

**COMBINING THE HACIENDAS AND BEYOND:
TRANSIT ORIENTED DEVELOPMENT IN THE TRI-VALLEY
EASTERN SPAN OF DUBLIN AND PLEASANTON, CA**

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Transit Oriented Development

Transit Oriented Development (TOD) strives to stimulate mixed-use, high density development within walking distance of a transit station. TOD aims to achieve the equilibrium between transit and development, and checks the excessive growth of either one of the two. Uncontrolled development will lead to excessive expenditure on transit, which by itself is inefficient. TOD is development which revolves around transit (Ramanujam).

High density of population in urban centers caused people to spread. Instead of settling in concentrated suburban cities, the spread happened in a random form of dispersion, and thus was created the problem of sprawl. The Interstate Highway system was a key to America's successful economic development in the 20th century, which ironically is now the single largest cause of exorbitant expenses on transportation. The American Public Transit Association observed 10.1 billion public transit boardings in 2006, beating 1957's record when the interstate system was non-existing – an implication of people's response to rising gasoline prices (Nelson).

Hacienda Crossings and Hacienda Business Park – Eastern Span

The area surrounding Hacienda Crossings in Dublin is a major employment and shopping center. It has gained recognition in the MTC report titled "New Places, New Choices," but the potential of development reaches far eastwards than the Dublin/Pleasanton BART station. Eastward expansion of these cities, especially Dublin, calls for TOD measures to be implemented in the region, which is the focus of this paper.

Current Situation

Development of the Eastern regions of Pleasanton and Dublin has occurred, with huge shopping complexes stretching along I-580 from the I-580-680 interchange to Tassajara Rd in Dublin. From an urban planner's perspective, the damage has already been done. A Pleasanton shopper at the local Longs Drugs store remarked - "All that (Pleasanton) streets need are people (Hendrick)." This situation is not uncommon in the Bay Area, but the extent to which the streets are deserted of liveliness is appalling. The typical pattern of shopping being located on either side of the freeway, and housing further away, is exhibited by the region.

A distinguishing feature of Eastern Part of Dublin and Pleasanton is the lack of high density development. Humongous parking lots surround business parks, and are inset within Hacienda Crossings and other retail centers. Wide roads make the atmosphere automobile friendly but desert the street of pedestrians – strictly against TOD policies.

The following transit modes exist:

- Dublin/Pleasanton BART Station – This is the last station on the BART network. TOD developments along the station have commenced in the form of Apartment Complexes (Elan - Dublin) being built within 2 minutes walking distance.
- Wheels (LAVTA) Bus – Wheels connects the BART station with Stoneridge Mall, Las Positas Community College, Lawrence Livermore Labs and Livermore Transit Center. Buses pass through Hacienda Crossings and Hacienda Business Park as well, but capacity and ridership are unsatisfactory. Wheels offers paratransit and Dial-a-Ride services to Tri-Valley residents (Dublin, Livermore and Pleasanton).

Major developments in the region include:

- Superstores like Wal-Mart, Kohl's and other category specific stores like Best-Buy, Macy's Furniture, and IKEA (planned).
- Corporate offices of Sybase, Carl Zeiss, Ross, Cingular-AT&T, Carr America, Oracle, Kaiser Permanente, Safeway etc.
- Medical facilities including Palo Alto Medical Foundation, Eden and Valley Care Medical Centers.
- Banks including Wells Fargo, Patelco Credit Union and Bank of America.
- Various restaurants, fitness clubs and other amenities.
- Myriad of housing development.

Analysis

The Tri-valley region experienced 30% growth from 1990 to 2000, slowing down due to Measure D, which limited growth boundaries (LAVTA). Subsequently, LAVTA had a challenge to provide transportation to increasing number of residents. As expected, LAVTA bus network expansion centered on the Dublin/Pleasanton BART station.

A survey performed by LAVTA based on Association of Bay Area Governments (ABAG) projections and the Regional Transportation Plan 2030 (RTP-2030) show that growth is yet to happen (Tables 1-2). Among mid-sized US cities, Pleasanton has the highest median household income of \$101,022 (Wikipedia). Similar facts project the Tri-valley to be one of the fastest developing regions in the nation.

Total Population						
	2000	2015	2000 - 2015 % Change	2030	2015 - 2030 % Change	Total % Change
Dublin	30 007	52 900	76%	74 500	41%	148%
Livermore	73 841	93 800	27%	118 100	26%	60%
Pleasanton	65 058	82 100	26%	90 100	10%	38%
Totals	168 906	228 800	35%	282 700	24%	67%

Table 1 (LAVTA)

Total Jobs						
	2000	2015	2000 - 2015 % Change	2030	2015 - 2030 % Change	Total % Change
Dublin	21 870	32 310	48%	45 920	42%	110%
Livermore	40 360	55 800	38%	85 560	53%	112%
Pleasanton	54 110	70 880	31%	77 060	9%	42%
Totals	116 340	158 990	37%	208 540	31%	79%

(Source: ABAG Projections 2003)

Table 2 (LAVTA)

The current public transit situation is grim. According to the 2000 Census, only 4.3% of the Tri-valley residents used public transit to go to work and over 95% households had access to automobile(s). Such statistics clearly sound an alarm for the public transit agencies. The report quotes – “Average spacing of stops along the bus lines is less than the oft-cited optimal distance of ½ mile (LAVTA).” These point to a flaw in land use and planning more than in LAVTA operations.

Solution

The idea is to transform the region according to TOD principles by leveraging the benefits of expansively developed infrastructure in close proximity of the Dublin/Pleasanton BART station. One principle of TOD is to bring potential riders close to transit facilities and increase ridership (Caltrans). The region has the potential to be a pilot program for Personal Rapid Transit (PRT).

PRT has the potential to be successfully implemented in this region because of its' following benefits:

- Guideways could be located underground, at grade or above ground level which allows design flexibility. Light poles allow guideways to be mounted on sides of buildings at desired levels.
- Vehicles available to be used "on-demand" i.e. operation occurs only if riders are present. This will maintain near-to-perfect capacity, thus low operation cost.
- Non-stop service provided from origin to destination
- The proposed PRT network would act as a feeder-distributor to the Dublin/Pleasanton BART.

PRT has gained recognition and confidence from planners since it has considerably improved after advances in networking and communications. Two PRT networks are scheduled to start operation in 2008 at Heathrow Airport (London) and Dubai International Financial Center respectively. The Tri-valley could gain recognition by implementing PRT as a pilot project in the US. Figures 1-2 are from Taxi 2000, which is a Minnesota based company promoting their PRT technology (Skyweb).

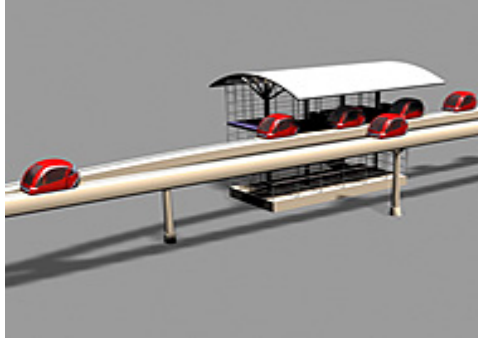


Figure 1 – PRT Station



Figure 2 – Skyweb

Pod

State-of-the-art development would increase population density in the region on provision of more housing options to commute residents. An extensive study regarding PRT implementation in Hacienda Business Park was conducted by Cities21, a promoter of PRT systems worldwide. Their proposed network is shown in Figure 3.



Figure 3 – Cities21 PRT Network

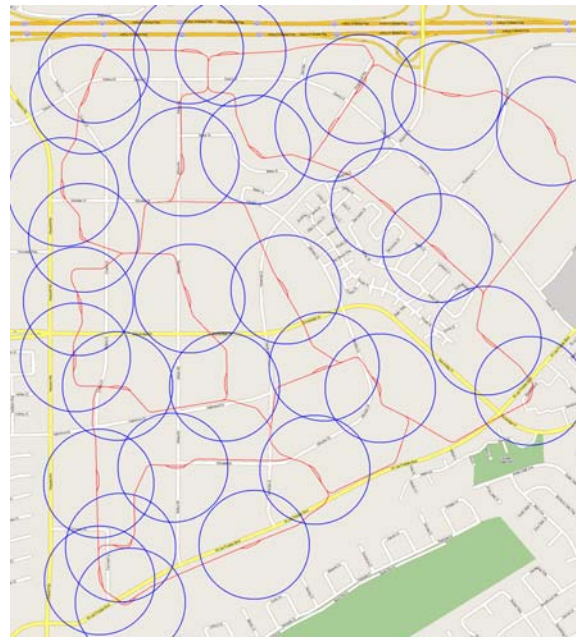


Figure 4 – PRT Accessibility Zones

Following were the key findings of the study (Raney). The network would:

- Serve 38500 commuters daily.
- Improve BART ridership since 17% of the region's employees would have easier access to BART.
- Considerably improve accessibility (Figure 4). Yellow streets signify major arterials.

PRT Analysis

As is apparent in Figure 3, the amount of space being utilized for parking is excessive – a typical suburban scenario. The Extended-TOD concept would be applied, which would utilize one or more intermediate capacity mobility systems to provide access between the rail station and locations farther than 1/4 mile from the rail station (Schneider). "For a lot of people, working out that last half-mile is a big deal. It's (PRT's) like a shuttle bus on steroids, from the BART station to the offices," quoted a Cities21 representative in an interview (Richards).

There are many options that the regional governments and transit agencies have to promote TOD, but in order to set an example, time is of utmost importance. A large scale PRT project would do more good if implemented sooner than later.

Improvisations and Recommendations to Cities21 Proposed PRT Network

The vision to solve the issue is not conventional. A vast amount of funding and planning is required. Following are the considerations to improve the solutions proposed by Cities21:

- Dublin/Pleasanton BART station, being the termination point on the BART network, offers scope for development of the region as a visitor attraction along with TOD improvisations. It should be remembered that the Tri-valley could lead the way by implementing a PRT system in the US. Residing in the vicinity of Tri-valley would give PRT users access to the Bay Area through BART.
- Development in the region has happened, offering most amenities for daily activities. A remodeling of the retail space is recommended to have a better visual impact for the community. Designing for shoppers, pedestrians for a mix of uses will create *synergy* (VTA). The development should focus on making communities more “walkable.” Commercial development should be integrated with residential provision on the floors above, and if needed, parking be provided underground.
- Population density is low, and in the long term, parking lots would be transformed into housing. As transportation expert Paul Minett remarked – “Free Parking is a big hindrance to mass transit and carpooling,” many economic measures alone could improve mass transit ridership amongst commuters (Minett).
- The proposed PRT network does not serve the easternmost developments of Dublin, which includes around 9000 housing units (Raney). Since this is comparatively low-density area, PRT may be expensive. Frequent shuttles, offering quick on-demand service are the ideal solution. With the induction of PRT, LAVTA’s resources could be used to provide better access to such far-flung areas. It is of essence that the city integrates PRT and LAVTA finances since both would complement to help attain the region’s TOD vision. As another alternative, a PRT network map is later proposed in the report.

- Housing benefits to be given to people using public transportation for work commute. A simple policy would be to allow tax-breaks to households without automobile dependency.
- If PRT becomes the network of choice, a way needs to be discovered to transport commuters from far flung areas of Dublin and Pleasanton to feed into the PRT system. Funds should be allocated to improve pedestrian/bicyclist environment. Bus Rapid Transit (BRT) measures should be implemented to link the PRT system to Las Positas College and Lawrence Livermore National Laboratory – two major trip generators in Livermore.
- The concept of Transit Oriented Development is bound to involve multiple parties, and thus needs tremendous collaboration between stakeholders of varied interests. As a TCRP report states – “The plurality of interests surrounding TOD is not necessarily a liability, but can be turned into an asset (TCRP 447).” Governments need to first collaborate within themselves and form a regional transit agency that deals with the private stakeholders. Also, Memorandum of Understanding (MOU) and informal partnerships between developers and government agencies are touted as key tools to achieve TOD.

The proposed PRT network should be extended to East Dublin which has recently added an apartment complex, two medical centers and few commercial developments adjacent to Tassajara Rd (Figure 5).

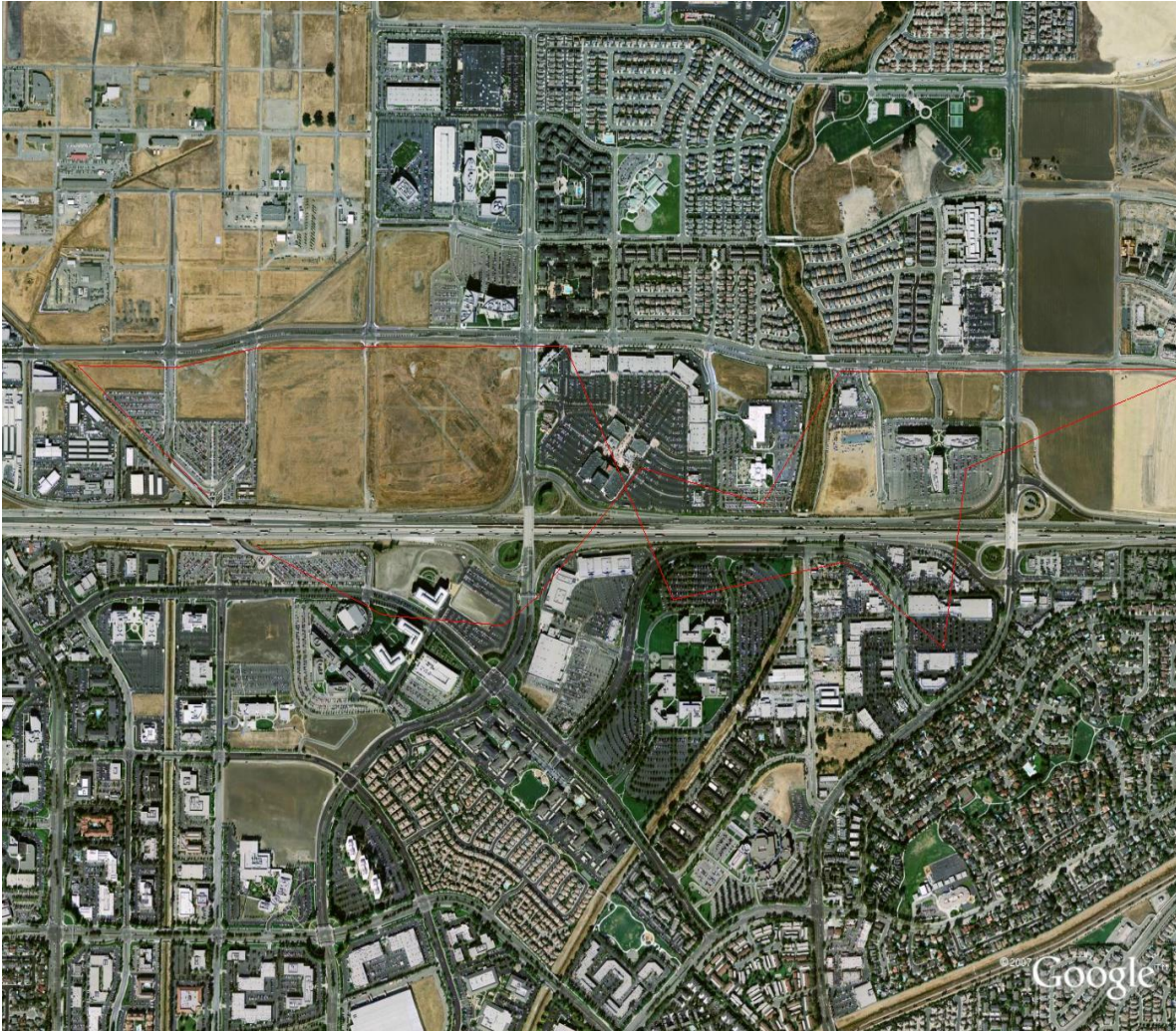


Figure 5 – Proposed PRT Network – East Dublin/Pleasanton (Google)

These developments (not shown in Figure 5) would attract non-peak hour trips and provide justification for the eastward extension of PRT. The network would also cross I-580 to cater to the corporate offices of Cingular-AT&T, Ross and Carr America in Pleasanton.

Conclusion

The development of the Dallas Metroplex can serve as a guideline for the Tri-valley. The primary transit system in Dallas, DART had the authority to sell and lease surplus property

(eg. Underutilized property) upon board's approval (TCRP 300). A similar approach can be pursued outside Pleasanton's Carr America's corporate offices to increase population density. Another example of collaboration and understanding was witnessed in Rutland TOD, Vermont. Wal-Mart was planning a typical suburban store that would have gifted a huge parking lot to a relatively small city. The mayor's leadership convinced Wal-Mart to consider a store in downtown Rutland, preserving the city's "walkability." Flexibility and cooperation between developers and the governments is a key, and the latter have more scope to improve (Benfield 7). The benefits of transit oriented development are multifold. Recent propositions approved by California voters in 2006 guarantee enough funds for improvement of transportation infrastructure. It is now in the hands of government agencies to spend wisely by integrating land use with transportation. The key to achieve smart growth is to minimize expenditure on gasoline, which is predicted to be thrice as expensive at \$200/barrel by the end of this decade (Leeb). Transit oriented development and smart growth are integral tools to prepare for this upcoming economic collapse.

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