

MEMORANDUM

To: Therese Trivedi
From: Jeffrey Tumlin and Kevin Shively
Date: November 13, 2009
Subject: eBART Corridor Transit Oriented Development (TOD) Analysis

In April of 2009, the board of the San Francisco Bay Area Rapid Transit District (BART) adopted the Final Environmental Impact Report (EIR) for Phase I of an east Contra Costa County extension (hereafter referred to as eBART) from the existing Pittsburg/Bay Point Station to a terminus near Hillcrest Avenue in Antioch, California. In order to facilitate station site selection and certification that the communities to be served by eBART satisfy the housing requirements of the San Francisco Bay Area Metropolitan Transportation Commission (MTC) Transit Oriented Development (TOD) Policy (Resolution 3434), Nelson\Nygaard has conducted an independent planning-level analysis of existing and planned land-uses within a one-half mile radius of each of two alternative eBART station sites in Antioch and the planned eBART station at Railroad Avenue in Pittsburg.

This memorandum contains (1) a summary of findings and recommendations for the corridor, (2) background information on the MTC TOD Policy, (3) an update on recent planning processes in each phase 1 station area, and (4) a detailed explanation of our methodology, analysis, and findings regarding existing and planned development in each station area and the corridor as a whole. The reader should note that as a separate Task Order, under the same contract with MTC, Nelson\Nygaard is preparing a complementary and detailed evaluation of the transit oriented development potential of and existing, planned, and potential access to each of the two alternative sites for the Hillcrest Station in Antioch (including the BART-favored Median site, and the City-favored Median-East site). A draft of that study was submitted to MTC for review in October of 2009 and, pending feedback from MTC, a final draft is expected to be completed in late November of 2009.

Summary of Findings and Recommendations

Based on our initial review of background documents, interviews with planners in both Antioch, and Pittsburg, and independent analysis of available data, Nelson\Nygaard has made the following findings regarding transit oriented development potential in the eBART corridor:

- As it stands, the eBART corridor does not yet meet the MTC TOD Policy threshold of 6,600 housing units (existing, under development, or planned) within a one half mile radius of all stations in the corridor, regardless of which site is selected for the Hillcrest Station in Antioch. This analysis includes the Railroad Avenue and Hillcrest Avenue station areas per the recently adopted specific plans for each area, but only incorporates existing housing units in the Pittsburg/Bay Point Station Area.
- The *Pittsburg/Bay Point Master Plan*, currently under development and scheduled for adoption in 2010, will establish a minimum development capacity for that station area and whether or not the eBART corridor will ultimately achieve the minimum housing unit threshold in the MTC TOD Policy. It is highly likely that the *Pittsburg/Bay Point Master Plan*, once adopted, will ensure the eBART corridor meets its housing targets.
- The analysis of both potential station sites at Hillcrest counts all housing units within a half mile radius “as the crow flies.” The actual walk trip from some of these units, however, is either significantly longer than a half mile, or faces major barriers. For example, no practical pedestrian way is provided for residents south of SR-4 to access the station. MTC may wish to revise its TOD policy to account for actual walk distance in order to more accurately calculate TOD potential.

Background on the MTC TOD Policy

The MTC Transit Oriented Development (TOD) Policy (Resolution 3434) was adopted on July 27th, 2005. The purpose of the policy is to address multiple goals, including: “improving the cost-effectiveness regional investments in new transit expansions, easing the Bay Area’s chronic housing shortage, creating vibrant new communities, and helping preserve regional open space,” by focusing growth in transit accessible, urbanized areas.

The three primary elements of the TOD Policy include, (1) “corridor-level thresholds... for appropriate minimum levels” of residential development near transit stations, (2) “local station area plans,” for land-uses including TOD and access and circulation improvements within station areas, and (3) “corridor working groups,” including Congestion Management Agencies (CMAs), cities, counties, transit agencies, and other key stakeholders. These corridor working groups are charged with collaborating to manage corridor-wide and local station area plans that together will achieve the corridor-level thresholds for development contained in the MTC TOD Policy.

Because it is a “physical transit extension” listed in Resolution 3434, Phase I of the eBART line, from Pittsburg/Bay Point Station to an eastern terminus near Hillcrest Avenue in Antioch, is subject to the minimum residential development thresholds established in the MTC TOD Policy. The eBART Corridor, which will be served by Diesel-Multiple-Unit (DMU) rail transit vehicles, is subject to the housing density threshold of 2,200 units (existing + planned) within a one half mile radius of the average station in the corridor, as specified in the MTC TOD Policy for “Commuter Rail” projects. To account for the fact that some station areas are larger employment centers, while others are, or are planned to be, high density residential neighborhoods, each project is assessed based on the average density of housing (existing + planned units) within one half mile radius of all stations in the corridor, including the end of the line stations. This means that the

three station areas served by the eBART corridor, including the existing Pittsburg/Bay Point BART Station, must contain a total of at least 6,600 units (existing + planned) to achieve TOD policy certification and be eligible to receive funding allocations from MTC.

Notes specific to this analysis

TOD potential in the eBART Phase I corridor was previously evaluated in 2006, and August of 2007, by Arup, Inc., as part of the Nelson\Nygaard-led *TOD Policy Evaluation (2007)*. Figure 1 shows the total number of housing units existing and in the development “pipeline,” found during this 2007 corridor evaluation. These figures are shown for comparison with our updated counts conducted in 2009, using the methodology described below (the development “pipeline” includes projects applications that have been formally submitted to the City and which are in some stage of the process of obtaining entitlements and/or permits to build, are under construction, or are otherwise awaiting city/county occupancy permits).

This 2009 corridor assessment is intended to update the 2007 corridor analysis by providing (1) updated counts of existing housing units and housing units in the development pipeline for all station areas in the corridor, including the existing Pittsburg/Bay Point station area, (2) new estimates of minimum and maximum development potential in the Pittsburg Railroad Avenue Station area, based on the adopted *Pittsburg Railroad Avenue Specific Plan*, and (3) new estimates of the minimum and maximum development potential within one half mile radius of each of the two station sites under consideration for the Antioch Hillcrest Station, as described in the *eBART Final Environmental Impact Report (FEIR)*, and the *Antioch Hillcrest Station Area Specific Plan (HSASP)*.

Major corridor planning milestones since completion of the 2007 TOD Policy Evaluation include the following:

- The “Median-East” site, approximately 700 feet east of the BART preferred “Median” Station site, was proposed as an alternative location for the Hillcrest Avenue eBART Station.
- The eBART *Final Environmental Impact Report (FEIR)* was adopted in May of 2009, permitting construction of either the Median or Median-East Hillcrest Avenue station alternative.
- The *Antioch Hillcrest Station Area Specific Plan (HSASP)* was adopted by the City of Antioch in April of 2009, amending the Antioch Zoning Ordinance and General Plan land-use designations for parcels located north of SR-4, within one-half mile of either station site.
- The *Pittsburg Railroad Avenue Specific Plan* was adopted by the City of Pittsburg in November of 2009, amending the Pittsburg Zoning Ordinance and General Plan land-use designations for parcels located within one half mile of the planned Railroad Avenue eBART Station.

The following planning processes have not yet been completed and are consequently excluded from this analysis:

- Final site selection for the Hillcrest Avenue eBART Station in Antioch (scheduled for fall 2009)
- The *Pittsburg/Bay Point Master Plan* and Environmental Impact Report: This planning process, initiated in 2009 with funding from the Contra Costa Transportation Authority

(CCTA) and MTC, will establish a land use and circulation plan for the incorporated and unincorporated area surrounding the Pittsburg/Bay Point BART station, and BART/eBART transfer facility. This plan will serve as the Ridership Development Plan (RDP) for the Pittsburg/Bay Point Station and, as the last station area plan underway in the Phase I eBART corridor, represents the final major opportunity to plan for new residential development within walking distance of eBART, as called for in the MTC TOD Policy.

- Phillips Station site: Although it is included in the HSASP as a “potential future station,” and was evaluated in the eBART draft EIR, the Phillips Station, proposed for a location in Antioch, immediately west of SR-160 in the Union Pacific Railroad (UPRR) right-of-way, near a planned extension of Phillips Lane, has not been considered in this evaluation of corridor TOD potential. If the City of Antioch, BART, and the property-owner(s) reach agreement and obtain funding to extend Phase I of eBART to a terminus outside of the SR-4 median at Phillips Station, a station specific evaluation of planned land uses within one half mile of the site should be conducted to update this corridor evaluation of compliance with the MTC TOD Policy (with one additional station, the minimum housing unit threshold for the corridor would increase by 2200 housing units to a total of 8800 units).

Methodology

To assess corridor performance per the MTC TOD Policy, including the relative performance of each of the two alternative station sites for the Hillcrest Station in Antioch, we took the following steps for each planned and potential station site evaluated:

1. We counted existing housing units using two alternative methods: (1) We evaluated the number of housing units by parcel according to the records of the Contra Costa County assessor’s office, and confirmed the land use type (multi-unit, single-unit, or vacant) by reviewing aerial photos provided by the County), and (2) as a cross-check, we evaluated Census 2000 records of existing housing units located within census block groups located entirely within or partially containing areas within one half mile of the each of the two station site alternatives.
2. We reviewed published records from the City of Antioch and the City of Pittsburg indicating the location and number of housing units in so-called “pipeline projects,” those individual development applications that have been formally submitted to the City, and which are in some stage of the process of obtaining entitlements and/or permits to build, are under construction, or are otherwise awaiting city permits for occupancy.
3. We identified vacant parcels and opportunity sites by consulting with the planning staff from each City, and reviewing relevant documents, including the Contra Costa County Assessor’s parcel database, aerial photos of Antioch and Pittsburg obtained from the County, the Antioch *Hillcrest Station Area Specific Plan* (HSASP), the Antioch General Plan and Zoning Ordinance, the Pittsburg *Railroad Avenue Specific Plan*, and the Pittsburg General Plan and Zoning ordinance.
4. We determined the minimum allowable residential development density for these opportunity sites, and other properties located within one half mile of each station area by referring to the development standards contained in the adopted general plans, zoning codes, and specific plans for each City and each station area.
5. Lastly, to determine the extent of the affordable housing bonus for each station area, we estimated the minimum number of TOD Policy qualified “below market rate” units that will be built in each station area according to the citywide and/or station area specific

“affordable housing,” and/or “inclusionary housing” policies, and the development densities permitted in adopted plans.

Analysis of Existing Housing Units for Each Station Area

The MTC TOD Policy specifies that corridors shall be evaluated based on the existing and planned land uses within one half-mile of each station. To determine whether or not each of the two station alternatives achieves the MTC policy target for average station area housing density (2200 housing units existing + planned for the station area), we evaluated the number of existing housing units within a one half mile radius of each station site using two alternative data sources:

1. Parcel data: We counted housing units for the share of all parcels fully located within a one-half mile radius of the each station site, as recorded by the Contra Costa County assessor’s office, updated by the City of Antioch, and verified by a roof-top survey of existing housing units conducted using aerial photo images provided by the City of Antioch. For parcels located partially within the one-half mile radius of each station site, we have allocated a share of the housing units to the station area that is equivalent to the share of the parcel area located within the half-mile radius.
2. Census data: We counted all housing units located within census block groups located entirely within one half mile of each of the two station site alternatives. For census block groups located partially within the one-half mile radius of each station site, we have allocated a share of the housing units to the station area that is equivalent to the share of the parcel area located within the half-mile radius.

Figure 1 Existing Housing Units

| Station | Census 2000 | 2006 Corridor Assessment (Arup) | Aug. 2007 Assessment (Arup) | Enhanced Parcel Data (NN, 2009) |
|---|-------------|---------------------------------|-----------------------------|---------------------------------|
| Pittsburg/Bay Point Station | n/a | 1929 | n/a | 2097 |
| Pittsburg Railroad Avenue Station | 1540 | 1614 | 1614 | 1775 |
| Antioch Hillcrest Median Station Option | 794 | 659 | 653 | 708 |
| Antioch Hillcrest Median-East Station Option | 721 | n/a | n/a | 644 |
| Existing Units in Corridor with Hillcrest Median Option | n/a | 4202 | n/a | 4580 |
| Existing Units in Corridor with Hillcrest Median-East Option | n/a | n/a | n/a | 4516 |

Figure 1, shows the number of existing housing units in each station area, found in recent counts, including enhanced parcel assessment method and adjusted census data methods described previously. The 2006 and 2007 counts were conducted by Arup, to inform the Draft and Final *TOD Policy Evaluation* that Nelson\Nygaard prepared for MTC. According to the enhanced parcel assessment, the most recent and accurate counts conducted in the corridor, there are more than 4,500 existing housing units within a one half mile radius of all Phase I stations in the eBART corridor (Note that there are 64 more housing units within one half mile of the Median-East site for the Hillcrest Avenue Station than the Median site).

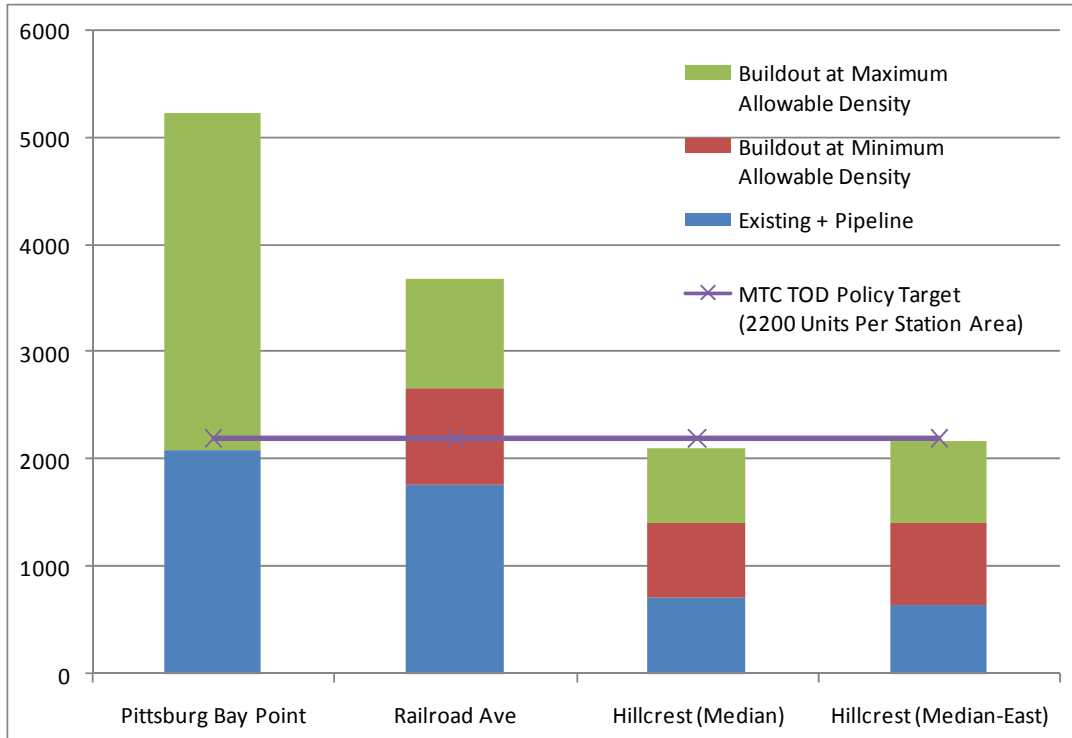
Projects in the Development Pipeline

Projects in the development “pipeline” include all those individual development applications that have been formally submitted to the City, and which are in some stage of the process of obtaining entitlements and/or permits to build, are under construction, or are otherwise awaiting city permits for occupancy. Based on a review of documents provided by the cities of Pittsburg and Antioch, and consultation with planning department staff from each City, we have determined that the only pipeline project in the corridor located within one half mile radius of an eBART station is a 73-unit project in the Los Medanos neighborhood southeast of the Pittsburg Railroad Avenue Station (Nelson\Nygaard has not conducted a pipeline analysis of all properties located within one half mile of the Pittsburg/Bay Point Station. Note that a significant share of the land within one half mile of this station is located in unincorporated Contra Costa County outside of the jurisdiction of the City of Antioch. A full assessment of pipeline projects in this station area should be conducted after adoption of the *Pittsburg/Bay Point Station Area Master Plan* to update full eBART corridor development capacity).

Planned Residential Development in Station Areas

The MTC TOD Policy Specifies that evaluation of planned station area housing density shall be based on an assessment of the minimum number of dwelling units that may be constructed according to adopted plans.

Figure 2 Existing Units + Development Capacity by Station Area



For this corridor threshold analysis we have added the number of *existing housing units* found in each station area using the enhanced parcel analysis method described previously and shown in the last column of the table in Figure 1 (existing housing units in each station area are shown in blue in Figure 2), to the minimum number of additional housing units that can be built in each station area according to adopted plans (shown in red in Figure 2, above).

Although maximum allowable development densities are not factored into this or any other evaluation of corridor performance relative to the MTC TOD Policy, Figure 2 shows (in green), the total number of housing units that could be built in each station area at “full buildout,” according to the maximum density standards in adopted plans. If “built out” at maximum density, the Railroad Avenue Station area will have approximately 3700 units, significantly exceeding the MTC station area target of 2,200 units. Under both the Median and Median-East Station site options, the Hillcrest Avenue station area will be just under the MTC target if all areas are built out at the maximum residential densities permitted in the HSASP.

No evaluation of the minimum or maximum planned development capacity of the Pittsburg/Bay Point Station Area was conducted as part of this assessment. The “maximum # of new units planned” for the Pittsburg/Bay Point Station, shown in Figure 2, and cited in Figure 3 (3145), was calculated by subtracting the total number of existing housing units counted in this 2009

assessment from the maximum development potential for the station area under existing city and county general plans and zoning ordinances found in the 2007 analysis (The 2007 assessment found that up to 5,242 units could be constructed within one half mile of the Pittsburg/Bay Point Station).

Affordable Housing Bonus

The MTC TOD Policy permits a bonus of +0.5 housing units towards achievement of the transit corridor housing density threshold for all planned housing units that are required to be affordable to households earning less than 60% of Area Median Income (AMI). For the purposes of this analysis, we have referred to the specific provisions of inclusionary housing policies in the adopted *Hillcrest Station Area Plan HSASP*, and the Zoning Ordinance of the City of Pittsburg.

HSASP Policy LU-25 requires that “At least 15% of the total new housing units in the Station Area shall be affordable to moderate-income, low-income, or very-low-income households, as required under state law for Redevelopment Project Areas.” The state law referenced further specifies that at least 40% of these units (effectively 6% of all units) must be affordable to very-low income households earning less than 40% of AMI. The units dedicated to very-low-income households according to this policy also meet MTC criteria for receipt of the affordable housing bonus in the TOD Policy (Resolution 3434). The remaining 8% of all project area housing units listed as “affordable” per the state redevelopment law may not receive a bonus in evaluation of progress towards achievement of MTC TOD thresholds because they may be available to households earning “moderate” incomes greater than 60% of AMI.

Unlike the HSASP, the Pittsburg *Railroad Avenue Specific Plan* does not contain any specific affordable housing requirements. However, all development within the station area remains subject to the requirements of the citywide inclusionary housing policy (Section 18.86 – Inclusionary Housing). The lowest share of MTC TOD Policy qualifying “below market rate” rental units that a developer can build is six percent, as defined in 18.86.040, which states that for rental projects, “at least six percent of all new dwelling units shall be extremely low-income rental units¹.” Likewise, for “owner projects,” the lowest share of “below market rate” units is six-percent, as defined in 18.86.050 (2) c (1), which states that “at least...six percent of all new dwelling units shall be very low income owner units².”

According to this analysis, development in the Pittsburg Railroad Avenue and Antioch Hillcrest Avenue eBART Station Areas at the minimum allowable densities will result in the construction of at least 96 “below market rate units” that qualify as affordable housing units according to the standards of the adopted MTC TOD Policy³. As stipulated in the TOD Policy, each of these qualifying affordable housing units will be counted as 1.5 units in this assessment of corridor performance relative to the MTC housing density thresholds, meaning that the total “affordable housing bonus” for these two station areas is 48-50 units, as shown in Figure 3.

¹ “Extremely low income” units are defined as those costing less than 30% of gross monthly income for households earning less than 30% of Area Median Income (18.06.096).

² “Very low income” owner units are defined as those costing less than 30% of gross monthly income for households earning less than 50% of Area Median Income (18.06.096). Note that the other provisions of this section permitting property-owners/developers to satisfy the requirements of the inclusionary housing ordinance by constructing rental housing affordable to “low-income” households (<70% AMI), and/or rental or ownership units affordable to households earning “moderate incomes” (<110% AMI) are not considered in this assessment, because the units produced do not qualify as affordable per the MTC TOD Policy.

³ This is if the Median Station option is selected for the Hillcrest Station. If the Median-East Station is selected, development at minimum allowable densities in the Railroad Avenue and Hillcrest Avenue station areas will result in construction of at least 100 MTC TOD Policy qualifying BMR housing units.

Figure 3 MTC Transit Oriented Development Policy Assessment

| Housing Units | Pittsburg/Bay Point | Pittsburg Railroad Ave | Antioch Hillcrest Median | Antioch Hillcrest Median-East | Corridor Total with Hillcrest Median Station | Corridor Total with Hillcrest Median-East Station |
|--|---------------------|------------------------|--------------------------|-------------------------------|--|---|
| Existing Units (+ units in "pipeline") | 2097 (0) | 1775 (73) | 708 (0) | 644 (0) | 4653 | 4589 |
| Minimum # of New Units Planned ⁴ | n/a | 898 | 704 | 764 | >1602 | >1662 |
| Maximum # of New Units Planned | 3145 ⁵ | 1920 | 1408 | 1528 | 6844 | 6904 |
| Total Housing Units at Buildout (Existing + Pipeline + Minimum Planned Development) | >2097 | 2746 | 1412 | 1408 | >6255 | >6251 |
| Minimum # of Planned Housing Units Required to be Affordable to Families Earning < 60% of Bay Area Median Income (6% of all units) | n/a | 54 | 42 | 46 | >96 | >100 |
| Bonus Units for MTC TOD Policy Evaluation (+0.5 units for every planned or existing affordable housing unit) | n/a | 27 | 21 | 23 | >48 | >50 |
| Total Housing Units for TOD Policy Certification (Existing + Pipeline + Min. Planned + Affordable Housing Bonus) | >2097 | 2773 | 1433 | 1431 | >6303 | >6301 |
| MTC eBART Station Area Target (MTC TOD Policy – Resolution 3434) | 2200 | 2200 | 2200 | 2200 | 6600 | 6600 |
| Difference | (<103) | 573 | (767) | (769) | (<297) | (<301) |

⁴ MTC TOD Policy specifically states that the minimum number of residential dwelling units allowed per acre shall be used for evaluation of planned station area density.

⁵ Note that allowable residential and commercial development potential in the Pittsburg/Bay Point Station area is likely to increase significantly with adoption of the *Pittsburg/Bay Point Master Plan*, which is currently under development.

TOD Policy Assessment

As of November 2009, the eBART Phase I Corridor does not yet meet the housing unit thresholds of the MTC TOD Policy (Resolution 3434), though it will likely do so once the Pittsburg/Bay Point Master Plan is adopted. Figure 3 shows that regardless of which station site (Median, or Median-East) is selected for the Hillcrest Avenue Station in Antioch, the minimum number of housing units within one half mile radius of all stations in the corridor – including (a) existing units, (b) units in the development “pipeline,” and (c) the minimum number of additional units that can be built in each station area according to adopted plans and ordinances – will be no greater than approximately 6,300 units. This is approximately 300 units short of the corridor TOD Policy threshold of 6,600 units (or 100 units short of the average of 2,200 units for each of the three stations planned for Phase I).

It is important to note that this corridor assessment did not evaluate plans for the Pittsburg/Bay Point Area, which are currently under development. Consequently, the counts shown in Figure 3, including the corridor total of 6,300 units, do not include any minimum number of additional housing units planned for development in the Pittsburg/Bay Point Station Area. The *Pittsburg/Bay Point Master Plan*, scheduled for adoption in 2010 will establish a minimum development capacity for that station area, and will thus determine whether or not the eBART corridor will ultimately achieve the minimum housing unit threshold in the MTC TOD Policy. Given that the corridor is currently within 5% of the number of housing units required by the TOD Policy, and the large tracts of vacant and underutilized land within the one half mile of the existing BART station, it is highly likely that the *Pittsburg/Bay Point Master Plan*, once adopted, will ensure that the eBART Phase I corridor meets MTC housing targets.

Station Area Specific Considerations

Pittsburg/Bay Point Station

Although counts of existing and planned housing units for the Pittsburg/Bay Point Station Area were not updated in this corridor evaluation, it remains a unique and important opportunity site for transit oriented development in the eBART corridor. Unique factors in the Pittsburg/Bay Point Station Area include the following:

- As the western terminus of the Phase I eBART line, and the eastern terminus of BART’s Pittsburg/Bay Point Line, the Pittsburg/Bay Point Station area has the greatest transit accessibility of any station in eastern Contra Costa County (because transit riders boarding here do not need to transfer to reach many destinations in the BART system, including downtown Oakland and downtown San Francisco).
- Approximately 50% of the land within a one half mile radius of the BART station platform falls within the jurisdiction of the City of Antioch, while the other 50% of the land, including most of the vacant land within walking distance of the station is in unincorporated Contra Costa County.
- There are more existing housing units located within one half mile of the Pittsburg/Bay Point Station – approximately 2100 at last count – than any other station site in the Phase I eBART corridor.
- A large tract of approximately 73 acres located immediately south of SR-4, and southeast of BART Station entrance (including the existing BART surface park and ride lots) lies vacant – creating a significant opportunity for large scale master planned transit oriented development within walking distance of the station.

Pittsburg Railroad Avenue Station

The Pittsburg Railroad Avenue Specific Plan was approved by the Pittsburg City Council in October of 2009, and a second reading and final adoption of the Plan and associated amendments to the General Plan and Zoning Ordinance occurred on November 2nd, 2009. The Final Plan was adopted as recommended by staff, without incorporating the Planning Commission recommendation to transfer approximately three acres in the Civic Center Area, from “TOD” zoning to parks and open space.

The area within one half mile radius of the planned Pittsburg Railroad Avenue eBART Station includes all or part of the following districts defined by the Specific Plan:

- Transit Village: Located immediately south of the station, and SR-4, the Transit Village area is mostly situated within one quarter mile of the station.
- High School Village to the northeast of Railroad Avenue and California Avenue/SR-4
- Los Medanos Industrial Center: South of SR-4 and east of the Transit Village
- Atlantic Avenue Corridor: South of the Transit Village (E Leland Road), and the East Leland Corridor, and east of the Railroad Avenue Corridor
- Railroad Avenue Corridor: Includes properties fronting on the east side of Railroad Avenue, south of the Transit Village (E Leland Road)
- Los Medanos Neighborhood: South of SR-4, and west of the Transit Village
- Civic Center: North of SR-4 between Railroad Avenue and Davi Avenue.
- Parkside Manor Neighborhood: North of SR-4, and west of Davi Avenue.

Nearly all of the vacant and underutilized land located within a one half mile radius of the Railroad Avenue eBART Station is in the Civic Center and Transit Village Areas. All of the other districts area largely “built out,” with minimal capacity for new development or redevelopment in the near term.

The *Railroad Avenue Specific Plan*, includes a provision allowing for conditional approval of residential, office, restaurant, and office-supporting commercial uses on parcels zoned for “Public/Institutional” land uses, provided that they are located within one half mile radius of the eBART Station⁸.

Properties located in residential and mixed-use zones within one quarter mile of the eBART Station may be permitted a “density bonus,” allowing construction of a total number of housing units, or total FAR that is above and beyond the maximum density established in the plan for residential and mixed-use classifications⁹. This density bonus is discretionary (subject to design review approval), and consequently has not been included in this analysis of the minimum or

⁷ Amendments to the Pittsburg General Plan and Zoning Ordinance, adopted along with the *Railroad Avenue Specific Plan* will not take effect until thirty (30) days after adoption on November 2nd (December 2, 2009).

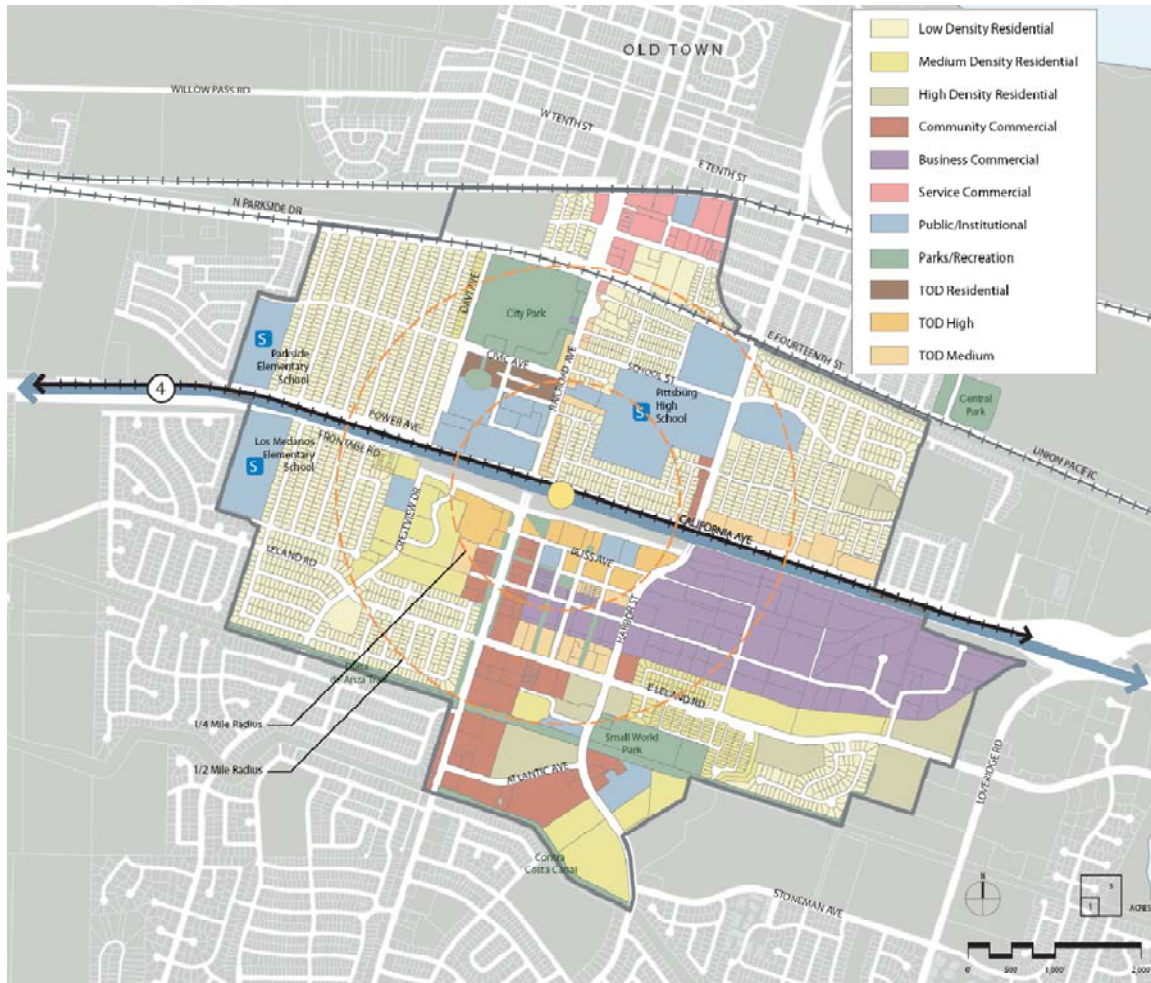
⁸ The purpose of this provision is to “support Public/Institutional uses,” and to “activate the area during evenings and weekends when public/institutional uses are typically closed (*Pittsburg Railroad Avenue Specific Plan*, August 2009 Draft Plan, Page 50).

⁹ Property developers may be permitted a 25% bonus in the number of units permitted for the residential component of projects located in TOD High and TOD Medium areas, and an additional 0.25 FAR for multifamily residential units built above or adjacent to commercial uses in mixed-use zones (*Pittsburg Railroad Avenue Specific Plan*, August 2009 Draft Plan, Page 89).

maximum development density allowed “by right,” within one half mile radius of the station. Nevertheless it provides an incentive for additional residential development on parcels closest to the planned eBART Station, and is thus an important component of the plan.

The only project currently in the development pipeline in the Railroad Avenue Station Area is the 73-unit Los Medanos apartments, which is nearly finalized.

Figure 5 Railroad Avenue Specific Plan Land Use Map



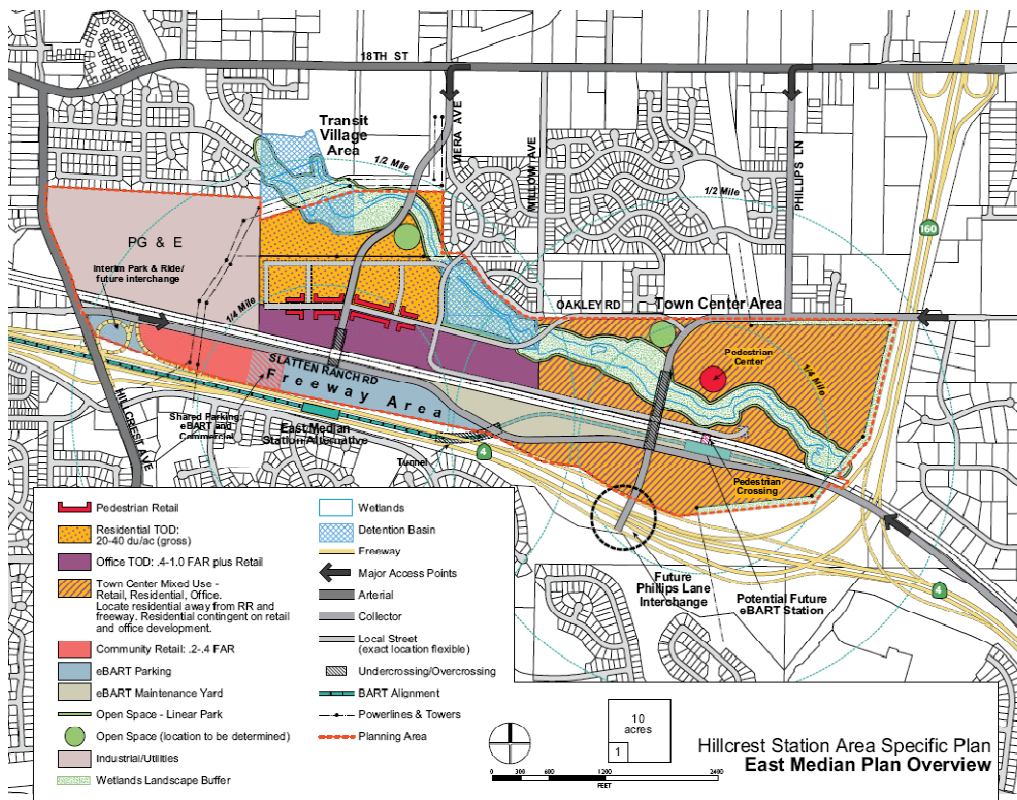
Antioch Hillcrest Avenue Station

BART, the City of Antioch, the Contra Costa Transportation Authority, and various other stakeholders are considering two proposed station site and design options for the Hillcrest Avenue Station in Antioch (the “Median-East” Station site is located 700 feet east of the “Median” Station site, which is located in the SR-4 median, 1275 feet east of Hillcrest Ave). Both of these station site options are evaluated in and permissible according to the *eBART Final Environmental Impact Report (FEIR)*, adopted in May 2009, and the *Antioch Hillcrest Station Area Specific Plan (HSASP)*, adopted in April of 2009.

The area within one half mile radius of the each of these two station sites is partially contiguous. Both half-mile station areas are divided in two by SR-4, which includes the planned eBART median alignment. South of SR-4, the station areas are mostly characterized by existing residential neighborhoods with minimal vacant buildable land (the site is hilly, with slopes rising to the south, precluding development on some vacant and underutilized parcels south of SR-4). There are some existing commercial retail establishments clustered in the southwest quadrant of each station area, between Hillcrest Avenue and Wildflower Drive. The only access to either station site from the southern half of the station areas will be via the Hillcrest Avenue overpass of SR-4, and a pedestrian bridge accessing the freeway median from the north.

The planning area for the HSASP is entirely north of SR-4, in an area that is divided by the Union Pacific Railroad (UPRR), which parallels the freeway several hundred feet to the north. Most of the land in this northern half of the station areas is vacant and buildable, with the exception of a large Pacific Gas & Electric (PG&E) Substation located north of the UPRR and east of Hillcrest Avenue, and a creek buffer zone that traverses the northeast part of the Median-East station area. For both station options, the area north of the UPRR and east of the PG&E property is referred to in the HSASP as the "Transit Village Area," slated for TOD, with mostly residential uses, while the "Freeway Area," located between the UPRR and SR-4 is currently planned for more auto oriented uses, including commercial retail, offices, and eBART parking facilities. An existing 300-space park and ride lot is located immediately east of Hillcrest Avenue, between SR-4 and the UPRR.

Figure 6 Median-East Option for Antioch Hillcrest Avenue eBART Station



TOD Policy Evaluation

One purpose of the TOD Policy is to require the adoption of plans for a sufficient density of residential development within walking distance of new transit stations to ensure adequate ridership to support the level of transit service planned for the corridor on which the station is located. The specific policy requirement for assessment of the build-out potential within a one half mile radius of each station may serve as an effective tool for corridor-wide assessment of transit oriented development and ridership potential, but it can mask the impact of barriers to bicycle and pedestrian accessibility within station areas. Such barriers can prevent existing homes, or new developments from being truly “transit oriented,” or from generating transit ridership to the degree envisioned in transportation and land use plans.

From an initial review of plans for the two Antioch Hillcrest station site alternatives and other relevant documents, we have identified several major barriers to pedestrian and bicycle access, which impact the transit oriented development and ridership development potential within the station areas.

Defining the pedestrian accessible station area

In the companion *Antioch Hillcrest eBART Station Site Assessment*, we have refined our estimates of the transit oriented development and ridership development potential for the two Hillcrest Station site alternatives. First we integrated planned and potential pedestrian access routes within and connecting to the Planning Area defined in the *Antioch Hillcrest Station Area Specific Plan* (HSASP), with existing roadway networks. Then, we conducted a network analysis using geographic information systems (GIS) to define the geographic extent of the area located within a comfortable one-half mile walking distance of each station site alternative (see Figure 7, below). Finally, using the same methodology detailed in this report, we calculated (1) the number of existing housing units, (2) units in the development pipeline, and (3) the minimum number of housing units that can be developed per adopted plans and ordinances – all within the smaller “walkable half mile,” as opposed to the half mile radius used in the policy.

The results of this analysis indicate that the capacity for true transit oriented development within walking distance of each station site alternative is significantly lower than the capacity for “transit adjacent development” that is measured in this and previous TOD policy assessments. We recommend that all future TOD threshold assessments incorporate network analysis where possible to identify housing development potential within the pedestrian accessible half-mile, in addition to the half mile radius evaluated in this assessment.

Figure 7 Area within an actual half mile walk of proposed Hillcrest Station

