness to walk to a transit station. Based on BART data, planning should consider long walk distances.

This paper uses new, more detailed data to better quantify relationships between residential density and walk to rail transit stations. BART data shows that the average rider usually walks over half a mile to a station regardless of density, ranging from CBDs to dense neighborhoods like the Mission District to sprawling suburban areas like Pleasant Hill. The data also show wide range of walk distances among stations.

There was no correlation between density around stations and the number walking to the station. The BART data shows many anomalous stations – with low density and high walk access, or vice versa – to support a positive relationship. Density is important for other reasons, such as supporting walking and transit in general, not necessarily walking to transit stations.

BART survey data reveals a great variation in home access distances and frequency, and shows that longer walking distances need serious consideration when planning rail transit and transit-oriented development.

Service Development
1600 Franklin Street, Oakland CA 94612

September 19, 2017

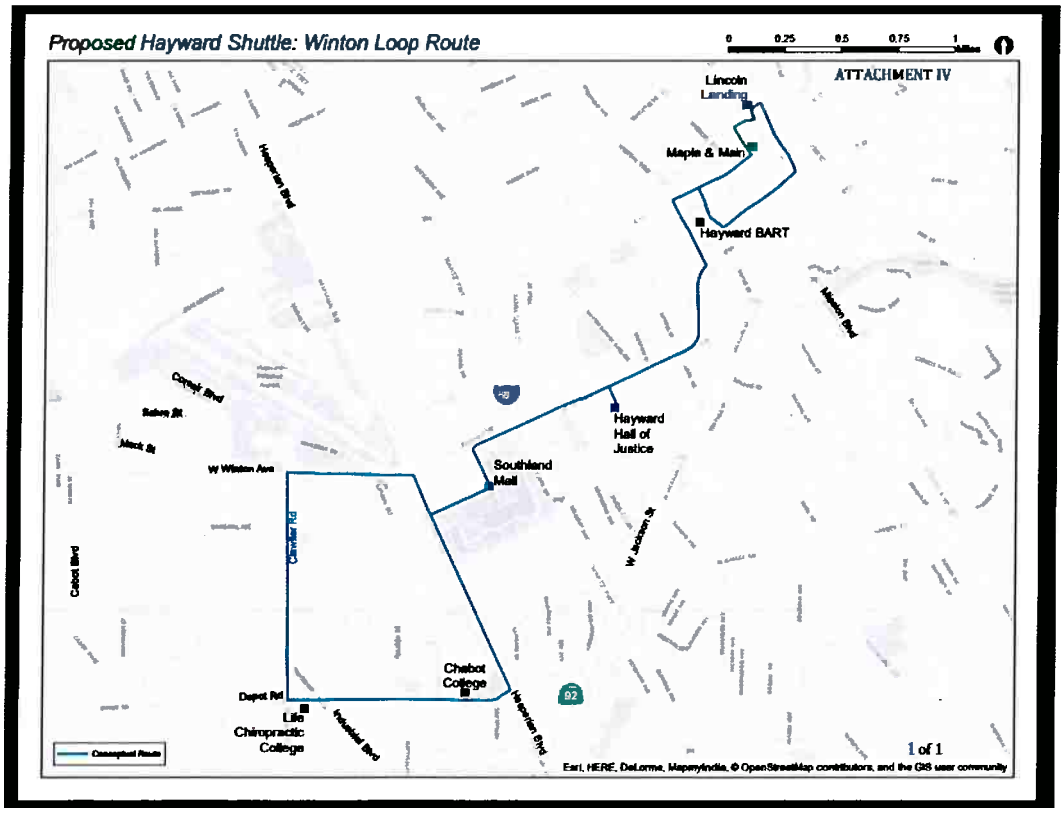
Honorable Mayor Halliday
Hayward City Council
777 B Street
Hayward, California 94541

RE: Hayward Shuttle Study

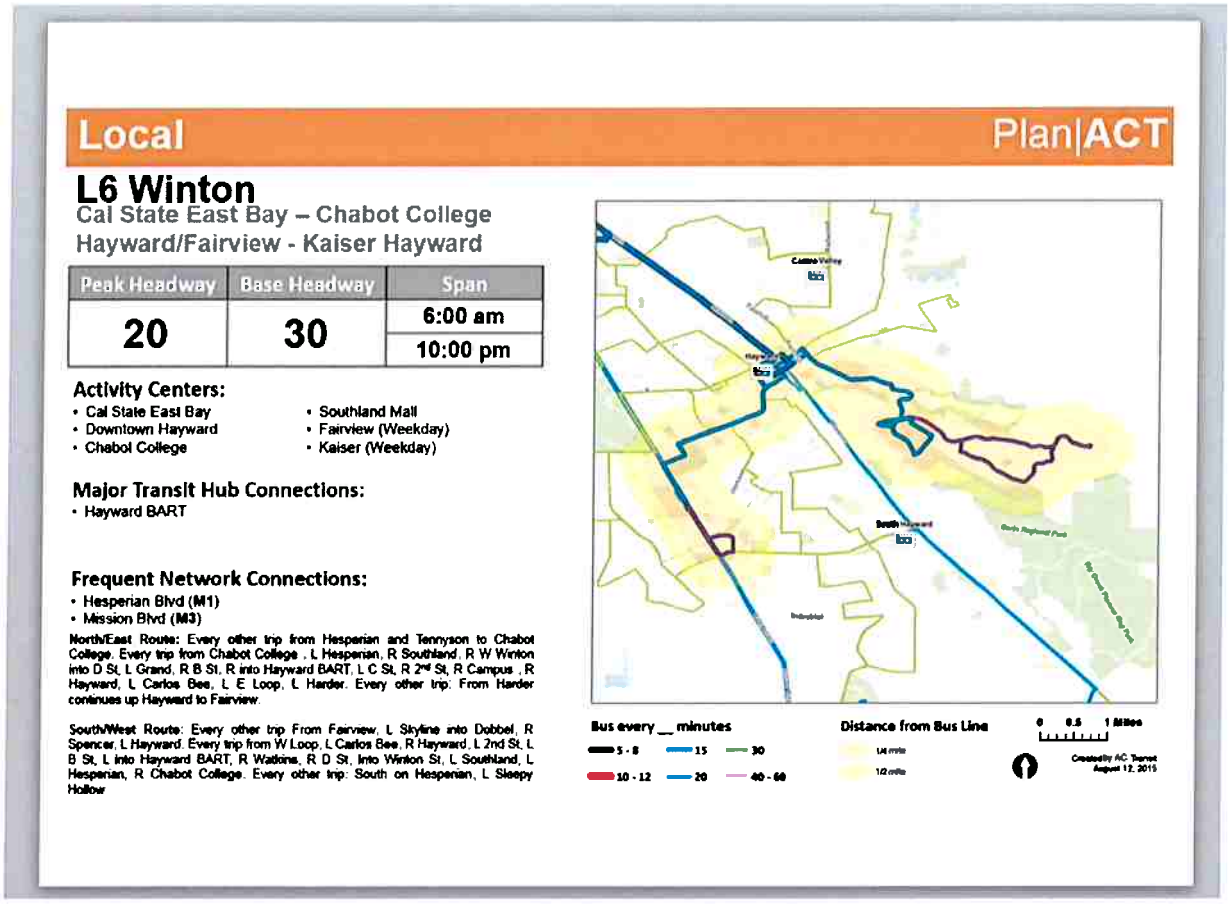
Dear Mayor Halliday and City Council Members,

AC Transit appreciates the City of Hayward's efforts to improve transit options for the community. In addition, we appreciate the opportunity to have served on the City's Shuttle Feasibility Study Technical Advisory Committee (TAC). As our staff have noted throughout the study process, the alternative shuttle routes proposed by the study's consultant would be on streets which are already served by AC Transit. With the passage of the Measure BB transportation sales tax in Alameda County, AC Transit plans to provide several corridors in Hayward with increased transit frequencies beginning in March 2018 under our Comprehensive Operations Analysis entitled AC Go. Many of the improved corridors are the same as those identified in the Feasibility Study. One of the lines that will see an improvement in frequency is a 20-minute service between Cal State University East Bay and Chabot College. The following maps show the final proposed alternative from the Feasibility Study along with the route that AC Transit will be operating beginning March 2018.

Feasibility Study - Proposed Winton Loop Route designated in blue color:



An excerpt from AC Transit's new Winton Route designated in light blue color:



Local — Plan|ACT

L6 Winton

Cal State East Bay – Chabot College
Hayward/Fairview - Kaiser Hayward

Peak Headway	Base Headway	Span
20	30	6:00 am – 10:00 pm

Activity Centers:
- Cal State East Bay
- Downtown Hayward
- Chabot College
- Southland Mall
- Fairview (Weekday)
- Kaiser (Weekday)

Major Transit Hub Connections:
- Hayward BART

Frequent Network Connections:
- Hesperian Blvd (M1)
- Mission Blvd (M3)

North/East Route: Every other trip from Hesperian and Tennyson to Chabot College. Every trip from Chabot College , L Hesperian, R Southland, R W Winton into D St, L Grand, R B St, R into Hayward BART, L C St, R 2nd St, R Campus , R Hayward, L Carlos Bee, L E Loop, L Harder. Every other trip: From Harder continues up Hayward to Fairview.

South/West Route: Every other trip From Fairview, L Skyline into Dobbel, R Spencer, L Hayward. Every trip from W Loop, L Carlos Bee, R Hayward, L 2nd St, L B St, L into Hayward BART, R Watkins, R D St, into Winton St, L Southland, L Hesperian, R Chabot College. Every other trip: South on Hesperian, L Sleepy Hollow

When comparing the two maps, AC Transit's new line along Winton is similar to the final alternative in the Feasibility Study. The new AC Transit line will also serve more destinations and provide more hours of service (16 hours of service per day versus the Study's proposed 10 hours of service per day).

With the implementation of AC Go, AC Transit believes that the agency is well positioned to meet the transit needs of the Hayward community. Rather than developing duplicative service as recommended by the Feasibility Study, AC Transit hopes the City will work with AC Transit to establish and encourage strong, consistent ridership on our future route plans for the Winton corridor and other improved transit service in Hayward. Collaboration could come in the form of co-promotion, fare discounts through our Easy Pass program, and improvements to the service, whether it is the optimization of bus stop locations or minor route adjustments that would leverage interest from adjacent developers and the Hayward Hall of Justice. Such collaboration could accomplish the same goals outlined in the Feasibility Study, while significantly minimizing cost.

AC Transit looks forward to continuing our partnership with the City of Hayward to deliver quality transit service. We would be more than happy to discuss the collaboration ideas mentioned above in further detail. If you have any questions or comments, please do not hesitate to contact me directly.

Sincerely,

Robert del Rosario
Director of Service Development and Planning
AC Transit
510.891.4734
rdelrosa@actransit.org

BOARD OF SUPERVISORS

RICHARD VALLE
Vice President
Supervisor, District 2

September 19, 2017

Mayor and City Councilmembers
City of Hayward
777 B Street
Hayward, CA 94541

Subject: Support for Agenda Item #15 – Hayward Shuttle Study

Dear Mayor Halliday and Councilmembers,

In 2016 the Alameda County Superior Courts consolidated court services to the Hayward Hall of Justice creating a burden for residents throughout Alameda County. Around that time the District Two Office was contacted by the Alameda County Bar Association about the disproportionate impact this change will and has had on lower income county residents. As your staff report indicates the County of Alameda operates an employee shuttle from the Hayward BART station to the County's various agency offices located on Winton between Amador and Santa Clara Streets.

Conversations between City staff and County General Services Agency (GSA) staff have been productive in exploring options for consolidating our shuttle service into a future City of Hayward Shuttle. The District Two Office supports staff's recommendation to implement the Winton Loop Hybrid Route, with a proposed addition of providing an employee only shuttle during peak hours to serve the County Winton facilities. Combining our shuttle services improves efficiency and maximizes limited public resources.

Alameda County's employee only shuttle operates from 6:35 a.m. to 6:45 p.m. with an average daily ridership of 95 riders; with most ridership occurring during peak hours. The shuttle serves court, public works, district attorney, public defender, and social service employees among other agencies. District Two Office and GSA believe that adding a dedicated employee only shuttle during peak hours to the Winton Loop Hybrid Route would meet the needs of both county employees and the general public. With this addition GSA could discontinue its existing shuttle service and help fund the City of Hayward shuttle.

Should the City implement the Winton Loop Hybrid Route, the District Two Office believes the City, County, and our constituents would be better served from partnership on the proposed shuttle route.

Thank you.

Richard Valle
Supervisor, District 2

cc: Kelly McAdoo, City Manager, City of Hayward
Willie Hopkins, Director, Alameda County General Services Agency

1221 OAK STREET · SUITE 536 · OAKLAND, CALIFORNIA 94612 · 510 272-6692 · FAX 510 271-5115
24301 SOUTHLAND DRIVE · SUITE 101 · HAYWARD, CALIFORNIA 94545 · 510 259-1097 · FAX 510 259-0860

AMENDMENT TO MINUTES
OF JULY 11, 2017

DATE: September 19, 2017

TO: Mayor and City Council

FROM: City Clerk

SUBJECT City Council Minutes of July 11, 2017

RECOMMENDATION

That Council accepts the amendment to agenda item #2, MIN 17-123.

At the request of Council Member Lamnin, the minutes of July 11, 2017 are being amended as follows.

Second paragraph on page 2 currently reads:

"… consider including a hotel, banquet facility, or conference center in Opportunity Site 1 – City Center..."

Proposed to read:

"… consider including a hotel, banquet facility, or conference center in Opportunity Site 1 – City Center or Opportunity Site 3 – BART Transit Oriented Development"

With the change noted above, I respectfully request approval of the amended minutes.