Complete Downtown Community Transportation Plan

Prepared for:

SAVE OUR FORESTS AND RANCHLANDS

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1. Introduction and Summary to Complete Downtown Community Transportation Plan

San Diego Downtown Community Plan: Rising on the Pacific (DCP) generally is an excellent guide for the evolution of San Diego's downtown to a more vibrant urban place. It presents a compelling vision of a mixed use center that is accessible on foot, on bike, on transit and in cars. Streets are designed not just for passing through, but are also attractive public spaces – both to experience urban life and to experience the natural world. However, the transportation aspects in the Plan and particularly in its *Final Environmental Impact Report* (EIR) fall short of what is needed to fully realize the Plan's vision because there is too much reliance on cars.

This report presents an alternative to the DCP that embraces the central role of the pedestrian realm in urban life – not just for transportation, but also for social interaction and experiencing the outdoor environment. Rather than planning for cars first, and fitting in the pedestrians and transit afterwards, this alternative begins with pedestrians and pedestrian access to transit. With a comprehensive downtown transit plan, all downtown development should be transit oriented. In addition, all development outside downtown, located within walking distance of trunk line stations, should also be transit oriented. Thus, without increasing congestion, Center City development can lead to the laying of a foundation for affordable housing throughout the region. Ample access for cars is provided, but the cars are managed so that the urban environment is preserved. This plan will provide accessibility and mobility, while also creating and maintaining a high quality of life that will support the planned level of economic development – job growth and population growth. Our recommended *Complete*[1] *Downtown Community Transportation Plan* includes:

- Maximize Coaster service – double track, increase service frequency, tunnel and station in University Town Center, extension to 6th Avenue, improved connection to Downtown circulator, increased feeder bus services, and more parking at stations
- Maximize Trolley service – increased service frequency, direct routing of Mission Valley trains to Downtown, station improvements, investments in switches and controls to allow more flexible operations, and increased feeder bus services
- New transit trunk lines integrated into downtown – new high capacity/high service trunk lines on new corridors integrated into a set of Downtown transit stations
- Improve local and express bus services –increased employment will create a need for increased local and express bus service into Downtown
- Very frequent free transit service within downtown – one or more circulator routes with free fares and headways of 5 minutes or better, possibly integrated with new trunk lines
- Market pricing for parking – removing minimum parking requirements and parking subsidies will increase transit usage and allow economically-efficient development
- Street diets – reclaiming street pavement where possible for on-street parking, landscape, and an improved pedestrian realm
- Pedestrian primacy – maximize pedestrian level of service by minimizing street widths, vehicle numbers, and vehicle speeds

The overarching goal is to significantly increase San Diego's transit mode share for workers and overall transit mode share by 2020. This requires monitoring and an implementation plan. Implementation may require enactment of an ordinance to collect an alternative transportation impact fee or institute a tax increment financing district for transit operations and streetscape improvements.

[1] "Complete" here refers to "complete streets", a planning term for streets that serve all transportation modes well.

2. The Problem: Too Many Cars

The DCP would support large increases in downtown population and downtown jobs. With buildout, population would increase from 27,500 today to 89,100, and employment would increase from 74,500 to 167,700 (Table 3.2, p. 3-27). Increased density has regional transportation benefits. As discussed in the May 2006 Independent Transit Planning Review Services report prepared for SANDAG (p. 2-19 – 2-21), increased residential density lowers vehicle miles traveled (VMT) per capita. This will be especially true downtown residents in a rich job center that is a transit hub. Higher job density also will reduce VMT, per capita, provided that the transit system takes full advantage of the opportunity that the jobs centers presents. The challenges are: 1) to make sure that regional benefits of increased downtown density are fully realized by maximizing transit use and 2) to make sure that the benefits are not offset by detrimental local congestion.

Compared to the present, the EIR predicts large increases in the numbers of downtown person-trips, downtown auto trips, and downtown vehicle-miles of travel (VMT):

- downtown person trips +120% (p. 5.2-23)
- downtown auto trips +112% (p. 5.2-24)
- vehicle-miles traveled in study area +125% (p. 5.2-24)

EIR Tables 5.2-11A and 5.2-11B (p. 5.2-25 and 5.2-26) show forecasted increases on individual streets of up to 29,820 vehicles per day. The huge increase in downtown traffic would cause an even more pronounced increase in downtown traffic congestion. The EIR states:

> **The increased traffic volumes would result in significant congestion on portions of the downtown grid streets. With buildout of the Community Plan, 62 of the 275 intersections would operate at an unacceptable level of service (LOS F).** Of the 62 intersections, all currently operate at an acceptable LOS in the AM peak hour and all but two operate at an acceptable level in the PM peak hour. Thus, significant direct impacts would occur at 60 intersections. (EIR, p. 5.2-24, **bold** text in original)

The EIR describes as mitigation – "potential intersection improvements" for the 62 intersections that are forecast to operate at LOS F with buildout (Table 5.2-20, p. 5.2-45 through 5.2-47). Most of the proposed mitigation concepts involve adding turning lanes at intersections, and others add through travel lanes.

The EIR recognizes that these mitigation steps may not be feasible. It states:

> … final design would be required at each of the intersections to determine the appropriateness and feasibility of improvements designed to accommodate anticipated traffic. Furthermore, the traffic consequences of implementing these improvements should be considered prior to implementation. In addition, as indicated earlier, conflicts with pedestrian/bicycle activities could affect the feasibility and/or desirability of proposed intersection improvements. (EIR, p. 5.2-44)

If the mitigation measures are not feasible, they do not represent mitigation. Furthermore, the EIR admits that no mitigation measures are feasible at 12 of the intersections[2], citing "insufficient right of way or pedestrian limitations." (p. 5.2-44)

The negative traffic impacts extend beyond the streets in the study area. The EIR also identifies adverse impacts on traffic operations in other neighborhoods (EIR, p. 5.2-30 through 5.2-32). Even more significantly, the buildout analysis shows significant adverse impacts to the freeway system, adding large amounts of traffic to segments already operating at LOS F. The EIR states: "the cumulative impacts on freeways are considered significant and not mitigated." (p. 6-11)

The EIR forecasts a huge increase in traffic volumes. Some of these could be mitigated by street widenings. Some city street impacts cannot be mitigated. Freeway traffic impacts cannot be mitigated without major widenings that are outside the scope of the EIR. In summary, the EIR represents a "plan for failure" that would result in unreasonable future traffic congestion if it were implemented.

The EIR plan fails in terms of traffic congestion, but it is even weaker as a guide to creating a vibrant urban place. The only mitigation actions that are considered feasible are "improvements" a.k.a roadway widenings, especially at intersections. Such widening would lengthen crosswalk distances, making intersections less satisfactory and safe for pedestrians. The term "improvement" is commonly used in a suburban context regarding road widenings, but is inappropriate here because pedestrians are supposed to have the priority. A change that makes conditions worse for pedestrians is not an "improvement."

The Downtown Community Plan states:

> The organizing concept of the Community Plan is walkable neighborhoods with a mix of uses and easy access to open space, shops, services, amenities, and cultural attractions that create opportunities for true urban living. (DCP, p. 1-3)
>
> …streets are designed for pedestrian comfort, walking, and lingering. (DCP, p. 1-3)

For the large areas labeled *Pedestrian Priority Zones*, the Downtown Community Plan goes even further, saying:

> The retail districts and the Neighborhood Centers will need wide sidewalks, crosswalks, and street design and traffic signalization that give priority to pedestrians. (DCP, p. 5-15)
>
> In Pedestrian Priority Zones,
>
> - Undertake strategic streetscape improvements (such as sidewalk widenings, bulbouts, enhanced lighting and signage);
> - Lengthen traffic signal walk times for pedestrians, and explore feasibility of "all walk" signalization at intersections with heavy pedestrian flow; and
> - Accept lower levels of automobile traffic level of service. (DCP, Policy 7.2-P-4, p. 7-8)

[2] possibly reduced from 12 intersections to 9 under one alternative (EIR, p. 5.2-49)

Instead of working towards these objectives, the FEIR proposes huge increases in traffic volumes, wider intersections with more lanes for pedestrians to cross, and persistent congestion at many bottlenecks for traffic trying to enter the downtown area.

A far better approach is to maximize the use and efficiency of the region's public transit system, so that people have the choice to come to the downtown area without their cars. Parking for the downtown area will be provided in shared, market-priced facilities. Using the free market to provide parking will provide for a more efficient use of parking resources, and appropriate pricing to ensure availability of parking. The downtown San Diego street network will be designed with pedestrian priority as the major goal, which will involve reducing traffic speeds to provide greater safety, and implementing street "diets" to provide public space for on-street parking, landscaping, bicycling and walking.

The FEIR presents only one future alternative: one with high traffic volumes, high dependence on automobiles, numerous parking garages interrupting the city blocks and development opportunities, and streets designed to accommodate high traffic volumes, that will be unfriendly or even hostile to pedestrians.

3. Components of Transit Alternative

A. Regional Transit System Overview

The overarching transit goal is to increase the downtown's transit mode shares for both work trips and non-work trips. This will require enhancements throughout the region and across the different classes in the transit system. The *Regional Transit Vision*[3] and the *Regional Transportation Plan* [4] (RTP) both describe three general classes of transit: regional, corridor level, and local:

> Regional *Yellow Car* services provide the fastest type of service and are designed to serve longer-distance regional trip making. Yellow Car services travel at an average of 40 miles per hour and have limited stops. The Coaster commuter rail system is an existing example of Yellow Car service…
>
> Corridor-level *Red Car* services provide rapid, very frequent transit services along the region's major travel corridors. Average speed for Red Car service is 25 miles per hour, and stops are more frequent than Yellow Car services. The San Diego Trolley is an existing example of Red Car service...
>
> The two remaining service concepts provide critical feeder and shuttle services to the Yellow and Red Car networks. *Blue Car* services are essentially the local bus network serving shorter-distance trips within our communities with frequent stops. *Green Car* services are local shuttles that circulate through local communities and employment centers to connect people to and from their homes and work sites and the Yellow and Red Car networks. . . (RTP, p. 86-87)

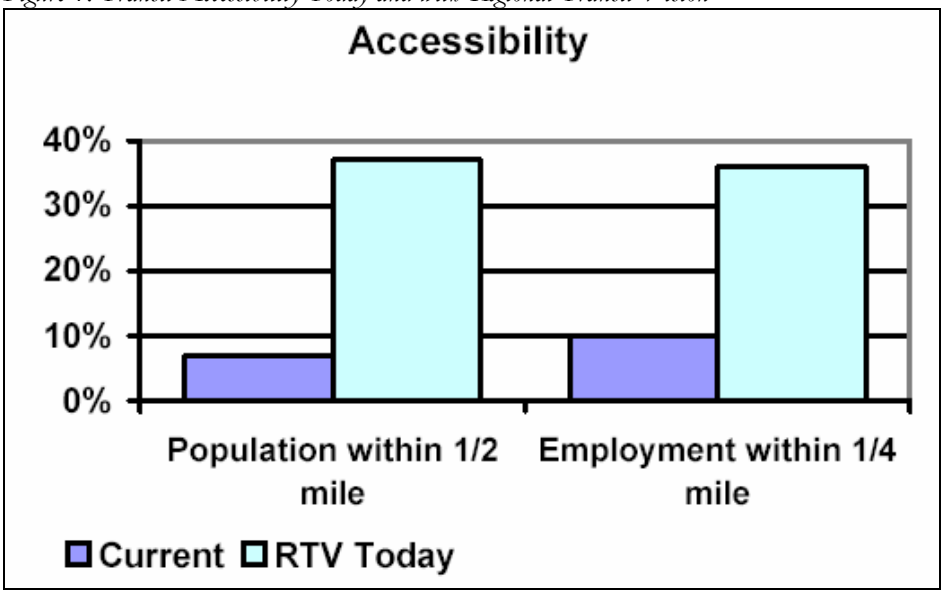
A three-tiered approach is consistent with successful transit systems in Europe and the U.S. Local services are needed to reach the largest possible fraction of origins and destinations. Corridor level services are needed for faster service on major routes and for intermediate length trips. Regional services like commuter rail are needed to compete with longer freeway trips. The three systems need to be integrated because many trips will require connections between the submodes. The San Diego region needs to invest in all three tiers.

For anyone with a car and a valid driver's license, the road system is a complete system. One can get by car from any origin to any destination. The transit system is much less complete. SANDAG's Regional Transit Vision document states that less than 10% of the region's population lives within ½ mile of a transit stop, and only 10% of the region's jobs are within ¼ mile of a transit stop. With the full implementation of the Regional Transit Vision (which is not all included in the fiscally-constrained RTP), the percentages would increase to 37% of population and 36% of jobs.

[3] SANDAG, *Regional Transit Vision: A Strategy for Improving San Diego's Quality of Life*, Final, November 2001.

[4] SANDAG, *Mobility 2030: The Transportation Plan for the San Diego Region*, Final Amendment Number 1, February 2005:

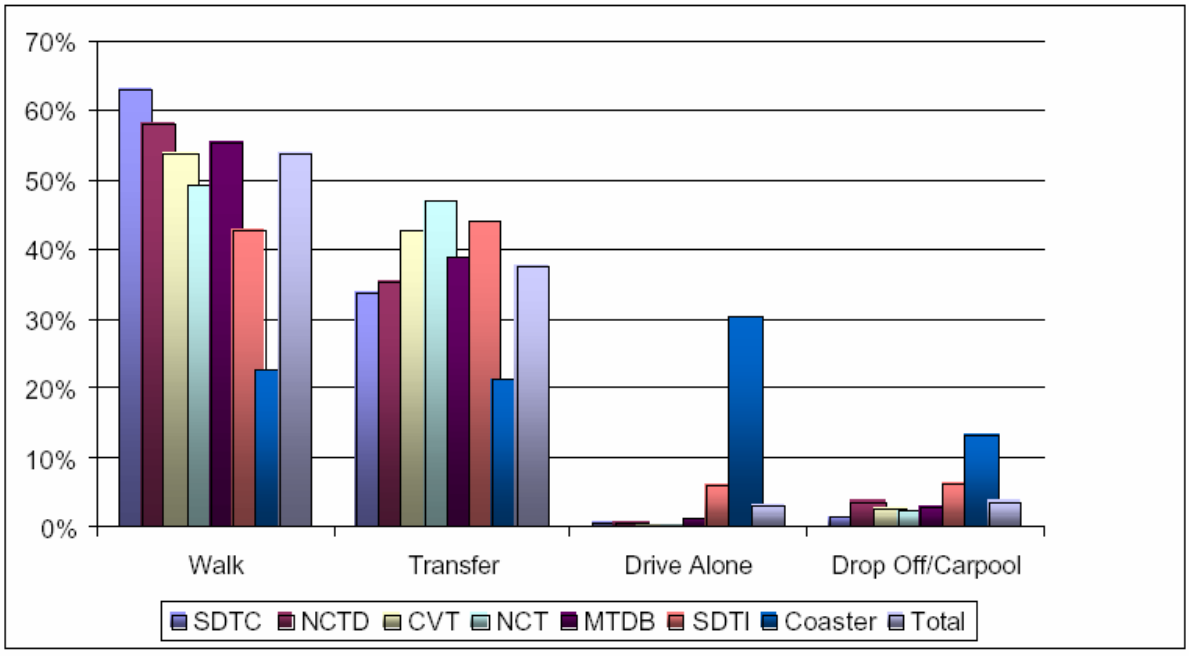
Figure 1: Transit Accessibility Today and with Regional Transit Vision



Source: SANDAG, *Regional Transit Vision*, 2001, Figure 1, p. 4.

Most transit trips have walk access on both ends or involve a transfer from a walk access trip. As shown below, only the Coaster has significant drive access today.

Figure 2: Transit Access in the San Diego Region



Once travelers are in their cars, it is difficult to get them out to transfer to transit. Generally, this is possible only for longer trips, such as the Coaster, or if parking at the destination is scarce or expensive.

For the predominant walk-access transit trip, the accessibility issue is even larger than it appears in Figure 1. A transit trip includes an origin and a destination. If the origin and destination of a trip each have a 10%

likelihood of being within walking distance to transit, then the joint probability of having walk access at both ends is only 1%. Because there are so few trips in the region where transit could be considered an option, transit will often not be considered even for trips where it could be used.

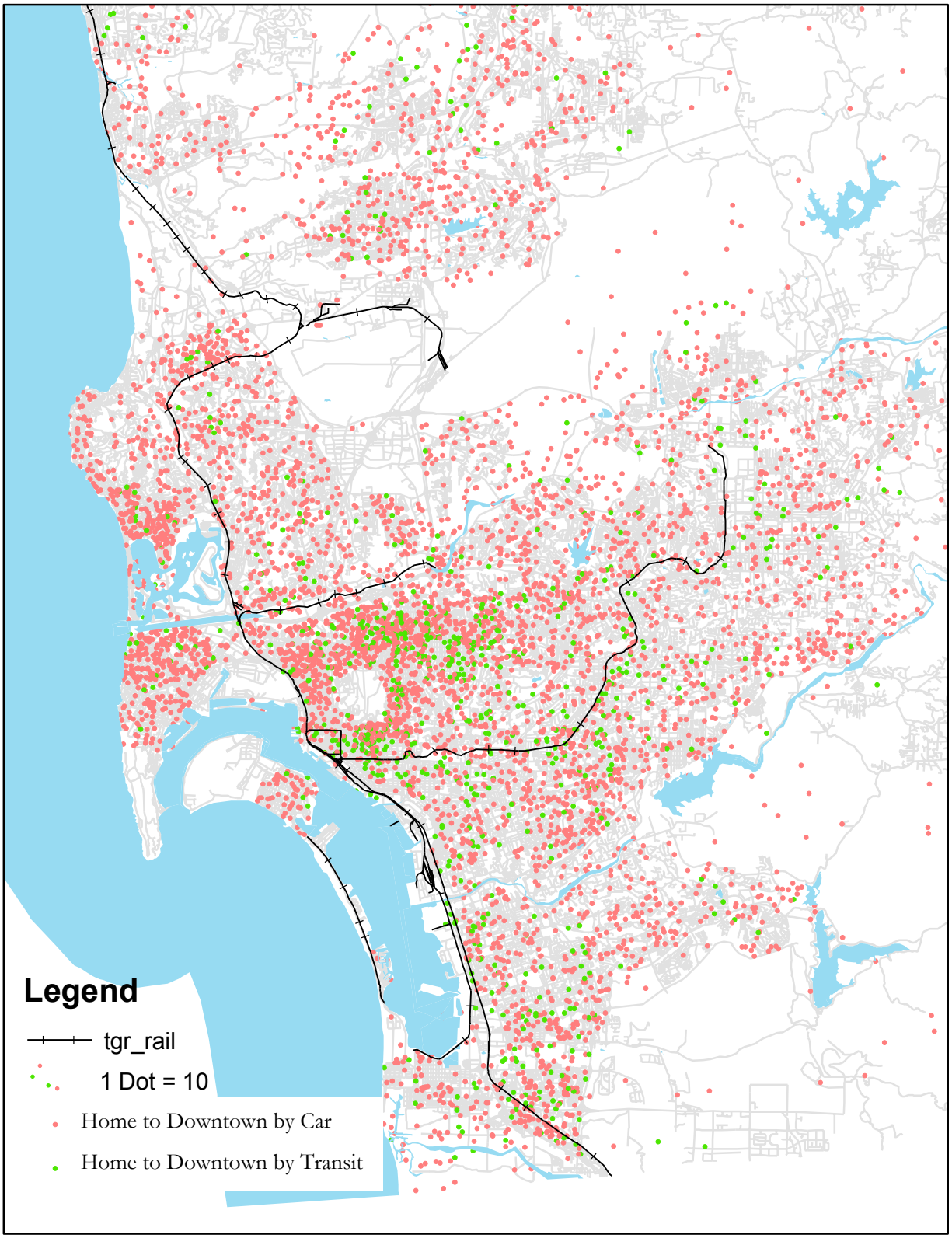
The *Plan* is an important step in improving the region's transit accessibility because it places housing and jobs where there already is transit or where transit service will be expanded in the future. This is more efficient than extending transit to dispersed, low-density land use.

In most downtowns, work trips comprise a high percentage of daily transit trips, and a majority of transit trips entering and exiting the downtown during the morning and afternoon peak hours. In the San Diego region, 45% of daily transit trips are between home and work, and another 17% are between home and school.[5] In a service economy, transit that serves commuters will also serve many non-work trips with destinations at major employment centers including medical centers, educational institutions and retail centers. On average, non-work trips are shorter than work trips. On the Coaster, 81% of all trips are between home and work, but non-work trips are more important for the other transit services in the region.

The 2000 Census provide detailed data on work trips that are not available for non-work trips. Figure 3 shows the home locations for daily auto vehicle-commuter trips and transit person-commuter trips into Centre City in 2000. Each red dot represents the home location of 10 cars with commuters and each green dot represents the home location of 10 transit commuters. As shown in Figure 3, the majority of both transit and auto commuters come from the region's core. The core area generally has higher population density, and residents in these areas are more likely to commute to Centre City than are workers living farther out.

[5] SANDA Onboard Transit Passenger Survey, Figure 11, p. 17, March 2004.

Figure 3: 2000 Census Home Locations for Workers Commuting to Centre City



The Centre City commuting locations shown in Figure 3 are consistent with SANDAG's study of travel in the region (shown below in Figure 4).

Figure 4: Trip Movements in San Diego County

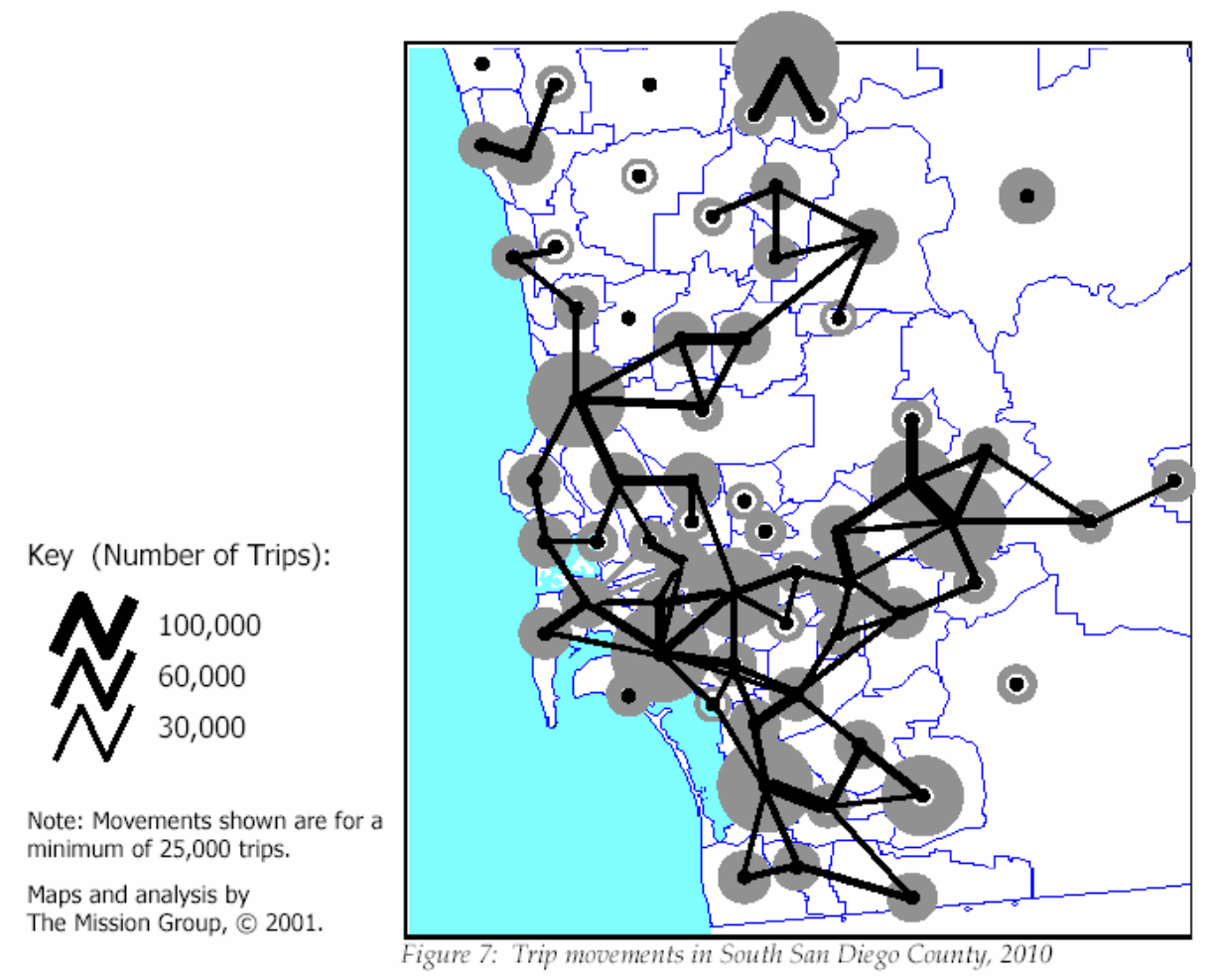


Figure 7: Trip movements in South San Diego County, 2010

Source: SANDAG, *Regional Transit Vision*, p. 16, 2001.

The Coaster and the Trolley serve some of the important interchanges with the downtown well, but other corridors are poorly serviced. In the following sections, we discuss ways to maximize the Coaster and Trolley services, and then discuss the need for new transit trunk lines to Downtown, especially of the intermediate *Red Car* type service.

B. Maximize Coaster Service

> We cannot sustain our historical patterns of land use and build enough roadways to keep up with projected increases in motorized travel. Congestion in urban areas will generally worsen over time unless options are available that allow people to get out of their single occupant vehicles, especially during peak travel periods. (San Diego Association of Governments, *Mobility 2030: The Transportation Plan for the San Diego Region*, Revision 1, February 2005, p. 63.)

Coaster service today is infrequent, with headways (time between departures) of 36 minutes during peak weekday periods and 2 hours for off-peak service. The RTP calls for the Coaster frequency to be approximately doubled to 20-minute peak and 1-hour off-peak headways. (p. 89) Even higher frequency service would be desirable.

Increasing frequency will require more investment than just buying additional train sets because part of the line has only a single track which limits operations. Double tracking the entire system is required to maximize frequency, minimize travel time, and assure schedule reliability. Together, these service improvements would attract many more riders which would justify the increased service frequency.

Another way to dramatically improve Coaster service would be a tunnel providing a shortcut for the mainline railroad from Rose Canyon to Sorrento Canyon. This would provide an underground station in University Town Center, and would also benefit Amtrak trains, which would not have to climb or descend the long winding grade out of Sorrento Valley.

In the downtown area, it would be useful to extend the Coaster service from the foot of 6th Avenue to serve Petco Park, the Gas Lamp District and the Convention Center. This improvement would require the addition of a third track in this section.

In making these improvements, it is important to also focus on the access to the train stations at both ends. At the downtown end, access will be by walking and also by high frequency circulators linking the Coaster rail station with other important downtown destinations. Downtown circulators are discussed in a later section of this report.

At the other end of the Coaster trip, which will often be the home end of the trip, most riders will access the station by driving or from feeder buses. The demand for parking at Coaster stations is already outstripping supply, and it can be very expensive to add parking at stations. For example, a 500-space parking garage is planned for the Solana Beach Transit Station at a cost of $15 million, or $30,000 per space. If parking fees were charged to cover the costs of this investment, they would be about $200 per month.[6] Instead, the Coaster parking spaces are provided for free. It will be prohibitively expensive to supply all of the Coaster parking for free. Instead, parking will have to be priced. In order to justify the price, it will be important to move to market-based pricing downtown (discussed in a later section of this report), so that there will continue to be monetary savings by using transit. In addition, feeder bus routes to the Coaster stations will need to be expanded and frequencies increased, including shuttle services to cheaper or free satellite lots.

[6] Shoup, Donald. *The High Cost of Free Parking*, p. 191 – 194. Chicago, IL: American Planning Association, 2005.

C. Maximize Trolley Service

The Trolley light rail system now mostly operates with 15-minute headways peak and 15-30 minute headways off peak. The RTP calls for peak headways to be reduced to 7 ½ minutes but off-peak headways to remain at 15-30 minutes. (p. 89) The RTP includes higher frequency of 5 minutes peak and 10 minutes off-peak for proposed Bus Rapid Transit (BRT), including suburban managed lane BRT that may attract little off-peak ridership. It makes more sense to operate the Trolley at these higher frequencies – 5 minutes peak and 10 minutes off-peak.

The RTP includes the Mid-Coast Trolley extension from Old Town to Sorrento.

Other ways to improve Trolley Service include:

- Routing through trains between Mission Valley so users do not have to transfer at Old Town
- Extend Bayside line beyond 12th/Imperial to Euclid (Orange line) to provide greater access to and from Southeast San Diego
- Provide a new station at C Street capable of accommodating four cars
- Construct station improvements to accommodate four-car trains and low-floor vehicles
- Construct station shelters, streetscape, and landscape improvements at downtown trolley stations so they are attractive, welcoming, comfortable and user friendly

In addition, the feasibility of skip stop express services during peak periods and terminating some trains before the end of the line during peak periods should be evaluated, along with requirements for additional track and switches.

As shown earlier in Figure 2, a large fraction of Trolley ridership transfers from other transit vehicles. If downtown parking prices are allowed to move up to market prices (discussed in a later section of this report) and Trolley service is improved, the Trolley will become increasingly attractive for transfer trips. Therefore, it will be critical to mirror the increases in Trolley service with increases in the service area and service frequency of feeder bus lines. Although only a small portion of Trolley ridership is now drive access, there may be opportunities for expanded parking at Trolley stations, where it can be provided inexpensively and with convenient access to major roadways.

D. New Transit Trunk Lines Integrated Into Downtown

Black lines showing rail track are included in Figure 3 to help relate the rail services to where commuters live. While the Trolley and the Coaster are successful rail lines, their placement was limited by the locations of existing freight rail lines. There is no rail service in many of the areas where there is the highest density of commuters.

The housing clusters also are not generally clustered around interstate exits. It is generally assumed that if there are tens of thousands of cars on a freeway that there must be a large transit demand along that same corridor. This is not necessarily true. In the auto network, a driver retrieves their car parked next to their house, enters a local street, then a collector street, then an arterial street, and then the freeway, before working their way back down through these functional classes. Many of these segments cannot be realistically duplicated with transit, as it would suggest a local bus, transferring to a corridor route, transferring to another corridor or regional route, and so forth. Even if all of these services could be provided and coordinated, it is very unattractive to make more than one transfer on a transit trip.

Therefore, the most promising routes for new trunk lines are not along freeways but along major arterial streets that pass directly through denser residential neighborhoods. In order to achieve a high level of service, these new trunk lines need to operate at high frequency in reserved lanes with signal preemption and possibly queue jump lanes. These new trunk lines could be either Light Rail or high-amenity Bus Rapid Transit (often this technology discussion is made during the environmental review process). An example of a highly successful new light rail system is in Bordeaux, France where 3 new tram lines (extending through the City on 6 legs), operating in arterial streets with peak 4 minute headways, are already carrying 190,000 passengers per day. The best model for a comparable BRT option is under construction in Cleveland on Euclid Avenue. The Euclid Avenue system dedicates one travel lane in each direction for BRT service every 5 minutes (peak) with long articulated 166-passenger clean hybrid electric vehicles being developed with support of the Federal government. The system is designed as light rail on rubber tires, including pre-purchase of tickets and fast boarding through multiple, low doors, and signal priority at intersections.

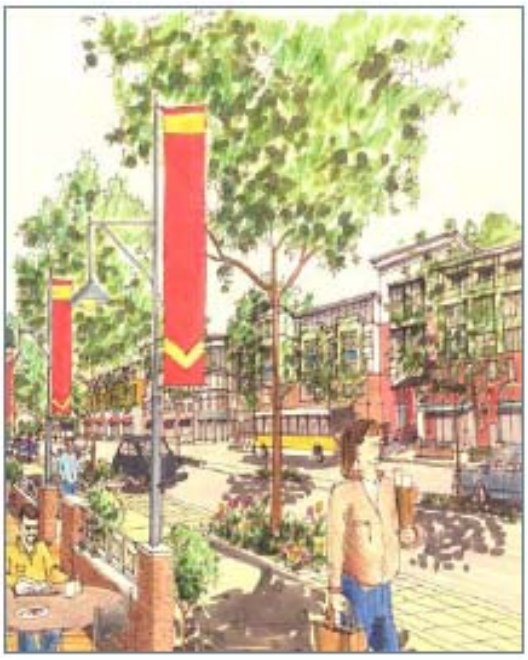
Figure 5: Cleveland Euclid Avenue BRT Vehicles

The type of enhanced, high-amenity trunk line BRT under construction in Cleveland is lumped together with BRT on managed freeway lanes in the RTP and in the *Plan*. However, there are major differences. The arterial

trunk line is an urban transit form that serves walk access trips and connecting local bus trips. The highway BRT is a suburban form and serves drive access and connecting transit trips, subject to the limitations of having to leave the high-speed roadway to pickup and discharge passengers.

In addition to existing neighborhoods with higher residential density, trunk line stations also are appropriate for large new Oriented Development (TOD) areas. It is important that the return on transit investments be as high as possible – both in terms of transit ridership and also in terms of replaced cars. This can be assured by requiring new station areas to meet density standards. In the San Francisco Bay area, BART has made the density within a half mile radius of a possible station a significant factor in stations location decisions.[7]

RTP Table 6.1, p 89, lists 4 major new BRT lines into Centre City. From the limited description given, it appears that two of the projects are managed lane BRT projects and two are arterial BRT projects. The two arterial BRT projects appear to pass through areas with dense numbers of commuters to Centre City, and are listed in the RTP with 5-minute peak service. If these services were given stations, dedicated travel lanes and signal priority, these would be new trunk lines as we are using the term. If these first two lines were successful, more trunk line services could be added later and/or the first two lines could have branch extensions at their ends.



Rendering of Euclid Avenue Streetscape/BRT Project

Rendering of Euclid Avenue BRT/Streetcape

A major current opportunity for the downtown *Plan* is to anticipate these new transit lines and plan the downtown routing and station locations. This opportunity is not realized in the current *Plan*. Instead, it states only:

"Downtown BRT service is part of a regional initiative for an attractive, contemporary bus service system making connections between major employment and residential centers. It is anticipated that it will reduce the number of vehicles entering downtown on a daily basis and alleviate the impact of transit on Broadway." (p. 7-10)

[7] Deakin, Elizabeth, Marianne Payne, and Val Menotti. "Development of the BART System Expansion Criteria and Process." Presented at the Annual Meeting of the Transportation Research Board, January 2004.

Instead, one or more transit corridors should be planned with dedicated lanes, signal priority, and transit stations that would serve these new trunk lines. As discussed in a section below, it may be possible to also use these trunk lines as high frequency downtown circulators with a free transit zone. While Centre City cannot plan these services on its own, it is critical that the Centre City *Plan* maximize the value of these new services when they are implemented.

E. Improved Local and Express Bus Service

In the 2000 U.S. Census data, there are over four times as many commuters reporting that they use bus transit to get to work in Centre City than use rail transit. Unfortunately the Census does not support entry of a combined bus/rail transit trip, so there is no information on bus/rail transfers. Nevertheless, it is clear that local and express bus service to the downtown is a critical part of the transit system. With expanded transit use, there will be more buses entering downtown in the future than there are today. This will likely include additional routes, including reinstating some that were dropped in funding cuts. It will also include increased service frequency on some routes.

Attention also needs to be given to accommodating these buses. Downtown bus terminals can reduce the need for cross-town buses. For important transit streets, priority should be given to the movements that the buses are making. Buses should have signal priority, and also queue jump lanes where needed. Dedicated bus lanes may be justified where multiple routes overlap. In addition, investments should be made in upgrading shelters, hardscaping, landscaping and passenger information at downtown stations so that they are attractive, welcoming, comfortable and user friendly.

F: High Frequency Free Transit Service within Downtown

It is critical that once someone is in Centre City that they can move about conveniently without a car. A frequent downtown circulation system is needed that can serve people who are parked, people who have taken transit to the Downtown, residents and visitors including convention center and cruise ship patrons.

The Plan's discussion of small vehicles operating on a large loop at 5-10 minute headways sounds is insufficient to meet this need. Instead, there needs to be prominent cross-town routes operating at 5-minute headways or less. The Denver Transit Mall is an example of a free, high-service downtown circulator, with headways of 1.25 minutes. At this frequency, one can always see the bus approaching, and can often see more than one.

There may be an opportunity to use the new trunk lines as at least part of this circulation system. For example, if there are two new trunk lines using the same stations downtown, with each operating at 5-minute headways, the average headway would be 2 ½ minutes. Many of the U.S. cities with new urban light rail systems are using them partly as circulators in a downtown free zone.

4. Market Pricing for Parking

The single most effective step that could be taken to reduce future downtown traffic would be to allow parking to be supplied and priced by the market rather than through minimum requirements and subsidies. The EIR is very concerned about the potential of parking shortages, including this issue in Tables 1.3-1, 1.4-1, 10.1-2 and on p. 5.2-14, 5.2-41 - 5.2-44, 5.2-58 - 5.2-60, 6-10 - 6-12, 10-1, and 10-11. In a free market economy, there are no lasting shortages for consumer goods. The Soviet Union used to have shortages of food, clothing and other consumer goods. These shortages were a result of the failures of central planning. When visitors from the old Soviet Union experienced a US Supermarket, they marveled at all the available food in a small supermarket, and couldn't understand why there were no "shortages", nor grasp how those goods could get there without the government organizing production and shipments.

Since then the Soviet Union has disappeared and central planning is discredited throughout the world. Nevertheless, some planners in the U.S. still think parking needs to be centrally planned. In fact, the intervention of planners in the U.S. in the parking market almost always causes parking to be oversupplied and under-priced. This is economically wasteful and encourages traffic to choke downtown regions. This has been exhaustively documented in Donald Shoup's *The High Cost of Free Parking*, published by the American Planning Association in 2005.

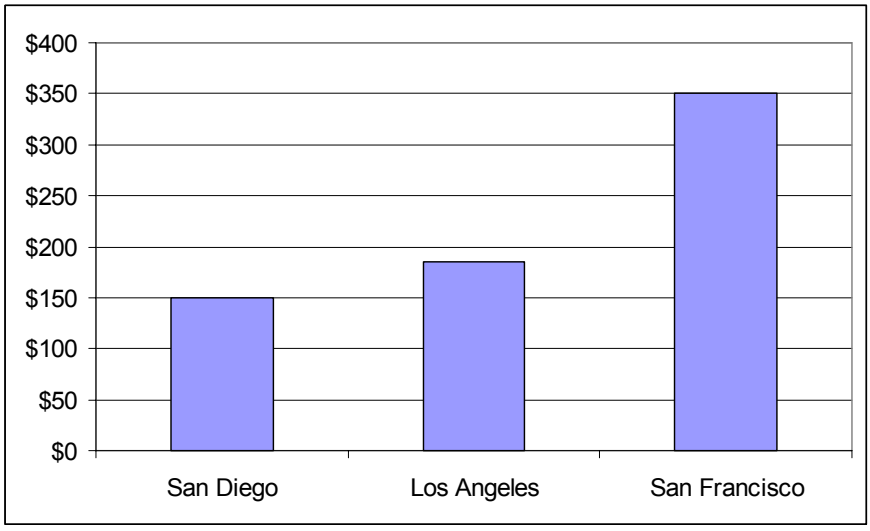
There is much language in the EIR that emphasizes "central planning" of the parking supply:

- "Site and design new parking structures …" (p. 5.2-42)
- "Distribute new public parking garages throughout downtown …" (p. 5.2-42)
- "Work with the Port to provide public parking in the Waterfront/Marina area, and with the City, County and other agencies in Civic/Core." (p. 5.2-43)

If there is an economic need for parking, then it can be provided by the market. Obviously, a retail development cannot succeed if it has no customers, an office building cannot succeed without workers, and a residential development cannot succeed without residents. If these shoppers, workers and residents require parking space, the market will supply it. If on-site parking requirements for new developments are eliminated, developers can plan their projects for optimal financial return, and decide how much parking is the right amount for their development.

In a separate report for SOFAR (attached), an associate of Donald Shoup's – Michael Manville of UCLA – has highlighted the deficiencies in the parking segments of the EIR. He finds that the San Diego downtown has almost 5 times as much parking per worker today as downtown San Francisco, and 30 percent more parking per worker than downtown Los Angles, which is routinely criticized for being too auto-oriented. As shown in Figure 6 below, monthly parking costs in downtown San Diego are lower than for Los Angeles and much lower than for San Francisco. Manville suggests that the current parking minimum requirements could be replaced with parking maximum requirements.

Figure 6: 2005 Central Business District Median Monthly Unreserved Parking Price



Source: Colliers International North America CBD Parking Rate Survey

Following the recommendations of Shoup and his colleagues, our alternative includes:

1) pricing on-street parking at market rates (so that average peak period utilization is 85 percent)
2) pricing publicly-owned garages at market rates and possibly privatizing them
3) selling day use on-street parking permits in adjacent residential areas and returning the money to the neighborhoods
4) removing parking requirements for new development, including residential requirements allowing residents to purchase parking if they want it.

Shoup has found that objections to day parking in neighborhoods are eliminated if the parking is priced and the revenue is returned to the neighborhood for investments such as sidewalks, lighting, landscaping, etc. This results in a true win-win outcome with a new revenue source for neighborhood improvements, and the substitution of existing shared on-street parking for more expensive structured parking in the downtown.

Unbundling parking from the costs of housing and office space will greatly encourage car sharing, which is recommended in the EIR (p. 5.2-59), but without providing any real incentives. In contrast, the core of San Francisco has an extensive privately-operated *Zipcar* system, with 46 locations for cars to be picked up and dropped off in the city's core. Zipcar reports that each Zipcar replaces over 20 privately owned automobiles. As Shoup has found that each car requires 2-3 parking spaces throughout a region, the reduction in regional parking demand for each shared car is even greater.

For the parking market to work, parking must be an allowed use on many, but not all parcels. Parking design can be regulated so that it fits in with urban form, and traffic impacts need to be evaluated for large parking structures. The Plan calls for locating parking under public parks, which can be done through public-private partnerships, provided that the parking makes sense economically.

5. Street Diets

To achieve the goals expressed in the Center City plan, the street system should aim at favoring transit over automobiles, and maximizing pedestrian use. But the analysis of the streetscape in the EIR is focused on automobile operations.[8] Accordingly, under the present Community Plan, access to downtown will be primarily by motor vehicle, and will involve, for most visitors, enduring severe congestion in the I-5 corridor before accessing the downtown street network. However, this conflicts with the vision that the Community Plan describes, one of attractive, pedestrian oriented streets.

As discussed above, the EIR states that without mitigation, 62 downtown intersections would operate at level-of-service F during the morning or afternoon peak period, or during both periods. In the EIR, it is proposed that these impacts be mitigated by adding lanes or turn lanes. The EIR then suggests that some of the intersections cannot be mitigated (Figure 5.2-7, p. 5-2-48). We are concerned that this analysis is overly simplistic. In general, drivers in the urban grid have many possible routes. Any increase in capacity at one intersection will generally increase traffic volumes there, but shift traffic from other intersections. While 62 intersections may have failed without any mitigation, this does not mean that 62 intersections need to have more capacity. Some subset is sufficient. The proposed mitigation is more than what is needed and would consume unnecessary amounts of pavement and negatively impact pedestrians and street life.

Moreover, through an increased transit share and higher market-based parking costs, future traffic volumes and congestion at the bottlenecks can be reduced. Higher transit shares and lower traffic volumes on the city streets will allow for design that is much more favorable for pedestrians, as well as the type of economic development envisioned for the downtown area. Many street widenings will not be needed, and in fact, many of the downtown streets could be narrowed and still provide adequate vehicle capacity.

The City of San Diego policy is that levels of service of E or better are acceptable in the downtown area. However, with increases in transit share and market-based parking costs, the vast majority of intersections still will operate at levels of service A or B. This indicates that many of the downtown streets are "overdesigned" for traffic, and could be narrowed without falling below the City's goal of LOS E. This "street diet" allows the right-of-way to be allocated to other uses that will more effectively support multimodal transportation, parking and economic development goals.

Examples of reallocation of the street right-of-way include converting travel lanes to parking lanes; converting parallel parking to diagonal parking; adding bicycle facilities to the street right-of-way, or providing landscaped medians (i.e. green streets). See the following examples from Livermore, California that have re-allocated right-of-way from four lane arterials to create much more attractive and safe streets.

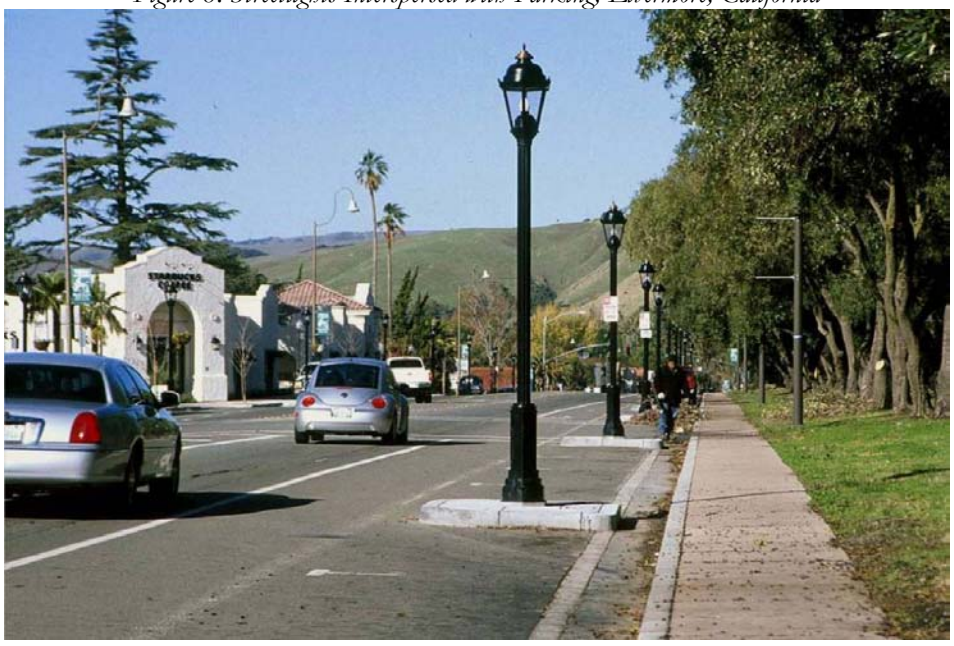
San Diego's downtown has an excellent, relatively fine grained street network. This is a tremendous asset, as this network can provide both traffic capacity and opportunities for wider sidewalks, street furniture, diagonal rather than parallel parking, and other enhancements. The very high levels of service reported in the EIR indicate many streets and corridors could operate well enough with fewer lanes, and these lanes could be re-allocated to other important public uses that are far more supportive of the CCDC plan.

[8] As discussed above, the EIR level of service analyses ignored buses, so the analyses should be redone with buses included.

Figure 7: First Street, Livermore, California

Source: Freedman, Bottomly and Tung

Figure 8: Streetlights Interspersed with Parking, Livermore, California



Source: Freedman, Bottomly and Tung

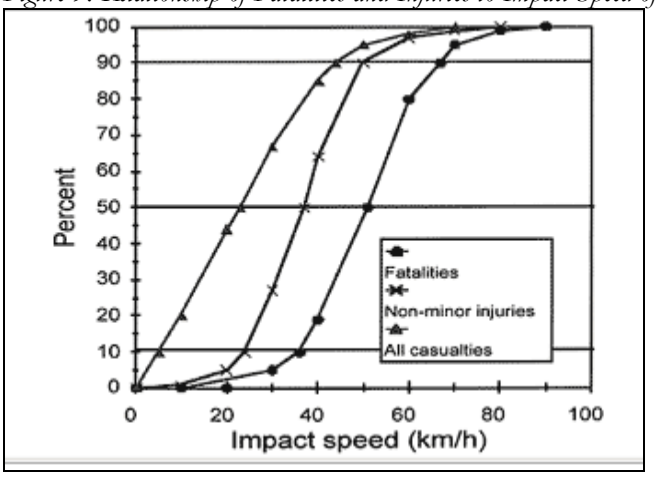
6. Pedestrian Primacy

In any environment where pedestrians and cars mix, it is important to strike a proper relation between pedestrian and automotive mobility. In a downtown context, the pedestrians must have priority. The basic idea of how downtowns function is that almost everyone is a pedestrian at times. Transit customers are almost always pedestrians for the final leg of their trip. The Plan properly places an emphasis on public, shared parking as being both much cheaper and more aesthetically pleasing than a lot of parking spaces that remain empty for much of the day. However, public, shared parking means that even motorists will generally have to walk to their final destination.

Achieving an excellent pedestrian environment is not only a planning issue, but is also a public safety issue. When pedestrians and cars collide, the pedestrians often die. Despite representing only a very small fraction of person-trips and traveled distance, pedestrian fatalities are 22.5% of all traffic deaths in the San Diego region.[9] This is the third highest percentage in the U.S. among major metropolitan areas. Many of these fatalities were clustered in the region's core where population densities are higher and people are more likely to walk. This statistic indicates the need for a substantial shift in the priorities and objectives of intersection and street design, in favor of pedestrians.

Pedestrian and bicyclist safety is directly related to the traveled speeds on streets, which is governed by street design. A study of the likelihood of fatality for pedestrians struck by vehicles estimates that 5% of pedestrians who are struck at 20 mph (30 km/h) are killed, 45% at 30 mph (50 km/h) and 85% at 40 mph (65 km/h) (Ashton and Mackay, 1979). This is a staggering display of the vulnerability of pedestrians to high speed traffic, and of the great need to reduce traffic speeds in pedestrian priority areas by design.

Figure 9: Relationship of Fatalities and Injuries to Impact Speed of Traffic

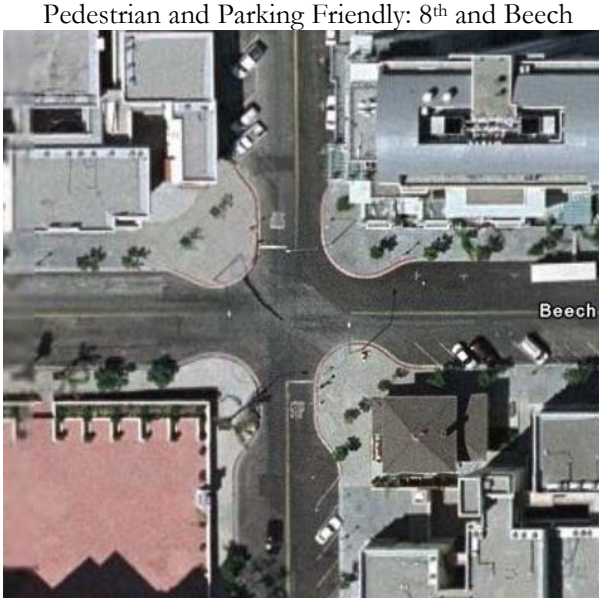


[9] Ernst, Michelle. *Mean Streets 2004: How Far Have We Come? Pedestrian Safety, 1994-2003*, p. 18. Surface Transportation Policy Project, November 2004.

There are numerous design techniques to reduce traffic speeds and improve pedestrian safety that have been used in many cities and gained acceptance in the traffic engineering community. A recent publication by the Institute for Transportation Engineers[10] provides a sound basis for creating more pedestrian friendly streets, and how to integrate on-street parking, transit stops and other amenities into a welcoming pedestrian environment. These design tools and techniques should be applied to San Diego's downtown street network to provide a balance between mobility for all modes and pedestrian safety.

Hostile to Pedestrians: 8th and G

Pedestrian and Parking Friendly: 8th and Beech



7. Recommended Analysis Procedures

The EIR estimates that about half of existing downtown transit trips are work trips (Table 5.2-4, 5-2-12) which seems reasonable. However, the percentage transit share for work trips in the EIR, 20.9%, is much higher than the US Census reports (11.3%). The total number of person-trips for the downtown, 1.2 million, also appears to be very high. Using the numbers in Table 5.2-4, only 10.8% of all downtown trips are work trips. Generally, about 25% of all trips in a region are work trips, and the percentage typically is higher for downtown areas. If doesn't make any sense to be analyzing details like adding a turn lane if the big picture numbers like the number of trips and the number of transit trips are wrong.

The May 2006 Draft Final Independent Transit Planning Review Services document (ITPRS) prepared for SANDAG concludes that SANDAG is overestimating 2030 transit ridership. This same conclusion was reached earlier by a model peer review panel convened by the Federal Highway Administration.[11]

[10] *Context Sensitive Design of Major Urban Thoroughfares*, ITE, 2005.

[11] U.S. DOT Volpe Center, "Report on Findings of the Peer Review Panel of the San Diego Association of Governments Travel Demand Model", Held June 23-24, 2005, San Diego, California, December 2005.

Although the ITPRS concludes that regional 2030 transit ridership is overestimated, it also concludes that the model may underestimate ridership in Transit Oriented Developments (TOD). It states:

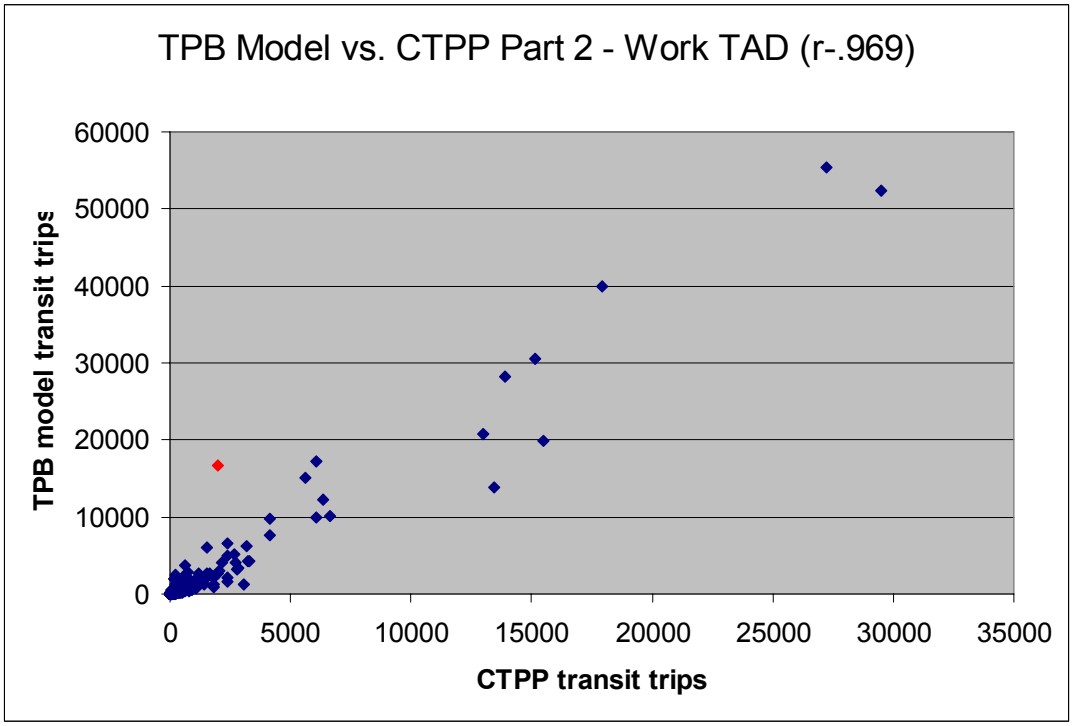
> … the model tends to underestimate transit ridership in a "true" TOD area. "Post-processing" adjustments can be made to account for the increased transit ridership that occurs. This can be accomplished during post-processing through application of the "3 D's" – Density, Diversity and Design (Cevero). (ITPRS, p. ES-9)

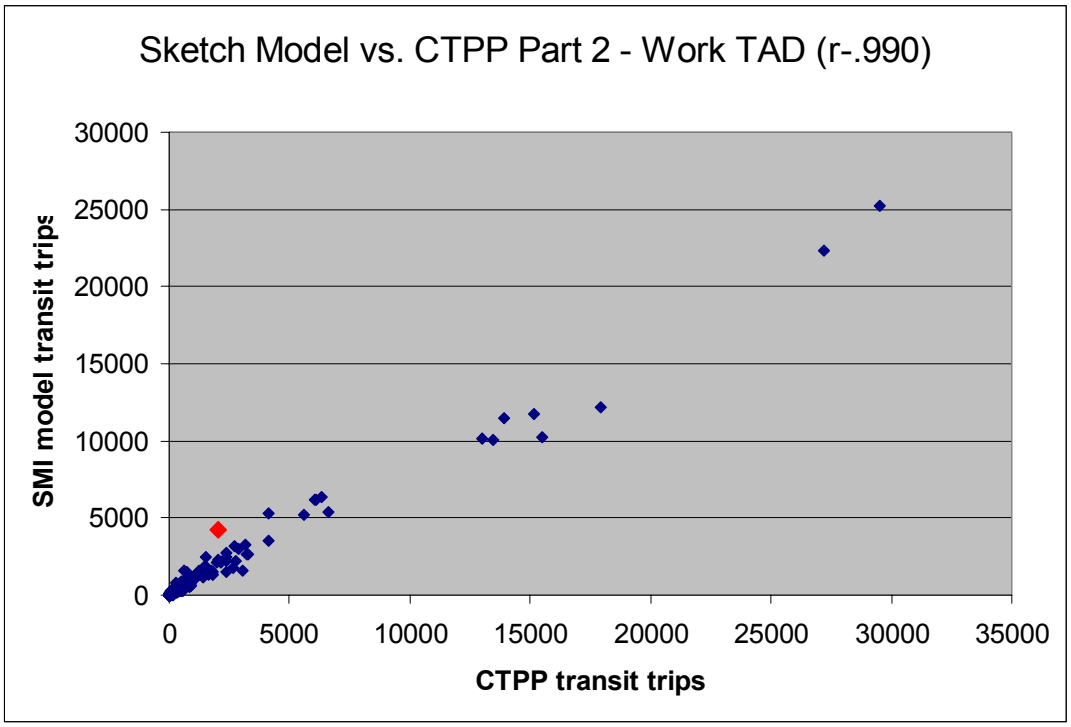
Our own work in the Washington D.C. region has demonstrated how conventional models overestimate transit ridership in the fairly dense but suburban Tysons Corners area, an "edge city." [12]

Figure 10 compares the official regional model of the Washington DC region ("TPB") with a model that incorporates the 3 D's ("Sketch"). The figures compare predicted ridership at the work end with the 2000 Census data for Transportation Analysis Districts (TAD). The correlation between observed and modeled trips for the TPB model at the TAD level is 0.969; for the sketch model it is 0.990. The Tysons Corner data point is shown in red in both graphics. In the official model, overestimates of ridership in suburban areas are offset by underestimates in more urban areas.

[12] This work is described in more detail in Marshall, Norm and Brian Grady. "Sketch Transit Modeling Based on 2000 Census Data", presented at the 2006 Annual Meeting of the Transportation Research Board and accepted for publication in the *Transportation Research Record*. For more information about our inclusion of the 3 Ds in travel demand model, see Marshall, Norm and Brian Grady, "Travel Demand Model for Regional Visioning and Scenario Analysis", in *Travel Demand 2005, Transportation Research Record* No. 1921.

Figure 10: Standard Transportation Model vs. Model with Land Use Factors





Getting downtown transit ridership right is an important part of estimating downtown traffic impacts. The Plan calls for increasing density for both jobs and residents, increasing diversity by bringing in more residents and mixing land use, and improving design for pedestrians including increasing street connectivity. These

effects all will increase the transit mode share in the downtown. The ITPRS found that the SANDAG model does not adequately account for these effects, and recommends a post processing model.

Properly accounting for parking costs is also critical to transit mode share. In a free market, parking costs will naturally rise with density, as the cost of providing parking becomes greater. Therefore parking costs should be different between the no build and build cases. It does not appear that this effect has been included in the analysis. In a natural experiment in the 1970s, parking costs were raised by 25% in San Francisco with a tax.

> An average demand elasticity was found of -0.30 (change in number of autos parking in relation to change in price) across a presumed mix of uses in all facilities.[13]

With an elasticity of -0.30, and if the average parking price were increased to San Francisco levels as shown earlier in Figure 6, this effect alone would reduce parking by 40%, and would reduce downtown traffic by almost as much. While this amount of traffic reduction cannot be guaranteed, the effect on traffic of allowing parking prices to float to market levels in the San Diego downtown will be very significant.

The roadway analyses are incomplete because they neglect pedestrians and buses. Despite the primacy of pedestrians that is described in the Downtown Community Plan, there is no discussion of pedestrian level of service – only of vehicle LOS. Instead, the EIR only considers pedestrians as a "limitation" on providing better vehicle LOS. Despite the critical importance of buses in the Centre City transportation system, the impact of buses on street level of service is not factored into the detailed analyses in the EIR, even on a street like Broadway where a high percentage of the vehicles are buses.

The same *Highway Capacity Manual* used by the EIR in calculating vehicle LOS also gives procedures for calculating pedestrian LOS Exhibit 18-9 of the *Highway Capacity Manual* (reproduced below) relates pedestrian delay at signalized intersections to pedestrian LOS.

Table 1: Highway Capacity Manual Exhibit 18-9, LOS Criteria for Pedestrians at Signalized Intersections

LOS	Pedestrian Delay (s/p)	Likelihood of Noncompliance
A	< 10	Low
B	≥ 10-20	
C	> 20-30	Moderate
D	> 30-40	
E	> 40-60	High
F	> 60	Very High

With delays greater than 30 seconds, the risk of pedestrian noncompliance rises rapidly and the intersection becomes increasing less safe. Therefore, the target for pedestrian LOS at signalized intersections in the downtown should be C or better. The alternatives analysis should report average pedestrian delay at signalized intersections and the letter grade.[14]

[13] Vac, Erin and J. Richard Kuzmyak, *Traveler Response to Transportation System Changes*, Chapter 13 – Parking Pricing and Fees, p. 13-4. Transportation Research Board, Transit Cooperative Research Program (TCRP) Report 95, 2005.

[14] Even if the highway capacity software does not provide the pedestrian delay and LOS, it is a simple process to compute from the signal phasing and timing. For example, consider a case where the cycle length is 120 seconds and the pedestrian crossing phase is 30 seconds. If the street width is 60 feet, then 15 seconds are needed to cross (4.0

While LOS for transit and bicycles has not been standardized, some jurisdictions, including the state of Florida, have adopted policies and procedures that may be applicable. Some discussion of transit and bicycle LOS should be included in the alternatives analysis.

Even with a lower number of autos in the downtown, the vehicle LOS may be fairly poor for the *Complete Downtown Community Transportation Plan* because the intersections will be designed to give priority to the pedestrians, as is specified in the Plan. The lower number of autos in the downtown will benefit the entire region as travel is shifted away from single occupant vehicles (SOVs). Recent pricing initiatives in central London and Stockholm have resulted in major time savings for transit (which results in operating cost savings) and for those who continue to drive. The alternatives analyses should include regional metrics including vehicle miles traveled (VMT) and vehicle hours of travel (VHT), as well as the local metrics in order to demonstrate these benefits.

feet/second for non-elderly people). Therefore, the time window for starting crossing is 15 seconds out of 120. Assuming random arrivals, one eighth of the people have no delay. The other seven eighths of the people are delayed, and the delay averages half of 105 seconds or 52.5 seconds. Averaging together those not delayed with those delayed, the average delay is 46 seconds which is LOS E. (This doesn't account for the unfortunate people who must cross diagonally across two legs and may face two waits.)

8. Conclusions – Downtown as Catalyst for Evolution as World Class Region

SANDAG's *Mobility 2030* states:

> Under Sustainability, the Plan's results are mixed. The significant expansion of regional transit services will result in a dramatic increase in transit ridership, daily transit passenger miles (5.2 million) are more than double the miles under the "no build" scenario and are tripled compared to current conditions. Yet, the Plan's roadway improvements, including the planned Managed/HOV system and completion of the freeway network, will result in a 50 percent increase in daily vehicle miles of travel (VMT) compared to current conditions (112.2 million compared to 74.7 million).[15]

As discussed above, both a peer review panel and the SANDAG-contracted ITPRS have concluded that SANDAG has overestimated future transit ridership given their plan. This means that the positive measures under *Sustainability* are overestimated and the negative measures (VMT) are underestimated.

There is a general problem than runs through Mobility 2030 and the EIR. Rather than shifting from an auto-oriented vision to a vision where other modes are given priority, the documents try to have it both ways. They will keep giving the auto priority while adding in multi-modal elements. This will not be successful. For example, the EIR states:

> The Downtown Community Plan seeks to provide an adequate supply of parking to serve a growing downtown, while avoiding excessive supplies that discourage transit ridership. (p. 4-37)

This is doublespeak. As the price is free to move, any number of parking spaces can provide an "adequate supply", since the demand will be affected by the price. Transit will provide an option for those who are unable to pay for parking or don't want to pay for parking. Any excess parking beyond what the market provides will lower parking cost and reduce transit use. By requiring under-priced parking in the downtown and investing billions of dollars in additional freeway capacity, the plan allows the auto to continue to dominate and even to crowd the pedestrians in the downtown. What is needed is a full embrace of the alternative vision.

The downtown is the place to start, and can act as a catalyst for the region. The ITPRS document concludes:

> The Downtown region is a key to the success of the regional transportation center. It is the major regional center and should be supported with an efficient, seamless and convenient transit system. Other issues such as capacity, interlining, transit priorities and service levels need to be addressed. (p. ES-5)

The auto has such a large regional mode share because it is the only mode that serves all trips. Transit serves only a subset of origin-destination pairs, some of which are served very poorly. What is needed is a more complete and higher service transit network that can serve a larger fraction of all trips at a high level of

[15] SANDAG, Mobility 2030: The Transportation Plan for the San Diego Region, Final Amendment Number 1, February 2005, p. 21.

service. The downtown is the foundation of this as the hub of the region's transit system. Improvements in downtown transit accessibility will lead to more transit usage which will lead to more service enhancements. As transit becomes more important in the downtown, transit will become more important in the region, and businesses and residences will find it more desirable to locate on transit lines. This reinforces the positive feedback cycle for transit, in which more transit use will lead to more transit service and yet more transit use.

However, building the transit system will not be sufficient. The pedestrian system is a fundamental part of the transit system, as transit customers must walk, generally on both ends of their trip. Parking must be priced correctly, so that the price of auto travel is not kept artificially low.

Emphasizing pedestrian and transit travel in the downtown will reduce traffic throughout the region, and benefit everyone. The region's potential investments in new trunk lines to the downtown offer a special opportunity at this time to redesign the downtown based on new transit routes. Over the longer term, the downtown can serve as a model for the rest of the region, as other areas become more walkable, and have better multimodal transit options. In this way, the benefits of the *Complete Downtown Community Transportation Plan* will spread throughout the region.