## Why PRT Can Succeed

## Connects all three major FTB foci -- Bella Terra, Five Points, Downtown plus Hi-Density Apt/Condo Developments

- Elevated guideways causes no street congestion
- Future opportunity if Costco et al built in area
- Supports Golden West College commuting
- Mitigates further street congestion, parking issues

#### Fundable

- OCTA
- Meets \$1B Measure M2, Project S stipulations by reaching three Metrolink stations Santa Ana, Anaheim (via Santa Ana River) and Buena Park (NB on Beach Blvd.)
- Meets \$226M Measure M2, Project V stipulations
- FTA Small Starts, New Starts
- Supportable by Rep. Rohrabacher (House Science Committee), Sen. Harman (CA Senate Transportation
- Public/Private Partnerships
- Costs shared with private business desiring direct station access and/or dedicated vehicles
- Potential interest Hilton, Hyatt, Pacific City and Strand downtown operations; Wal-Mart, Target, other retailers; car dealers?
- Major medical facilities
- Bella Terra, Five Points, Downtown BID
- Ripcurl, The Village, Murdy Commons
- Boeing

#### Other alignment opportunities

- PRT can be built in alignments off the arterials
- Alleys
- Flood channels
- Other city streets
- Could share Union Pacific Right-of-Way

- Completely electric, emission-free
- Politically desirable
- Publicity positive (press friendly)
- Solar potential

#### An Attraction of its Own Could be unique to California, US

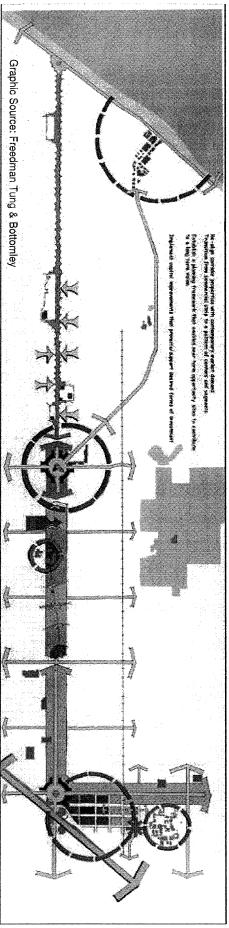
- Resorts to beach, Downtown Draws tourists, visitors directly from Anaheim and Disney
- Mitigates traffic, parking issues Downtown, along PCH

#### Far more flexible than LRT, BRT, Monorail

- Takes out NO street lanes
- No at-grade street crossings
- No catenary overhead power cabling
- No interaction with street traffic
- Suitable for Edison transmission pathways if allowed
- Virtually noiseless

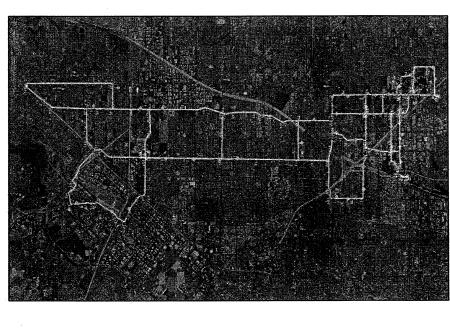
#### Scalable

- Unlike rail, BRT, need not be complete to be functional
- Proliferating station portals does not decrease throughput

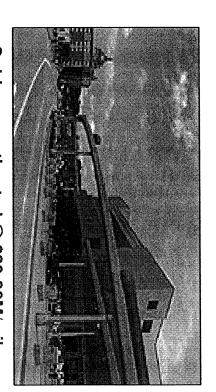


# Fixed Grid of Elevated Trackway

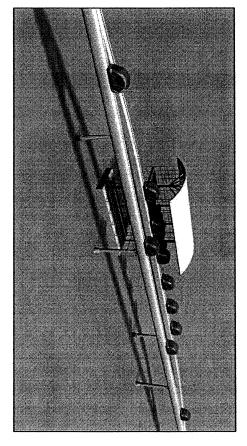
Scaleable, modular for maximum efficiency, throughput



Example Orange County Central Corridor Grid serves Anaheim & Disney Resorts, JWA

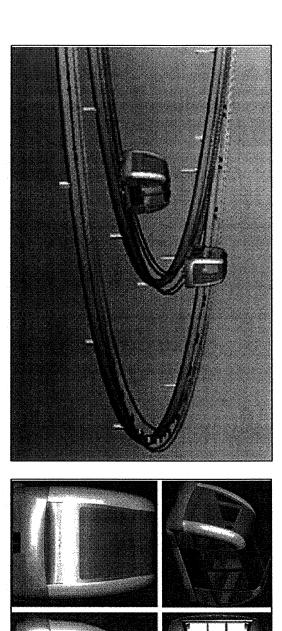


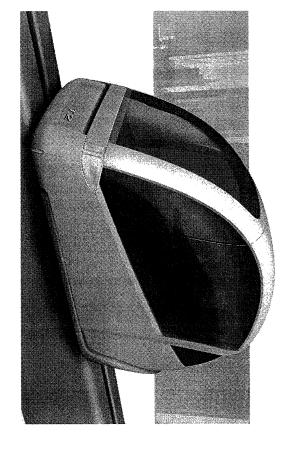
Guideway estimated @ \$20-30M/mile Vehicles @ \$75-100k

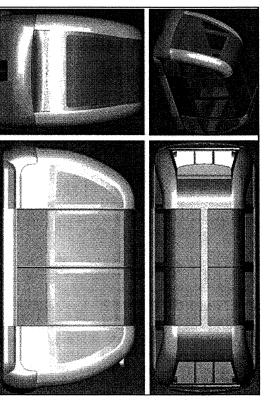


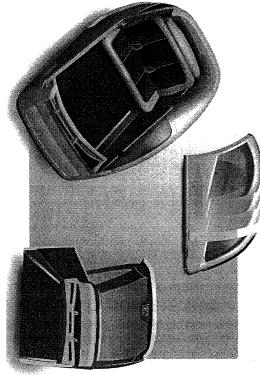
Offline Station operation for point-to-point throughput

# 3-6 Person, All-Electric, Driverless Vehicles

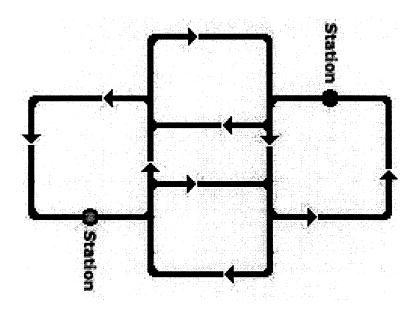




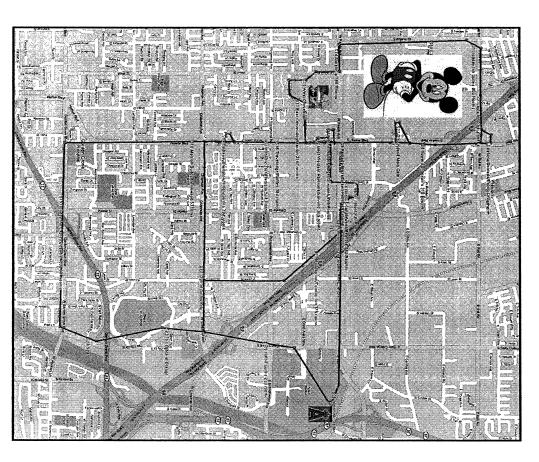




## **Unidirectional Trackway Loops**



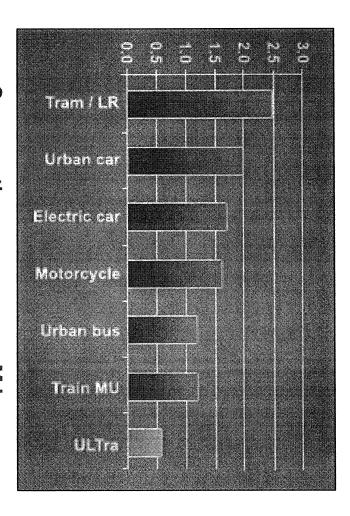
- Scaleable
- **Flexible**
- Relocatable
- Stations easily added with no reduction in throughput



Example emulation of Anaheim Resort Transit Shuttle System, including Member Hotels

## **Environmentally Friendly**

- Energy efficient
- Vehicle equivalent to a 136mpg auto
- Completely electric
- No lights required at night
- Only onboard computer energized when idle
- Emission-free
- Nearly silent
- Solar panel potential on trackway infrastructure
- Trackway potential for
- Municipal WiFi
- Cable concealment



Comparative energy use -- MJ per passenger kilometer (per ATS ULTra PRT)

### PRT Opportunity

- Analogous to a horizontal elevator
- Readily computer modeled
- transmission paths, street edges, street medians Use non-traditional ROWs – flood channels, bike paths, electrical
- Minimal footprint
- Stations attractive to shopping malls private participation
- "Last Mile" solution to commuter rail, other transit stations & hubs
- School bus alternative? Stations at schools?
- Zero emissions
- Fast unimpeded travel to destination
- Recovers at least operational costs from farebox
- Offers credits or opportunities to comply to Air Quality rules?
- Station equivalency to bus stops, more prolific than LRT, HRT
- Computerized for safety, security, fare handling, special scheduling
- Freight handling (palletized ½-ton loads)
- Easily co-exists with bus system for transfers, stops/stations, revenue share
- Readily computer modeled



## Where in the World?

PRT operates or is testing at at least four locations

#### West Virginia University

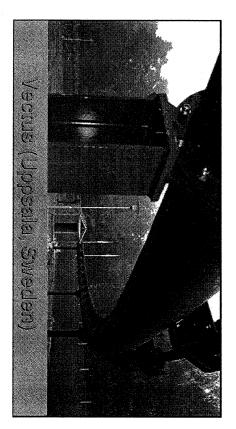
- -8.7 miles for 28 years at 98% reliability
- 15 30k riders/day, capable of 4,800/hr
- NO serious injuries or fatalities

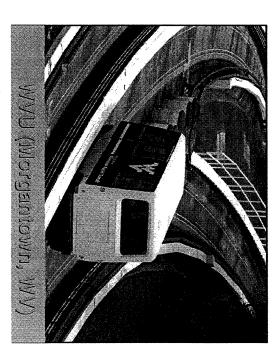
#### Vectus test track complete

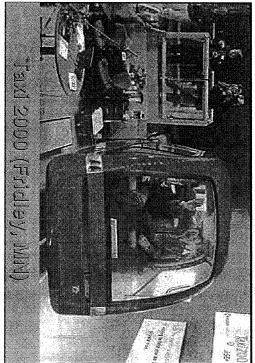
- Vehicle testing underway
- Berkshire Hathaway has 4% stake in parent

## Taxi 2000 test trackway w/vehicle now

- Demonstrable wireless control system
- Heathrow Airport APM by ULTra in 2008

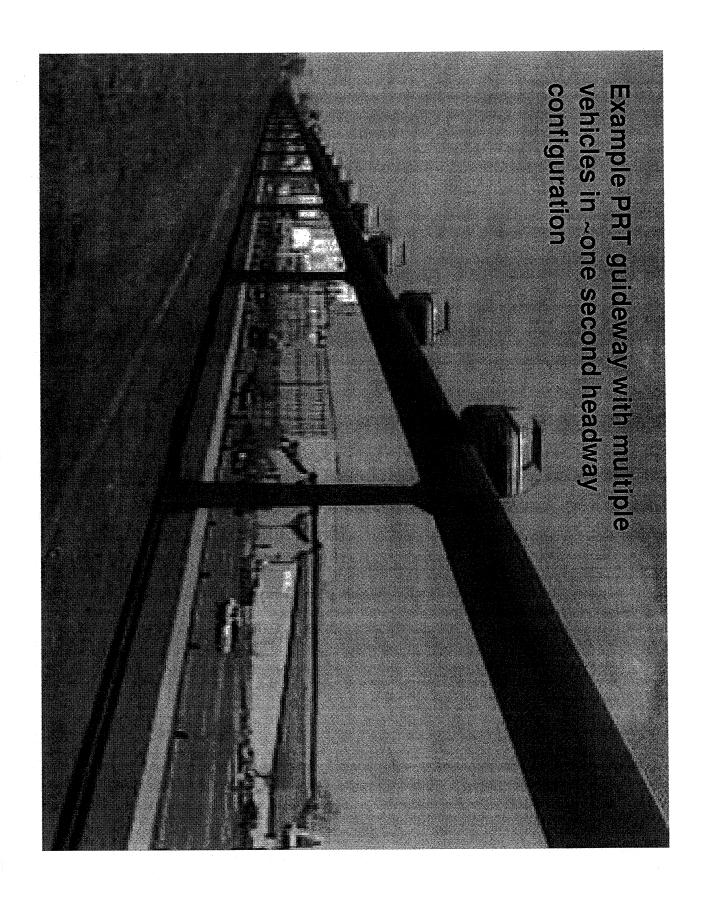






# PRT's Subtler Features & Conveniences

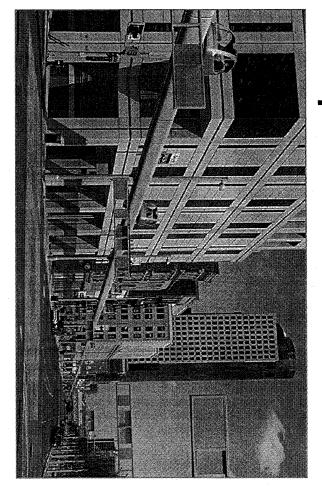
- Within system, NO vehicle or route transfers
- Point-to-Point service requires no change of vehicle
- Guaranteed seat
- No standing feasible in vehicle
- Vehicle must accommodate wheelchairs, bicycles, therefore 100% of fleet serves need
- Higher average speed compared to mass transit
- Non-stop service via computerized routing control chooses fastest routing, achieves ~25-40mph (urban)
- Light rail ~21mph; bus ~15mph
- Non-scheduled services means no missed rides
- Vehicles await users and not vice versa
- Crowds don't form if sufficient vehicles are available as no waiting is required
- No route maps or schedules required published
- Station names might be sold or licensed
- No missed stops due to sleeping, rider inattention
- Dirty or vandalized vehicles may be rejected
- Returned for immediate maintenance
- Video monitoring nabs vandals, or apprehendable via ride payment or pass record
- Large stations accommodate simultaneous, multi-vehicle unloading/loading
- NO surface traffic interactions
- No accidents dramatically reduces risk, financial exposure
- Video monitoring (ala OCTA buses) limits liability from staged incidents
- Station video monitoring enhances user safety, especially at night
- IP-based video, alarms (from stations and vehicles) easily directed to law enforcement dispatchers
- No cash handling anticipated
- Fares expected collected via credit card swipe or pre-sold magnetic pass
- Transit charged by vehicle, like a taxi, not per person
- Encourages shared, car pool like usage
- Employer participation programs feasible, encourages off-site parking

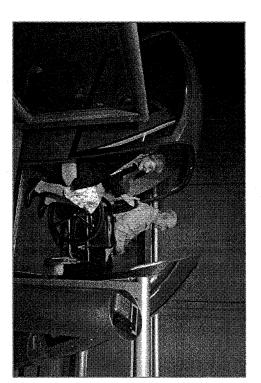


## Public/Private Partnerships -- Local Buy-In Key to Funding, Acceptance

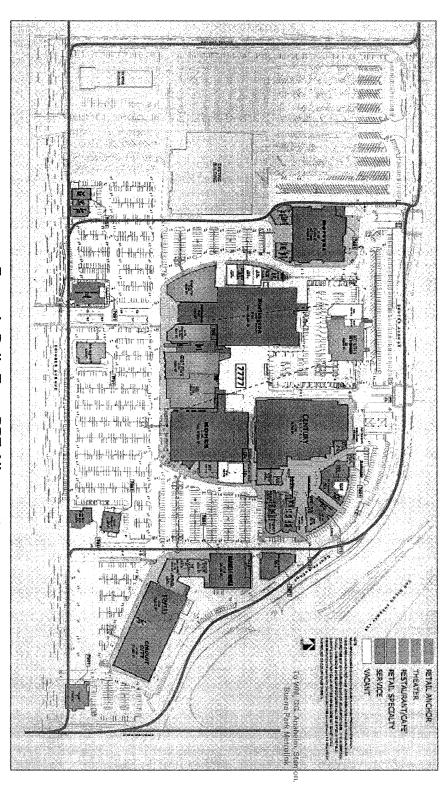
- Shopping Center, Mall portals
- Incented customer use, e.g. coupons, passes
- Parking lot and/or in-building portals
- Freight, mail delivery potential
- Hotel portals
- Dedicated stations for guest services
- Private (computer segregated) guest vehicles
- Apartment/Condo/Office building portals
- Zoning mitigation
- Turn parking space to revenue space
- Reduce local street congestion, emissions
- Extend tourist visits
- Anaheim Resort ↔ HB
- Promote via both Tourist/Visitors Bureaus
- Business groups need to get on board
- Will Chambers support?
- מוטגי
- Public school transportation
- Neighborhood station portals
- OCTA ACCESS service supplement

   Shopping, medical facility transport
- Significant security
- ADA compliant
- Potential for profitable private operation
- Ground floor station space lease/rentals (e.g. Starbucks, ATMs, shippers)
- Goods movement (palletized)
- Big box freight portals
- CUTU





## **PPP Opportunities**

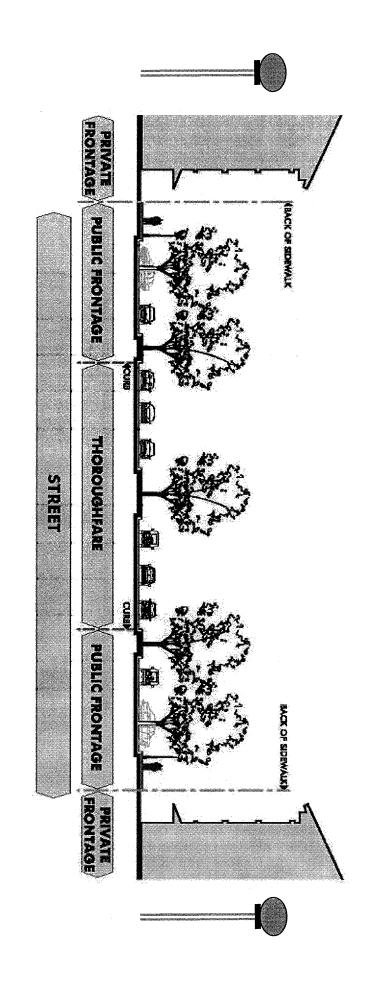


#### **Example Bella Terra PRT Alignment**

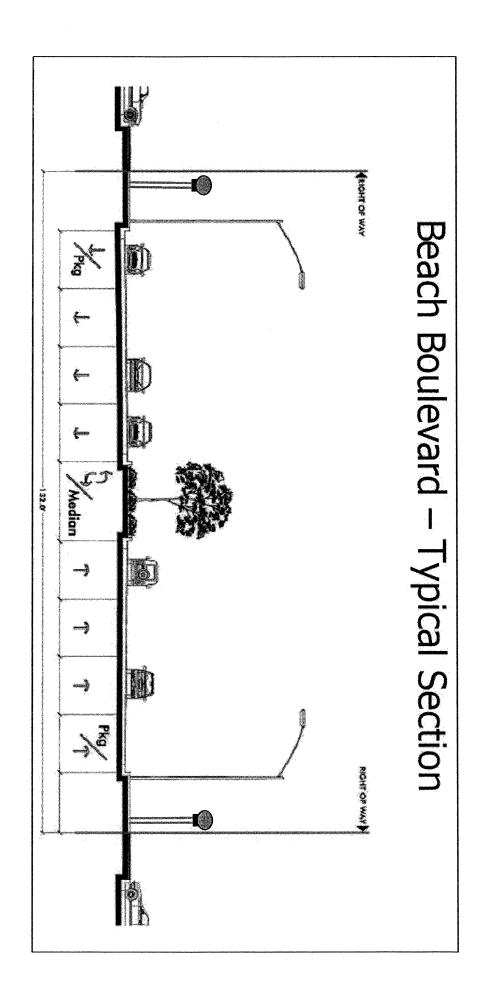
- Hyatt & Hilton Resorts
- Large Mini-malls most intersections
- Five Points
- HB Hospital, Hoag and Kaiser Facilities
- Comerica Bank Hi-Rise @ Warner

- 100s of Retailers
- Target, Wal-Mart
- Regal Theatres @ Warner
- Bella Terra @ Edinger (most heavily trafficked intersection in OC)
- Future Bella Terra housing developments

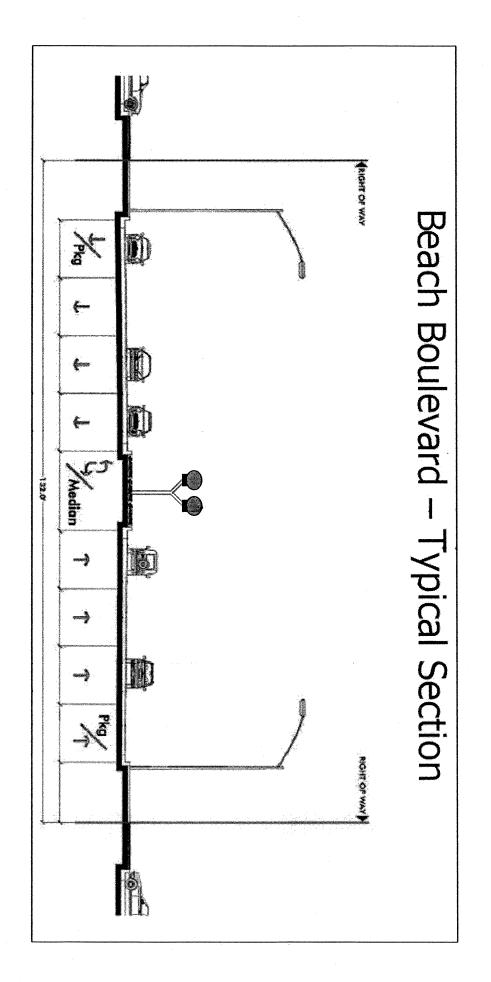
#### PRT can operate in "Public Frontage", in street medians, behind private buildings (e.g. alleys) and in County flood control channels



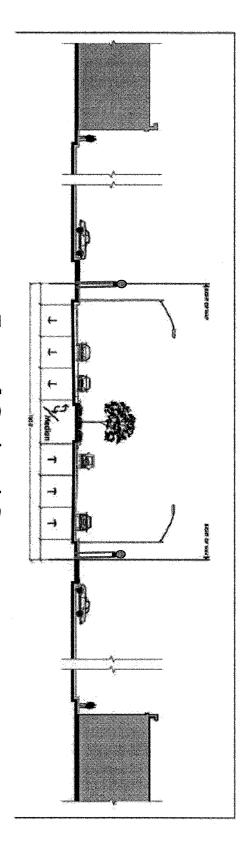
## Example northbound and southbound elevated PRT guideways and vehicles along street right-of-way



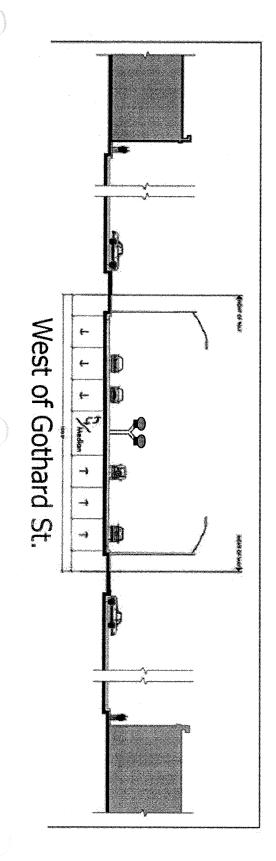
## guideways and vehicles on "Y" pylon in street median **Example northbound and southbound elevated PRT**



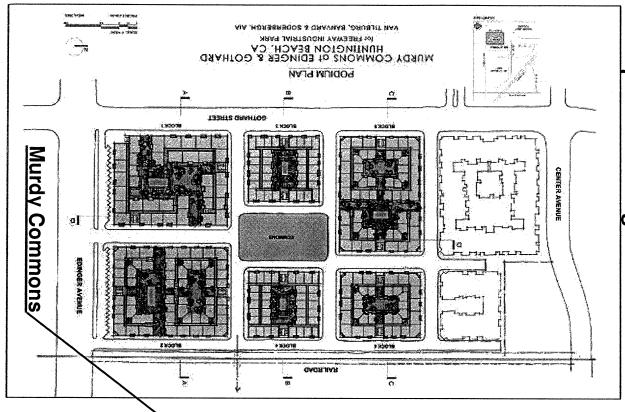
### Example eastbound and westbound elevated PRT guideways and vehicles on shoulders and "Y" pylon in street median Edinger Avenue – Typical Section

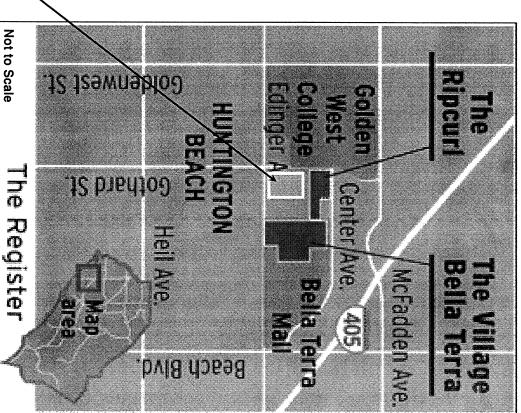


East of Gothard St.



#### High-Density Apartment/Condo Housing Anticipated in Edinger/Gothard Area





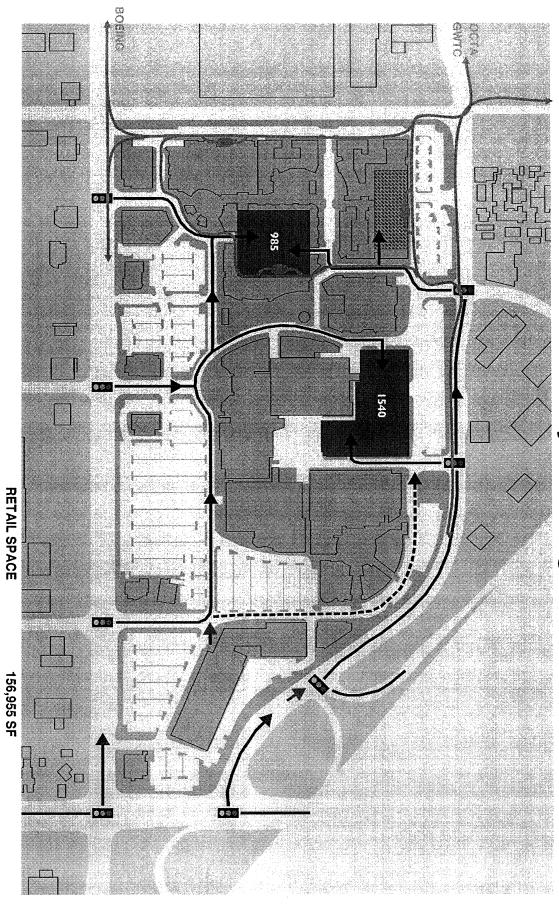
Village (DJM) - 45 units/acre

Not to Scale

- Ripcurl (Red Oak) 87 units/acre
- Murdy (FIP) 1,268 units (101/acre)

Densities subject to confirmation

# Sample PRT alignment, station placement in area high-density housing



**Public Parking and Access** 

Source: DJM Presentation of 05/07

PARKING SPACES

503 UNITS
1095 PUBLIC PARI

1095 PUBLIC PARKING SPACES 966 RESIDENTIAL PARKING SPACES

