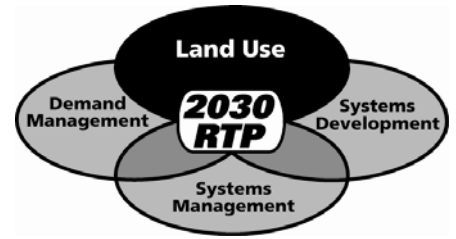


CHAPTER 5 LAND USE-TRANSPORTATION CONNECTION: GROWING SMARTER



This chapter focuses on the relationships between population growth, land use, and the environment to the region’s mobility. In addition, this chapter addresses the relationship of our transportation planning to environmental justice issues. *Are we growing smarter? How can we better coordinate land use and transportation planning in the region to improve mobility and livability? How do our land use decisions and transportation investments affect our natural environment and our investment decisions in the areas of energy and open space conservation? How do we ensure that environmental justice issues are given proper consideration in our transportation planning?*

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GROWING SMARTER

Despite a recent decrease in the region’s annual average growth rate, the region is still growing. The SANDAG 2030 Regional Growth Forecast Update indicates that the region will add almost one million people, 290,000 housing units, and roughly one-half million new jobs between 2005 and 2030. This is in addition to the three million people that already live in the region, the one million existing homes, and the 1.3 million jobs to which our workers currently commute. What do these additional growth projections mean for our land use pattern, transportation network, and infrastructure needs? How do they affect our public health in terms of air quality and opportunities for physical activity? And how do they impact our demand for energy and our ability to address global climate change?

In addition to the numbers, the 2030 Regional Growth Forecast Update also identifies several important trends. Key among these trends is the aging of the population. This trend has widespread implications and points to the need for communities with a wider variety of housing choices, more affordability, more accessible public transportation, more walkability, and a greater mix of land uses ensuring the appropriate public facilities needed to serve the changing demographics.

Another trend that has emerged recently is an increase in interregional and international commuting from surrounding counties and Baja California, Mexico. As explained in Chapter 3, much of this is due to the disparity between local wages, particularly those in lower-paying sectors, and high housing costs. More and more people are choosing to work in San Diego, but live in more affordable homes in Imperial County, Riverside County, and northern Baja California.

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Both the Regional Comprehensive Plan and *Preparing for Regional and Global Collaboration, San Diego's Regional Economic Prosperity Strategy* recognize that the region's housing crisis, coupled with increasing low-paying jobs, is resulting in more long-distance commuting. This occurs both within the region and from outside the region, resulting in significant impacts on our transportation facilities and our quality of life. While the 2030 RTP focuses primarily on the transportation issues, the RTP and SANDAG's other regional plans address these interrelated issues through specific plans and programs.

Regional Comprehensive Plan

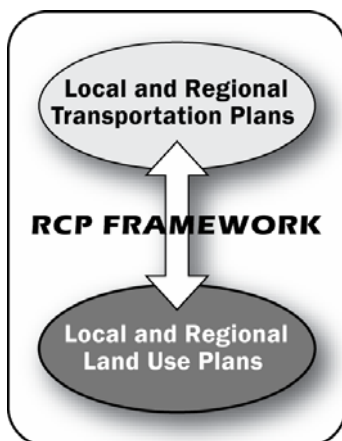
In 2004 the SANDAG Board of Directors adopted a regional blueprint for the San Diego region known as the Regional Comprehensive Plan (RCP). The RCP is based on three themes:

- ▶ Improving connections between land use and transportation plans using smart growth principles;
- ▶ Using land use and transportation plans to guide decisions regarding environmental and public facility investments; and
- ▶ Focusing on collaboration and incentives to achieve regional goals and objectives.

The RCP provides a strategy for the region to grow in a smarter, more sustainable manner while encouraging local jurisdictions to make their own commitments to smart growth.

The RCP brings together a number of topics: urban form, transportation, housing, natural habitat and open spaces, water quality, shoreline preservation, air quality, economic prosperity, water supply, energy, waste management, public facilities, border issues, social equity and environmental justice, regional infrastructure, and performance monitoring. This chapter discusses many of these topics as they relate to mobility in the region. It also provides recommended actions to meet the region's transportation and quality of life goals.

Figure 5.1—RCP Framework



CONNECTING LAND USE AND TRANSPORTATION

Shortly after the adoption of the RCP, SANDAG began work on two specific efforts to improve connections between land use and transportation plans using smart growth principles (Figure 5.1):

- ▶ Development of a Smart Growth Concept Map to illustrate where smart growth development exists or could be built in the region, and

-
- ▶ An Independent Transit Planning Review (ITPR) to provide expert guidance and assistance to SANDAG to coordinate smart growth initiatives with the transit elements of the RTP.

Additionally, work is underway to prepare Smart Growth Design Guidelines for use by local jurisdictions in smart growth areas, focusing on the qualitative elements of smart growth development.

Smart Growth Concept Map

In June 2006 the SANDAG Board accepted the Smart Growth Concept Map for planning purposes for the 2030 RTP. The Smart Growth Concept Map illustrates a preferred planning concept for the region based on smart growth principles and is the framework for prioritizing public land use and transportation investments in the region.

The RCP defines smart growth as a compact, efficient, livable, and environmentally sensitive urban development pattern which focuses future growth and infill development close to jobs, services, and public facilities to maximize the use of existing infrastructure and preserve open space and natural resources. Smart growth is characterized by higher-density development and mixed land uses, with appealing community design and walkable streets in areas near public transit.

- ▶ **Smart Growth Place Types.** The smart growth principles of the RCP are not intended to be applied in a “one-size-fits-all” approach. The region’s communities have different needs and priorities. The smart growth “place types,” which range from the Metropolitan Center and Urban Centers to Community Centers and Rural Villages, provide different ranges of density and scale. This, in turn, provides a basis for SANDAG to plan for appropriate transportation facilities and transit services to serve these areas.

Prepared in conjunction with the county and each of the cities in the region, the Smart Growth Concept Map identifies approximately 200 areas where smart growth development exists or could be built, based on the land use and transportation targets identified in the RCP.

Figures 5.2 – 5.6 show the regional-scale Smart Growth Concept Map and more detailed sub-regional maps for North County, North City, Central San Diego and East County, and South County.

- ▶ **Existing, Planned, and Potential Smart Growth Areas.** The RCP establishes land use and transportation targets for smart growth areas and distinguishes them as either “Existing/Planned” or “Potential,” depending upon whether they meet the targets. The *Existing/Planned* areas either meet the targets or have local plans in place that allow the targets to be met. The *Potential* smart growth areas are places where the existing land uses or the current plans do not meet the targets, but jurisdictions have identified these areas for possible smart growth planning and development in the future. All of the 18 cities and the county have identified at least one smart growth area in their jurisdictions.

Because local jurisdictions have different timetables for updating or amending their land use plans, the Smart Growth Concept Map is seen as a dynamic, living document. Updates to the map will be made periodically to reflect changes in local land use plans or in regional transportation and transit plans. The most recent version of the map is maintained on the SANDAG Web site at www.sandag.org/rcp. In addition, site descriptions for each of the identified smart growth areas also are available on-line.

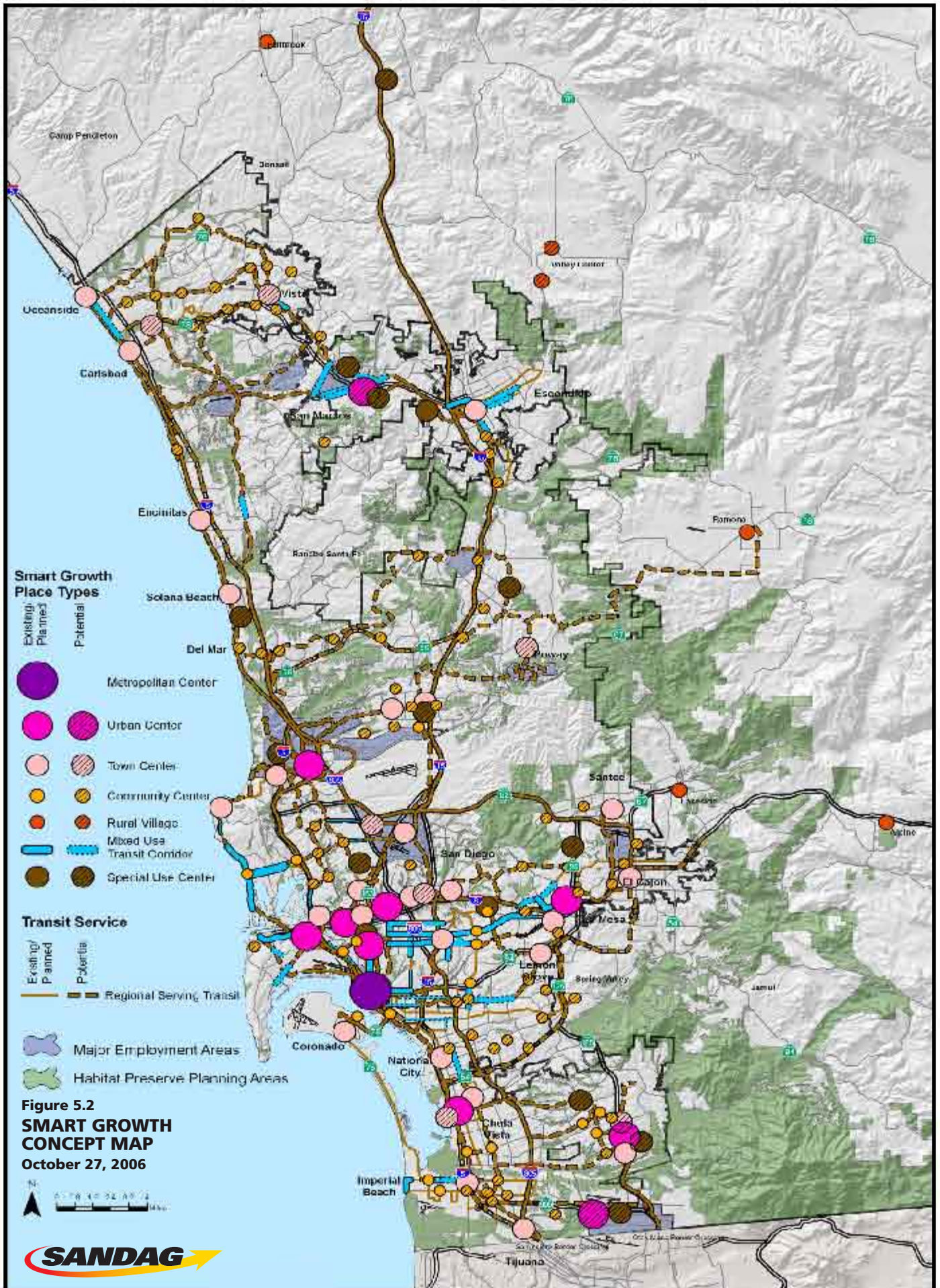
All of the Existing/Planned smart growth areas are included in the 2030 Regional Growth Forecast Update because they are reflected in current local plans. The Potential smart growth areas are not included. Instead, they serve as a mechanism to show where future smart growth could be implemented if plans are changed

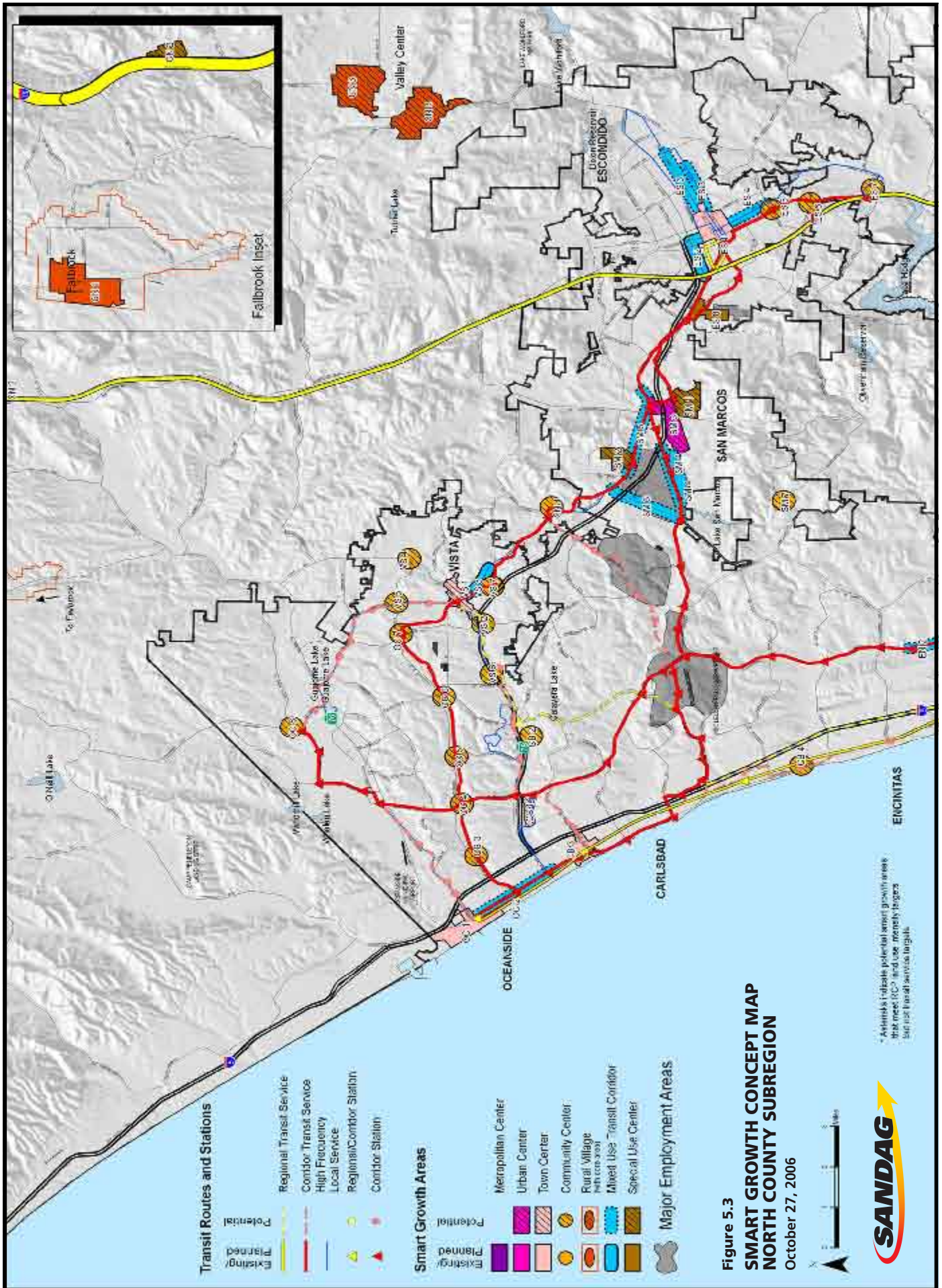
Independent Transit Planning Review

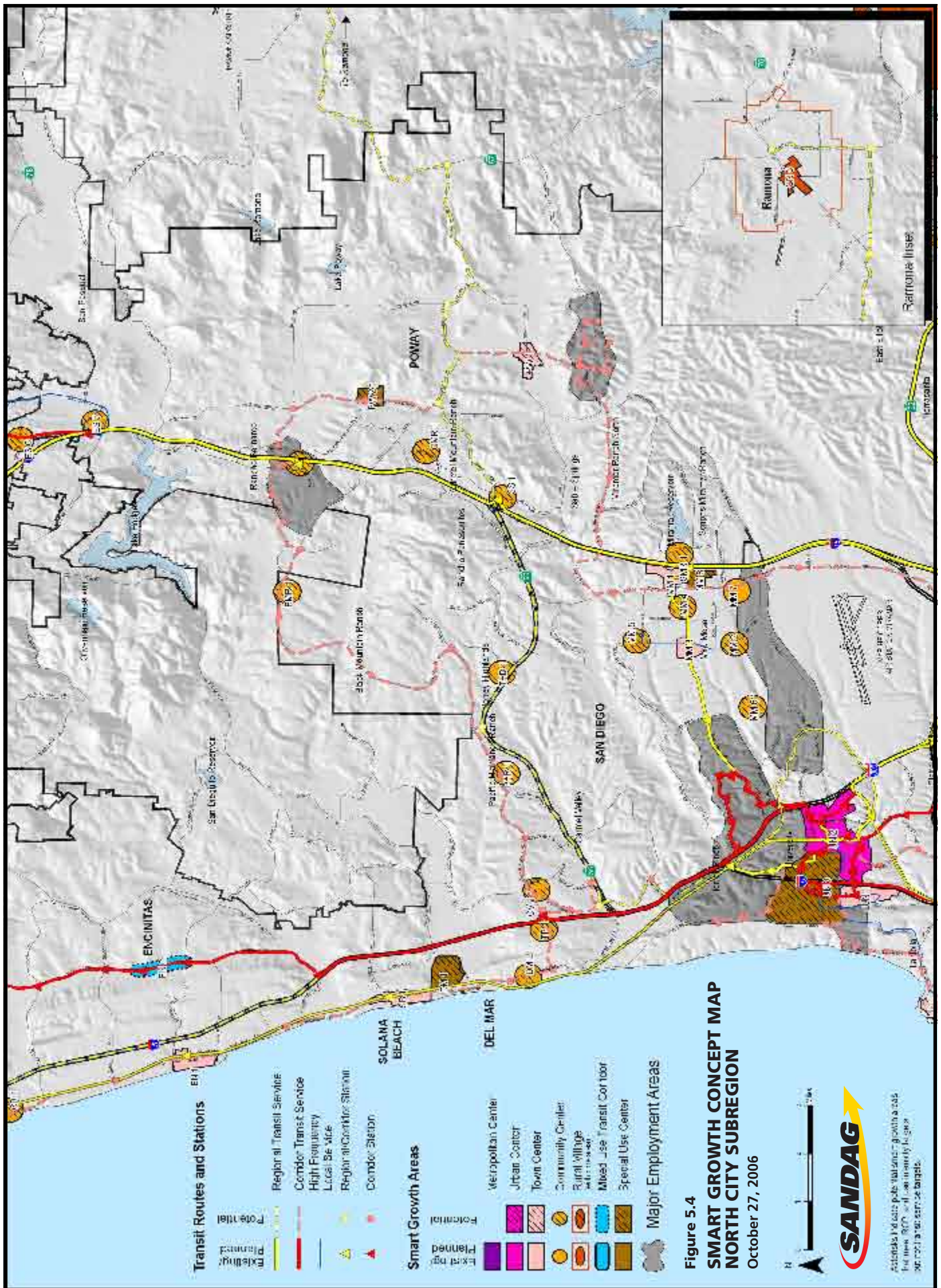
As noted in Chapter 2, in June 2006 the SANDAG Board accepted the Independent Transit Planning Review (ITPR) report for use in preparing the 2030 RTP. The ITPR included recommendations that would improve the role of public transportation in addressing regional mobility needs. The regional transit system development recommendations of the ITPR are discussed in Chapter 6.

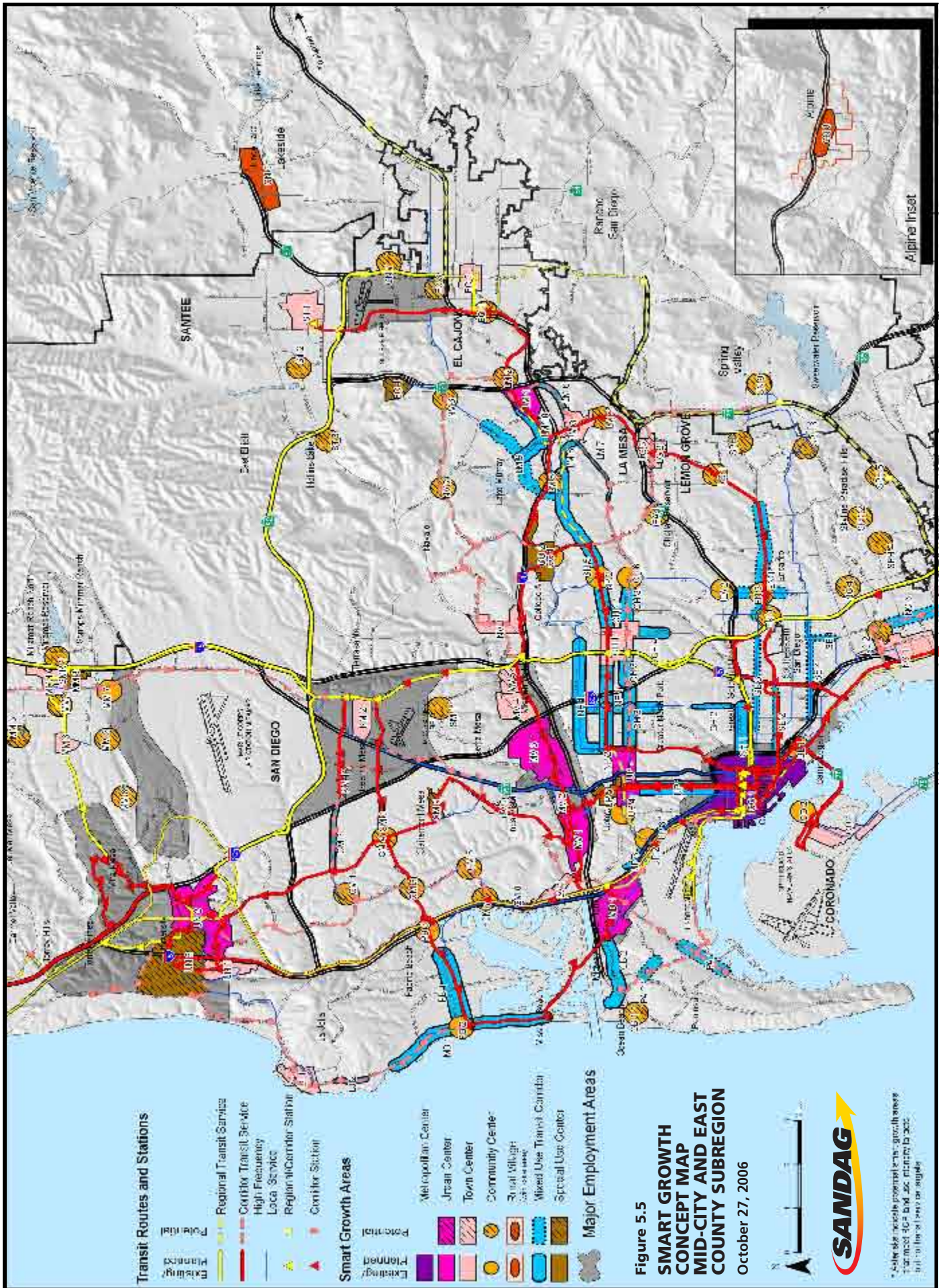
Many of the ITPR recommendations focused on enhancing coordination between land use and transit. The panel’s recommendations generally supported the smart growth goals included in the RCP. The panel made recommendations ranging from very general to very specific, with implementation actions assumed by both SANDAG, which has the responsibility to plan the regional transit network, and the local jurisdictions, which have the ultimate authority over land use decisions. The following points summarize the panel’s main recommendations regarding land use. Each of the recommendations will be considered as the Smart Growth Concept Map is updated and refined, the Smart Growth Design Guidelines are prepared, and the Smart Growth Incentive Program is developed.

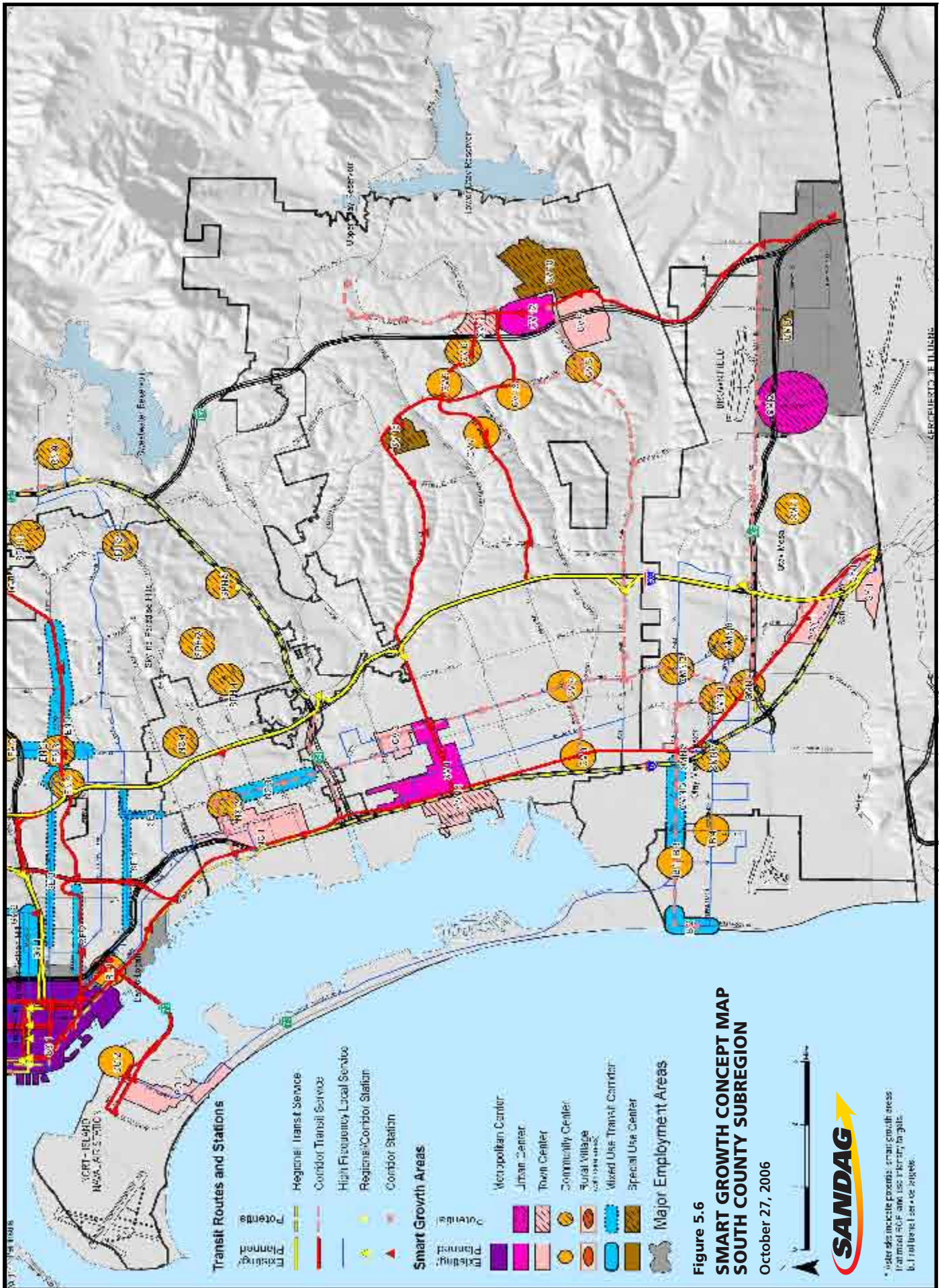
The ITPR recommendations generally supported the smart growth goals included in the RCP.











ITPR Land Use Planning Recommendations

- ▶ Provide pedestrian circulation and parking guidelines in smart growth areas.
- ▶ Encourage use of paid parking, shared parking, and parking design standards that promote more walking and transit use in smart growth areas.
- ▶ Promote additional Smart Growth areas along the COASTER, SPRINTER, and Trolley stations.
- ▶ Locate larger retail, employment, medical, educational, and government land uses near arterial and major collector streets served by public transit.
- ▶ Discourage construction of new auto-oriented land uses along principal transit corridors and encourage conversion of auto-oriented development to transit oriented land uses.
- ▶ Design park and ride lots that are pedestrian friendly and provide good access to transit.
- ▶ Offer incentives for transit-oriented development in smart growth areas.

Permitting/Development Recommendations

- ▶ Require transit-efficient and pedestrian-friendly arterial and collector street patterns in new subdivisions and planned unit developments.
- ▶ Prioritize pedestrian access to transit, as it is as important as development density to the success of transit.
- ▶ Use transit patronage potential, in addition to vehicle miles traveled (VMT), as tools to evaluate development approvals.
- ▶ Integrate supporting retail uses into residential and employment developments to help minimize dependence on automobile use.

With these recommendations in mind, the 2030 RTP envisions improving regional transit service to make public transit the first choice for many of our trips. Transit improvements need to be focused in areas with compatible land uses that support an efficient transit system.

As recommended by the ITPR panel, transit services need to be integrated into many of our communities and neighborhoods, with the design and location of transit stations serving as central activity centers. The Smart Growth Concept Map is a starting point for the implementation of this approach. The 2030 RTP envisions a network of convenient, reliable, fast, and safe services that interconnect the region.

Neighborhoods and communities will be improved and strengthened by providing facilities for transit, biking, and walking. These include a more concentrated and diverse mix of land uses complemented by sidewalks, bike lanes, buildings that front directly onto public streets, and an interconnected and rich street grid that slows and disperses traffic.

Uses of the Smart Growth Concept Map

In an effort to better connect land use and transportation, the Concept Map is being used in a number of ways in the update of the 2030 RTP. With its almost 200 locations, the map is guiding the planning and development of the region's future transit networks, providing higher priority for peak period transit services that link smart growth areas to one another and to other major activity centers. Specifically, the smart growth area designations have been incorporated into the RTP Transportation Project Evaluation Criteria. These criteria are important because they are used to prioritize planning and funding for regional transportation projects. As a result, smart growth areas will receive higher priority for transportation improvements, lending additional support to the smart growth principles contained in the RCP.

The map also identifies the region's habitat preserve planning areas, providing a framework for the continued preservation of open space and natural resources. This information will be used in the implementation of the *TransNet* Environmental Mitigation Program, which directs transportation project mitigation land purchases to areas that are designated as open space preserves in the region's habitat conservation plans (this program is discussed in greater detail in the next section). In addition, the map will be used to determine eligibility to participate in the region's Smart Growth Incentive Program (SGIP), which will be funded through *TransNet*, the region's half-cent local sales tax.

The identification of specific locations in the San Diego region with opportunities for smart growth allows transportation agencies, transit operators, utility agencies, lenders, developers, and others to focus coordinated infrastructure investments and services in these areas.

Finally, an important idea behind the map is that successful, on-the-ground smart growth examples serve as catalysts for more smart growth development in the region. The identification of specific locations in the San Diego region with opportunities for smart growth allows transportation agencies, transit operators, utility agencies, lenders, developers, and others to focus coordinated infrastructure investments and services in these areas, simultaneously reducing development pressure on the outlying and rural areas of the region.

Smart Growth and Public Health

The RTP can address public health from two perspectives: air quality and physical activity. The air quality impacts of our transportation system on public health are well documented. More recently, public health research has pointed to a connection between the design of our transportation networks and the level of healthy physical activity in our daily lives due, in part, to the transportation choices we make.

Air Quality

The federal Clean Air Act requires the U.S. Environmental Protection Agency (EPA) to set national air quality standards. The State of California has adopted even more stringent standards. Although the region now meets the former federal one-hour standard for ozone (one of the main components of smog), we remain a “non-attainment area” by the stricter federal eight-hour ozone standard.

Under federal air quality regulations, special requirements in non-attainment areas ensure that proposed transportation activities – plans, programs, and projects – do not cause new, nor contribute to existing air quality problems. Compliance with these regulations is referred to as “transportation conformity,” which requires analyses that demonstrate that forecasted emissions are within healthy air quality limits. The air quality conformity analysis for the Plan is included in Appendix E.

The San Diego region's primary air pollution problems are caused by ozone, also known as photochemical smog. Emissions from cars, power plants, chemical plants, and other sources cause smog. Pollution transported from the Los Angeles air basin also adversely affects the San Diego region's smog levels. Our region also is affected by greenhouse gas, which causes global warming. These pollutant and possible mitigation strategies are explored in the Energy section.

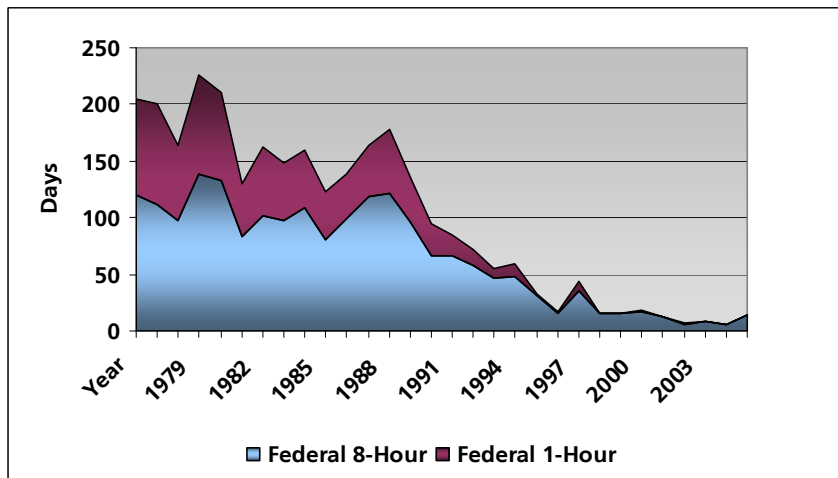
In spite of large increases in vehicle miles traveled over the past two decades, the region's air quality has actually improved over time. Figure 5.7 displays the downward trends in air pollution levels in the region since 1980. The federal one-hour ozone standard was attained in the San Diego air basin in 2001 and subsequently was revoked by the EPA in 2005. The region exceeded the federal eight-hour standard on 5 days in 2005 and 14 days in 2006, compared with 48 days in 1995 and 138 days in 1980.

In spite of large increases in vehicle miles traveled over the past two decades, the region's air quality has actually improved over time.

Improvements from the transportation sector are primarily the result of advances in technology. The elimination of lead in gasoline, lower fuel volatility, and the advancement of emissions control systems have significantly reduced air quality emissions, including reactive hydrocarbons (HC), carbon monoxide (CO), and oxides of nitrogen (NO_x).

Air quality remains an important concern for the region. Federal and state standards are safeguards against the adverse health effects of pollution. The 2030 RTP reaffirms the region's commitment to maintain air quality standards. The integration of smart growth development combined with the investments in public transit, managed/high occupancy vehicle, pedestrian, and bicycle facilities will help lessen dependency on motor vehicle travel, which in turn, will benefit the region's air quality.

Figure 5.7—Days Exceeding Ozone Clean Air Standards – San Diego Air Basin



1-Hour Standard >12 pphm * pphm – parts per hundred million
 SOURCE: San Diego Air Pollution Control District

Better Urban Design for a Healthier Lifestyle

The connection between air quality and public health has been understood for some time. Only recently, however, have we come to understand that the way we construct our transportation system and the way that system relates to our land use plans and community design also plays a role in the overall health of our communities.

In recent years, public health officials have become increasingly alarmed by a rising rate of obesity in this country associated with physical inactivity, leading to a parallel increase in health risks such as diabetes and heart disease. The cost impacts of this trend on state and local governments are significant. According to the California Department of Health Services, the costs attributable to physical inactivity and obesity amounted to \$28 billion in 2005.

Why is this a transportation planning issue? The search for the cause of this increase has pointed in several directions, but one clear cause is a decrease in the level of physical activity in our daily lives. Moreover, public health research has found a relationship between the type of communities in which we live and our level of physical activity, especially physical activity associated with our means of travel.

Researchers are finding that people are more physically active when they live in communities that are more compact and have a greater mix of land uses than those who live in single-use, lower-density neighborhoods. The key features of the communities that support a more active lifestyle appear

to be an interconnected street network, higher-density housing, and a mix of land uses that put goods and services closer to home or work. In other words, people who live in walkable, bicycle-friendly communities are more likely to use walking and bicycling as everyday forms of transportation.

There are other public health implications associated with increased walking and bicycling beyond the impact on obesity. To the extent motor vehicle trips are replaced by walking and bicycling (including trips that incorporate a public transit link), transportation-related air pollution is reduced, and the distribution of uses in the public right-of-way becomes more balanced. Research shows that when bicycling and walking increase significantly, the risk of injury from a motor vehicle collision is reduced for the population of bicyclists and pedestrians.

The implications for SANDAG’s regional planning activities in general, and transportation plans in particular, could be significant. SANDAG has a history of supporting bicycling and walking, or “active transportation” as it is sometimes called, but consideration of public health has not been incorporated into transportation decisions. While SANDAG has supported active transportation through smart growth incentives and bicycle and pedestrian funding programs, no basis for evaluating the effectiveness of these efforts on encouraging active transportation has been developed. SANDAG should collaborate with public health professionals in the region to determine how public health considerations could be taken into account in the planning, funding, and project development process. In addition, SANDAG should develop and implement a methodology for monitoring and reporting on the amount of bicycling and walking that takes place in the region so it can better evaluate the effects of its plans and programs.

SANDAG should collaborate with public health professionals in the region to determine how public health considerations could be taken into account in the planning, funding, and project development process.

USING LAND USE AND TRANSPORTATION PLANS TO GUIDE OTHER PLANS AND INVESTMENTS

The second major theme of the RCP focuses on *using land use and transportation plans to guide other regional plans and investments*. The Smart Growth Concept Map and other RCP implementing tools provide guidance to local governments, property owners, and service providers as to where smart growth development should occur from a regional perspective. Not only can these tools be used by local jurisdictions as they update their general plans and community plans, but they can also be used in implementing regional and local plans related to regional infrastructure such as energy facilities and “green infrastructure,” such as open space and habitat preservation. This section discusses specific areas in which smart regional transportation and land use planning can lead to smarter regional infrastructure investments.

Open Space and Habitat

The San Diego region has been identified as a “hot spot” because of threats to our biodiversity and native species. Many unique and endangered species are found only in our region. San Diego County’s population also is growing. This combination of high biodiversity, large numbers of rare and unique species and increasing urbanization has led to intense conflicts among the issues of economic growth, biological conservation, quality of life, and transportation corridors.

A system of interconnected open space provides the necessary habitat for the preservation of endangered species, while promoting other land uses outside these areas.

To reconcile conflicts between urbanization and rare, threatened, and endangered species, the State of California enacted the Natural Community Conservation Planning (NCCP) Act of 1991. The NCCP facilitates the creation of a landmark regional preservation system based on the characteristics of habitat areas rather than individual species. In addition, the preservation of natural habitats in the urbanized areas of the region provides visual relief from the manufactured landscape and maintains a connection to the region’s natural heritage. This system of interconnected open space provides the necessary habitat for the preservation of endangered species, while promoting other land uses outside these areas.

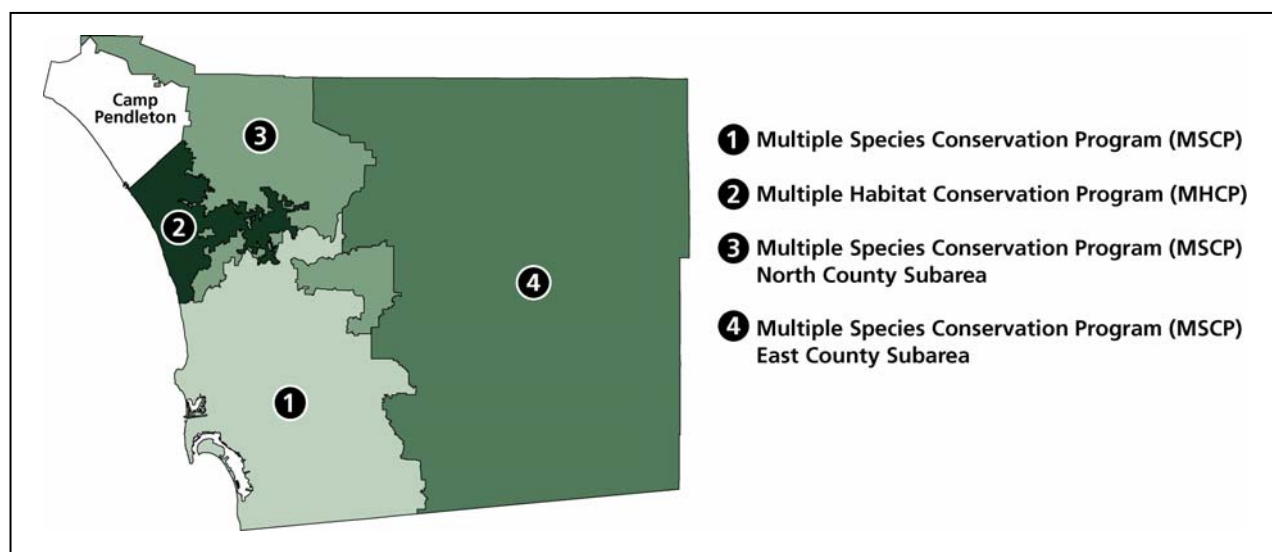
San Diego’s Habitat Plans

In the San Diego region, all areas of the County have been included into one of four habitat conservation plans (see Figure 5.8). The Multiple Species Conservation Program (MSCP) South was adopted in 1997 and is in its tenth year of implementation. The Multiple Habitat Conservation Program (MHCP), completed in 2003, covers the seven jurisdictions in north coastal San Diego County. In the unincorporated areas of the County, two plans are currently being prepared; the MSCP North covering the inland areas of northern San Diego County and the MSCP East, which extends east to the San Diego/Imperial County border. These habitat plans provide the policy framework that allows the jurisdictions to identify how their local land use authority will be used to conserve habitat and open space.

The concept of integrating both infrastructure and ecological planning efforts has been incorporated into the Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (SAFETEA-LU). Sections 6001 and 6002 incorporate specific environmental planning factors into the project development processes, leading to more informed transportation planning decision-making, including the integration of natural resource considerations with transportation needs, prioritized mitigation areas, and the identification of mitigation opportunities having the greatest potential to restore the environmental functions that may be affected by a proposed transportation project. SAFETEA-LU, in conjunction with Executive Order 13274 Environmental Stewardship and Transportation Infrastructure Project Reviews (2002), led to the creation of the publication *Eco-Logical:*

an *Ecosystem Approach to Developing Infrastructure Projects*, in early 2006 (www.environment.fhwa.dot.gov/ecological/eco_index.asp). This multi-agency publication endorses proactive approaches to compensate for unavoidable impacts caused by infrastructure projects in advance of the need for project-level mitigation. This approach is consistent and further supports the State's Natural Community Conservation Program (NCCP) efforts and the tenets of the regional *TransNet* Environmental Mitigation Program.

Figure 5.8—Habitat Preserve Planning Areas



Source: Table 4.D-2. *Regional Comprehensive Plan, 2004*.

***TransNet* Environmental Mitigation Program**

A unique component of the *TransNet* extension is the creation of an environmental mitigation program (EMP), which goes beyond traditional mitigation for regional and local transportation projects. The EMP includes \$650 million dollars for the early acquisition of land to offset the direct impact of upland and wetland habitat from regional and local transportation projects. The early acquisition of land for multiple projects would allow large blocks of land to be acquired in advance of the traditional, project-by-project mitigation. In addition, there is an economic benefit by reducing project mitigation costs through an economy-of-scale and increased purchasing power. It also provides a higher level of certainty for local and regional transportation projects by securing mitigation land well in advance of the need to obtain federal or state regulatory permits. For example, one advanced land acquisition project, the Rancho San Diego Mitigation Bank, has provided cost-effective habitat mitigation for the SR 125 project, minimized project delays, and yielded “mitigation credits” for future transportation projects.

The economic benefit generated by the EMP, estimated at \$200 million, allows for additional funding for habitat acquisition, management, and monitoring activities that will help implement the regional habitat conservation plans.

The economic benefit generated by the EMP, estimated at \$200 million, allows for additional funding for habitat acquisition, management, and monitoring activities that will help implement the regional habitat conservation plans. In turn, more land that is conserved and managed in the predefined habitat planning areas will result in more certainty for future development projects outside the habitat preserves, including regional and local road projects, by providing advanced protection for endangered and threatened species.

The EMP is a collaborative effort among SANDAG, the cities, the county, the wildlife agencies (California Department of Fish and Game and the U.S. Fish and Wildlife Service), and other regulatory agencies (Coastal Conservancy, U.S. Geological Survey, and U.S. Army Corps of Engineers), as well as representatives of various stakeholder groups, including the environmental community and the science/technical community.

Energy

Energy is fundamental to our regional economy and the quality of life of our residents. Energy lights, heats, and cools our homes and offices, runs our businesses and industrial machines, moves people and goods, and affects nearly every facet of daily life. Energy implications of the transportation sector are receiving greater scrutiny and transportation has been identified as the largest source of greenhouse gas (GHG) emissions in California.

Measures that reduce our fuel demand and associated emissions, such as better integrated land use and transportation planning, smart growth development, congestion reduction measures, demand reduction measures, and smart growth not only save energy, but also mitigate our

climate change impact. During the next two years, SANDAG will address the energy and climate effects more comprehensively in the update of our *Regional Energy Strategy 2030*.

Energy and Climate Change

The state has declared that climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of California. The potential adverse effects of global warming include the exacerbation of air quality problems, a reduction in the quality and supply of water to the state from the Sierra snowpack, a rise in sea levels (resulting in the displacement of thousands of coastal businesses and residents), damage to marine ecosystems and the natural environment, and an increase in the incidences of infectious diseases, asthma, and other human health-related problems.

The state has declared that climate change poses a serious threat to the economic well-being, public health, natural resources, and the environment of California.

Since the adoption of the previous RTP, California has undergone significant changes in law and mandate regarding climate change. In 2005, Governor Schwarzenegger established Executive Order S-3-05 calling for statewide greenhouse gas (GHG) emission reductions. In September 2006 the California Global Warming Solutions Act of 2006 was signed into law, which creates a statewide GHG emission limit that will reduce emissions by 25 percent by 2020. The law will first require mandatory GHG emission reporting and reductions from the electricity sector. It also requires all state agencies to consider and implement GHG emission reporting and reduction strategies.

The impacts of the regional transportation system on overall energy use are receiving greater scrutiny. Transportation is the largest source of climate change emissions in California. The California legislature has recognized that “passenger vehicles and light-duty trucks are responsible for 40 percent of the total GHG pollution in the state.”

Two approaches to reducing the region’s greenhouse gas emissions are to reduce vehicle miles traveled (VMT) and to use cleaner vehicles when traveling. Smart growth and demand management choices are integral components to reducing energy and greenhouse gas emissions in the region. But the increased penetration of alternative fuels and vehicles likely will play a significant role in addressing mobile source emissions. Cleaner vehicles can be highly energy efficient, achieving high miles-per-gallon ratings. They can be hybrids utilizing both electric battery and gasoline or diesel fuel. They can use alternative fuel like biofuels, which emit lower GHG emissions.

As of October 2007, RideLink had 572 vanpools carrying more than 4,700 passengers, which in turn saved 585,017 gallons of gas for our region.

Saving Energy Through Transportation Choices

Carpooling, vanpooling, and increasing opportunities for riding public transit are ways to lessen our dependence on fossil fuels and reduce GHG emissions. The SANDAG RideLink Program offers free services to commuters who would like to find alternatives to driving alone. As of October 2007, RideLink had 572 vanpools carrying more than 4,700 passengers, which in turn saved 585,017 gallons of gas for our region. Single-person trips have been reduced by more than 2 million so far. Alternative modes of transportation also significantly reduce fuel consumption and emissions. Further information on these programs and other efforts can be found in the Demand Management chapter.

Alternative Transportation Fuels and Vehicles

The use of alternative fuels can reduce dependence on foreign oil, provide economic development opportunities, and reduce emissions of GHGs, criteria pollutants, and toxic air contaminants. Moving toward a more diversified approach to fuels and supporting the advancement of higher-efficiency vehicles is one of the state's goals. The California Energy Commission (CEC) and California Air Resources Board (CARB) set a goal that 20 percent of all transportation energy used in 2020 comes from alternative fuels (current alternative fuel use in 2005 is 6 percent). If California successfully meets this goal, about 4.8 billion gallons of gasoline and diesel will be displaced annually by alternative fuels.

The state's demand for transportation fuels has increased 53 percent in the last 20 years, and in the next 20 years gasoline and diesel demand will increase another 36 percent.

According to a 2005 CEC report, the state's demand for transportation fuels has increased 53 percent in the last 20 years, and in the next 20 years gasoline and diesel demand will increase another 36 percent. California refineries rely increasingly on imported petroleum products to meet this demand. This growing demand and the increasing challenge faced by refineries in meeting this demand will lead to more frequent price volatility and potential economic dislocation. In 2003 the CEC and CARB adopted a two-pronged strategy to reduce petroleum demand: promoting improved vehicle efficiency and increasing the use of alternative fuels.

In September 2005 Governor Schwarzenegger signed into law Assembly Bill (AB) 1007 requiring the CEC to prepare a state plan no later than June 30, 2007, to increase the use of alternative fuels in California. This state plan also will address potential air quality conflicts to ensure a harmonizing of transportation energy and air quality policies and objectives in the state. Additional alternative transportation efforts are underway in the state and the region. San Diego Gas & Electric (SDG&E) has restarted an electric vehicle program, Miramar College is working on programs to encourage transportation efficiency and reduce petroleum usage, and the CEC has a truck stop electrification program and a heavy-duty advanced technology development program.

Regarding the availability of alternative fuels in the region, there is only one public alternative fueling station in San Diego that sells ethanol, compressed natural gas (CNG), and liquefied petroleum gas (LPG). It is difficult for drivers in the region to switch to alternative fuels when there is limited infrastructure to support it.

In April 2007 SANDAG secured partial funding from the California Energy Commission (CEC) to undertake a two-year project to address regional energy and climate issues. As part of this effort, SANDAG will conduct a study of appropriate locations for siting alternative fuel infrastructure to best leverage geographic, institutional, financial, and environmental resources. The study will guide development of an Alternative Fuel Vehicle and Infrastructure Toolkit for local governments that will contain best practices related to ordinances, analytical tools, financing opportunities, codes, and standards related to saving energy or reducing GHG emissions.

In April 2007 SANDAG secured partial funding from the California Energy Commission (CEC) to undertake a two-year project to address regional energy and climate issues.

SANDAG also will work with its member agencies to identify opportunities for alternative fuel vehicles both in municipally owned vehicles, as well as those owned by franchisees of these cities, such as trash haulers, green waste haulers, and curbside recyclable haulers. Regarding public transit, a significant shift to alternative fuel vehicles is already underway. As of January 2007, the San Diego Metropolitan Transit System (MTS) has already replaced 360 of its 725 revenue vehicles with alternative fuel buses. Their proposed FY 2008 budget calls for purchase of up to another three new alternative fuel buses. North County Transit District (NCTD) has replaced 79 of its 155 urban buses with CNG buses and has another 12 CNG buses on order.

As of January 2007, the San Diego Metropolitan Transit System (MTS) has already replaced 360 of its 725 revenue vehicles with alternative fuel buses.

Furthermore, SANDAG is supportive of the San Diego Gas and Electric (SDG&E) Clean Transportation Program that is undertaking a variety of alternative electric transportation initiatives. This new program aims to reduce fuel consumption, promote the use of electricity as an alternative fuel, reduce dependence on foreign oil and respond to state environmental priorities. Focus areas range from on-road electric vehicles, like plug-in, hybrid automobiles, to electric idling initiatives like electrification of cruise ship terminals (cold ironing), to non-road electric vehicles like forklifts and airport ground support equipment. As this program progresses, SANDAG will assess ways electrification may reduce and displace fuel use and associated emissions.

INCENTIVES AND COLLABORATION

The third major theme of the RCP is to implement regional planning policies and objectives through incentives and collaboration. In the following section, current efforts to use incentive programs and collaborative planning to address regional transportation and land use issues are discussed.

Smart Growth Incentive Program (SGIP)

MOBILITY 2030 called for the creation of a five-year, \$25-million pilot program to provide incentives for smart growth development. SANDAG established the Pilot Smart Growth Incentive Program (SGIP) in 2005, awarding \$19.1 million in Federal Transportation Enhancement funds to 14 local, smart growth development projects. An additional \$3.4 million was awarded in 2006, bringing the total to \$22.5 million shared among 16 projects.

The pilot program was a precursor to a longer-term smart growth incentive program that will be funded through the local *TransNet* half-cent sales tax, beginning in FY 2009 when approximately \$6 million in funding will be available annually for smart growth projects. The *TransNet* program will dedicate 2 percent of the annual revenues during its 40-year life, for a total of \$280 million of regional funding for smart growth incentives.

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These funds can be used to leverage additional funds for smart growth projects through local matching requirements and by seeking other state and federal funding sources, including funds from the statewide housing and infrastructure bonds approved by California voters in 2005. SANDAG is committed to seeking additional funds for the implementation of smart growth plans and projects. The \$280 million generated from the *TransNet* program for smart growth, together with the Smart Growth Concept Map, provide the San Diego region with a robust competitive edge when seeking additional smart growth funds. Consideration should also be considered to leverage other funding to supplement the *TransNet* Smart Growth Incentive Program during this RTP cycle.

The \$22.5 million Pilot SGIP made grant funds available for projects that incorporated concepts, such as the integration of transportation and land use, or the revitalization of community centers that included making areas more conducive to mixed land uses, transit, walking, and biking. The SANDAG Regional Planning Committee and Transportation Committee, along with working groups of planning and public works directors and other local agencies and stakeholders, were instrumental in crafting the details of this incentive program. These groups will use the lessons learned from the Pilot SGIP to develop criteria for the long-term *TransNet* SGIP. The initial program objectives focused on funding smart growth projects that were ready to go, influenced land development, supported public

transit, promoted housing development, and demonstrated smart growth in a variety of settings.

While the pilot program only provided funding for capital infrastructure projects, the future program intends to provide funding for both capital projects and planning efforts in areas identified on the Smart Growth Concept Map. At the same time, SANDAG is also working with its member agencies to encourage the State of California to allocate several components of State Infrastructure Bond funds (Proposition 1C and 84) in a way that is consistent with the San Diego region’s smart growth incentive policies and programs.

In addition, as discussed in more detail in Chapter 8, the *TransNet* Extension Ordinance includes 2 percent of its total funds for bicycle, pedestrian, and neighborhood safety (traffic calming) projects. In conjunction with the Smart Growth Incentive Program funded by *TransNet*, this funding for nonmotorized transportation projects also will enhance the quality of life in local communities and smart growth areas.

These are key examples of providing incentives and collaboration to implement the smart growth principles contained in the RCP.

Collaboration Efforts

The RCP recognizes that in order to preserve our quality of life, we must prepare not only for our own growth, but for the impacts of the growth taking place beyond our borders in Riverside, Orange, and Imperial Counties, as well as in Tijuana and Tecate, Baja California and with the 18 tribal nations located in the San Diego region.

Over the last several years, SANDAG has been working on joint plans with Riverside County (Phase II of the I-15 Interregional Partnership) and on the Otay Mesa/Mesa de Otay Binational Corridor Strategic Plan. Both of these planning efforts address issues related to housing, transportation, jobs, and the environment in their geographic areas, and propose actions in San Diego County, Riverside County, and Tijuana to address related issues. These efforts are discussed in more detail in Chapter 6.

Coordination with Tribal Nations

There are 17 federally recognized tribal governments with jurisdiction over 18 reservations in the San Diego region – the most in any one county in the United States. SANDAG, along with its partner agencies, has been developing a regional government-to-government framework for ensuring that tribes are involved in the regional transportation planning process in a timely and meaningful way. SANDAG has partnered with two key intertribal organizations – the Reservation Transportation Authority (RTA) and the Southern California Tribal Chairmen’s Association (SCTCA) – to build a context of consultation, cooperation, and coordination.

There are 18 reservations and 17 tribal governments in the San Diego region.

Caltrans and SANDAG conducted a tribal transportation needs assessment, the results of which were discussed in a technical workshop between all of the tribal nations and public agency staff. Strategies were jointly developed to improve tribal transportation programs in the region. SANDAG and the SCTCA, in collaboration with the RTA, co-hosted the 2006 San Diego Regional Tribal Summit, bringing together the 17 tribal nations and the SANDAG Board of Directors to discuss the identified strategies and create a mutually agreed-upon action agenda. Among the next steps, at a policy level, the SCTCA has joined SANDAG as an advisory member to the SANDAG Board and Policy Advisory Committees. At a technical level, an Interagency Technical Working Group on Tribal Transportation Issues was formed as a forum for tribal governments in the region to discuss and coordinate transportation issues of mutual concern with the various public planning agencies in the region, including SANDAG, Caltrans, the County of San Diego, and the transit agencies. Additional detail on tribal consultation for the Plan is provided in Appendix D.

ENVIRONMENTAL JUSTICE

Environmental Justice encourages better land use decisions, improves access to jobs, helps promote good air quality, and strengthens neighborhoods.

Environmental Justice is defined as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies. SANDAG plans, projects, and programs, including the RTP, comply with the principles of environmental justice and all associated federal and state requirements.

Environmental Justice encourages better land use decisions, improves access to jobs, helps promote good air quality, and strengthens neighborhoods. It also supports community involvement in regional planning and programming through improved communications and active engagement with the process.

Promoting Public Involvement

In order to avoid any adverse impacts of the RTP on minority¹, low-income, or other populations at risk, SANDAG is undertaking a program to promote community involvement in the planning process. Through its expanded community outreach, SANDAG is attempting to learn of the community's needs for improved transportation and listen to proposals for accomplishing the improvements.

¹ Minority groups include African-American, Asian, American Indian or Alaskan Native, and Native Hawaiian or Other Pacific Islander. In addition, persons of Hispanic ethnicity are considered a minority group.

A public outreach program began prior to the release of the Draft 2030 RTP. Appendix C provides additional information about the public outreach activities. Through this program, SANDAG Directors and staff members have participated in community events throughout the region to discuss transportation needs with residents. In addition, a targeted “mini-grant” program was implemented to provide minority communities, meaningful input into the draft plan as it was being developed. Input provided from this process was incorporated into all components of the RTP.

To remain in contact with the community and open to its comments, SANDAG has a number of committees and working groups to advise it on transportation and transit plans and programs. Comments from the members have guided the development of the 2030 RTP and provided valuable information from the community.

SANDAG will continue to seek out community information through its speaker’s bureau and at community meetings, forums, and events. SANDAG maintains an extensive Web site of information and invites public communications through e-mail, phone, and attendance at meetings.

SANDAG continues its program of promoting the use of public transit and invites the low-income community, especially those who are transit-dependent, to communicate with SANDAG on their needs to access jobs, school, and personal business locations.

SANDAG maintains an extensive Web site of information and invites public communications through e-mail, phone, and attendance at meetings.

Regional Analysis of Environmental Justice Issues

In February 2007 SANDAG finalized its regular Triennial Title VI report in accordance with Federal Transit Administration (FTA) requirements. The quantitative evaluation within the report illustrates the extent to which benefits or adverse impacts of proposed transportation projects and policies affect minority and low-income populations. Geographic Information System (GIS) methods were used to analyze demographic, socio-economic, and transportation data. The primary purpose of this analysis was to determine whether a proposed transportation improvement strategy would result in disproportionate negative impacts to minority and low-income populations. If that were the case, the proposed improvements would be evaluated to minimize unfavorable impacts. The results of this analysis did not show substantive disproportionate effects. Additional information is provided in Technical Appendix 5.

Population and Ethnicity

The San Diego region is an ethnically diverse area, and it will become more so by 2030. Just ten years ago, the non-Hispanic White population of the region was 65 percent of total population. Data indicates that non-Hispanic Whites now constitute 52 percent of the population, continuing to decline to 38 percent by 2030. Hispanics comprise 28 percent of the region's population today and will make up 38 percent of the population by 2030.

Between 2004 and 2030, the Asian/Other population will increase from 14 percent to 19 percent. The Native American population, which is a portion of the Asian/Other population, will remain steady at about 1 percent of the region's total population. The share of Black/African American population will remain at 5 percent.

Population and Age

The median age of the population of the San Diego region is increasing. In 1990, the median age was 31 years, increasing to almost 33.7 years in 2004. In 2030, median age is expected to increase to 39 years. In 1990, the percent of children under 18 years of age was 24 percent increasing to 25 percent in 2004. By 2030, children under 18 years of age are expected to account for only 21 percent of the population. By 2030 residents of San Diego over the age of 65 will have increased 125 percent, higher than in Florida. This will have a significant impact on transportation planning as the needs of the elderly are different from younger generations. The nature of trip purposes will shift from commuting to other types, such as medical and shopping. There will be an increase in the need for specialized transportation services, requiring more coordinated efforts to accommodate the shifting demographics. These service issues and specific actions are more fully discussed in Chapter 6.

Income and Other Factors

In 2005, the region's median household income as reported by the U.S. Census Bureau was \$45,000 (in 1999 dollars), with 11 percent of the population of the region living below the federal poverty thresholds. Comparable figures for 2000 were \$47,100 median household income and 12 percent of the population below the poverty thresholds. By 2030, the median household income is predicted to increase to \$62,600 (in 1999 dollars).

In 2005, 36 percent of the region's population spoke a language other than English at home.

Other characteristics of the region's population of concern to Environmental Justice programs include the following:

- ▶ In 2005, 36 percent of the region's population spoke a language other than English at home.
- ▶ 23 percent of the population was foreign-born.
- ▶ Persons with disabilities accounted for 13 percent of the non-institutionalized population.

Improving the quality of life of a region means ensuring that the needs and concerns of the most vulnerable populations are a priority. Transportation planning must be done with a wide variety of communities in order to promote regional equity. Significant efforts have been made, and more will continue to be done in ongoing and future planning efforts.

CONCLUSIONS

The SANDAG Board adopted the Regional Comprehensive Plan in 2004, establishing a long-term planning blueprint for the San Diego region. Since then, much work has been done to begin implementing the smart growth and sustainability principles of the RCP. The 2030 RTP is a fundamental component of that implementation.

This is the first time that the region has had a Regional Comprehensive Plan in place while updating its regional transportation plan. This 2030 RTP incorporates many goals and objectives from the RCP, recognizing the iterative nature of the planning process. After the 2030 RTP is adopted, SANDAG will incorporate its transportation principles and actions into the next update of the RCP, realizing the true benefits of the expanding coordination between land use and transportation.

In addition, this chapter provides an overview of environmental justice issues, and how SANDAG is addressing those issues in its planning process. SANDAG has continued to recognize the importance of environmental justice issues, and has made significant progress in the ways that it is considering these issues in its planning and project development decisions.

ACTIONS

The following actions support the Plan’s Land Use-Transportation Connection Chapter recommendations.

LAND USE & TRANSPORTATION	
Proposed Actions	Responsible Parties
<i>Connecting Land Use and Transportation – The following proposed actions support the RTP goals of Accessibility, Livability, Sustainability, and Equity.</i>	
1. Use the Smart Growth Concept Map as a basis for allocating smart growth incentives, prioritizing transit service enhancements, and seeking additional smart growth funds.	SANDAG
2. Use the Smart Growth Concept Map in updating local general and community plans and zoning codes to encourage smart growth development, including transit-supportive land uses.	Local jurisdictions
3. Update the Smart Growth Concept Map, as needed, to reflect changes to local land use plans and regional transportation and transit networks.	SANDAG and local jurisdictions
4. Develop and adopt Smart Growth Design Guidelines that illustrate and encourage aesthetically pleasing and functional higher density mixed use development, incorporating the land use and transit recommendations of the Independent Transit Planning Review.	SANDAG and local jurisdictions
5. Through the development review process, continue to provide comments to local jurisdictions that encourage development patterns that support walkability and access to transit in existing and emerging areas, and in areas with major public facilities such as colleges and hospitals.	SANDAG, MTS, and NCTD
6. Support legislation that provides financial incentives for smart growth projects; that helps provide affordable housing near transit; and that addresses fiscal reform issues, consistent with smart growth principles and regional strategies.	SANDAG and local jurisdictions
7. Pursue joint development opportunities to promote the construction of housing and mixed-use projects at existing and planned transit stations.	SANDAG, local jurisdictions, and private developers
8. Conduct Air Quality Conformity analyses to ensure that transportation plans conform to the current State Implementation Plan (SIP).	SANDAG
9. Collaborate with the region’s public health professionals to determine how SANDAG can address public health issues in its planning, programming and project development activities.	SANDAG and County Health and Human Services Agency
10. Incorporate the concepts and recommended actions of the 2030 Regional Transportation Plan into the next update of the Regional Comprehensive Plan.	SANDAG

LAND USE & TRANSPORTATION

Proposed Actions

Responsible Parties

Using Land Use and Transportation Plans to Guide Other Plans and Investments – The following proposed actions support the RTP goals of Accessibility, Livability, and Sustainability

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| 11. Coordinate and cooperate throughout the region on the planning and implementation of future transportation and habitat preserve infrastructure systems. | SANDAG and local jurisdictions |
| 12. Design future infrastructure projects in a way that protects wildlife corridors and habitat linkages in designated habitat conservation plans. | SANDAG and local jurisdictions |
| 13. Continue to secure and distribute regional funding for habitat acquisition and ongoing land management and monitoring in accordance with the approved habitat plans. | SANDAG |
| 14. Manage and monitor the <i>TransNet</i> Environmental Mitigation Program (EMP). | SANDAG, local jurisdictions, and wildlife agencies |
| 15. Update the region’s long term energy plan, Regional Energy Strategy 2030, to incorporate energy and climate impacts of land use and transportation measures. | SANDAG |
| 16. Develop a regional climate change action plan in coordination with state and local jurisdiction efforts. | SANDAG |
| 17. Prepare an alternative fuel vehicle and infrastructure toolkit for local governments to aid in the transformation of municipally owned or contracted fleets. | SANDAG |

Incentives and Collaboration – The following proposed actions support the RTP goals of Accessibility and Equity.

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|---|--------------------------------|
| 18. Develop and implement the program guidelines and criteria for the long-term Smart Growth Incentive Program funded by <i>TransNet</i> to provide incentives for integrating transportation and smart growth development. | SANDAG |
| 19. Seek additional Federal, State, and regional funding resources to augment the <i>TransNet</i> Smart Growth Incentive Program. | SANDAG and local jurisdictions |
| 20. Collaborate with the tribal nations, based on a government-to-government framework, to implement mutually beneficial transportation and land use strategies. | SANDAG and Tribal Nations |

LAND USE & TRANSPORTATION

Proposed Actions

Responsible Parties

Environmental Justice – The following proposed actions support the RTP goals of Accessibility and Equity.

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|---|--------------------------------|
| 21. Seek comments from minority and low income communities in planning and programming efforts to ensure that plans and programs do not adversely affect the communities. | SANDAG |
| 22. Work with the region’s transit operators to ensure that transit services are available to minority, disabled, elderly, and low-income persons so that they have access to services, employment, and schools, as described in Chapter 6. | SANDAG |
| 23. Continue to engage minority communities in the regional transportation planning process through community-based workshops. | SANDAG and local jurisdictions |