Regional Transit Vision
A Strategy for Improving San Diego’s Quality of Life

Executive Summary

The San Diego region faces challenges over the next several decades. Our region is projected to grow by about a million more people by 2030. We face a serious housing shortage and skyrocketing home prices; our roadways are more congested; and our open space is threatened by continued sprawl into rural areas. We can meet these challenges head-on by taking bold steps to reverse the negative effects of sprawl and create livable, sustainable communities.

Transit can play a key role in addressing these challenges and strengthening our communities. Transportation is one of our most tangible indicators of quality of life. Everyone “feels it” when our traffic gets worse and our transit systems run late and no matter how many resources we devote to transportation, we cannot solve our transportation problems with just transportation solutions. We need to take a more comprehensive approach, one that integrates our land uses and our transportation systems. The Regional Transit Vision focuses on a new role for public transit. One in which

- transit is integrated into many of our communities and neighborhoods including the location and design of transit stations as central activity centers.
- transit takes advantage of high-occupancy vehicle and/or managed lanes in order to bypass traffic-choked freeways.
- transit uses signal priority or dedicated lanes at congested intersections.
- transit is a network of convenient, reliable, fast, and safe services that interconnect our region.
- transit is just as quick as taking the automobile for many of our trips.
- transit is more customer-focused than ever before and attention to details like easier boarding and real-time information at stations means that new markets now find transit attractive.

But without changes in land use decision-making, transit will not achieve its full potential.
Making Transit a Viable Alternative to Going it Alone

The region’s two transit planning and service agencies, the Metropolitan Transit Development Board (MTDB) and the North San Diego County Transit Development Board (NCTD), oversee a transit system nationally recognized for its efficiency. The proportion of expenses recouped through fares, 45 percent last year regionwide, is one of the best in the country. San Diego Trolley, Inc., opening its first light rail transit (LRT) line in 1981, is widely viewed as a case study of successful LRT in the United States. For San Diego Trolley, this farebox recovery rate averages 65 percent.

The benefits of transit are widely accepted by the public. Recent surveys show that transit is viewed as a community benefit by more than 80 percent of San Diego residents. In addition, more San Diegans than ever are trying transit now, 59 percent of residents has tried the region’s buses, trolleys, and trains within the last year.

While maintaining efficiency as a major performance standard and building upon the public’s growing awareness of public transit, MTDB and NCTD, along with SANDAG, Caltrans, and local jurisdictions have worked jointly to develop a new vision for the San Diego region: a transit system that is the preferred travel option in the San Diego region. The difference between the current system and the Regional Transit Vision is in the application of a private market-based approach to public transit. Extensive market research and analysis of where San Diego residents travel in our region have been used to help define a transit network that could attract a significant proportion of the region’s traveling public.

The Regional Transit Vision (RTV) is a network of services connecting the San Diego region. It is a system that is convenient, reliable, fast, and safe for commuters, for those who depend on transit as their primary way of getting around, and for visitors to our region. Implementing this vision will make taking a trip using transit just as quick as taking one by automobile for many of us.

The RTV’s four service concepts serve a variety of trip needs, including regional long-distance commutes, corridor trips, and local short trips. Each concept serves a particular market and taken together, these concepts offer a first-class ride.

An important component of the Regional Transit Vision is improvement to the basic mobility services in our region. Nearly three-quarters of current transit riders do not have a car available to them. These residents will benefit from improvements to the existing transit system, such as 15 minute frequency on many local routes. Riders will also benefit from the network of high-frequency services, new vehicles and stations, and attention to the customer experience such as real-time information on when the next vehicle will arrive.

Transit and Our Communities

The RTV is an integral part of the smart growth land use vision for the San Diego region. Coordination between transit and land use is absolutely essential if we are to preserve, and
even improve, our region’s quality of life. The cities, the County, transit operators, Caltrans, communities, and private developers must evaluate and act upon land use decisions favorable to transit if the region is to realize this vision.

The Regional Transit Vision integrates transit into many of our communities and neighborhoods. It relies on local jurisdictions supporting transit-oriented developments that become the central activity areas around which housing, jobs, shopping, and recreational opportunities are plentiful. Mobility through transit becomes woven into the fabric of our daily lives. Transit riders enjoy a pleasant walking environment to community stations. Providing the mixture of land uses and pedestrian-friendly urban design features will make transit and walking more convenient, faster, and safer, and strengthens our neighborhoods and communities.

Can Transit Serve our Commuters and Help Reduce Rush Hour Traffic Congestion?

Improvements to existing transit lines, connected with new innovative types of services serving new and different markets, are projected to make major improvements to our region’s transportation system and overall quality of life. Figure 1 identifies a number of these potential benefits.

More than 310,000 trips are made on the region’s buses, trolleys, and trains on a daily basis. Under the RTV, transit ridership increases by more than four times. Currently, less than five percent of our residents who travel to work use public transit during commute periods. Implementing the RTV would expand our transit system and make getting to work a lot quicker and more convenient. Preliminary analysis shows more than three times the number of commuters regionwide would choose to use transit during the morning and evening rush hours if the extensive RTV network of services is implemented.

In dense employment areas like Centre City San Diego, one in three persons would ride transit to get to work. In the Kearny Mesa and Sorrento Valley job centers, nearly one in five commuters would choose transit to get to work. In Otay Ranch and the Palomar Airport Road Corridor, one in seven commuters would ride transit. Such increases may appear small, especially when compared to the costs of building and operating the system. However, increases in transit mode share of just a few percentage points can have noticeable impacts on freeway traffic.

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<th>Total Daily Transit Boardings (thousands)</th>
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Figure 1
SELECTED BENEFITS OF RTV

Figure 1 continued on next page.
A key attribute of the Regional Transit Vision is accessibility. Stations must be accessible for riders, pedestrians, and bicyclists. Major employment and population centers must be served. Thirty-seven percent of San Diego residents would be within a ½ mile walk of their homes if the high-end services proposed under the RTV were available today compared to our current transit system, where only seven percent have this level of access. And 36 percent would have access to a station with a ¼ mile of their workplace if the RTV high-end services were available today, compared to 10 percent with this level of access to the current transit system.

One of the reasons for these changes in ridership, mode share, and accessibility is the network structure of the RTV. Service frequencies increase dramatically from an average of 36 minutes for the basic mobility services to 15 minutes (shown in blue on the chart). Currently frequencies for the high-end services are at seven to 15 minutes for the San Diego Trolley and 30 minutes for the Coaster during the peak period. The RTV proposes a 10 minute frequency all day on the high-end services (shown in red and yellow on the chart).

The ability of the RTV to attract such high ridership can help alleviate the daily traffic congestion we experience on our roadways during peak commute periods. And while no one mode can in itself eliminate traffic congestion, transit can provide a more enjoyable, relaxing, and quick ride to many of our major job and activity centers. It also will be a practical option for those who want to avoid the hassle and stress of stop and go traffic. These more qualitative reasons for using public transit are attractive to not only current riders but potential riders will also see transit as a much more attractive option.

Central to the RTV is the care given to the customer experience. High-quality station design features are provided, and real-time information lets riders know when the next bus, trolley, or
The Challenges of Making the Vision a Reality

Implementing the RTV poses several challenges for our region:

Financing:
- **HOV/Managed Lanes**: A substantial financial commitment will be necessary, not just to improve our transit system but to build the dedicated carpool facilities that are needed to make transit a faster, safer ride. In order to compete with autos, the RTV makes extensive use of a future network of carpool lanes on our freeways and highways that are currently limited in the region.
- **Funding Priority**: SANDAG should implement policies that ensure regional funding priority for transportation projects that contribute to the success of transit and smart growth.
- **Showcase Projects**: In order to show residents, major employers, and local jurisdictions how successful this system could be, SANDAG should commit a reserve of regional transportation dollars to showcase the RTV in select corridors.

Land Use/Transportation Integration:
- **Transit-Oriented Development**: SANDAG, MTDB, and NCTD must work with local jurisdictions to integrate land use plans and policies with smart growth and the RTV’s principles and goals. Transit-oriented land uses will be key to maximize the number of people with access to transit.
- **Signal Priority**: Coordination also will be required with local jurisdictions to implement appropriate transit priority measures on local streets and regional arterials like signal priority or queue-jumper lanes for transit vehicles. Caltrans must also cooperate by operating managed and high-occupancy vehicle (HOV) lanes and direct connector ramps on freeways and coordinating the interface with local streets.
- **Walkability**: SANDAG will complete the Walkable Communities Pedestrian Design Guidelines in 2002. Local jurisdictions should adopt these guidelines and incorporate them into their local circulation elements, zoning ordinances, and design standards.

The following sections detail the principles, goals, and integrated network of services that define the Regional Transit Vision. A discussion of the research supporting the development of the RTV and what is required of SANDAG, transit agencies, Caltrans, local jurisdictions, and developers in order to successfully implement the RTV also is provided.
Introduction

The San Diego region faces pressing challenges over the next several decades. Our region is projected to grow by about a million more people by 2030. We face a serious housing shortage and skyrocketing home prices; our roadways are more congested; and our open space is threatened by continued sprawl into rural areas. We can meet these challenges head-on by taking bold steps to reverse the negative effects of sprawl and create livable, sustainable communities.

SANDAG, in conjunction with our local jurisdictions, is addressing these quality of life issues through REGION2020, the regional growth management strategy based on the principles of smart growth. Smart growth means limiting urban sprawl and improving our older neighborhoods, or in the case of new development, creating livable, walkable communities. In either case, transit benefits from these pedestrian-oriented villages where homes and jobs are closer to each other or at least near a first class transit system that connects them.

Recognizing these challenges, MTDB and NCTD recently reevaluated how they will provide public transportation services to the region’s residents. The MTDB strategic plan, Transit First, outlines the requirements of a public transit system in the year 2020 and beyond. The NCTD business plan, Fast Forward, reorganizes transit services and also identifies needed improvements to the year 2010. Although each plan is distinct in its mission and time frame, both are fresh, critical looks at the region’s transit system. Both plans help serve as the basis for the way we want our region to grow over the next 30 plus years.

In adopting the 2020 Regional Transportation Plan (RTP) in February 2000, the SANDAG Board of Directors instructed staff to begin work on a significantly-expanded role for transit. Such a plan would increase the role for transit in meeting the mobility needs of our region--one that would make transit the preferred option for many of our trips. More specifically, the Board asked for a plan that would attract a double-digit share of our region’s peak period work trips.

The Citizens Advisory Committee for Transportation (CAC) was established in May 2000 to assist in this effort. The CAC is a diverse group of 50 individuals representing a variety of interests and organizations throughout the region, including environmental, development, education, business, community interests, and each geographic area of the region.

MTDB’s Transit First Strategy

MTDB undertook a two-year strategic planning process, called Transit Works, that culminated in the adoption of a Transit First strategy in October 2000. This strategy will guide the development of transit in its service area over the next 20 years and beyond. Underlying this decision was an extensive analysis of transit market segments and major trip movements.

Transit First refers to the goal of making transit such a desirable option that people will make it their first choice for many of their daily travel needs. Such a vision is predicated on establishing local policies that focus on pedestrian-friendly community design principles and transit priority
measures. *Transit First* provides a clear picture of how MTDB would like their service area to look and function by the year 2020.

The *Transit First* system provides all-day services, in order to capture market segments not traditionally attracted to public transit. Transit goes beyond being a realistic choice to becoming the *first* choice for many trips. There is an extensive network of faster, limited stop services that provide regional connectivity. A high degree of land use coordination is critical to integrating transit stations and routes into community design.

The aim is a superior customer experience in which significant attention is paid to amenities in all areas served by transit. The design of the sidewalk environment, for example, is oriented to creating a pleasant and safe walk to transit. Transit shelter design, lighting, and real-time information create a high level of comfort for customers and address the need for personal safety. Upscale vehicle design creates a first-class look and feel.

**NCTD’s Fast Forward**

NCTD evaluated the delivery of public transit services in the North County area through their strategic business plan, *Fast Forward*. It includes three plans, a near-term (2001), mid-term (2005), and a long-term (2010) plan. Because such a critical look at coordinating transit services has not occurred in the agency’s 25-year history, the emphasis has been on the near-term, tactical approach.

*Fast Forward*’s near-term plan focuses on providing an essential network of services, including 15-minute peak hour service in key transportation corridors. A network of time transfers and streamlined local services provides for faster trips. Improvements to transit stops enhance the customer experience and increase the comfort level of passengers. The NCTD Board of Directors endorsed the near-term service changes in December 2000.

The long-term plan of *Fast Forward* is also a tactical, operations-focused plan. For example, a focus of the long-term plan is on hourly Coaster rail service daily between North County coastal cities and downtown San Diego. Also, the 15-minute bus frequency of service is expanded to more travel corridors. The NCTD Board of Directors endorsed the *Fast Forward* long-term plan.

**Regional Transit Vision**

Agency staff and the CAC reviewed the MTDB and NCTD planning efforts as a first step in developing the Regional Transit Vision. Three transit system principles were developed: Network Structure, System Performance, and Customer Experience. In order to adhere to these principles, the CAC felt that the system should strive to meet the following goals:

- Lessening of freeway congestion,
- Encouraging compact land uses,
- Concern for transit dependent riders,
- Serving as residents’ second car,
• Expanding of service to employment centers, and  
• Consideration for school trips.

The CAC endorsed the *Transit First* planning scenario as the basis for the RTV for the entire San Diego region.

At its November 2000 meeting, the Joint Committee on Regional Transit, a joint board made up of MTDB, NCTD, and SANDAG representatives, recommended that the three agencies work closely to develop a strategy in which *Transit First* and *Fast Forward* would serve as the foundation for shaping the RTV.

**System Principles Define the Vision**

*Network Structure*

The RTV provides a network of transit services connecting our region. It is a system that is convenient, flexible, reliable, consistent, fast and safe for commuters, transit dependents, and other riders including students and tourists. Transit services in different geographic areas and serving different needs are integrated to make up a unified, regional system.

*System Performance*

The RTV will make transit competitive with the automobile for many of our daily trip needs. For longer distance commutes, for example, the system goal is to average 35 to 40 miles per hour even during peak periods. Since many services will operate at frequencies of 10 minutes or better throughout the day, using transit will no longer mean having to plan your day around transit timetables.

*Customer Experience*

Transit should integrated into the community, with local jurisdictions favoring transit-oriented developments that are centers of activity. Residents enjoy a superior walk to transit and comfortable and safe wait environment. The RTV meets residents’ perceived needs for service, safety, comfort, and convenience. Many stops would have real-time information that informs customers when the next bus will arrive. Smart fare cards, debit-like cards that are used instead of cash or monthly passes, are available to riders for convenience and to shorten the time it takes to board the vehicle. All vehicles have low-floors to make it easier to get on and off.
Regional Characteristics Also Underlie the Vision

Key Attitudes of the Region’s Residents

In preparing updates to their transit plans and concepts, MTDB and NCTD undertook extensive surveys of residents from all parts of the region. Conducted in Spring 2000, the surveys were used to better understand the different travel markets in the region and the attributes and sensitivities that are part of a person’s decision on which mode they choose for making a trip.

Residents were asked to rate more than 30 attitudinal statements which focused on travel time, cost of commuting, feelings of safety, and convenience. Three primary attitudes were found to influence the mode of travel chosen by the region’s residents: Speed and Flexibility, Travel Experience, and Personal Safety. These attitudes affect the choices made by different sectors of the population in differing degrees. But an understanding of how these attitudes influence who will use transit for different types of trips, allows transit planners to allocate services to the markets in which improved transit services will provide viable mobility options and increase ridership the most.

Speed and Flexibility

Residents who have a need for flexibility and high speed most often make trips to several different destinations during the week and multiple trips during any one day. These people are usually in a hurry when they are making these trips.

At the other end of the spectrum, many residents make the same trip every work day and make very few other trips during the day. High speed is less of a concern when trips can be scheduled for the times when transportation is available. Transit has traditionally had difficulty attracting riders who need speed and flexibility, except for trips where automobile traffic is slow or parking is scarce and expensive.

Travel Experience

We all prefer to be comfortable when we travel, but the degree of comfort demanded by travelers varies. The transit travel experience can be diminished by personal attitudes in which a potential patron views transit riders as different from oneself.

Others may not choose transit because they have a strong need to be in control - to drive the vehicle rather than to be driven. This feeling can be increased when delays occur in the trip - the transit patron is unable to participate in lessening the delay through choosing an alternative route or other action. Providing transit vehicles with priority lanes or traffic bypasses can reduce delay both on freeways and surface streets.

Design of the transit environment can greatly improve the personal transit travel experience. Adequate space, comfortable seats and clear visibility can improve this experience.
Personal Safety

This same lack of control can also affect the transit patron’s view of their personal safety when using transit. People may feel insecure in isolated or under-populated urban places or simply in places that are unfamiliar. Others feel threatened in confined or congested situations. The design of transit stops, transfer stations and vehicles can assist in providing a feeling of security.

Transit vehicles and facilities are often crowded, particularly at times of peak usage. It is difficult, therefore, to provide a comfortable transit environment for people who wish to avoid crowds and crowded places. However, adequately-sized facilities with appropriate lighting and a variety of land uses nearby, together with more frequent service, would provide some level of comfort for the users of the transit system.

Service Concepts

The Regional Transit Vision includes four types of transit service which, together, can be designed to serve the range of trips and communities in the San Diego region. When designing these service concepts to serve different parts of the region, each part must be integrated with the overall network. To an extent, all four types of service operate in the region today.

Yellow Car Service (Regional Express Services)

The Yellow Car concept provides the fastest type of transit service, designed around longer-distanced regional tripmaking, especially important during commute hours. Although the Yellow Car service would be more frequent, the existing Coaster commuter rail service represents the closest local example of this service concept.

Network Structure: The Yellow Car network will provide rapid connectivity throughout the region in the principal travel markets. Vehicles will provide direct service between cities and communities with few intermediate stops.

System Performance: Yellow Car service will operate frequently, at 10-minute intervals or less, at speeds that average 35 to 40 miles per hour, including station stops. To achieve these speeds, the Yellow Car transit system will require dedicated rights-of-way and transit priority treatments such as signal priority for late-arriving vehicles at intersections.
**Customer Experience:** Special attention will be given to the design of all facilities and vehicles in order to maximize the attractiveness of Yellow Car service to the broadest transit market. Stations are integrated into the design of the community and create a superior waiting environment that is pleasant and safe for riders. There is real-time information at the stations to let customers know when the next vehicle will arrive.

**Red Car Service (Corridor Express Services)**

The Red Car service provides rapid, relatively frequent transit services along the region’s major travel corridors. The San Diego Trolley and some street-based express bus services approach this kind of service.

**Network Structure:** The Red Car routes parallel major travel corridors with stops or stations at about one-mile intervals. These stations should be as close as possible to major activity centers. Several stations might be located in major corridors such as Mission Valley.

**System Performance:** Red Car service would average speeds of 20 to 25 miles per hour, including stops. While some routes, including most of the trolley system, would operate on separate rights-of-way, these overall speeds can be achieved through priority treatments (e.g., exclusive lanes provided in extremely congested areas or priority at traffic signals). Service would be provided at 15-minute intervals, potentially decreasing to 10-minute intervals where the demand for that frequency is generated. This level of demand currently exists on the Blue Line Trolley south of Centre City San Diego.

**Customer Experience:** The current trolley station and vehicle design standards would be applied to all Red Car services. Providing a safe and secure waiting environment is key. These standards might require upgrading in station amenities and vehicle interiors, such as seating, to meet customer needs.

**Blue Car Service (Local Services)**

Blue Car services would continue to provide the backbone of transit service within communities and neighborhoods. To accommodate existing and anticipated demands, the service would be provided by standard buses operating primarily on major and collector streets. But even here, priority treatments and transit stop improvements will speed service and improve the transit experience. Blue Car services will also serve to connect riders to higher-level Red and Yellow Car services.
Network Structure: The Blue Car network will have extensive coverage of the transit service area, providing basic mobility where it is needed. These routes are primarily located on arterial streets, but also penetrate onto collector streets where a potential market exists.

System Performance: Blue Car service will continue to operate at speeds of 8 to 15 miles per hour. Service frequency for most routes would be 15-minute service in peak demand periods and possibly 30-minutes in the off-peak. Over the longer run, service frequencies should be increased to 10-minute intervals to match that of Yellow Car service.

Customer Experience: Transit stops will be improved through the addition of shelters, seating, and real-time information about transit service. The design and lighting of these shelters and their surroundings will make riders feel secure. As vehicles are replaced, low floor, more modern vehicles will become the standard.

Green Car Service (Circulator Services)

Green Car services provide for travel within communities and provide access to the inter-community services provided by the Yellow, Red, and Blue Car lines. The closest example of this type of service in the region are the shuttle services in Balboa Park and the Sorrento Valley Coaster Connection. Green Car services are critical in employment areas because they provide the link between stations and work sites in generally congested areas.

Network Structure: Green Car services include loops or other short routes focused on a neighborhood or community center. These routes would also pick up and drop off local residents or workers to the Yellow and Red Car services in these centers or at other locations.

System Performance: Green Car vehicles would operate on neighborhood streets at relatively slow speeds of 8 to 15 miles per hour. Frequencies would be set based on the frequency of main-line services and the needs of the area, but may be as frequent as 10 minutes.

Customer Experience: Smaller, “cuter” vehicles with low floors would provide Green Car service for the comfort, safety, and convenience of passengers. Transit facilities might be provided at

Figure 4: Blue Car Service Example

Figure 5: Green Car Service Example
the neighborhood center. Depending on the intensity of the community, dedicated transit lanes or other fixed infrastructure may be provided.

**Conceptual Network**

In order to assess the impacts of the Regional Transit Vision, the service concepts and underlying principles were translated into a conceptual transit network. The following describes the tools used to prepare this network.

**Regional Market Segmentation**

People travel around the region for many reasons. These include traveling to work or school; traveling to shop for food, clothing or services; and traveling to the movies or to visit friends. The kind of trip influences whether we travel by transit or car. If we’re taking our kids to the movies, for instance, we are likely to drive a car because there are four in our party and parking is paid by the theater. We are more likely to use transit to get to work because we are traveling alone at a time when the freeways are most congested and we are more likely to have to pay to park when we reach the office.

By segmenting the travel market, it is possible to identify potential system changes, which influence ridership of different groups. For example, increasing transit speeds will attract persons who have more limited time available to travel, but not necessarily those who do not use transit because they are concerned for their safety. Similarly, improving the perception of safety will do little to attract those who need to make the trip more quickly than transit provides.

Both the regional transportation information collected by SANDAG and the transit surveys of residents conducted by MTDB and NCTD in Spring 2000 identify the different kinds of trips people make and the travel mode they use to get there. While this information is used to guide our forecast of how people will travel in the future, enhancements were made to our computer model to account for the significant changes to the transit system called for in the RTV.

These changes include more frequent and faster service, but they also reflect improvements to the transit experience and perceived feelings of personal safety. As discussed above, these attitudes are important to people’s decision to use transit. These changes are reflected in the forecasts presented below.

**Land Use Coordination**

The region today - the distribution of homes, offices, stores, and other major activity centers, as well as the transportation system that connects them - was primarily shaped by automobile travel. Because of our existing land use patterns and transportation system, the car is our preferred mode. But this mode is beginning to break down.
If we continue with our current land use patterns, we can expect to see more congestion, more air pollution, and fewer opportunities for walking and taking public transportation. Many people feel that the region’s quality of life is threatened, and they are concerned that additional growth will make things worse. If we do not begin to make our communities more livable, by integrating our land uses, focusing on the design of our neighborhoods, and providing more walkable and safer streets and sidewalks, we will continue our trends toward urban sprawl and increased traffic congestion. Furthermore, our efforts to implement a successful regional transit system that provides our residents and visitors with viable transportation choices will fail.

A major part of REGION2020 and the Regional Transit Vision is the strengthening of our neighborhoods and communities, by providing the facilities we need to make mobility through transit use and walking more convenient, faster, and safer. These include a better mix of land uses accompanied by pleasant tree-lined sidewalks, design standards that emphasize the human scale, and streets that encourage slower but more smoothly flowing automobile traffic.

The success of REGION2020 and the RTV are dependent upon the establishment of neighborhood and community centers with a mix of retail, office, service and residential uses. Directly served by transit, these village centers would have moderate to higher densities that encourage walking as a major travel option for access to jobs and services as well as to transit. The result of this is shorter, neighborhood trips.

The moderate to higher density, mixed-use villages will be a major factor that shapes the conceptual transit network. Depending on their size and density, these village centers will become destinations of the Yellow and Red Car transit networks. The centers will be the focal points of the Green Car routes, where passengers will transfer to and from the high-level services.

The region’s cities and the County will decide where these village centers will be located as well as how large and how intense they will be. Our local jurisdictions, by power of their land use authority, therefore will play a significant role in helping to design the transit system. Villages with sufficient population and employment will serve as key locations for transit stations.

In order for the RTV to succeed, there needs to be strong support from local jurisdictions in the form of transit- and pedestrian-oriented land uses and transit priority measures.
Origin and Destination Analysis

We make many different kinds of trips in a normal day: to work, to school, to shopping and to recreation. Trips can begin at nearly any place, but the first trip of the day almost always begins at home and the last trip - often made in the late afternoon - usually ends up back at home. The work trip tends to be the longest and most consistent trip we make during the week.

SANDAG maintains data on daily trips, which is updated periodically using detailed surveys of San Diego residents. This data is mathematically expanded into a region-wide database that can be verified against travel volumes counted both on the roadways and on the existing transit system. This information is used to forecast future travel using expected population and employment growth. The U.S. Census also is used to verify SANDAG’s transportation models.

Figures 6 and 7 show the heaviest volumes (about 70 percent) of all trips made in the region in the year 2010. The maps show all trips regardless of mode.

Trips between the delineated communities are represented as lines; trips within those communities are shown as circles. Nearly half of all trips are made within the communities shown, and are short distance trips that would be served by Green Car and Blue Car services. The longer trips would be served by Yellow, Red and, in some more urban places, Blue Car services.

Several main corridors are evident. The heaviest corridor runs from Sorrento Valley/North University City through Centre City San Diego and Chula Vista to the International Border. A second heavily-traveled corridor runs north and east from Centre City to El Cajon/Santee. The third heaviest corridor runs from Oceanside to Escondido in North County.

It should be emphasized that this represents total travel, not merely freeway traffic. For example, the Oceanside-Escondido travel corridor includes Mission Avenue traffic and traffic on numerous local streets. Travel between Sorrento Valley/University City and Poway occurs primarily outside of the freeway corridor.

Compared to total trips, data for the home-to-work trips (including higher education) shows a much lower percentage of local trips. Over half of the work trips occur in the morning and afternoon peak travel periods, a much higher percentage than for other types of trips. And this longer distance travel is a larger component of travel in the peak periods. Again, Green and Blue Car transit would provide service for these shorter, internal trips. The Yellow and Red Car services would provide for longer distance travel.
Figure 6: Trip movements in North San Diego County, 2010.

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

Figure 8 shows the conceptual regionwide network of Yellow, Red, Blue, and Green Car services. This network remains conceptual because it is a dynamic network, and one that will be based on more detailed analysis and specific interactions with local land use decisions. It is a tool to assess how well the Regional Transit Vision could perform, but will require a more detailed and coordinated effort to implement.

Yellow Car Service (Regional Express Services)

Yellow Car transit corridors primarily connect residential areas with major employment and activity centers. To a large extent, these routes will travel on the freeway system, using High Occupancy Vehicle (HOV) or Managed Lanes and bypass facilities where required to avoid areas of high traffic congestion. Many routes will operate over a range of rights-of-way, such as expanded trolley facilities in the South Bay to transitways in University City and Kearny Mesa. Transitways are roadways for the exclusive use of transit, separated from automobile traffic.

Some Yellow Car service will operate on conventional roadways such as regional arterials. On these facilities, priority will be given to transit vehicles at traffic lights and some exclusive lanes will need to be provided to bypass congested areas.

Yellow Car services can be operated with buses or flextrolleys (“flextrolley,” or “trains on tires,”) operated like buses with the look and feel of rail vehicles.

Currently under study by the California High-Speed Rail Authority, the agency charged with planning, implementing and funding a statewide high-speed passenger rail system, the Inland Corridor connecting San Diego with Los Angeles via Riverside County could serve as the Yellow Car route identified on the conceptual map. SANDAG will continue to assist the Authority and monitor this corridor for consistency with the Regional Transit Vision.

A few routes on Figure 8 are identified as Peak-Hour Yellow Car. In these cases, routes have all the characteristics of Yellow Car services, but operate at the 10-minute standard during the morning and afternoon peak periods only. Because major trip movements were identified for these routes, the infrastructure for Yellow Car will be put in place. Therefore, increased service frequencies during non-peak hours could be implemented fairly easily as demand and/or policy warrant.

Red Car Service (Corridor Express Services)

Red Car services will operate in the existing trolley or light rail corridors and trolley-like service will be expanded into other corridors. Initially, this expanded service will be operated with buses or flextrolleys either on existing or other exclusive rights-of-way. Such rights-of-way are being preserved in places such as Otay Ranch, a developing transit-oriented community in the South Bay. Stations on the Red Car service lines would average one mile apart, and would generally be located in mixed-use, pedestrian-oriented community activity centers.
Together, the Yellow Car and Red Car services will accommodate inter-community travel at relatively high speeds. However, less than 30 percent of this service will operate on exclusive rights-of-way such as light rail transit tracks and transitways. About 20 percent of the routes will use the freeway system, which is assumed to provide priority access for transit and, where congested, HOV lanes to speed transit’s travel. More than half of the Yellow Car and Red Car service will operate on arterial streets. Transit priority treatments such as signal priority for transit or dedicated lanes will be key to successful operation on major arterials.

Blue Car Service (Local Services)

To a large extent, the Blue Car system is a continuation of the existing local bus network. These routes connect adjacent neighborhoods and provide circulation within urban communities. Blue Car service connects residential areas with more regional Yellow and Red Car services.

Blue Car service also would operate primarily on major neighborhood streets, with priority over automobile traffic at certain intersections and other bottlenecks. Stops would be improved with real-time information about the next bus, better lighting, and other amenities.

Green Car Service (Circulator Services)

Planning for Green Car services will be different in each community where the service operates. Generally, it will focus on community centers, circulating through residential areas to bring people from their houses to the community center. At these centers, passengers could transfer to Yellow Car, Red Car, or Blue Car services.

Regional Impacts

Peak Period Transit Mode Share

Preliminary analysis shows that the proportion of peak period work trips made using transit under the Regional Transit Vision increases from just under five percent currently to 13 percent. In employment centers, the proportion is higher. For example, currently 20 percent of peak period work trips into the downtown San Diego area are made using transit. Under the Regional Transit Vision, this proportion rises to 31 percent (Figure 9).
Travel Time Analysis

Figures 10, 11, and 12 show an analysis of transit travel times compared to single-occupant auto travel times both currently and under the RTV. These maps are for the employment areas of Kearny Mesa, Sorrento Valley, and Palomar Airport Road respectively. Each map shows trips that can be made to these areas within 30 minutes using either transit or driving alone. And each shows a substantial impact of the Regional Transit Vision in making these trips. It does appear that there is little change in the shaded areas for auto trips, however, it should be noted that these maps represent 20 years worth of population and employment growth, indicating that auto congestion will not be reduced during this time period in these areas.

On the other hand, under each scenario, the distance that can be traveled using transit will increase considerably, making transit a more viable transportation choice for many people in these major employment areas. With the RTV, riders can travel farther within 30 minutes, while areas served by auto do not expand.
Figure 10:
TRAVEL TIMES TO KEARNY MESA: CURRENT AND REGIONAL TRANSIT VISION

Figure 11:
TRAVEL TIMES TO SORRENTO VALLEY: CURRENT AND REGIONAL TRANSIT VISION

KEY (trips within 30 minutes):
- Auto
- Transit
Infrastructure Needs and Regional Costs

The RTV requires a substantial financial commitment by the region. A fully built regional system will require nearly a four-fold increase in annual operating costs, a large number of transit capital projects such as stations and grade-separated transitways, an extensive network of HOV/Managed Lanes and arterial priority measures, and smart growth development around transit stations.

Transit Operating Cost Estimate

It is estimated that the cost to operate the fully built-out RTV draft conceptual network is between $662 and $760 million annually in the year 2020. (All costs are in current dollars and have not been escalated.) Currently, annual transit operating costs are $174 million. Finding operating dollars will be a significant challenge for the RTV.
- Yellow Car services are costed as flex-trolleys, with the exception of a third track for the Blue Line Trolley from San Ysidro to Centre City and increases in Yellow Car Coaster services.

- Red Car services are costed as either flex-trolleys, or in some cases, improvements to existing light rail services.

- Currently, the RTV calls for Blue Car services to operate every 15-minutes most of the day. This represents a doubling of current MTDB-area Blue Car services and a 280 percent increase in current NCTD-area Blue Car services. The reasons for enhancing the Blue Car services is to continue to provide basic mobility services and satisfy environmental justice considerations as well as to provide connections to Red and Yellow Car Services.

- Green Car services are single-vehicle circulator routes around major Yellow and Red Car stations. Sixty such services are included in the cost estimate.

*Transit Capital Cost Estimate*

The initial estimate for the 20-year capital cost for the RTV draft conceptual network is between $7.6 and $9.2 billion for transit capital improvements. This initial estimate includes a number of major capital projects to implement the RTV, including grade-separated transitways in Kearny Mesa, Sorrento Mesa, Palomar Airport Road, Otay Mesa, and the North Bay and Beach Area Guideway Project. Other costs include station construction, vehicles (including vehicle replacements), and maintenance and fueling facilities.

*Necessary Roadway and Arterial Projects Cost Estimate*

In order for overall travel times to remain competitive with the automobile, Red and Yellow Car services use an extensive network of HOV lanes throughout the region or have priority treatments on major arterials, such as signal priority, dedicated lanes, or queue bypasses. These treatments facilitate higher speeds for transit to compensate for access and station dwell times. Figure 13 shows the shared roadway needs for the RTV.

- Existing HOV lanes and transit priority treatments are currently very limited in the San Diego region.

- A number of arterial signal priority and intersection grade separation projects also are included in this cost estimate.
Figure 13: SHARED ROADWAY NEEDS FOR THE REGIONAL TRANSIT VISION
Critical Issues

Three overriding issues relate to implementation of the RTV. Meeting these challenges will require new and innovative ways of thinking about the delivery of transportation services in our region. The cities, the County, SANDAG, the transit agencies, and Caltrans need to take actions to address the following issues:

Coordination between Transit and Local Jurisdictions

The Regional Transit Vision is dependent on close coordination with SANDAG’s REGION2020 growth management strategy as well as land use decisions by local jurisdictions. MTDB and the City of San Diego have to continue to work closely to coordinate Transit First and the City’s current general plan update. (The City of San Diego’s evolving “City of Villages” has the Transit First policy as a core design principle.)

SANDAG is working with each of the local jurisdictions, both at staff and elected official level, to address issues related to smart growth implementation. The first step is for our local governments to make specific commitments to support REGION2020 and implement smart growth principles. Many of these commitments can and should be related to the Regional Transit Vision.

Positions: Local jurisdictions, SANDAG, MTDB, and NCTD must work together to integrate land use plans and policies with smart growth and the RTV’s principles and goals. Transit-oriented land uses are critical to maximize the number of people with access to transit.

Local jurisdictions must establish neighborhood and community centers with a mix of retail, office, service and residential uses.

This integration implies that there will be joint planning by the land use and transit agencies to achieve mutual goals, and that local policies will promote mixed uses, walkability, and access to transit stations.

In changing land use plans and approving discretionary development applications, local jurisdictions have to consider the consistency of these projects with the Regional Transit Vision.

Coordination will also be required between local jurisdictions, SANDAG, Caltrans, MTDB, and NCTD to implement appropriate transit priority measures on local streets and regional arterials like signal priority or queue lanes for transit vehicles. On freeways, managed and HOV lanes and direct connector ramps between these facilities and local streets is also needed.

Local jurisdictions need to work with Caltrans, SANDAG and either MTDB or NCTD to implement appropriate transit priority measures on the conventional state routes and streets in each jurisdiction.
SANDAG, Caltrans, MTDB and NCTD will work to secure funding to demonstrate and install effective transit priority measures on the regional highway network.

SANDAG, MTDB and NCTD will prepare design guidelines to permit transit facilities to be successfully integrated into community and neighborhood centers.

Local jurisdictions have to work with SANDAG and either MTDB or NCTD to identify areas where transit stations and stops can be located to best integrate with activity centers in the community, to maximize transit ridership.

SANDAG will complete the Walkable Communities Pedestrian Design Guidelines in 2002. Local jurisdictions should adopt these guidelines and consider their incorporation into their local circulation elements.

**Funding**

Funding, and the distribution of funding between modes, are key issues. Although the need for transit capital and operations funding is critical, a substantial investment is required for most of the highway plan to develop an HOV/Managed Lanes system.

Currently, transit services receive one third of the TransNet half-cent sales tax or approximately $66 million annually. Eighty percent of this funding goes to transit capital projects such as constructing the Mission Valley East light rail line and Oceanside to Escondido rail project, and purchasing new equipment. Transit operations receive the remaining 20 percent.

**Positions:** SANDAG, MTDB, and NCTD should continue to work closely together on a TransNet extension measure that will implement the Regional Transit Vision.

SANDAG should implement policies that ensure regional funding priority for transportation projects that contribute to the success of transit and smart growth.

SANDAG, MTDB, and NCTD commit to identifying other potential sources of funding for both short-term (demonstration) and long-term projects.

Specifically, in order to show residents, major employers, and local jurisdictions how successful this system could be, SANDAG should commit a reserve of regional transportation dollars to showcase the RTV in select corridors.

**Phasing/Implementation**

The Regional Transit Vision was prepared to change the emphasis of the region’s transportation program and, consistent with REGION2020, to change the relationship of land uses and transit facilities and services.
This vision is not merely more of the same transit services, but an upgrading of existing facilities as well. It is a new way of thinking about how transit services are provided. For example, trolley stations would be upgraded with real-time information systems to better inform passengers about system operations. Queue bypass lanes for buses would be added on arterial streets when congestion increased to a point where transit vehicles are being delayed. And bus transitways might be changed to trolley rights-of-way if demand increased to the point where the larger rail vehicles would provide significant operating cost savings.

SANDAG will be working to integrate the RTV into the 2030 Regional Transportation Plan (RTP), and into an updated and more comprehensive regional land use plan based on smart growth principles contained in REGION2020.

The 2030 RTP must phase these projects for implementation over the 30-year planning period. To accomplish this integration and an implementation program, the initial step is to develop evaluation criteria to assess the importance of the range of potential projects in a reasonable way.

Positions: SANDAG, MTDB, NCTD, and Caltrans should revisit the Regional Transit Vision on an annual basis and compile a progress report on efforts to implement the vision.

SANDAG will continue to assist MTDB and NCTD in short-range transit planning studies, such as the South Bay Transit First Study, in terms of their consistency with the Regional Transit Vision.

Working with input from local jurisdictions, MTDB, NCTD, and Caltrans, SANDAG will prepare and adopt transit project criteria including land use criteria to be used in selecting and establishing priorities for transit projects.

**Toward Implementation of the Vision**

The cities, the County, transit agencies, Caltrans, communities, and private developers must act if the region is to realize this Regional Transit Vision as an integral component of REGION2020 and in order to preserve San Diego’s quality of life. The first actions involve the discussion of these growth issues and a broader understanding of the options that need to be chosen if we are to maintain the region’s mobility and sense of community.

The transit agencies must reevaluate their plans for the growing travel corridors in their service areas and they must work more closely with the cities to ensure transit-friendly land uses and urban designs. NCTD will proceed with the refinement and funding of the Oceanside to Escondido light rail transit project. In addition, the agency will consider options for improving transit service in the growing employment and residential areas along El Camino Real and Palomar Airport Road.
With construction of the Mission Valley East project underway, MTDB will reevaluate its existing plans for Trolley service extensions in the Mid-Coast corridor to University City and the eastern South Bay corridor to the Otay Mesa Border crossing. In addition, guideway service from Old Town to the beaches will be reconsidered in light of Transit First and the Regional Transit Vision.

The Regional Transit First Showcase Projects Study, a joint effort by MTDB, NCTD, and SANDAG, will put the Regional Transit Vision concepts on the street for people to experience first hand. This program will initiate an integrated Red and Yellow Car service in selected corridors, to supplement the existing local bus services. In some corridors, new Green Car services may feed these regional routes. Potential corridors to be showcased will be selected in early 2002.

The Cities of San Diego and Chula Vista as well as the County of San Diego should complete the revisions of their General Plans, which currently embrace the transit-friendly concepts included in the Regional Transit Vision. Other cities, as part of SANDAG’s REGION2020 strategy should evaluate the opportunities to use transit services to improve the livability of their neighborhoods and mobility of their residents.

Developers should reevaluate the options available for their projects, considering the potential benefits of orienting them to pedestrian, bicycle and transit travel. Several developers have chosen mixed use, transit-friendly designs, notably in downtown San Diego, at Otay Ranch in the South Bay, and in the Poinsettia Coaster station area in Carlsbad.

And finally, communities should reevaluate their future under existing Community and General Plans. They should consider the option of having a more balanced place to live with work, school, shopping, and recreational opportunities within easy reach by walking and riding a bike or transit. Working together, these changes will enhance our region’s quality of life.