ENVISIONING
THE MONTEREY BAY AREA

A Blueprint for Sustainable Growth and Smart Infrastructure

Association of Monterey Bay Area Governments

June 2011

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A Blueprint for Sustainable Growth and Smart Infrastructure

Purpose of this document:

Envisioning the Monterey Bay Area is an advisory document intended to provide a regional policy framework for planners and policy makers in the communities of the Monterey Bay Area.

June 2011

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ENVISIONING THE MONTEREY BAY AREA
Executive Summary

"In 2035 I want to live in an area that has more mixed age and income neighborhoods and more public transportation, while preserving the open spaces that we currently have."

Resident, Monterey Bay Area

Source: AMBAG, 2010

Envisioning the Monterey Bay Area is a blueprint for the future describing how the communities of the Monterey Bay Area might grow in a sustainable fashion over the next 25 years. As such, this document focuses on meeting the growth challenges of the coming years through expanded housing and transportation choices for residents of the Monterey Bay Area.

By providing more of both kinds of choices, between single-family homes and townhouses, and between cars, transit, biking and walking, the region can also make fiscally sound decisions about infrastructure. Given limited and shrinking resources, our decisions about the future require making trade-offs among all of those choices. Among the hard choices facing decision makers in the region and at the state level are decisions on long-term water supply issues and funding transit adequately in order to provide these choices.

This document and its Technical Appendices, collectively titled the Blueprint, and available through the AMBAG web site, summarizes two years of joint fact finding involving regional agencies, special use districts, local governments and the public and concludes with some recommended policies for regional and local governments. While the findings of the Blueprint are the result of a coordinated planning process, implementing any land use changes is at the discretion of local jurisdictions.

As such, the Blueprint offers a menu of choices that individual jurisdictions and the region can make to balance future housing and infrastructure investment decisions. This menu allows jurisdictions to customize their growth strategies by selecting options that best meet the needs and preferences of their residents and preserve the unique character of their respective communities.

Envisioning the Monterey Bay Area is about expanding housing and transportation choices. Given limited and shrinking resources, it is also about making trade-offs.

The overall strategy is designed to accommodate future growth by 1) concentrating development in infill areas; 2) creating incentives to develop on vacant lands in immediate proximity to the urban core, rather than on the outskirts of urban growth boundaries; 3) providing a mix of higher density housing and community design options; and 4) focusing infrastructure and transit expenditures to maximize achievement of a jobs-housing balance.

Building on a series of "what if" kinds of questions and using sophisticated modeling techniques, AMBAG compared the region's official forecasted growth pattern, the Current Growth Pattern, which has sprawling characteristics, to an alternative growth pattern, called the Sustainable Growth Pattern.

What does the Sustainable Growth Pattern look like in comparison with the Current Growth Pattern?

- Fewer people would be driving alone in their cars, and stuck on the highways. More people would be out on the streets walking, biking and taking transit to work, school and play
- More active neighborhood centers where people can easily walk or bike from home to restaurants, work, school, community centers and parks.
- Neighborhood design that focuses on walkable, bikeable streets and commercial and housing densities that can support high quality transit services.
- Housing, employment and commercial activities are closer together, cutting down driving distances.
- Improvements in the physical health of Monterey Bay Area residents as well as the environmental health of the region
- The rural beauty and natural resources of the Monterey Bay Area conserved and more efficiently utilized

Comparing Current Growth Patterns to Sustainable Growth Patterns

Key Characteristics of Current Growth Patterns

- ☐ Isolated local efforts for smart growth
- ☐ Transportation dominated by single occupancy vehicles
- ☐ Future employment concentrations in existing areas
- ☐ Strong fiscalization of land use patterns
- ☐ Widespread commercial strip development
- ☐ Leapfrog development
- ☐ Great variance in the fiscal capabilities of local governments
- ☐ Lack of coordination between market rate, workforce and affordable housing provision

Key Characteristics of Sustainable Growth Patterns

- ☐ Coordinated regional plan for sustainable growth
- ☐ Medium to high residential and employment densities in Blueprint Priority Areas while maintaining existing average densities across the region
- ☐ New development with mix of different land uses
- ☐ More access to affordable/workforce housing in cities with large employment bases
- ☐ Multimodal focused transportation (streets for cars, buses, rail, bike and pedestrians)
- ☐ Most employment growth takes places in existing employment clusters
- ☐ Far less leapfrog development, mostly compact development
- ☐ Fiscal variances are tempered by some tax base sharing

GOALS AND OBJECTIVES

Envisioning the Monterey Bay Area presents a regional vision for the communities of Monterey, San Benito and Santa Cruz Counties. It is a blueprint for both "smart growth" and "smart infrastructure."

As adopted by the AMBAG Board of Directors in March of 2009; edits to Blueprint terminology have since been made by AMBAG staff and Blueprint Policy Group members.

GOALS

The Blueprint is the first regional effort to sustain a coordinated vision of the future in the Monterey Bay Area. Staff from regional and local agencies in the tri-county area developed four overarching goals in consultation with one another to guide the Blueprint planning process. On March 11th 2009 the AMBAG Board of Directors adopted the following goals:

1. Evaluate current trends regarding the distribution of population and employment in comparison with:

Improving mobility & accessibility
Reducing greenhouse gas emissions
Providing housing & employment opportunities
Protecting natural & cultural resources

2. Develop a preferred growth scenario that maximizes the achievement of these outcomes while retaining the autonomy of local jurisdictions

3. Use the preferred growth scenario as a basis for SB 375's Sustainable Communities Strategy, which will be used to inform regional transportation plans and to be a platform for future regional housing needs and housing elements

4. Provide a forum for ongoing discussions and coordination of issues of regional significance

OBJECTIVES

The specific effort of developing a Blueprint for the Monterey Bay Area includes the following steps:

1. Through joint fact finding in an inter-agency setting, accomplish Goal 1

2. With public feedback and ongoing fact finding associated with Goal 1, accomplish Goal 2

3. With AMBAG Board of Directors approval and feedback from State agencies, accomplish Goal 3

4. A product of all actions taken by participating parties, this goal is to improve regional communication; tangible products of the effort include the identification of regional and local policies that implement Envisioning the Monterey Bay Area.

Both the Current Growth Pattern and the Sustainable Growth Pattern, on the preceding page, are broadly consistent with local General Plans. Those plans are flexible enough for growth to occur as forecasted or more sustainably. The difference between the two depends on a willingness among the region's communities to plan collaboratively on specific goals.

Working with local governments and other agencies, as well as with the general public, Envisioning the Monterey Bay Area lays out a regional long-range strategy for attaining this Sustainable Growth Pattern over the next twenty-five years. This document incorporates feedback from both the public sector and nearly 700 residents from across the region who participated in workshops and on-line surveys over the course of the last year.*

On March 11, 2009, the AMBAG Board of Directors adopted Goals and Objectives for Envisioning the Monterey Bay Area. Those Goals and Objectives are shown on the left.

While Envisioning the Monterey Bay Area is not legislatively binding upon the region or local communities, the Blueprint does identify best practices which could be valuable to local governments in their own local planning efforts. Recent State grant opportunities have requested documentation regarding local proposal consistency with an adopted regional Blueprint. AMBAG Board of Directors' adoption on March 9, 2011 of Envisioning the Monterey Bay Area will make the region more competitive for grant funding.

Most importantly, Envisioning the Monterey Bay Area will lay the foundation for the Sustainable Communities Strategy (SCS) for the Monterey Bay Area, which will be adopted in late 2012 or 2013. Each Metropolitan Planning Organization (MPO) in California is responsible, pursuant to statute, for developing an SCS that demonstrates how, through more efficient coordination of land use decisions and transportation investments, each region can reduce per capita greenhouse gas emissions from cars and light trucks.

*Full survey results are available in Technical Appendix E.

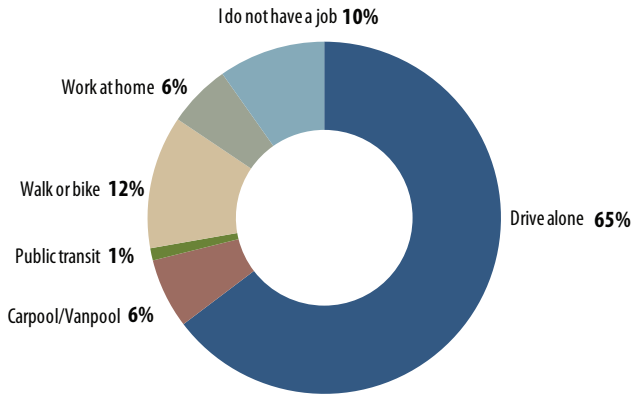
Photo Source: AMBAG.

In the summer and fall of 2010, AMBAG conducted workshops throughout the region, collecting feedback from nearly 700 participants. Detailed results from the workshops and online survey can be found in the Appendix E.

Figure 1. Who Responded to AMBAG's Regional Blueprint Survey?

The majority of survey participants drive alone to work or school everyday.

Source: AMBAG, 2010 Regional Blueprint Survey



The California Air Resources Board (CARB) adopted regional targets for each metropolitan region on September 30, 2010. The Monterey Bay Area received a fairly modest target of reducing per capita greenhouse emissions levels 5% below 2005 levels by 2035.

Envisioning the Monterey Bay Area is the synthesis of a wide array of data, analysis and public input that will be helpful in preparing the SCS. This strategy will help our region reduce per capita greenhouse emissions. There will be further opportunities for public participation in the development of the SCS over the course of the next two years as part of the long range transportation planning process.

This document is divided into three sections: Defining the Issues, Presenting an Alternative and Getting There From Here.

"Defining the Issues" identifies the main concerns of the Blueprint planning process and ends with a brief summary of the implications of current trends for the region in 2035. Highlights of this section include consequences of an aging but growing population with poor access to jobs. Compounding the existing challenges of the region is the potential future growth pattern which places housing and employment further apart than they are today, worsening congestion, vehicle emissions, increasing the consumption of open space and agricultural land and the declining financial stability of local jurisdictions due in part to supporting an ever more widespread infrastructure and deeper dependence on single occupancy vehicles.

"Presenting an Alternative," sets forth a potential different course the region can take, building on existing plans for a more sustainable future. With modest increases in average residential densities, more housing focused in areas with employment centers, and a more multi-modal focused built environment, the Monterey Bay Area can reduce congestion, emissions and the consumption of open space and agricultural land and save money on infrastructure costs.

"Getting There from Here," identifies the menu of choices that local and regional agencies may pursue to achieve that alternative. These

choices are well known to local jurisdictions and in some cases have been implemented in the region. Federal and State legislation is demanding more regional solutions, and the leaders of the AMBAG region are encouraged to pursue legislation that provides long-term solutions to local and regional needs.

Various technical appendices are available from the AMBAG website. A Glossary is included in the appendices. Sources and Endnotes for each section are also included in the appendices.

DEFINING THE ISSUES
Current Growth Patterns

"In communities like ours, our industry and job market is limited. We can't work where we live - or the dollars aren't in the jobs where we live."

Resident, Monterey Bay Area

Figure 2. The Monterey Bay Area Urban Footprint 2005-2035

Data Source: CA Dept. of Conservation Farmland Mapping and Monitoring Program; AMBAG 2010

Since the 1960s, the total miles traveled (Vehicle Miles Traveled, or VMT) in the United States has grown five times faster than the nation's population. Road capacity has not kept up with the increasing demand, resulting in congestion. Building new infrastructure and maintaining it is more costly than revenues from gas taxes and other sources can match.

Throughout California, the State Department of Transportation (Caltrans), has been working with metropolitan regions, such as the Monterey Bay Area, to develop regional visions, or "Blueprints," that map how the population and economy of each region can grow without having to always build new roads and infrastructure. Envisioning the Monterey Bay Area is the result of this Caltrans funded effort.

The Monterey Bay Area, which includes the communities of Monterey, San Benito and Santa Cruz Counties faces similar changes. Our population is growing but employment growth is not keeping up. As a result, more residents will have to drive to other cities, counties and regions to find high quality employment.

Moreover,the aging of the Baby Boomer generation through 2035 will result in a dramatic increase in retirement age residents in the Monterey Bay Area. Even though retirement age Americans tend to drive less than working age Americans, in the Monterey Bay Area longer commutes for working age adults and students will overshadow decreases in VMT from older residents.

Envisioning the Monterey Bay Area explores opportunities to mitigate the impact of our unsustainable consumption of limited resources.

Given current growth trends, AMBAG forecasts that VMT in the Monterey Bay Area will grow nearly three times as fast as our population through 2035. This trend is largely influenced by an emerging potential sprawling growth pattern in which residential areas are developed far away from employment centers and other activities such as shopping, recreation and higher education.

This potential growth pattern, called "Current Growth Patterns," threatens our region's water supply, open space and agricultural land, results in congestion on our roadways, increased greenhouse gas emissions and a decline in public health.

Whether the Monterey Bay Area grows just as regional forecasts predict or whether results will vary, AMBAG is certain that the region's population will grow, that the aging of the US population has particular relevance to our region, and that providing living wage jobs to our residents will continue to be a challenge. AMBAG is also certain that the region can change the way in which it is growing.

These challenges are discussed in more detail over the course of the next few pages.

Population Trends in the Monterey Bay Area

Overall, population growth in the Monterey Bay Area has been and is anticipated to be slow to moderate when compared to the rest of California. A very significant emergent trend is the profoundly important rise in retirement age people living in our region. Not only does the Monterey Bay Area attract retirement age people from all over the United States, a very large proportion of the Baby Boomer generation in this region will be retiring in the coming years.

Figure 3. Population vs. VMT Growth

Monterey Bay Area 2005-2035

United States 1970-2000 and 1960-2007

Source: AMBAG, Monterey Bay Area 2008 Regional Forecast; AMBAG Regional Travel Demand Model; Federal Highway Administration; US Census Bureau

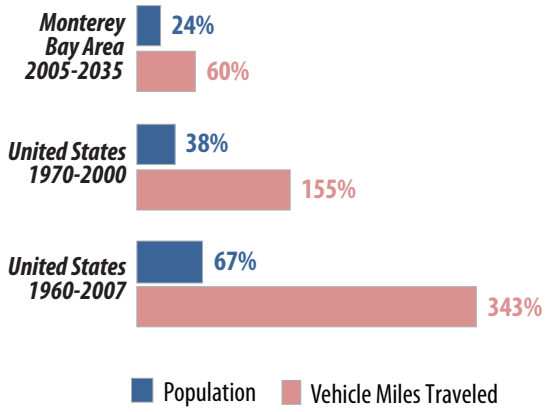
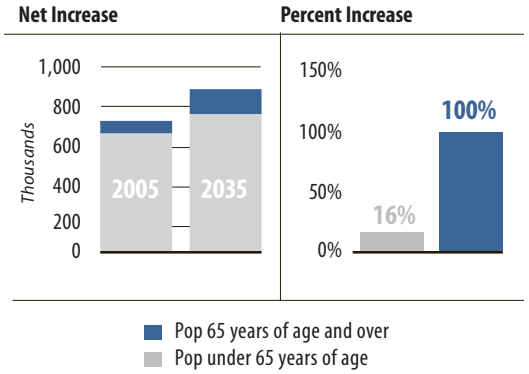


Figure 4. Increase in Population 65 yrs +

Monterey Bay Area, 2005-2035

Source: AMBAG, Monterey Bay Area 2008 Regional Forecast

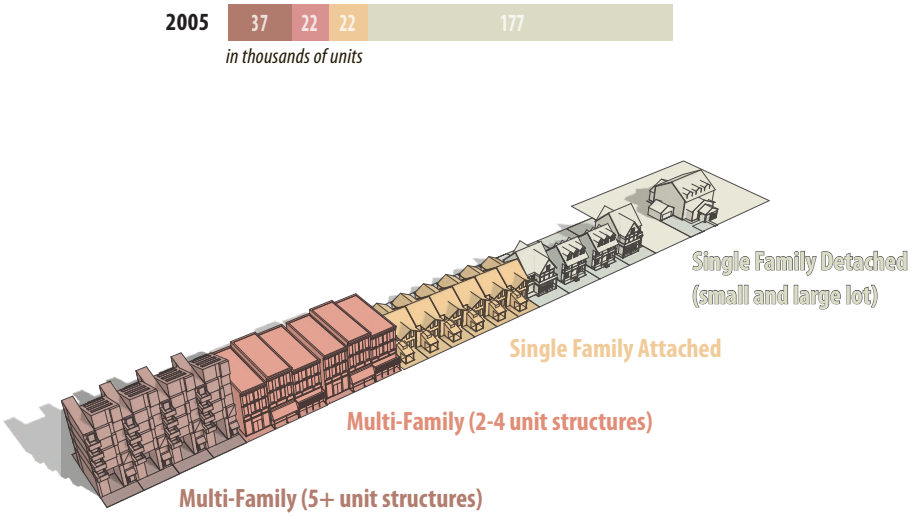


HOUSING CHOICE:

Figure 5. What Types of Housing Are Available to Monterey Bay Area Residents?

2005 Housing Stock

Source: CA Department of Finance 2010; AMBAG 2010



Aging and its Fiscal Consequences for Transportation Infrastructure

With the aging of the "Baby Boom" generation a wave of national household spending activity that began in the late 1940s is peaking. After the average household age passes the mid-sixties, household consumer expenditures on taxed retail items will generally tend to decline. Less consumer goods consumption means less public revenue from sales tax, which partly supports transportation infrastructure and transit in California. Older residents of the area will continue to drive to services such as health care and recreation, using area roads but widening the gap between the costs of wear-and-tear and the revenue needed to fix roads.

With diminishing visual and other physical capacity, older Americans may need to rely more on specialized or on-call transit services called "para-transit." Together with the need for increased para-transit, and other infrastructure improvements including improved signage and roadway improvements to help drivers, there are significant fiscal impacts of an older population on transportation. With an older population there will be needs for additional investment in transportation safety.

Current Growth Patterns in the Monterey Bay Area

There are several ways of considering how the pattern or direction of growth will influence the future built environment of the Monterey Bay Area. In this document AMBAG focuses on the impact of two important components of these trends--the types of housing in this region, and the spatial distribution of that housing across the region.

Housing choices in the Monterey Bay Area are limited. According to the Department of Finance, in 2005, single family detached units comprised over two thirds of all housing. The next largest type is multi-family 5+ unit structures which comprise just 15% of all housing. Choices for multi-family housing are also limited in terms of quality and design.

Due to a number of factors including the elimination of a tax advantage for investors in multi-family development in 1986 and nearly a decade

of construction defect litigation, multi-family development in California has plummeted in the last twenty years.

Also, development trends promoting a disconnected pattern of automobile oriented strip commercial and housing in some areas, exacerbate the problem of poor housing choices and overreliance on the automobile.

Without enough high quality housing choices available in existing urban areas, by 2035, more single family detached housing will be built at the urban fringe and will contribute to sprawl. As such, most population growth is forecasted under Current Growth Patterns to occur in the inland communities along US 101 corridor, with less growth in the coastal communities connected by Highway 1.

Even though the coastal communities are not currently experiencing significant population growth, they are changing as the result of a sharp increase in retirement aged population in those areas. While the coastal communities have always been popular with retirees, the lack of housing opportunities for younger families in those communities ensure that the average age of householders in those areas will continue to increase.

Commute Patterns

Many Monterey Bay Area residents work in a different community than they reside in. According to Local Employment Household Dynamics Data from the US Census, over one-third of all Monterey Bay Area residents work outside the county they live in and in San Benito County 62% of residents worked outside their county. Most Monterey Bay Area residents commuting out of county are going to Santa Clara County for work. There are over 35,000 jobs in Santa Clara County alone that are held by Monterey Bay Area residents.

In the Monterey Bay Area, about 40 percent of all jobs are located in the cities of Monterey, Salinas and Santa Cruz, according to the California Economic Development Department. Nearly 70 percent of employees

Figure 6. Commuters Work Outside the County They Live In
By County, Monterey Bay Area 2008

Source: US Census Bureau and Bureau of Labor Statistics

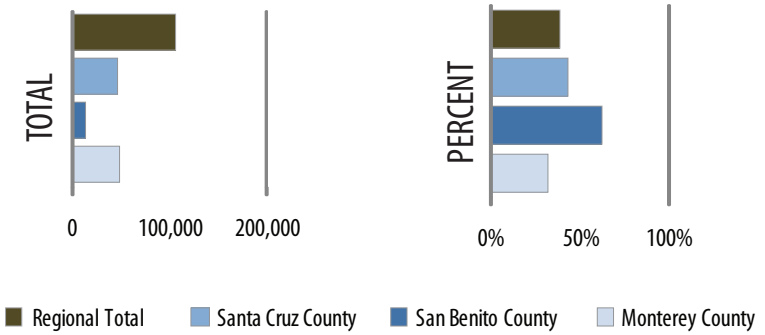


Figure 7. Vehicle Miles Traveled vs. Population Growth in the United States
Net Increase, 1960-2007
Source: Transportation Statistics Bureau and US Census

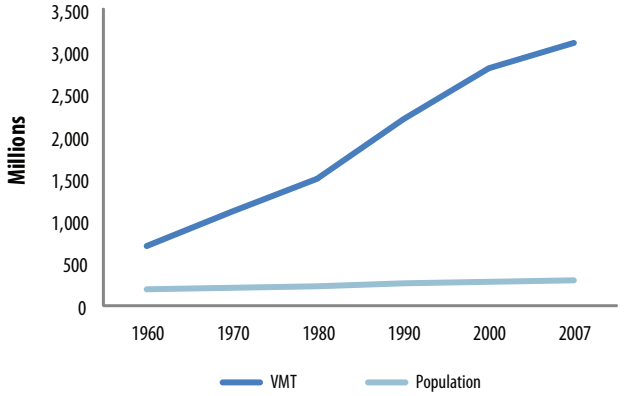
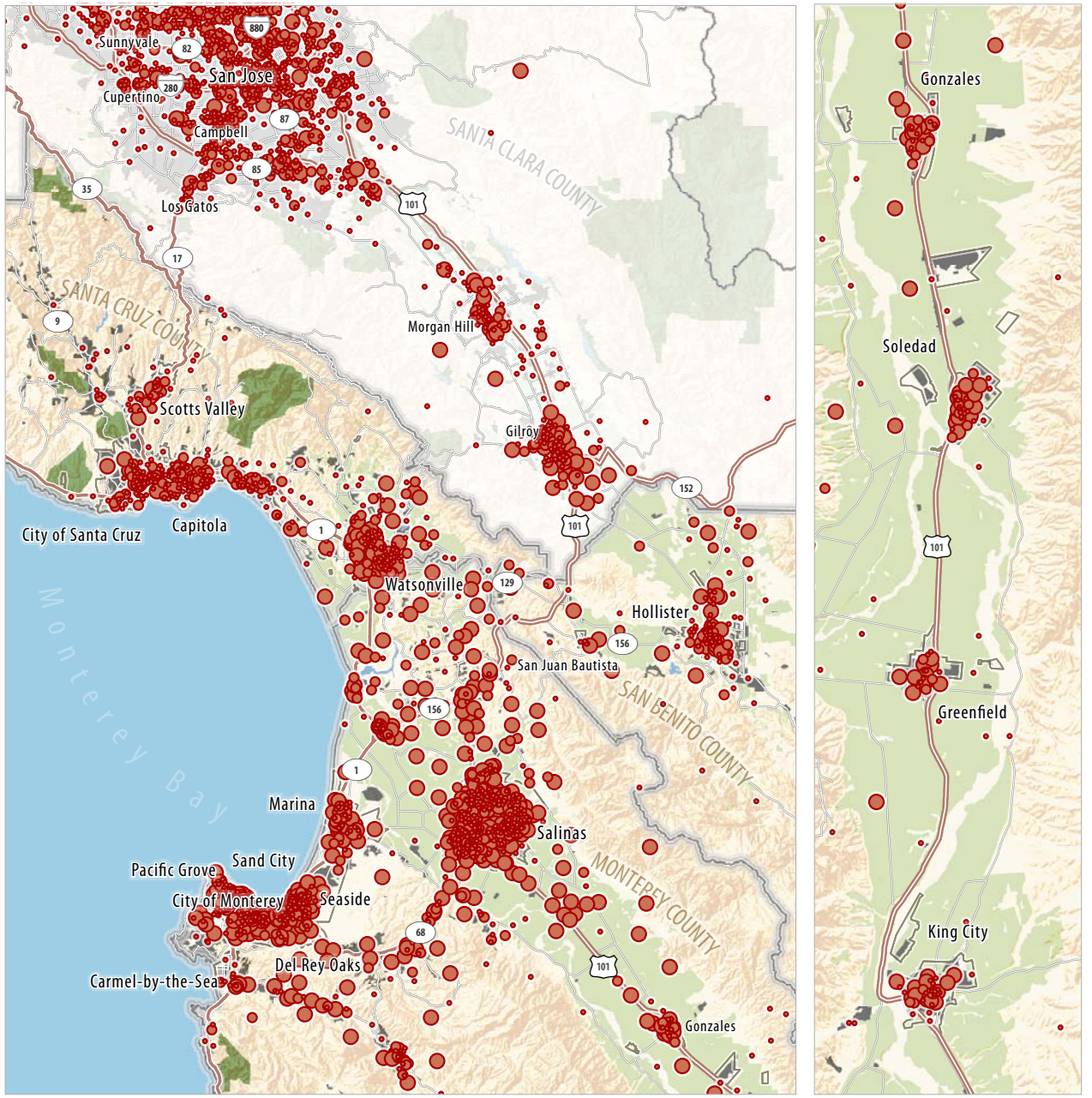


Figure 8. Where do Salinas Residents Work?

Source: U.S. Census Bureau, Bureau of Labor Statistics, Local Employment Household Dynamics, 2008

- 1 to 2 employees
- 3 to 5 employees
- 6 or more employees
- Limited Access
- Highway
- Major Road
- City Boundaries
- County Boundaries
- Urban and Built-Up Land
- Farmland
- Local, State and National Parks



CiTY OF SALINAS AND SURROUNDING AREAS

Reference Map

in those three cities are commuting from other areas, according to the US Census.

While still necessary, building roads alone will not solve the congestion problem. Instead, we have to consider the larger picture of how each community in the Monterey Bay Area influences and is influenced by all the other communities in the region. By rethinking how areas that are rich in housing but poor in jobs connect to areas that are rich in jobs but poor in housing we can better address the challenges presented to our region.

Vehicle Miles Traveled versus Population Growth

As background, it is important to understand why vehicle miles traveled (VMT) has grown so fast with respect to population growth. This dramatic multiplier of VMT to population growth occurred because of two distinct demographic trends, both of which became significant by the 1960s and grew more important over the following decades.

First, women entered the labor force in large numbers, ushering in vast changes in commute patterns, schooling, dining, and other activities, redrawing the former line between activities that happened at home and those that happened outside of the home. This change has reshaped the American family, raised its income, its household spending and diversified its traveling choices. By 1990, growth in additional female participation in the labor market began to level off, and VMT grew at twice the rate of the population growth through 2007.

The second new trend multiplying VMT growth has been a wave of suburbanization that fundamentally shifted the balance of our transportation choices from the personal automobile, transit, walking and bicycling, to a primary focus on personal vehicles. With new residential developments separated from commercial development and employment centers, the suburbs have become more and more disconnected from downtowns. This pattern of disconnected growth gave rise to the term "sprawl" to describe a land use pattern that reinforced dependence on personal vehicles.

In the Monterey Bay Area, the overwhelming majority of residents in our region drive alone to work every day, 4% walk to work, less than 3% bike to work and 3% take public transportation. Compared to the much higher percentages of households and places of work that

Figure 9. Rendering of Auto-Dominated Congested Street in 2035

Source: AMBAG, 2010

Figure 10. Daily Vehicle Miles Traveled per Adult

Monterey Bay Area 2005-2035

Source: AMBAG RTDM 2010 | Note: "Adult" is defined as mobile residents 15-84 years of age; VMT excludes a portion of interregional travel consistent with regional GHG target setting methodology

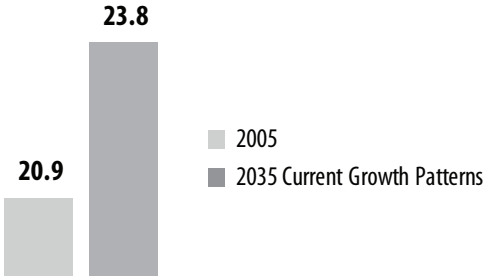
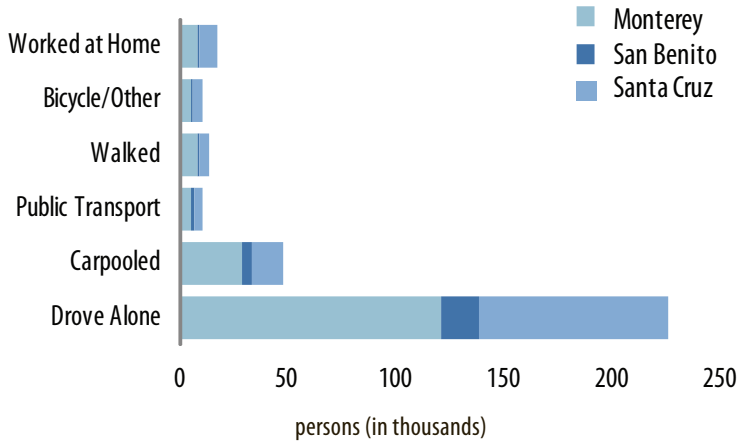


Figure 11. Commute to Work by Mode by County
Monterey Bay Area

Source: 2006-2008 American Community Survey



Over **50%** of all households in the Monterey Bay Area are currently located within an (8 minute) walk of a bus stop

Over **65%** of employees in the Monterey Bay Area currently work within an (8 minute) walk of a bus stop

Data Source: AMBAG, ESRI Business Analyst 2009, MST, SCMTD, SBTCOG

are located within a comfortable walk of a bus stop - 50% and 65%, respectively - low. Several local survey results help to explain why low transit ridership levels are prevalent in this region:

> Based on their 2002 Household Travel Survey, the Transportation Agency of Monterey County reports that the average travel time for trips on public transportation is 50 minutes, compared to less than 20 minutes for automobile vehicle trips.
>
> AMBAG's Blueprint workshop surveys indicate that if a transit trip takes twice as long as driving, it is only attractive if driving would require an extra 15 minutes to find parking, and it were possible to get everything one needed in a single transit trip.
>
> In a 2009 survey conducted by Monterey Salinas Transit, respondents who indicated that they did not regularly take the bus were asked why. Over three-quarters indicated that they have a vehicle for personal use and do not need to take the bus, while 14% indicated that the bus does not go where they need it to go.

What these numbers suggest is that our challenge in reducing the region's VMT is more complicated than increasing access to the existing bus services in the region. Travel time, route directness and convenience are major factors for Monterey Bay Area residents in choosing to drive to work instead of taking transit. Improving ridership levels need to include an effort to make the system more responsive to needs and to be more attractive to potential transit riders. However, achieving high quality transit is problematic given the ongoing funding crisis in the public transit industry. Priority should be given to developing a plan to meet the operational expenses required to fulfill such an obligation.

Sprawl Costs (more and more....)

Annually, all Americans pay about $31 billion for sprawl. Besides more pavement, new water and sewer hookups are 20 to 40 percent higher than in more compactly developed areas. More sprawled service areas for police, fire and schools raise the costs of services and infrastructure

because the extended service areas increase linear construction and maintenance costs and serve far fewer people than more compact service areas.

For most utilities Americans pay on an average cost basis. That means that even if you live in town on an established electrical grid, you pay the same rate as someone living far from an established community. The costs of providing power to that person living farther away are subsidized by other users, including you. The same principle applies to many other infrastructure needs. Consequently, urban residents subsidize suburban and rural users of the same infrastructure.

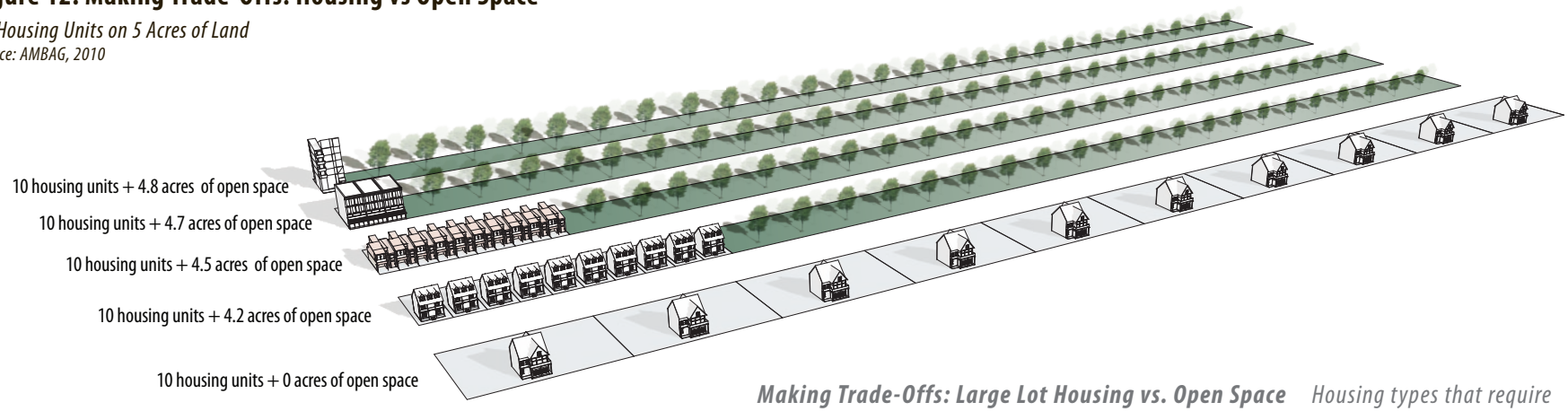
Building closer to existing communities, however, can dramatically cut the rise in costs from additional development. For example, according to a recent study, if 25 percent of low density growth shifted to a more compact pattern in the San Francisco Bay Area, per capita savings would be about $2,178 over the next 25 years. With far fewer people to share major infrastructure costs in our region, the more the cost of sprawl is subsidized by all residents, with similar or even larger savings than Bay Area residents might expect.

With anticipated higher fuel prices in the future, transportation costs will be significantly higher. In the Summer of 2008, surging gasoline prices incurred enormous costs for commuters in California. For months Californians with the longest commutes paid hundreds of dollars more in fuel costs, compounding the looming housing crisis in those areas with the longest commutes.

Higher gasoline costs also incentivize oil refiners to refine petroleum that is usually used in building roads into gasoline, driving up the price of oil

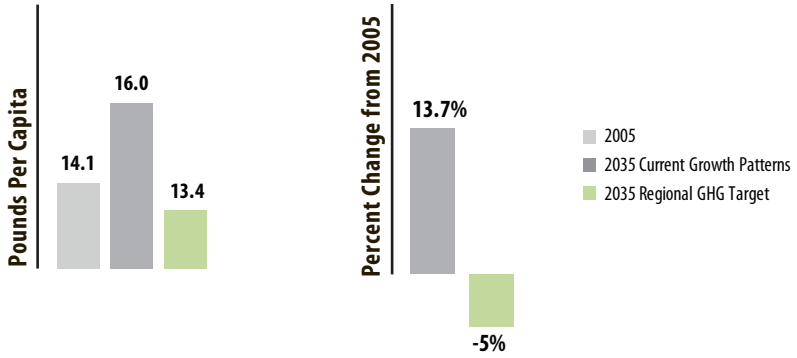
Figure 12. Making Trade-Offs: Housing vs Open Space

10 Housing Units on 5 Acres of Land
Source: AMBAG, 2010



Making Trade-Offs: Large Lot Housing vs. Open Space *Housing types that require larger lots are associated with suburbanization and consume more land per capita than smaller lot housing types such as townhouses and mixed use apartment buildings. At a density of 2 dwelling units per acre, 10 large lot suburban units consume 5 acres of land - compared to 10 apartment units which would consume less than 1/4 acre of land and allow for the conservation of 4.8 acres of open space.*

Figure 13. Per Capita Greenhouse Gas Emissions From Cars and Light Trucks
Monterey Bay Area 2005-2035
Source: AMBAG Regional Travel Demand Model, EMFAC 2007; CARB 2010



Senate Bill 375 is recent legislation that mandates regions such as the Monterey Bay Area reduce per capita greenhouse gas emissions from cars and light trucks through coordinated land use and transportation planning.

by-products used in making asphalt. Around $6 a gallon, the cost of building a road will be dramatically higher than at lower prices. Sprawl costs us in the short term and in ways that the region as a whole has never considered.

Congestion

The most tangible consequence of an increase in VMT without road capacity expansion to meet new demand is traffic congestion. Traffic congestion is the increase in travel time delay due to an increase in traffic, slower vehicle speeds, and queuing when cars line up to enter a roadway. Congestion will grow and shrink in tandem with the economy, roadway capacity and individual mode choices such as traveling by car, transit, bicycle or walking. Congestion in the Monterey Bay Area results in losses to commuters and other drivers from vehicle operating costs, environmental costs, lost economic productivity and freight unreliability.

As of 2005, AMBAG estimates that there were 49,730 daily hours of delay due to congestion. The think tank RAND estimates that each hour of delay for passenger vehicles costs the economy $14.60, and $77 for freight trucks. As such, overall daily costs to the economy and to the region's households from congestion in the Monterey Bay Area average $1 million a day. Under current growth trends, daily hours of delay will increase to 138,000 by 2035, nearly tripling costs to the economy in today's dollars.

Greenhouse Gas Emissions from the Transportation Sector

As vehicle miles traveled increases, so do greenhouse gas (GHG) emissions from the transportation sector. Under Current Growth Patterns, carbon dioxide per capita emissions from cars and light trucks will rise in our region from 14.1 daily pounds in 2005 to 16 daily pounds by 2035.

In September of 2010, the California Air Resources Board adopted regional ***per capita*** greenhouse gas targets for each of California's eighteen metropolitan planning regions as required under Senate Bill

375. The Monterey Bay Area's specific mandate is to reduce per capita greenhouse gas emissions from cars and light trucks to 2005 levels by 2020 and to reduce per capita levels to 5% below 2005 levels by 2035. In other words our per capita GHG emissions target is 14.1 pounds per capita for 2020 and 13.4 pounds per capita for 2035.

Under SB 375, the Association of Monterey Bay Area Governments is required to adopt what is called a "Sustainable Communities Strategy" or SCS in the next Metropolitan Transportation Plan. That Strategy will build on information developed through Envisioning the Monterey Bay Area to identify how through land use and transportation investment we can reduce per capita greenhouse gas levels.

While ***Envisioning the Monterey Bay Area*** is primarily a fact-finding document and as such is not required to show how the region can meet the regional GHG target, it can play a key role in moving our region in this direction. This document lays the foundation for the development of the SCS over the course of the next two years.

Public Health

National studies indicate that increasing the time spent walking each day significantly reduces obesity rates. In an article appearing in the Journal of Preventive Medicine, researchers examined the health benefits of simply walking to a transit stop. Generally, taking public transit versus driving alone equates to an average of 8.3 more minutes a day of walking. The researchers found that there is an average lifetime savings of $5,500 per person in obesity medical related costs by simply walking to nearby public transit each day.

In 2003, 20% of Californians were considered to be obese. Given this rate, and the average rate increase in obesity seen nationally, by 2035 approximately 50% of the population could be considered obese. If 8.3 minutes of walking are added each day, the obesity rate could drop to around 28%.

Figure 14. Rates of Obesity in the United States

Percent Increase, 1960-2006

Source: U.S. Department of Health and Human Services, Centers for Disease Control and Prevention

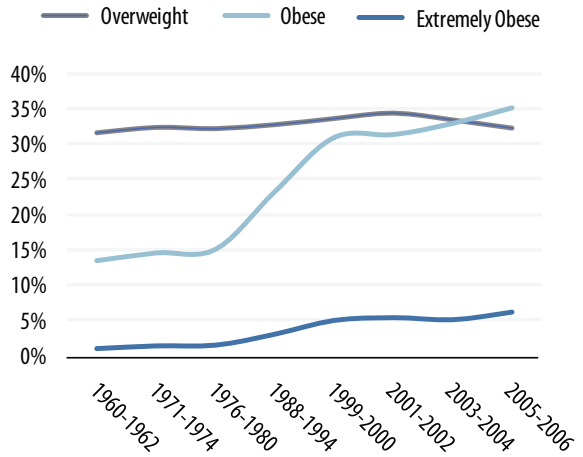


Table 1. Daily Water Consumption by Housing Type - Indoor & Outdoor

Changes in water consumption vary with total landscaped area

Assumptions based upon APA Urban Design Standards and Index PlanBuilder and AWWA (American Water Works Association), USDA Soil Conservation Service Study (1986)

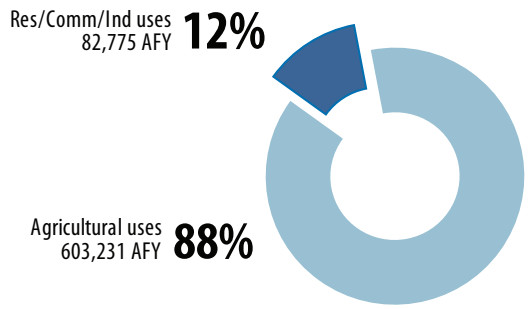
Housing Type (dwelling units/acre)	Water Use per Unit (gallons/day)*
Apartments/Apartment Buildings (30+ dus/ac)	approx. 220
Single Family Attached Units (20 dus/ac)	approx. 225
Small Lot Single Family Detached (12 dus/ac)	approx. 240
Suburban Large Lot (2 dus/ac)	approx. 500
Rural Large Lot (0.3 dus/ac)	approx. 2000

**In the Monterey Bay Area, water use per unit can be substantially lower than these figures--depending upon the jurisdiction and the housing type, average use may be as low as 70 gallons/day in coastal communities.*

Figure 15. Water Use by Sector

Monterey Bay Area, 2005, Acre Feet per Year (AFY)

Source: Damitz, Table 2-B, Page 22



Risks to Natural Resources in the Monterey Bay Area

Popular concerns about the Monterey Bay Area's natural resources generally pivot around water supply and agricultural land conversion.

Water Supply

With only 12% of the region's water supply supports urban uses, with the remainder supporting agricultural uses, the need to address water use for our growing population stands out among other major issues. With some water basins already in overdraft, and the need to replace water otherwise drawn from the Carmel River to meet a State order, there is an urgent need to address the region's water supply. The juxtaposition of a growing population and the needs of the economy within limited water resources has engendered spirited discussions across the region centering around desalination, water conservation policies and recycled water use as potential solutions.

The issue is further complicated in two key ways when viewed in light of our regional development pattern:

1. Generally speaking, more compact growth minimizes the demand on urban water uses. However, detached single family housing comprises the large majority of our housing stock. According to national data sources, these types of housing can use 240 to 500 gallons of water per day, compared to 220 gallons per day or less for more compact housing types such as townhouses, duplexes and apartment buildings. In the Monterey Bay Area, however, water use is much more efficient.

2. At a regional level, potential residential development in job-rich areas such as along the Monterey Peninsula or in the City of Santa Cruz sometimes face opposition because of the lack of existing water resources, and therefore, growth opponents maintain, whatever growth there is will have to go where there is enough water. In reality, however, the entire Monterey Bay Area has limited water resources.

Certain areas may have the potential to have more readily available potable water in the region, or to have it available at more efficient rates of GHG emissions than desalination.

For example, using data from the Pacific Institute, a water policy think tank based in Oakland, AMBAG estimates that if the entire increment in forecasted population growth over the next 25 years in this region is supported by desalination, the desalination process would create approximately 0.2 pounds of carbon dioxide emissions per person per day, compared to 0.03 pounds for groundwater processes and 0.02 pounds for reclaimed water. *

While this necessitates consideration of water supply processes and their impacts on greenhouse gas emissions, water supply is only one of many central factors to consider in identifying a sustainable growth pattern for the Monterey Bay Area.

For example, one of AMBAG's central strategies for lowering vehicle miles traveled is to improve the balance of jobs to housing in the region in which there is enough of a housing supply near jobs to house employees of those jobs. As described in the Presenting an Alternative section, matching housing and employment will reduce VMT, greenhouse gas emissions, reduce the fiscal costs of future development and lower household commuting costs.

However, locating additional housing units where job centers currently exist in this region could necessitate water supply processes, such as desalination, that are expensive and have some potential environmental consequences.

The communities of the Monterey Bay Area will need to consider these trade-offs. As such, difficult decisions lie ahead for residents and community leaders as well as elected officials in the Monterey Bay Area.

*More information on this estimate is the Technical Appendix C

Figure 16. Total Land Area by Classification

Monterey Bay Area, 2006

Source: California Department of Conservation, Department of Farmland Mapping and Monitoring Program

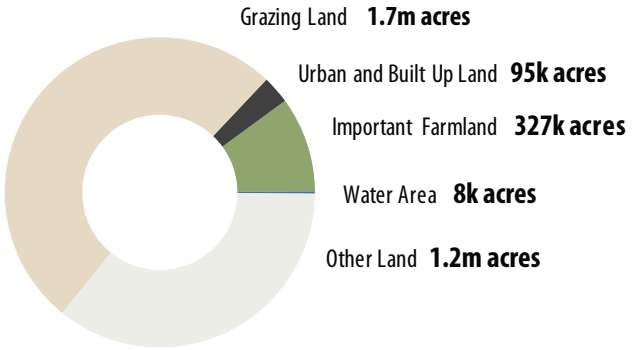
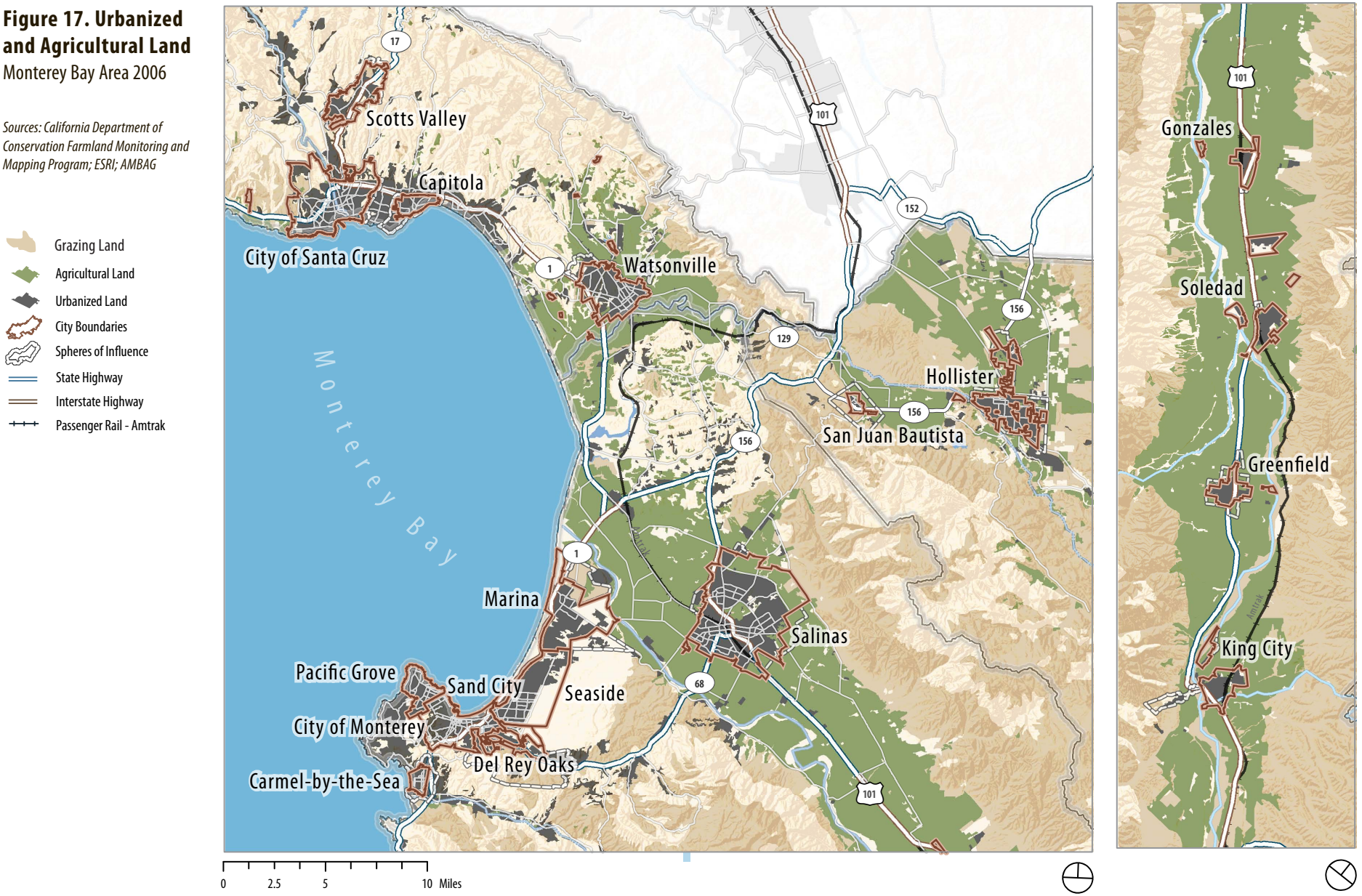


Figure 17. Urbanized and Agricultural Land
Monterey Bay Area 2006

Sources: California Department of Conservation Farmland Monitoring and Mapping Program; ESRI; AMBAG



Agricultural Land

The Salinas Valley and the Pajaro Valley are two of the most important agricultural areas of the United States, worth billions of dollars in various commodities. With some of the most productive soil in California, these two areas in the region experienced a net gain in farmland from 1984 to 2006 of over 10,000 acres. The AMBAG region, however, has experienced a net loss of 13,000 acres of farmland from 1984 to 2006, with much of that land converted to new residential subdivisions and commercial uses. Some of this land was simply taken out of agricultural production.

While not all of the land was converted to urban uses, many rural communities surrounded by prime agricultural land may look to convert more of that land to support their growing populations, especially as it becomes increasingly less beneficial for farmers to keep their land protected due to the lack of funding of the Williamson Act.

The Williamson Act provides landowners a lower tax assessment placed on agricultural lands in return for farmers committing to keep their land undeveloped for at least ten years. In exchange, the State of California has provided the Counties a subvention to make up at least a portion of the difference in property taxes. However, State budget cuts have reduced those subsidies. Even when the program was funded, as pressure for housing development increased, the tax benefits provided by the Williamson Act is not always enough of an incentive for some farmers to keep their land undeveloped.

Fully pricing the actual cost of development and on-going infrastructure costs on the urban fringe, along with better incentivizing farmers through revisions to the Williamson Act, will help preserve the region's important farmland and ensure continued economic prosperity through the agricultural sector.

In each County, Local Agency Formation Commissions (LAFCOs) continue to be involved in discussing the protection of agricultural resources and in regulating the annexation process. These agencies have played an instrumental role in balancing the timing and expansion of urban uses and agricultural land conversion.

Figure 18. Net Change in Urbanized and Agricultural Land

Monterey Bay Area by County, 1984-2006

Source: California Department of Conservation, Department of Farmland Mapping and Monitoring Program

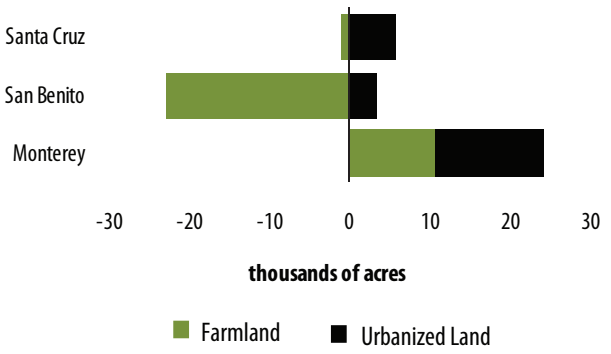
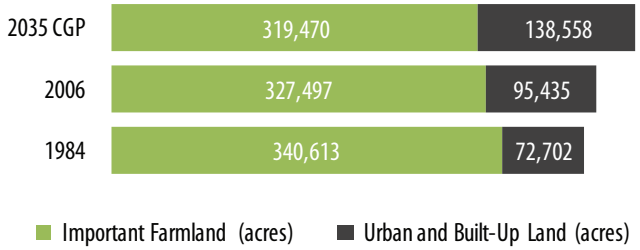


Figure 19. Urbanized and Agricultural Land: Total Acres

1984, 2006 and 2035 Current Growth Patterns (CGP)

Source: California Department of Conservation, Department of Farmland Mapping and Monitoring Program; AMBAG Analysis



Key Characteristics of Current Growth Patterns

- Isolated local efforts for smart growth
- Transportation dominated by single occupancy vehicles
- Future employment concentrations in existing areas
- Strong fiscalization of land use patterns
- Widespread commercial strip development
- Leapfrog development
- Great variance in the fiscal capabilities of local governments
- Lack of coordination between market rate, workforce and affordable housing provision

Under Current Growth Patterns, even as local jurisdictions independently pursue mixed-use projects, the existing urban footprint's forecasted future growth pattern outweighs the positive effects of isolated mixed use projects and downtown intensification as a whole.

In the Year 2035

By 2035, the Monterey Bay Area could see much of its quality of life factors substantially altered. Residents will likely experience longer commutes, spending additional time on congested roads. An aging population may find getting around more difficult as homes, services and jobs grow farther apart.

The lack of a broad spectrum of workforce housing choices will make attracting and retaining employees more challenging. With per capita VMT growing nearly 14% over the next 25 years, greenhouse gas emissions will increase even as the rest of California realizes decreasing emissions. Local jurisdictions will face substantially higher costs to maintain more widespread infrastructure even as tax revenue may decline as aging households reduce consumer spending.

The region will continue to face the challenges of water availability, protection of natural resources, and the pressure to convert prime agricultural land to urban uses.

Conclusion: A Regional Challenge

Today, the Monterey Bay Area is served by a number of regional agencies, special use districts and local governments that have all engaged in high quality planning for their respective communities. Balancing competing interests while reaching for the highest common good is challenging even under the best of circumstances. The Monterey Bay Area has achieved a lot in recent decades in ensuring orderly development within the 21 local governments of Monterey, San Benito and Santa Cruz Counties with the diversity of interests, limited funding, and other challenges.

Many Monterey Bay Area jurisdictions support and implement public policies that support higher density mixed use development within

downtown areas and other sustainable compact strategies. These communities also plan together as with the multimodal corridor linking Highway 1 through Marina to Salinas. All of these efforts have helped make the region a better place to live than it would have been without advance planning and public participation.

Even as jurisdictions plan for their individual futures historically there has been less joint planning between all jurisdictions in facing the future and its challenges than the region really needs. When one community is jobs rich, but lacks enough housing for their workforce, while another community is jobs poor, both communities lose as the roads between them become inextricably congested.

In the next section, Presenting an Alternative, AMBAG presents a more sustainable vision of the future, developed with input from the public at various workshops held by AMBAG around the three county region and in consultation with planners at all local jurisdictions. Using AMBAG's forecast of population, housing and employment for the year 2035 we draw some conclusions about what an alternative future could look like.

Source: AMBAG, 2010

PRESENTING AN ALTERNATIVE
Sustainable Growth Patterns

"Forms of public transportation should be encouraged. Green belts should be maintained and expanded."

Monterey Bay Area Resident

Figure 20. The Monterey Bay Area Urban Footprint 2005-2035

Data Source: AMBAG 2010; CA Dept. of Conservation Farmland Mapping and Monitoring Program

Rather than allowing growth to consume over 40,000 acres of undeveloped land by 2035, as shown under Current Growth Patterns, AMBAG has identified an alternative scenario of future development called Sustainable Growth Patterns. This scenario focuses the majority of the region's future anticipated development in existing urbanized areas.

Under Sustainable Growth Patterns, the region's urban footprint would increase by 20,000 acres by 2035 - less than half that forecasted in Current Growth Patterns.

As such, the region's growth occurs in more compact nodes and corridors such that we could see:

- Fewer people driving alone in their cars, and stuck in congestion on the highways and roadways. More people out on the streets walking, biking and taking transit to work, school and play.
- More active neighborhood centers where one can easily walk or bike from home to restaurants, work, school, community centers and parks.
- Neighborhood Design that focuses on walkable, bikeable streets and commercial and housing densities that can support high quality services.
- Housing, employment and commercial activities are closer together, cutting down driving distances.
- Improvements in the physical health of Monterey Bay Area residents as well as the environmental health of the region.
- The rural beauty and natural resources of the Monterey Bay Area conserved and more efficiently utilized.

Under Sustainable Growth Patterns, the majority of the region's forecasted growth occurs within a comfortable walking distance of high quality transit corridors and neighborhood centers.

By focusing development in areas that are rich in jobs and adjacent to high quality transit corridors, an increase in transit use, walking, biking, and carpooling will result in significant decreases in vehicle miles traveled (VMT). Ongoing efforts to expand vanpooling for agricultural workers will help reduce VMT and emissions in agricultural areas. Even as the majority continue to drive their own cars, the overall distances they have to drive will be shorter than Current Growth Patterns because destinations will be more accessible when all development is located closer together.

Blueprint Priority Areas

Those job-rich, transit adjacent areas are identified as "Blueprint Priority Areas." More specifically, Blueprint Priority Areas are defined as areas within one half mile of proposed transit stops* for the Monterey Salinas Transit future bus rapid transit line and Transportation Agency of Monterey County's proposed light rail project; potential transit nodes identified by Blueprint Policy Group members in San Benito and Santa Cruz Counties; and areas identified in City and County general plans as allowing 15 dwelling units/acre or higher, as well as higher density commercial and industrial areas.

Areas were excluded if they fell within a park or open space, agricultural or conservation easement or if they did not fall within at least one of the following: a transit corridor, city boundary, a sphere of influence or in a potential annexation area.

Figure 21. Residential Neighborhood Within Walking Distance of a Transit/Neighborhood Center

Conceptual Illustration

Transit/Neighborhood Center

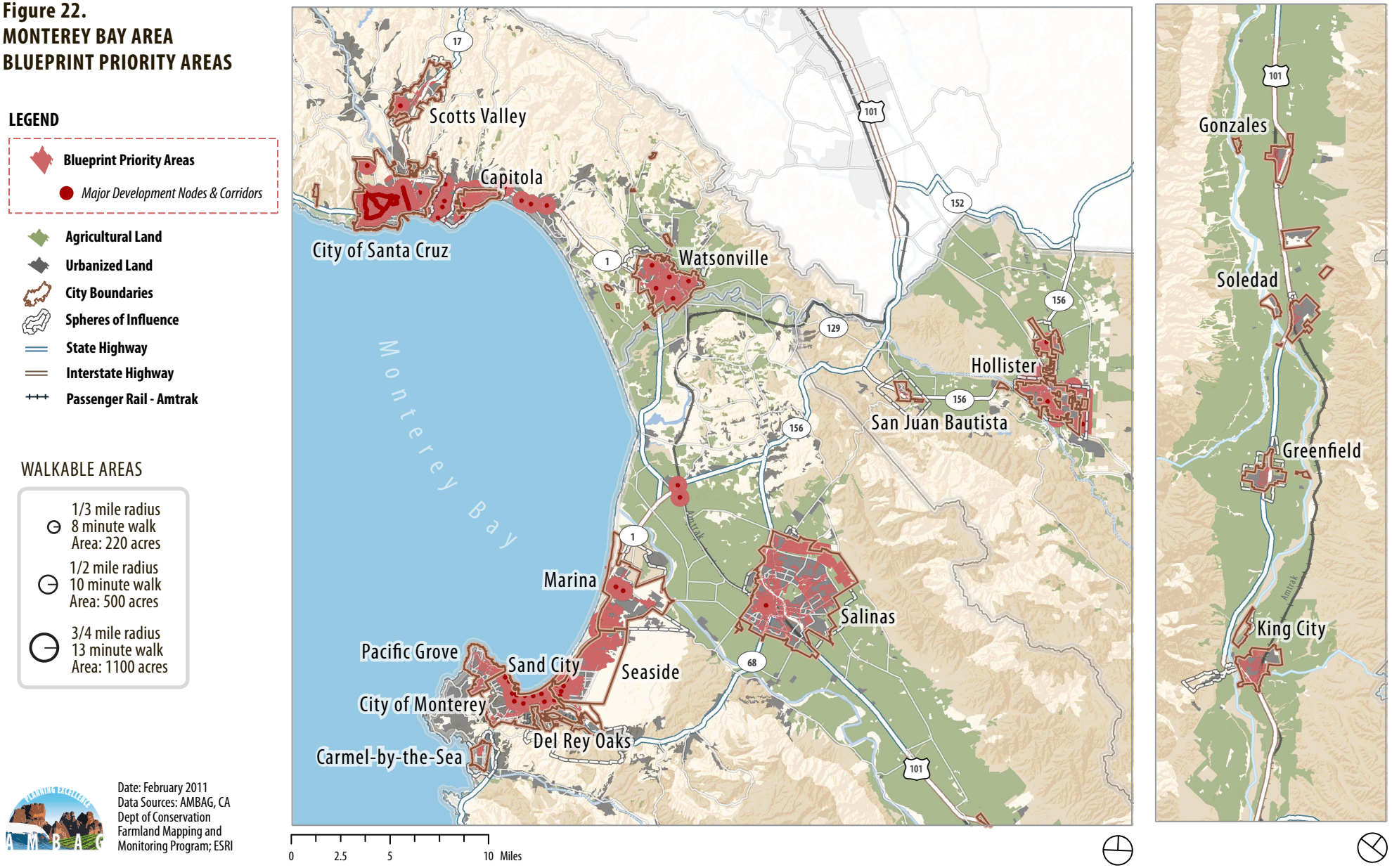
8 minute walk

Source: AMBAG, 2010

* Transit stop locations are proposed Light Rail, pending approval

AMBAG defines "sustainable" to mean that communities can meet present needs without compromising the ability of successive generations to meet their needs

Figure 22.
MONTEREY BAY AREA
BLUEPRINT PRIORITY AREAS



Date: February 2011
Data Sources: AMBAG, CA Dept of Conservation Farmland Mapping and Monitoring Program; ESRI

Can Blueprint Priority Areas Accommodate the Region's Growth?

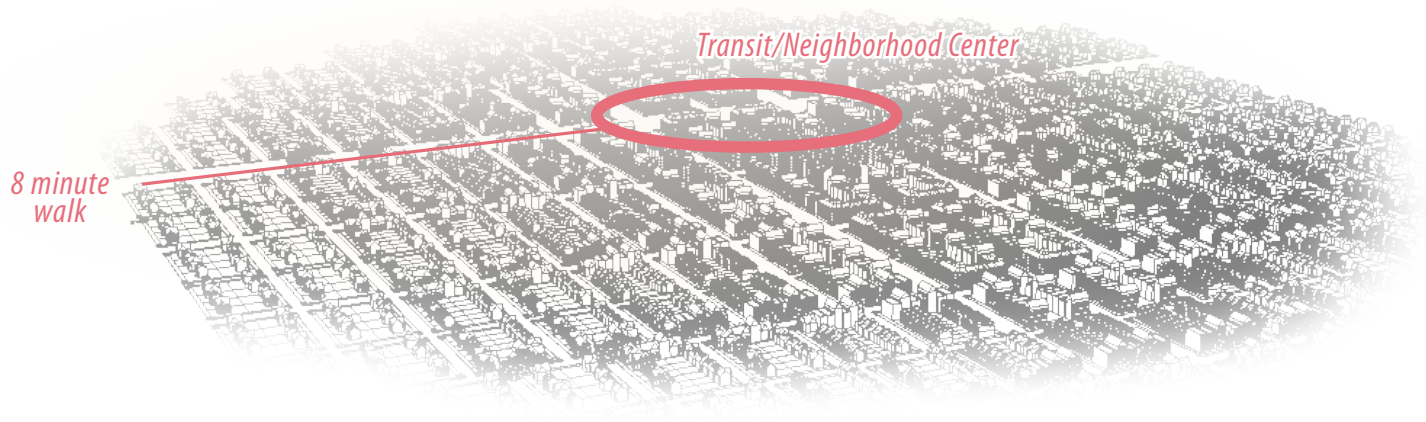
Yes, and with plenty of room to spare. Blueprint Priority Areas comprise a total of 44,000 acres - nearly two-thirds the total area of all existing incorporated areas in the region. However, as the majority of Priority Areas are already urbanized, not all of that land can be developed. Accommodating the region's growth within these areas will require smart and compact design that reflects and enhances the character of existing communities.

Key Characteristics: Sustainable Growth Patterns

- Coordinated regional plan for sustainable growth
- Medium to high residential and employment densities in Blueprint Priority Areas while maintaining existing average densities across the region
- New development with mix of different land uses
- More access to affordable/workforce housing in cities with large employment bases
- Multimodal focused transportation (streets for cars, buses, rail, bike and pedestrians)
- Most employment growth takes places in existing employment clusters
- Far less leapfrog development, mostly compact development
- Fiscal variances are tempered by some tax base sharing

Figure 23. Priority Area Development Node: Conceptual Illustration

Shown here is a conceptual illustration of a Priority Area node where the distance from the center to residential neighborhoods can be comfortably walked in 8 minutes. The housing and commercial densities shown here can support high quality transit service such as light rail and bus rapid transit where the wait time is no more than 15 minutes.

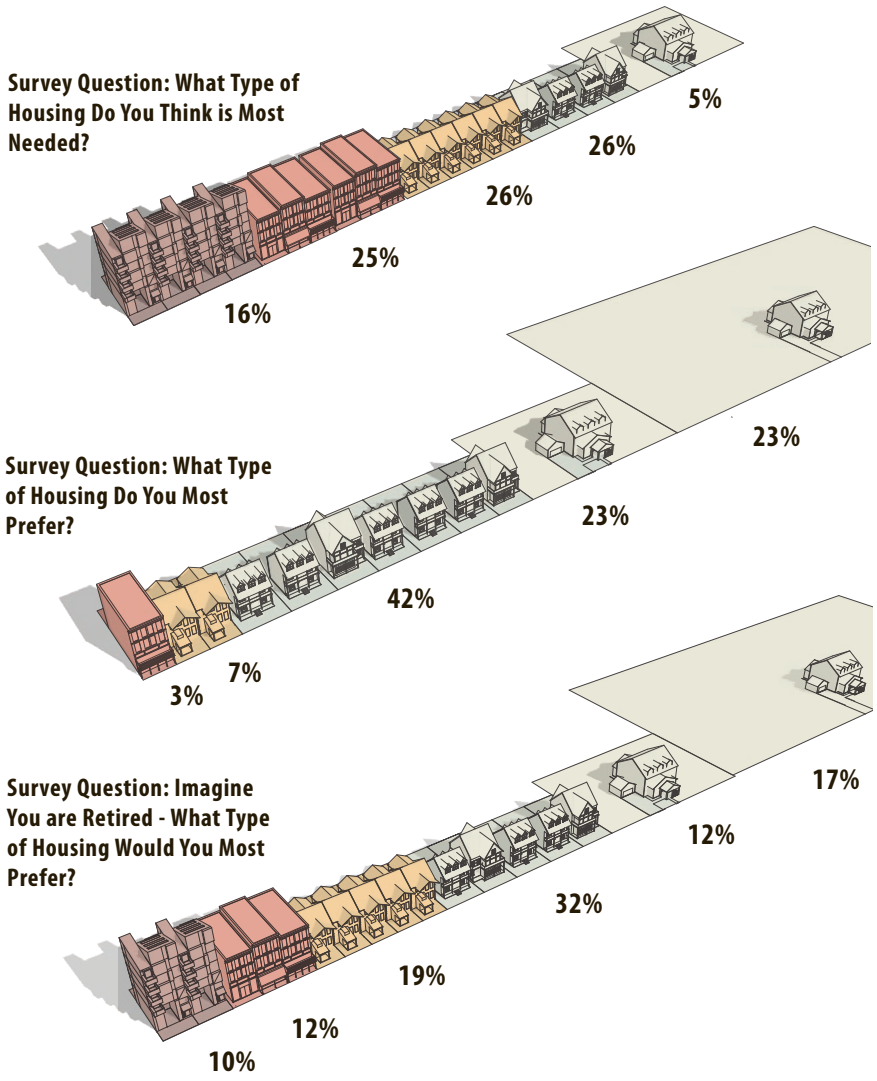


Source: AMBAG, 2010

Figure 24. Can the Region Grow Sustainably while Accommodating Housing Preferences?

Blueprint Survey Responses for Housing Preferences

More detailed survey results can be found in Technical Appendix E



If just 10% of lands within Blueprint Priority Areas or 4,400 acres of land were to accommodate the region's entire forecasted housing growth of 70,000 new housing units between 2005 and 2035, that development would have an average density of just 16 dwelling units per acre. This density can be achieved with a mix of small lot single family homes, townhouses and mixed use rowhouses. Consistent with this finding, over two-thirds of Blueprint survey respondents believe that townhouses or higher density housing is most needed in the Monterey Bay Area.

There are some 44,000 acres of Blueprint Priority Area shown in this report. Compare this to a 2005 study by John Landis, conducted on behalf of the State Department of Housing and Community Development (HCD) and Caltrans, that identified 3,800 acres of potential infill land in the Monterey Bay Area.

While AMBAG has not updated the HCD/ Caltrans analysis, the infill areas do fit within the footprint of the Blueprint Priority Areas, and their potential is considered in the following section.

Can the Region Grow Sustainably while Accommodating Housing Preferences?

Based upon Blueprint workshop survey results, the answer is yes. Through the Summer of

2010, AMBAG held workshops and provided web-based surveys to about 700 participants.

While not a scientific sample of the population, the workshops reflect the input of hundreds of area residents into the Blueprint effort. Results from the surveys are incorporated into AMBAG's analysis.

If the housing types that Blueprint survey respondents think is most needed perfectly anticipated market decisions in the region's future housing growth, under 4,000 additional acres of land would be consumed by 2035.

This constitutes less than 10% of the total area identified within Blueprint Priority Areas and could almost fit entirely within the 3,800 acres of infill land identified in the HCD/Caltrans 2005 study.

If the housing types that survey respondents most personally preferred perfectly anticipated market decisions in the region's housing growth, total land consumed would exceed the land available within Priority Areas. That is because 23% of respondents said they most preferred large lot rural homes among all housing choices. However, if preferences for rural large lot homes were excluded, personal housing preferences for all other housing would bring the total land consumed to under 8,000 acres and future housing demand would easily fit within the Priority Areas.

Workshop survey participants were then asked to imagine that they were retired and to identify which housing preferences they would prefer. Retired preferences were generally for higher density housing compared to current preferences. These results suggest that there may be interest in downsizing and a desire for more compact housing types among a segment of retired residents.

While Blueprint workshop participants are not necessarily a representative sample of the Monterey Bay Area, these findings are informative - particularly so considering the preferences of residents

Figure 25. Blueprint Priority Area Hubs: Mixed Use Transit/Neighborhood Centers

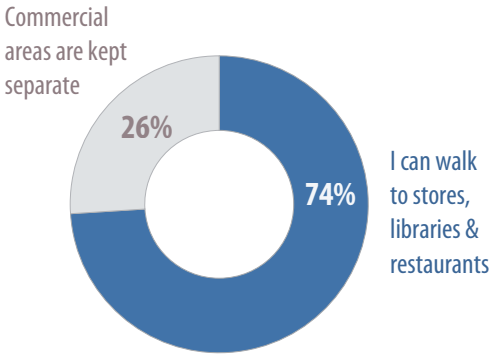
Conceptual Illustration

Source: AMBAG, 2010

NEIGHBORHOOD PREFERENCES

Figure 26. Survey Question: I would most prefer to live in a neighborhood where:

Source: 2010 AMBAG Regional Blueprint Survey Responses



NEIGHBORHOOD PREFERENCES

Figure 27. Survey Question: I would most prefer to live in a neighborhood that:

Source: 2010 AMBAG Regional Blueprint Survey Responses

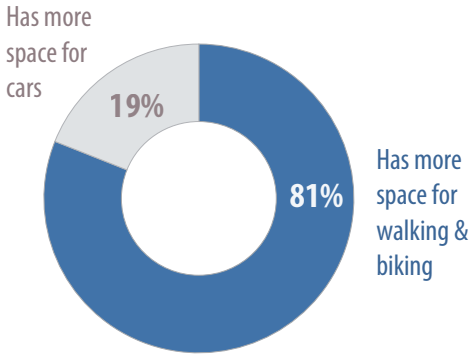
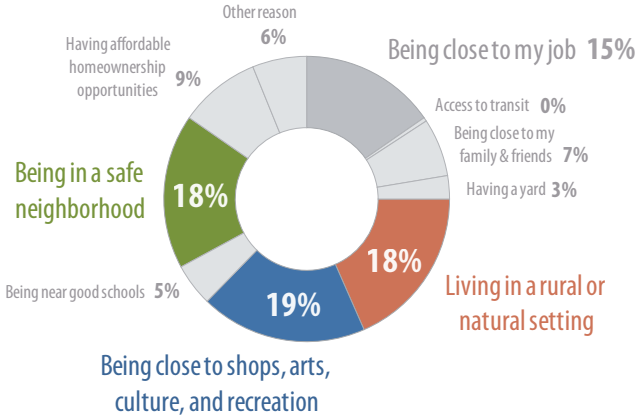


Figure 28. Survey Question: What is your most important reason in deciding where to live?

Source: 2010 AMBAG Regional Blueprint Survey Responses



currently living in multi-family housing or who currently rely on transit services. Both groups, while under represented in the workshop surveys, expressed support for more compact development.

With those caveats, the survey results demonstrate a considerable degree of interest in the kind of compact development that Sustainable Growth Patterns calls for in the Monterey Bay Area. Current housing data suggests that the market already supports what people think is needed in this region. Under Sustainable Growth Patterns, the distribution of housing would be focused in Priority Areas to increase neighborhood and transportation choices as well.

Increasing Housing, Neighborhood and Transportation Choices

Sustainable Growth Patterns presents an alternative regional growth pattern with smarter neighborhood design without assuming major changes in existing plans.

By clustering housing and commercial development within Priority Areas, housing, neighborhood and transportation choices are increased consistent with preferences identified through Blueprint public participation efforts.

Sustainable Growth Patterns creates walkable neighborhoods with increased access to destinations, high quality transit services, well-lit and well-designed streets with more neighborhood activity to ensure safe communities, and conservation of rural land.

As such, in 2035 under Sustainable Growth Patterns, residents are more likely to opt to walk because they enjoy the street life and find the walk to be pleasant and safe. Main streets act as public plazas where pedestrians take precedence over vehicles. With more eyes on the street, neighborhoods, village centers and downtowns become safer places to be.

Additionally, many people opt to walk or bike because they live within a comfortable walking distance to work. Others opt to take light rail for longer trips because it is more convenient than driving - they can pick up groceries at the shop near the station on the way home, and their kids can take the train home after school. With transit that gets people back and forth in less than 30 minutes, transit stations become bustling centers of activity.

Moreover, with people living closer together, it is easier to vanpool or carpool - including agricultural workers who can choose to ride in vanpools rather than raiteros, the prevalent existing informal agricultural carpools.

Healthy Environment, Healthy People

Under Sustainable Growth Patterns, the daily average vehicle miles traveled per adult drops to 21 miles by 2035, 3 miles less than what Current Growth Patterns suggest.

As a result, the Monterey Bay Area can lower per capita greenhouse gas emissions from cars and lights trucks to 14.2 daily pounds - just a 1% increase from 2005 levels. While this would not meet the regional targets set by CARB, it is a significant improvement over the 13.7% increase under Current Growth Patterns.

While the region's overall greenhouse gases will continue to increase due to population growth, minimizing the per capita impact on the environment helps to ensure that the Monterey Bay Area is reigning in its carbon footprint and doing its part to mitigate the adverse impacts of climate change.

In terms of agricultural conversion, Sustainable Growth Patterns minimizes the amount of agricultural land lost to urbanization, while limiting the urban footprint even more significantly - 20,000 acres smaller than Current Growth Patterns. Under Sustainable Growth Patterns, the new land that is converted to urban uses is primarily grazing land or identified as "other," rather than prime agricultural land.

By preventing the urbanization of an additional 20,000 acres of productive land, more of the region's agriculture and open space

Figure 29. Rendering of a Typical Pedestrian Oriented Street in 2035

Source: AMBAG, 2010

Figure 30. Daily Vehicle Miles Traveled per Adult

Monterey Bay Area 2005-2035

Source: AMBAG RTDM 2010 | Note: "Adult" is defined as mobile residents 15-84 years of age; VMT excludes a portion of interregional travel consistent with regional GHG target setting methodology

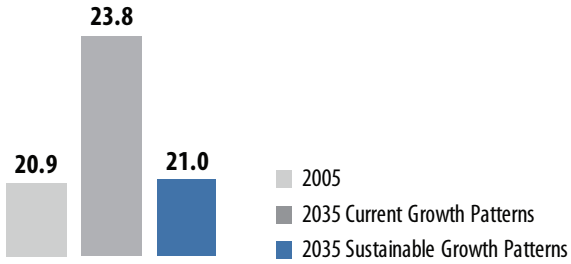


Figure 31. Per Capita Greenhouse Gas Emissions From Cars and Light Trucks
Sustainable Growth Patterns vs. Current Growth Patterns
Source: AMBAG Regional Travel Demand Model, EMFAC 2007; CARB 2010

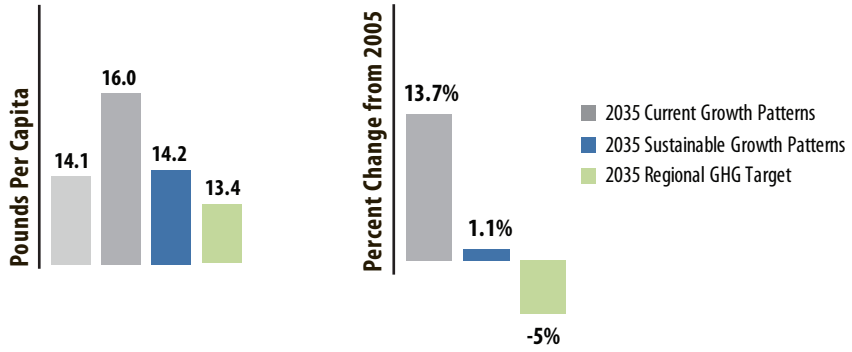
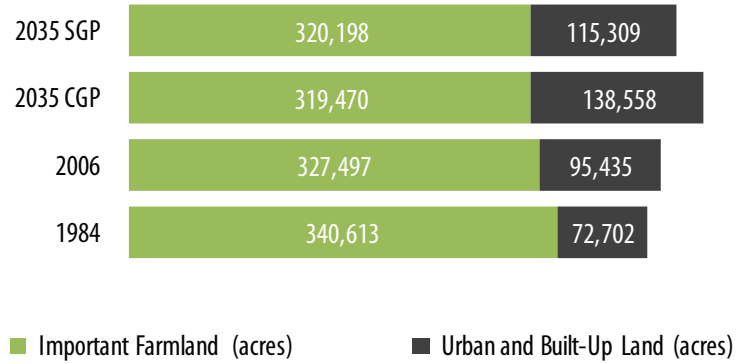


Figure 32. Farmland and Urbanized Land (total acres)
Sustainable Growth Patterns vs Current Growth Patterns
Source: Department of Conservation, Farmland Mapping and Monitoring Program, 2010



will be conserved, preserving the prized rural character, natural beauty and primary economic drivers of the Monterey Bay Area.

There are also public health advantages in Sustainable Growth Patterns.

Generally, taking public transit versus driving alone equates to an average of 8.3 more minutes a day of walking. Researchers have found that there is an average lifetime savings of $5,500 per person in obesity medical related costs by simply walking to public transit each day. If 8.3 minutes of walking are added each day, the obesity rate in 2035 in California could drop from 50% to 28%.

Under Sustainable Growth Patterns, up to 280,000 employees and 180,000 households will be located within a comfortable walk of a high quality transit corridor or mixed use center by 2035. As such, nearly 90% of the region's employees and over half of the region's households will have the daily opportunity to increase their physical fitness, decrease the region's overall rates of obesity, and minimize the overall financial burden of poor community health on the region's economy. However, achieving this will require a renewed commitment to the development of high quality public transit systems, which are currently shrinking due to the loss of support from State and federal sources.

Conclusion: A Regional Response

The Sustainable Growth Pattern identifies a potential alternative to the way the region is growing today that remains consistent with existing adopted local plans. By focusing more housing, a greater variety of housing, and infrastructure investment in proximity to existing employment centers and other commercial activities, significant improvements to congestion, VMT, greenhouse gas emissions and the consumption of open space and agricultural land can be realized. Reducing the average driving distance will not require massive new public investment. On the contrary, focusing on compact growth, emphasizing the jobs-housing balance, and supporting the complete range of transportation choices and street level activities can save local jurisdictions and taxpayers money.

Pursuing this alternative, and a more sustainable future, does entail making some hard decisions--including considering choices about resources and how the region supplements existing resources with new technologies. Whether this region sprawls or develops more compactly, water supply agencies need to plan for growth and not just for existing needs. The public and policy makers will need to consider the trade-offs: are the potential achievements listed above worth investment in new water supplies? Is coordination, collaboration and sharing among local jurisdictions a better long-run strategy than a more isolated approach? Is there value for all residents of the Monterey Bay Area in advancing non-traditional means and methods to share the burden of providing for more growth?

The following chapter, Getting There from Here, builds upon the Sustainable Growth Pattern and identifies ways, some of which are already being implemented by local jurisdictions, in which the region can provide more opportunities to future generations.

ENVISIONING THE MONTEREY BAY AREA
Getting There From Here

"Due to our City's restricted size, infill development is the primary opportunity for additional development. Even the City's vacant land planned for new shopping center development is planned as higher density than typically seen in historic trends."

Blueprint Policy Group Member

8 minute walk

Source: AMBAG, 2010

There are few topics in the Monterey Bay Area that are more controversial than future development. Determining what a "Sustainable Growth Pattern" for the future of the Monterey Bay Area might look like has induced spirited discussion throughout the region over the course of the last several years. Developing a plan for how to get "there" is equally demanding and will require the use of a wide range of smart growth and smart infrastructure policies.

Even as we continue to dialogue about the details of a sustainable future for the Monterey Bay Area, we can begin to make strides in a more sustainable direction.

This section details how public policies adopted by regional agencies and local communities can increase housing and transportation choices. The challenge is to identify and build on existing and emergent market trends that provide opportunities to the Monterey Bay Area to move in a more sustainable direction.

Market Trends That Support Sustainable Growth

Trends in the Housing Market

Based on an analysis of peer-reviewed published research, AMBAG anticipates greater future demand for smaller housing units, more rental opportunities, and homes closer to jobs and other activities by 2035 in the region.

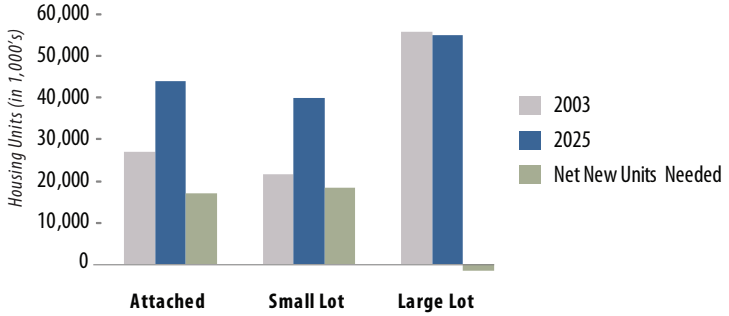
With higher demand for smaller detached homes and attached housing, and with housing closer to regional centers and amenities, the region can make progress toward the Sustainable Growth Pattern. This potential trend does not mean that consumers will no longer desire suburban or rural homes, rather, there will be an increase in niche market demand for more compact housing and transit oriented development.

While these assumptions are dealt with in more detail in Technical Appendix C, we summarize the major findings from published research and the applicability of research findings to the Monterey Bay Area below.

In a national study housing, Arthur Nelson forecasted that, as shown in Figure 33, the aging of the population and the increase nationwide of childless couples will drive demand for smaller housing units. Just as the growing Baby Boomer generation generated demand for larger homes as households grew with children, a significant niche segment of that same generation will downsize as their children leave home, along with declining interest in maintaining a larger home.

Figure 33. 2003 Housing Supply vs 2025 Housing Demand in the U.S.

Source: Nelson, 2006, "Leadership in a New Era"



A 2006 analysis of the US housing market compared existing housing stocks of attached housing, small lot and large lot homes to forecasted demand based on age and household sizes.

As shown in the figure, demand for attached and small lot homes clearly exceed current supply, while demand for large lot homes will fall below current supply.

"We have no control over school locations, but in Rancho San Juan, we revised the project to include a school with the intent of limiting [vehicle] trips. so, we may continue to do this into the future."

- Blueprint Policy Group Member

"Enforce the laws we have now, and encourage common sense growth, that takes the $ out of the equation. You can save a buck now, but you will have to pay three later for the short sightedness."

- Monterey Bay Area resident

Compounding these background trends, a recent Urban Land Institute study by John McIlwain on the changing demography of housing concludes that the net results of the current recession in the short run and a slow recovery over the long run is that there will be a substantial need for rental housing of all types in the future in the United States and less demand for new "for sale" construction.

According to the study by John McIlwain, home ownership levels rose to unsustainable levels before the current subprime mortgage crisis. The crisis created a very large inventory of homes whose mortgages exceeded their market value. Only by limiting new construction of "for sale" housing can the extremely large pool of "underwater" homes dry up. In lieu of that new "for sale" construction, housing markets need to provide more rental opportunities.

With supporting federal and State policy, an increased regional emphasis on rental housing can meet those housing needs while still providing ample opportunity for individuals and families to buy homes.

Future demand for more rental housing may also support, in part, a more compact development pattern as multi-family zoning districts are often used to buffer single-family zoning districts from commercial areas or support a high level of mixed uses between commercial uses and various attached forms of housing, that are often rental properties, like apartments and townhouses. As buffers between commercial areas and lower density residential areas, multi-family and mixed-use zoning districts are strategically placed near commercial and other employment areas to reduce per capita VMT.

During the Summer and Fall of 2010, close to 700 people participated in Envisioning the Monterey Bay Area's public workshops and online surveys. Through interactive surveys the public responded to a variety of questions about housing and neighborhood preferences that helped shape this document. Participants were asked several questions pertaining to age and housing choice. Relative to respondents' current preferences for housing--mostly small lot detached homes--most respondents believed that as residents age they tend to prefer more compact forms of housing, either small lot homes or attached housing of moderate densities.

At the other end of the age spectrum is Generation Y, the children of "Baby Boomers" born from the mid-1970s onward. This generation is coming of age in a time of a major economic recession, declining household incomes, and a labor market increasingly divided between many low paying jobs and few high paying jobs for less experienced workers. Together with a tendency to move more frequently between jobs, Generation Y may be more interested in the flexible living arrangements of rental property.

While most respondents in the workshop surveys indicated that they preferred small lot single family homes for themselves, with rural homes and large lot single family trailing closely, they also indicated overwhelming support for higher density housing for future residents of the area.

In sum, there will always be demand for small detached homes, large lot homes in suburban areas and rural homes, and the Monterey Bay Area has large inventories of these kinds of housing and builders will continue to build these kinds of housing.

A Sustainable Growth Strategy will depend upon offering expanded housing choices, especially to emerging niche markets for rental properties of all types and multifamily housing in particular. If future development patterns include moderately higher levels of multi-family development, the region can house its future population in a more sustainable pattern.

Market Trends Influencing Transportation Choices

With higher fuel prices in the future, infrastructure costs will continue to increase. In the Summer of 2008, surging gasoline prices incurred enormous costs for commuters in California. For months Californians with the longest commutes paid hundreds of dollars more in gasoline, compounding the looming housing crisis in those areas with the longest commutes.

Besides playing a role in the ongoing mortgage crisis, higher gasoline costs incentivized oil refiners to refine oil that is usually used in building roads into gasoline, driving up the price of oil by-products used in making asphalt. At around $6 a gallon, the cost of building a road will be dramatically higher. Sprawl costs us in the short term, the long term and can potentially cost much more if gas prices surge again.

Regional Blueprint survey results show that residents are more likely to take transit if the market price of gas were to increase to $8.00 per gallon. While survey results were not derived from a scientifically valid sample of the population, workshop results are consistent with economic analyses of the gas price sensitivity of commuters to choosing between taking personal vehicles and choosing transit. In the Monterey Bay Area, it will take major market driven increases to gas prices to make large numbers of commuters change to transit because the overwhelming majority of automobile owners will consistently choose to drive their car rather than ride transit.

Figure 34. What is your Vision for the Monterey Bay Area in 2035?

Regional Blueprint Workshop Presentation Board Participants emphasized the need for integrating schools into downtown areas

Source: AMBAG Blueprint Workshops 2010

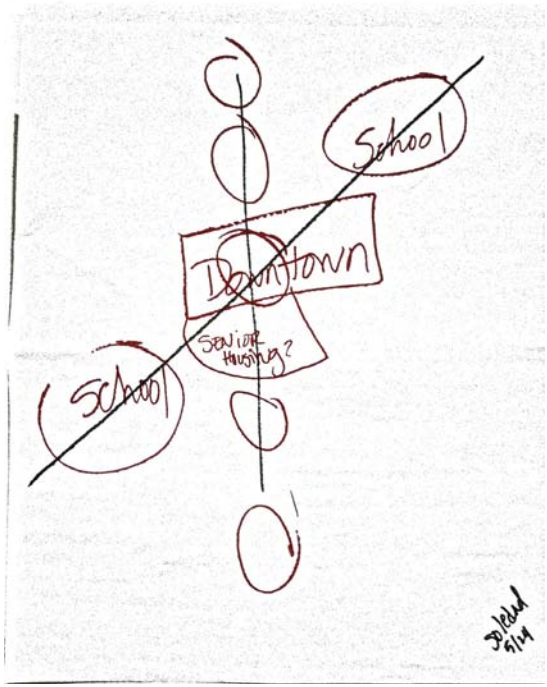
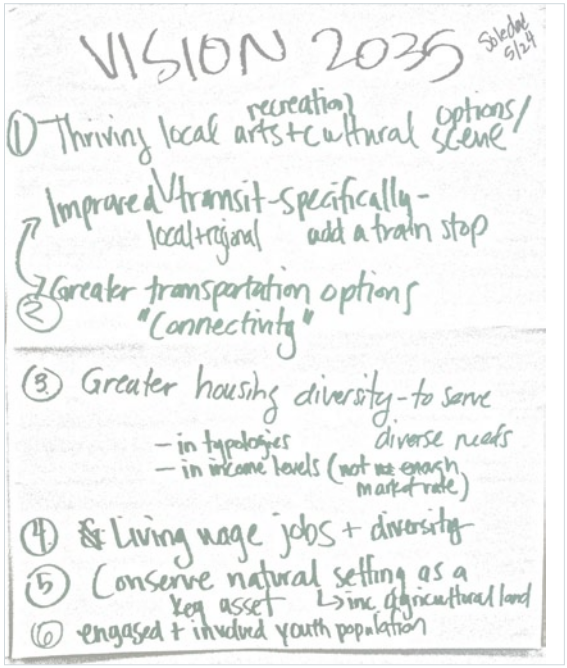


Figure 35. What is your Vision for the Monterey Bay Area in 2035?
Regional Blueprint Workshop Presentation Board



Policies to Improve Housing & Neighborhood Choices

Meeting the needs of the region's existing and future forecasted population in a sustainable way calls for policies to be enacted at the local level and at the regional level. These policies are described below.

First, local development regulations should continue to accommodate higher density and intensity uses within the existing urbanized area of the region, and accommodate the needs of an aging population. Second, these more intense levels of development should be designed in an attractive and functional way. Third, there should be ongoing public involvement and education directly addressing public anxiety related to more intense development and the mutual benefits of a more compact urban footprint. The following policies provide a glimpse into the myriad of practices available to achieve sustainable objectives.

Implement a graduated density bonus for infill projects

One of the greatest challenges for developers of infill development is land assembly. Because parcels in infill areas are often small and split among multiple owners, neighboring land owners sometimes take advantage of a redevelopment proposal by holding out for higher purchase prices.

Donald Shoup, an economist at University of California Los Angeles has written about a strategy called Graduated Density, which incentivizes land assembly by allowing higher density for sites as the sites get larger. As such, holdouts who are left with sites that cannot be combined with enough contiguous properties to trigger higher density lose a valuable economic opportunity.

For more information: www.its.ucla.edu/shoup/GraduatedDensityZoning.pdf

Improve commercial area design and parking

Parking lots and driveways now occupy a significant portion of the built environment. Improving pedestrian access, the visual and aesthetic elements of commercial design, and the amount of and location of parking spaces will be critical to increasing the value of existing commercial areas, making them more accessible and encouraging new investment.

Additionally, consideration must be given to alternative parking strategies, in which reduced parking requirements in areas with good alternatives and clustered parking--in which parking supports a wide range of adjacent uses--can reduce friction with pedestrians and bicyclists making the streetscape more attractive to alternative modes of travel and reducing dependence on vehicles.

For more information:
http://www.cnu.org/resources

Integrate affordable, workforce and market rate housing

Mixing affordable housing with new market rate housing supports a greater sense of community and also supports transit availability within neighborhoods to all residents. When developments include rental apartments, condominiums, live/work buildings, rowhouses and so on, they not only provide opportunities for all market segments, but also provide housing for older residents who wish to downsize their homes and continue to live in their own neighborhoods.

Accommodating Accessory Dwelling Units can help achieve housing goals, especially in areas with little land for new development. Local Inclusionary Housing ordinances have also been instrumental in integrating a mix of incomes into existing communities and new neighborhoods.

For more information:
http://www.policylink.org/site/c.lkIXLbMNJrE/b.5137027/k.FF49/nclusionary_Zoning.htm

Implement school centered development or locate schools in denser areas

Good schools anchor good neighborhoods. When families move to a new area, they often look at which schools offer the highest quality of education, and frequently decide to move close enough to be in the school district and/or within walking distance of that school. Schools have traditionally been the center of a community. Using schools to once again act as a community center will increase neighborhood identity and value. Currently, school siting criteria influencing location decisions, campus footprint sizes and other criteria indirectly contribute to sprawl. Potential solutions include reducing site size requirements and integrating complementary uses, such as school libraries, with community facilities.

For more information: http://www.edfacilities.org/rl/index.cfm

Figure 36. Transit Supportive Housing Types

Conceptual Illustration

While 10% of Blueprint survey respondents prefer townhouses and rowhouses like those shown here, 30% anticipate they would prefer them upon retirement. Over half of all survey respondents think this type of housing is the most needed type of housing in the Monterey Bay Area.

As of 2010, 17% of all housing in the region is comprised of single family attached homes and smaller (2-4 unit) multi-family housing, according to the CA Department of Finance. At the density range illustrated below, annualized per capita infrastructure costs are about 40% of costs for development at 5 dwelling units (dus) per acre.*

Source: AMBAG, 2010

Figure 37. Adopting a Fix it First Policy for Infrastructure

Assessing Current Needs

Source: ASCE

ASCE CALIFORNIA INFRASTRUCTURE REPORT CARD 2006

www.ascecareportcard.org

Aviation	C-
Levees / Flood Control	F
Parks / Open Space	D+
Ports	C+
Solid Waste	B
Transportation	D+
Urban Runoff	D+
Wastewater	C+
Water	C+
California's Infrastructure GPA	C-
Annual Investment Needs	$37 Billion

Policies to Improve Transportation Choices

Overall, the Monterey Bay Area already implements many good planning practices that reinforce existing communities and existing transit. Envisioning the Monterey Bay Area identifies the need to focus future housing growth near jobs to provide increased access to social, environmental and financial resources. Furthermore, we argue that clustered development supports an increase in transportation choices as well as housing choices.

For example, to support a thriving, high quality transit system, thresholds for housing must be met. At least 3,300 housing units within a half mile radius of a light rail stop and 2,750 housing units within a half mile radius of a bus rapid transit stop are thresholds recommended by the Metropolitan Transportation Commission for the San Francisco Bay Area. Housing types such as duplexes, townhouses, rowhouses and apartment buildings meet transit supportive density thresholds.

There are a range of additional policies that can serve to increase the transportation choices available to Monterey Bay Area residents. The following are some examples of these policies.

Implement "safe routes to schools" program/Support Bicycle Travel

A cornerstone of increasing walking trips to schools is addressing a growing if not statistically valid concern that walking trips to school are not safe because of traffic and crime. "Safe Routes to Schools" is funded by the Federal Highway Administration, and should continue to be utilized to improve access.

While not exclusively a "safe routes to school" issue, improving bicycle safety should be a priority through adding more bike lanes, dedicated bike-only paths and by removing bicycle impediments.

For more information: http://www.saferoutesinfo.org/resources/index.cfm

Adopting a "fix it first" policy for infrastructure

Public expenditures on capital infrastructure such as streets, highways, sewer and water systems, lighting, schools and other civic buildings are significant, even as maintenance only costs. An uncoordinated land development process means that investments in new public capital infrastructure are prioritized over maintenance of existing facilities.

For more information: http://t4america.org/tag/fix-it-first/

Use Intelligent Transportation Systems (ITS)

ITS can be used to re-route congested traffic to less congested roads, meter on-ramp, and inform drivers of expected travel times to destinations. ITS can also be used to inform transit users when the next bus or train is coming and these systems can support a wide range of intersection management tools as well to improve safety and efficiency.

For more information: http://www.its.dot.gov/

Encourage telecommuting and alternative work schedules

Many regions in the United States encourage alternative work schedules and even working from home via telecommuting as a way of easing peak-hour trips. Relatively easy to implement, participation is driven by employers, and by reducing office worker trips once a week, biweekly or even by staggering trips during peak hours vehicle volumes and VMT are lowered on major regional roads.

For more information: http://www.vtpi.org/tdm/tdm15.htm

Implement and coordinate use of employee vehicle sharing programs and alternative modes

In rural areas, many workers are employed in agricultural activities. Vanpooling is a safer and more reliable means of transit that has been well received in other parts of California. With about 60,000 to 80,000 peak season farm employees in the Monterey Bay Area, vanpooling, by capturing some percent of these trips, will contribute to lowering traffic volumes on major roads.

For more information: http://www.vtpi.org/tdm/index.php

Improve employer parking management

Typically, parking is subsidized by employers and provided free to the employee. By taking advantage of parking "cash out" and "Commuter Check" programs, employers give their employees choices for transportation and more accurately demonstrate the real cost of parking and single occupant driving in their accounting processes.

For more information: http://www.vtpi.org/tdm/tdm8.htm

Implement vehicle sharing programs

Car-sharing is a type of short-term rental or subscription based access to a vehicle. The cost includes gas and insurance in addition

Figure 38. For a Select Few: 5-8 Story Mixed-Use Districts

Conceptual Illustration

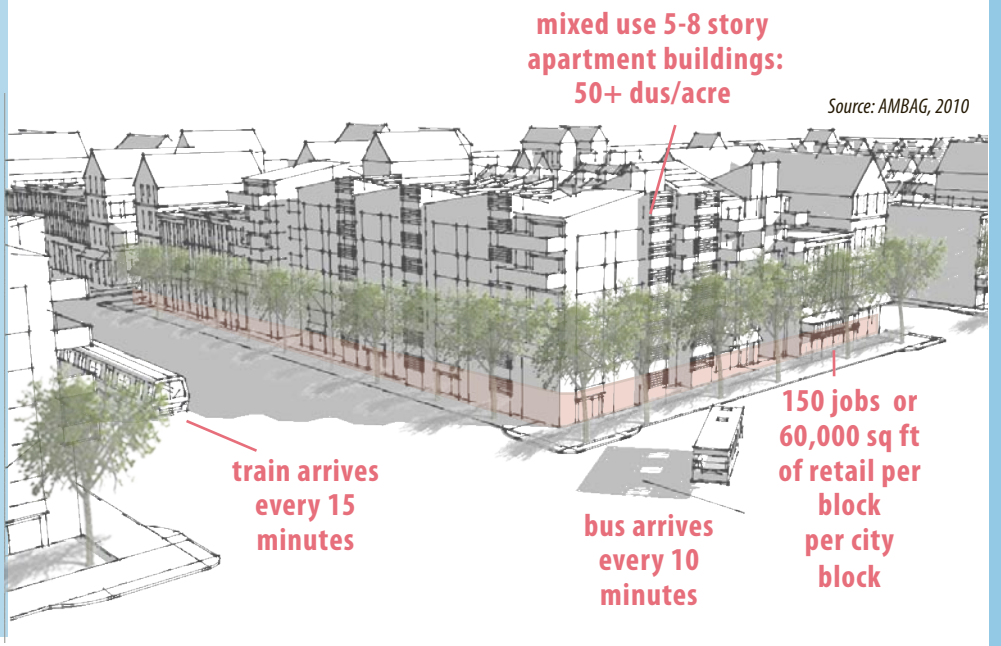
In Sustainable Growth Patterns, no city would need to build to this height to accommodate the region's growth. Some areas, however, may choose to.

Only 1% of Blueprint survey respondents prefer housing types like those shown here. Just over 7% said they would prefer them upon retirement, and 17% think the region needs this type of housing the most.

As of 2010, over 15% of the region's current housing is comprised of higher density multi-family housing. At the density range illustrated below, annualized per capita infrastructure costs are about half of costs for development at 5 dwelling units (dus) per acre.*

**Not Including construction.*

Sources: Frank, Littman; AMBAG Analysis



to a time-based rate, and reduces the amount of vehicles that are individually owned in a community. Many people are familiar with a company called ZipCar. In the proper circumstances, ZipCar can replace up to 15 personal vehicles.

For more information:
http://www.carsharing.net/library/index.html

Support Transit Oriented Development

Blueprint Priority Areas identify existing land zoned for densities that can support high quality transit. While not appropriate in all areas of the Monterey Bay Area, Transit Oriented Development is mixed use development designed to maximize access to transit, reducing dependence upon personal vehicles. Complimented by Bus Rapid Transit or Light Rail, commuters can make most personal trips without an automobile.

For more information:
http://www.mitod.org/home.php

Reducing Minimum Parking Requirements

Parking regulations for various types of development often result in an oversupply of parking spaces, leaving large areas of underutilized land in urban areas. Excessive parking requirements can require unnecessary and expensive structured parking. By reducing minimum parking standards, urban areas can make better use of existing property. By reducing the overall parking supply, localities can influence commuter decisions on taking transit or encourage employers to compensate employees who promise not to drive their own cars to work, leaving the available spaces for customers. Shared parking is also a policy that can allow residential uses to utilize spaces that are generally used during working hours.

For more information:
http://www.vtpi.org/tdm/index.php#parking

Conserving Natural Resources

Agricultural Land and Open Space

These policies can include agricultural buffer requirements for new developments and mitigation banking in which developers purchase land and place them into conservation.

The Williamson Act provides a lower tax assessment placed on agricultural lands in return for farmers committing to keep their land undeveloped for at least ten years. However, as pressure for housing development increases, the tax benefits provided by the Williamson Act are not enough of an incentive for some farmers to keep their land undeveloped. As shown in Figure 39, the Williamson Act has been successful in protecting agricultural lands in the Monterey Bay Area.

As stated previously, starting to fully assess the actual cost of development and on-going infrastructure costs on the urban fringe, along with better incentivizing farmers through

revisions to the Williamson Act, will help preserve the region's important farmland and ensure continued economic prosperity through the agricultural sector.

Agricultural land and other undeveloped land can be further protected with Urban Growth Boundaries, as Santa Cruz County adopted in 1978 with Measure J and Watsonville's Measure U, which contain urban development in voter specified areas.

For more information:
http://www.mrsc.org/subjects/planning/farmland.aspx#general

Limited Water Resources

There are a variety of water conservation policies that can come into play to respond to the concerns about water resources.

We have many options such as increasing efficiency and conservation of water, better groundwater management, recycling, conjunctive use, elaborate regional water management programs that store large volumes of surface water below ground during normal and high rainfall years and then pump large volumes of groundwater from storage during drought years. Finally, there is desalination, which while providing a dependable water source, is expensive, energy intensive and presents a challenge from the greenhouse gas perspective.

In terms of individual household use, conservation practices within each household can result in a reduction of 5% of water use or more. In some Monterey Bay Area coastal communities conservation practices have succeeded at lowering consumption to about 70 gallons/day.

Furthermore, more compact development results in less water use per housing unit as shown in Table 2. This is due to the variation in total landscaped area associated with each housing type. For example, suburban large lot units typically use approximately 500

Figure 39. Monterey Bay Area Williamson Act Acreage Total Reported Enrollment by County, 1991-2007

Source: California Department of Conservation, Farmland Mapping and Monitoring Program, 1991-2007

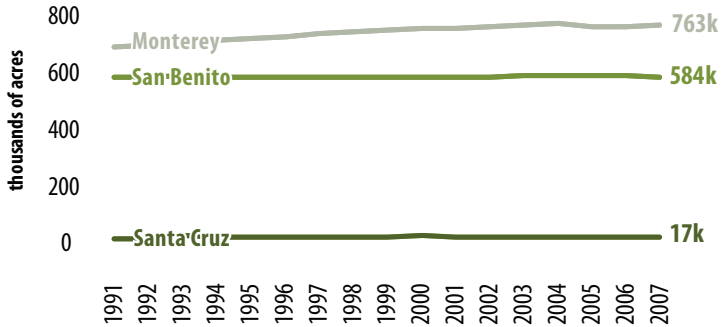


Table 1. Daily Water Consumption by Housing Type - Indoor & Outdoor

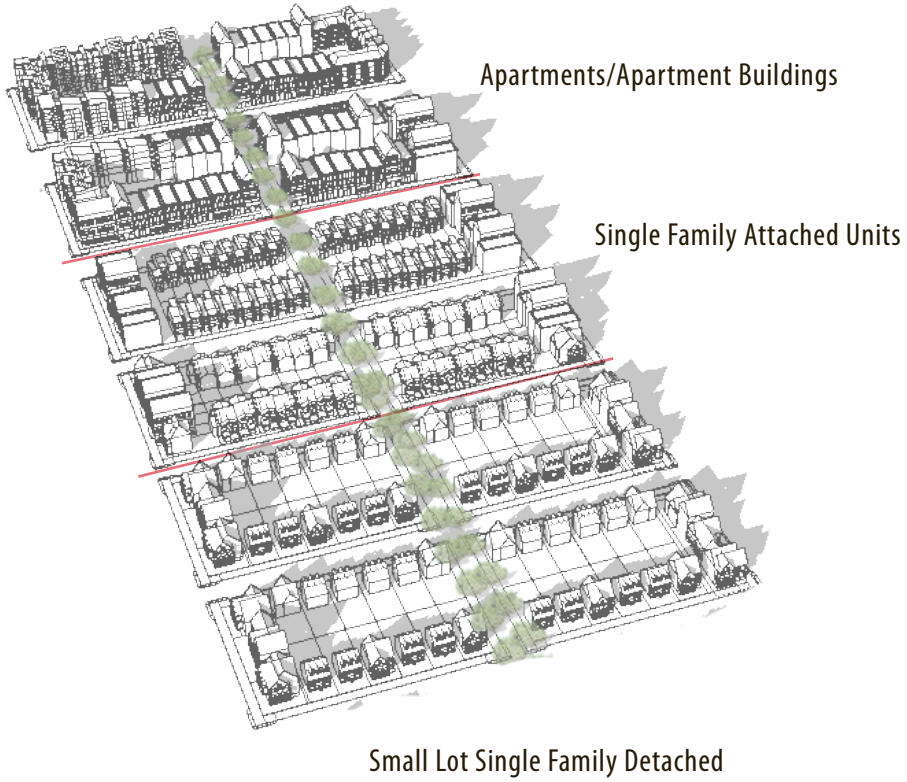
Changes in water consumption vary with total landscaped area

Assumptions based upon APA Urban Design Standards and Index PlanBuilder and AWWA (American Water Works Association), USDA Soil Conservation Service Study (1986)

Housing Type (dwelling units/acre)	Water Use per Unit (gallons/day)*
Apartments/Apartment Buildings (30+ dus/ac)	appr. 220
Single Family Attached Units (12-30 dus/ac)	appr. 225
Small Lot Single Family Detached (12 dus/ac)	appr. 240
Suburban Large Lot (2 dus/ac)	appr. 500
Rural Large Lot (3 ac/du)	appr. 2000

*In the Monterey Bay Area, water use per unit can be substantially lower than these figures--depending upon the jurisdiction and the housing type, average use may be as low as 70 gallons/day in coastal communities.

Figure 40. Water Consumption Rates Vary by Housing Type Due to Variations in Landscaped Area



Source: AMBAG, 2010

gallons per day for both outdoor and indoor water use while single family attached units such as townhouses and duplexes typically use approximately 225 gallons per day for both outdoor and indoor water use.

Other water conservation practices include using permeable surfaces to mitigate stormwater runoff and improve groundwater recharging; use of xeriscaping and hardscaping in place of landscaping in commercial and mixed use developments and along streetscapes.

Balancing competing demands for shrinking resources means making trade-offs among regional priorities. If the communities of the Monterey Bay Area plan corroboratively and invest in water infrastructure in conjunction with transportation investment there will be less congestion, less greenhouse gases, and more jobs. The trade-off for those priorities may ultimately include investment in desalination. Or we can defer on investment, because of its costs and controversy now, and risk paying much more, with less effect, later to address the same issues.

For more information: http://www.water.ca.gov/landwateruse/

Regional, State and Federal Policies

A Regionally Coordinated Housing + Transportation Investment Policy

Periodically, the State Department of Housing and Community Development provides regional housing goals for each Council of Governments in California to distribute to local jurisdictions. In our region, AMBAG is the Council of Governments for Monterey and Santa Cruz Counties. In the upcoming housing cycle, AMBAG, with local jurisdictions, will devise a regional housing needs allocation, a plan that provides housing goals to each jurisdiction, that improves the jobs-housing balance between jurisdictions and possibly between regions along with providing opportunities for housing of all income levels. The San Benito County Council of Governments will need to

provide the same services to its member jurisdictions.

Through the implementation of SB 375, State law now directs transportation planning agencies to co-invest transportation improvements in communities in ways to support the Regional Housing Needs Allocation. With better coordinated transportation and housing policy, the Monterey Bay Area can provide workforce and market rate housing and ensure that there is a variety of transportation choices for residents. It is not inconceivable that future plans will incentivize local governments to take on a higher housing allocation by providing more transportation and other infrastructure dollars.

Also, with a significant share of Monterey Bay Area commuters traveling to the San Francisco Bay Area and Silicon Valley for jobs, there will be a need to enlarge our region's discussion about jobs/housing balance with the State to consider how larger metropolitan areas can contribute more to housing their employees.

For more information:
http://www.dot.ca.gov/hq/tpp/offices/orip/sb375.html

Defiscalization of land use

State and local government finance is undergoing a crisis. Since the adoption of Proposition 13, local governments and the State have been forced to meet service, public safety and infrastructure needs through funding sources other than property taxes. Local governments have been given a primary source for funding: sales tax. Over the last decade cities and counties have been forced to favor retail or sales tax generating uses over housing and employment uses. This land use planning bias is called the fiscalization of land use.

As such, many localities in the Monterey Bay Area are struggling with paying for basic services for their residents because they cannot attract enough retail business and their accompanying tax dollars. On the other hand, there are some local governments that receive significant revenues from retail and transient occupancy taxes.

There are various solutions to the issue, some of which are easy and most of which will likely have to occur at the State level. Some options include revenue sharing and restructuring property and State sales tax allocations.

For more information:
http://cproundtable.org/cprwww/docs/fiscal.html

Pursue common legislative goals at the State and federal levels

Without funding for transit, or other capital improvements, local governments cannot implement many elements of Envisioning the Monterey Bay Area. Working together, local governments, in conjunction with AMBAG,

may seek legislative remedies to address impediments to sustainable development.

The Monterey Bay Area, like every other region in California, cannot sustain high quality transit unless the State makes transit a priority. The region cannot meet infrastructure needs without finance reform for local governments and for the State itself.

A Smart Infrastructure strategy must be a priority for the State, in order for our region to meet greenhouse gas emission targets. The State must also weight the interplay between infrastructures, such as between water, roads, schools, services and State housing mandates in ways that incentivize growth in places that limit additional expenditures, as opposed to treating infrastructures as independent components of development.

According to the American Society of Civil Engineers, California's backlog of infrastructure needs comes to $37 billion a year, $18 billion of that in roads. Caltrans has taken an important step forward through the Blueprint planning program in raising awareness of these issues, but there needs to be expanded statewide and federal investment in infrastructure.

For more information:
http://financecommission.dot.gov/

ENVISIONING THE MONTEREY BAY AREA
Conclusion

Over the preceding pages we have outlined the anticipated demographic trends affecting the Monterey Bay, the challenges those trends present and how those trends interact with new state legislation requiring that the Monterey Bay Area reduce VMT and cut its greenhouse gas emissions from cars and light trucks by 2035.

Using input from the public and from planners from all local agencies, we chart an alternative course than present trends--a course that is more sustainable through 2035.

This course, the Sustainable Growth Pattern, is consistent with long-term demographic trends, with much of the public response to Envisioning the Monterey Bay Area, and fits within the broad directives of existing local plans.

Specific actions that regional agencies need to take are working together on coordinating regional housing needs, regional transportation needs and involving local agencies and the public throughout.

We look to local agencies to consider the policies discussed in the Getting There From Here section and consider the challenges of implementing those policies, where applicable.

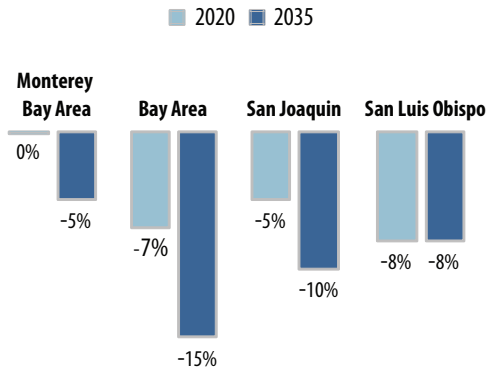
Once the AMBAG Board of Directors accepts Envisioning the Monterey Bay Area Blueprint Report, AMBAG and its partner agencies will build on the Blueprint to develop the new, statutorily required Sustainable Communities Strategy that will demonstrate how our region will reduce per capita greenhouse emissions by 5 percent from automobiles and light trucks by 2035.

Through the development of the Sustainable Communities Strategy, as required by SB 375, AMBAG and the Regional Transportation Planning Agencies will coordinate on how future transportation investments will be used to support a job-centered housing policy.

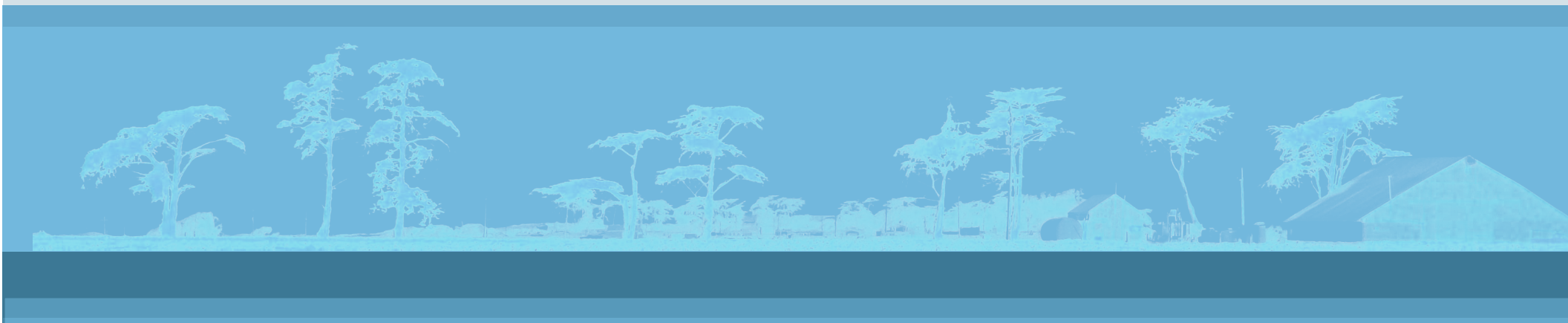
Figure 41. Regional GHG Targets per SB 375

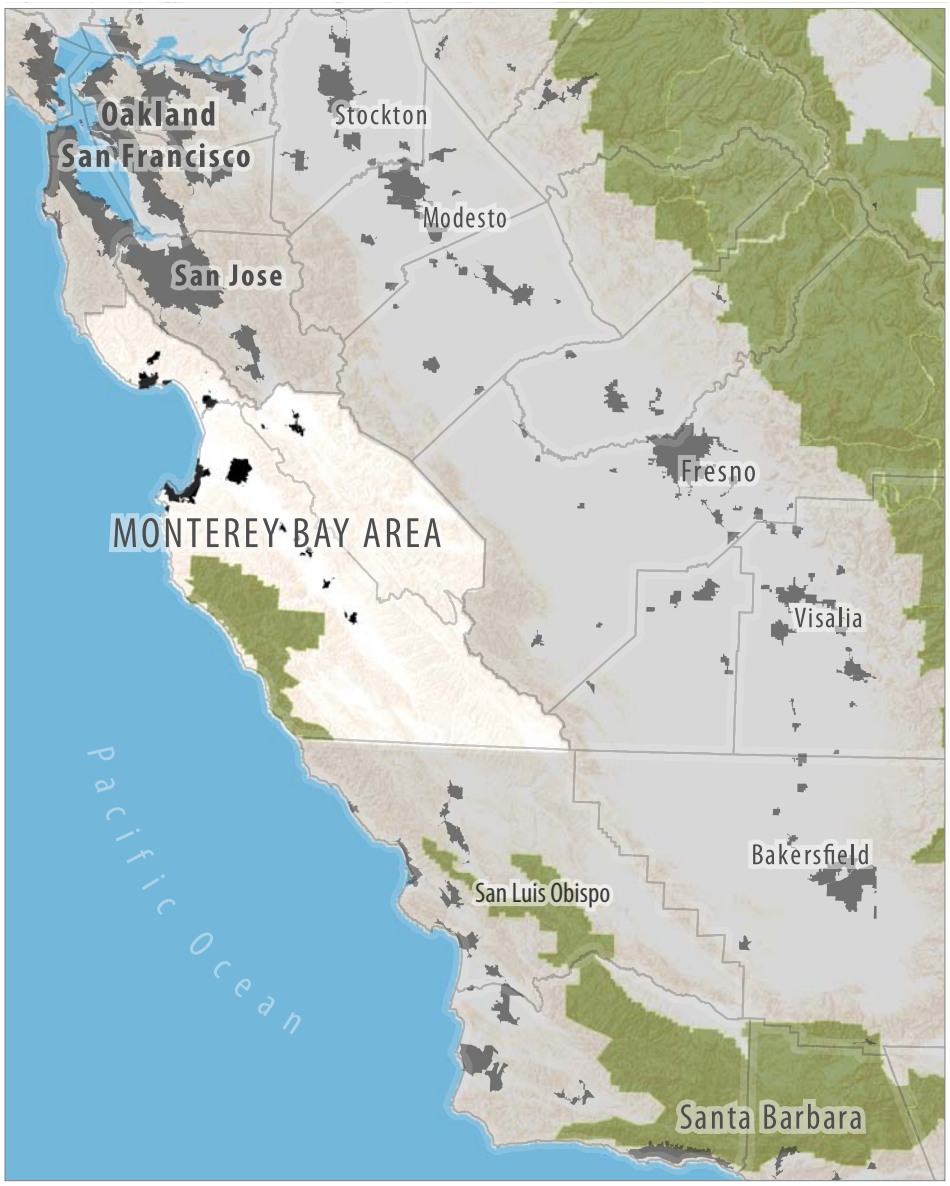
Percent Reduction from 2005 in Daily Per Capita GHGs

Adopted by California Air Resources Board on 9/23/2010



Technical Appendix A: Background to Blueprint Planning in California





Monterey Bay Area: Statewide Context

Counties: Monterey, San Benito, Santa Cruz

Urbanized Areas | State and National Parks | County Boundaries

Source: AMBAG, 2010

REGIONAL BLUEPRINT PLANNING IN CALIFORNIA

As discussed in the Executive Summary, Blueprint planning is a regional planning approach to solving common problems. The California Regional Blueprint Planning Program commenced in 2005, building on the success of previous Smart Growth visioning efforts in California during the 1990s. Housed under the California Department of Business, Transportation and Housing (BTH), the Regional Blueprint Planning Program is voluntary, discretionary and is funded by competitive grants through Caltrans.

Focusing on a regional perspective, Blueprint planners at the largest Metropolitan Planning Organizations were concerned with fostering, within their respective regions, a more efficient and effective transportation and land use pattern, a strong and sustainable economy and progress along the dimensions of place, prosperity and people.

Several common threads emerged from the state's various Blueprint planning efforts. While most Blueprints identified a range of performance measures that included progress on improving the jobs/housing balance, energy efficiency, physical personal health, vehicle miles traveled (VMT), and reducing greenfield development, the most important common threads concerned the broadening of public choice among travel modes and among housing types.

With the backing of additional transportation dollars, regions such as the San Francisco Bay Area and Sacramento sought to incentivize changes in personal behavior by linking investment in public transportation facilities to land use decisions. By increasing the supply of transportation and housing choices and by adjusting policy and investment decisions influencing the demand for those choices, the larger regions are working to harness consumer marketplace decisions to specific Blueprint outcomes such as lowering vehicle miles traveled.

These visionary efforts have inspired legislation aimed at lowering statewide Greenhouse Gas (GHG) emissions pursuant to AB 32. In September 2008, the California Governor signed SB 375 (Steinberg) into law, a bold move aimed at lowering the GHG emissions from cars and light trucks through improved coordination of land use and transportation.

The platform for that improved coordination is the Sustainable Communities Strategy. Based on realistic assumptions concerning local land use policy, constrained transportation resources, the Sustainable Communities Strategy lays out a coordinated land use pattern and transportation system that reduces GHG levels.

THE NEED FOR A MONTEREY BAY AREA BLUEPRINT

The Monterey Bay Area is a very diverse region. Tourism, agriculture, the military, education and research are all major industries. The population of the region is also highly diverse. Together, the region's economy and social characteristics are also heavily influenced by the San Francisco Bay Area.

All of these factors and others independently shape land use decisions throughout the Monterey Bay Area. While transportation programming takes a system-wide perspective, land use decisions are local in scope. Blueprint planning is a setting for integrating transportation and land use planning activities on the same regional scale. Doing so enhances opportunities for region-wide collaboration on problems of mutual concern.

From the perspective of the region's official adopted forecast of population, housing and employment to the year 2035, the region is on a path to increased congestion and vehicle miles traveled, increased greenhouse gas emissions and housing being developed further away from employment centers.

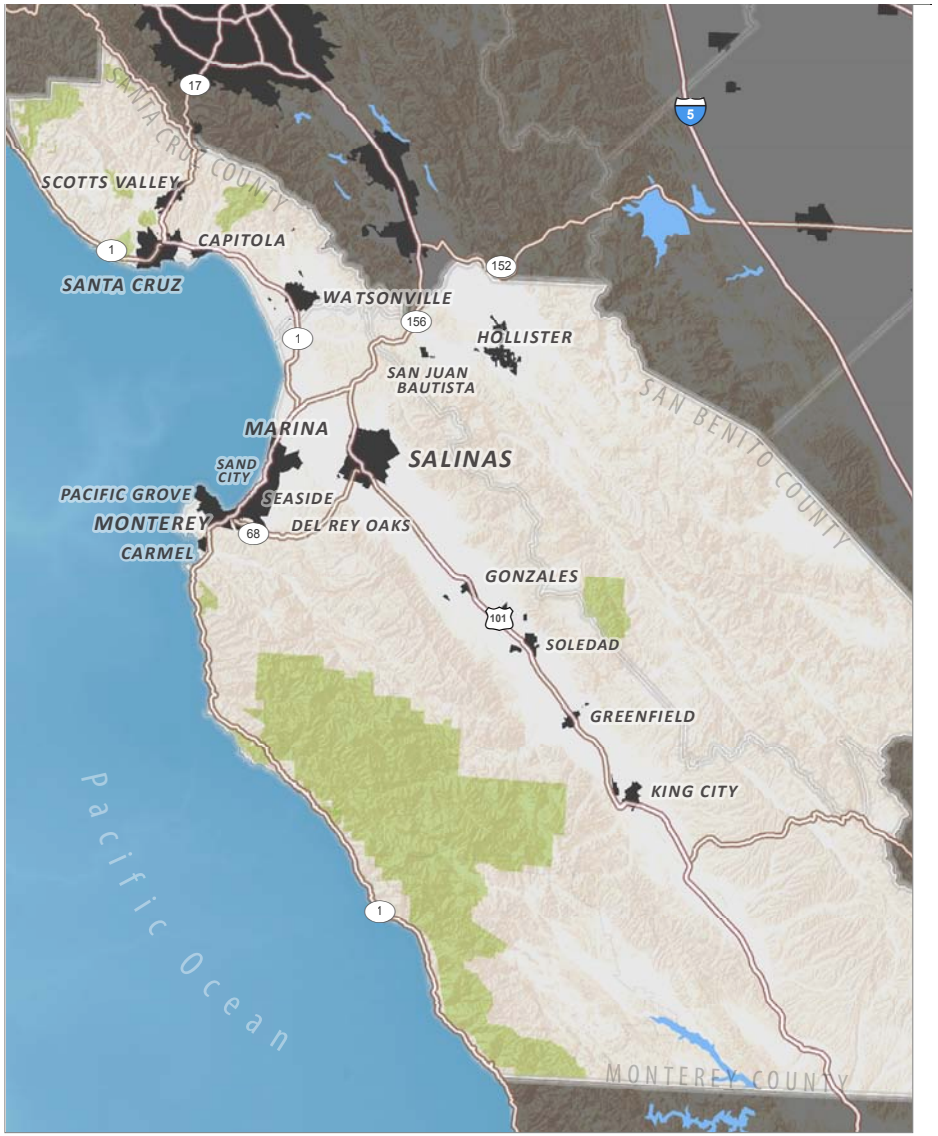
There are several reasons for conducting a Blueprint planning effort for the Monterey Bay Area. First, as a joint fact-finding effort to understand the dynamics of regional change over the coming decades and to answer the question of under which circumstances would people decide to seek alternatives in housing and transportation.

The follow up concern is to identify the policies and funding that broadens the transportation and housing choices the public has in order to reduce future congestion. While the Blueprint is concerned with other issues, such as environmental and air quality, answering these two questions sets the stage for addressing the region's response to those other issues. Once these questions are answered, AMBAG and its partners will work to identify the capital and program needs that will support those broadened choices and seek legislative assistance in paying for those needs. As a region we may choose to also seek other policy remedies that are outside of local control that may help further the Blueprint.

Increasingly, there are other reasons to pursue Blueprint planning in our region. Many grant and loan programs available to public agencies recognize the importance of regional Blueprints. As long as the Blueprint remains unadopted, some grants and loans will be harder for local jurisdictions to obtain.

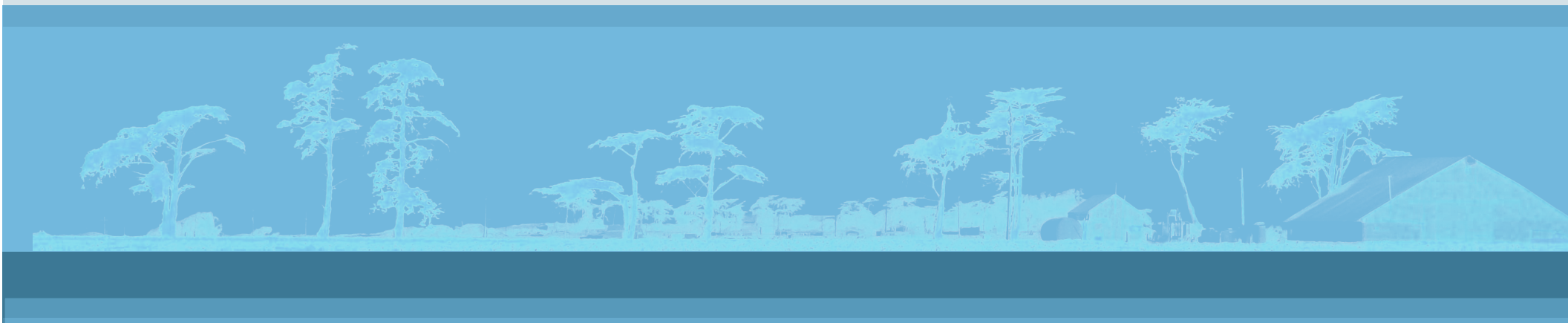
Finally, this Blueprint planning effort anticipates some of the tasks required of Metropolitan Planning Organizations in implementing SB 375. It is imperative that the region prepare for these SB 375 required tasks given that implementation is currently unfunded at the state level.

Three County Area: 3.3 million acres | Cities: 65k acres | Unincorporated Land: 3.13 million acres



Source: AMBAG, 2010

Technical Appendix B: Additional Regional Challenges



REGIONAL CHALLENGES: MONTEREY BAY AREA IN 2035

As discussed in the Defining the Issues section, there are challenges specific to the Monterey Bay Area that the region will face in the next twenty five years. In this Appendix, we discuss those challenges in greater detail. Using the AMBAG 2008 Forecast of Population, Housing and Employment as the basis of our analysis, we identify the most important trends as issue areas for the Blueprint:

- Total population growth and its geographic distribution
- The aging of the population
- Total employment growth and its geographic distribution
- The toll of these trends on infrastructure

Total Population Growth and its Geographic Distribution

Over the next 25 years, population growth is expected to be moderate, compared to other regions, expanding at about 1 percent a year throughout the region.

Monterey County's population is projected to increase by about one percent annually between now and 2035, with most growth occurring in the Salinas area and in the Salinas Valley.

San Benito County is anticipated to be the fastest growing county within the region with an annual average population increase of about 3 percent, bringing the total population to about 94,700 residents by 2035. Most of San Benito's growth is anticipated to occur in the vicinity of Hollister.

Santa Cruz County is projected to be the slowest growing county within the region, with an estimated annual population increase of less than one percent, adding approximately 35,500 residents by 2035. Decreases are anticipated in young children and school-age populations, comprising a five percent loss by 2035. Population growth among working-age residents is also projected to be slow at about eight percent. Watsonville will grow the most, while other areas of Santa Cruz County will grow very slowly.

The challenges represented by these trends include an increased demand for market-priced, workforce and affordable housing, increased distances between where housing is most likely to go and where jobs will be, and increased pressure to develop currently undeveloped land. There is a significant challenge in promoting a variety of housing choices.

There are environmental costs associated with more widespread urban type development such as sprawl. Sensitive habitats may be encroached upon, more runoff is associated with low density development than with more compact and higher density uses. Certain existing problems, such as the "fiscalization of

Monterey Bay Area Population Growth, 2005 to 2035 by County

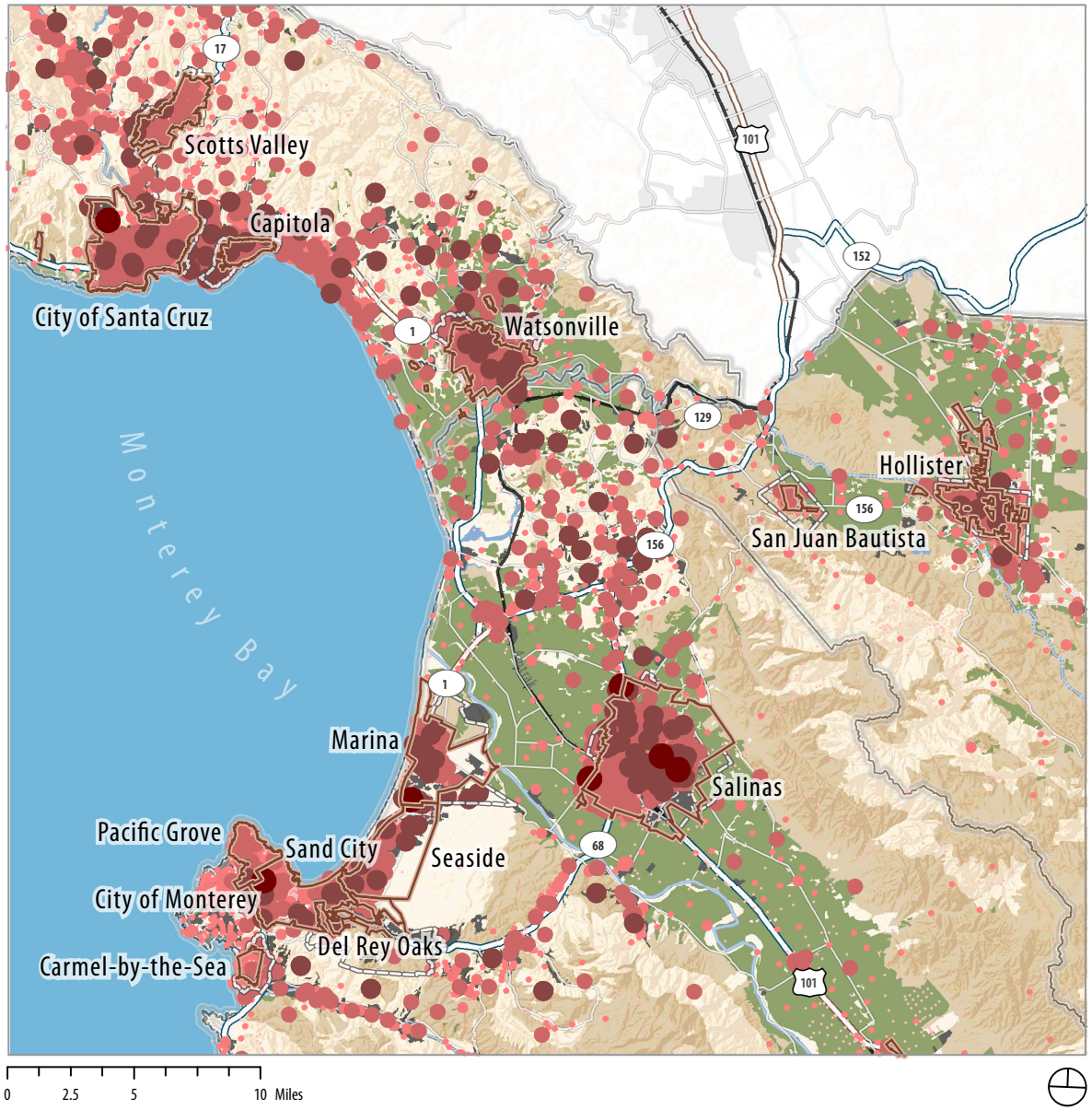
Source: AMBAG, Monterey Bay Area 2008 Regional Forecast

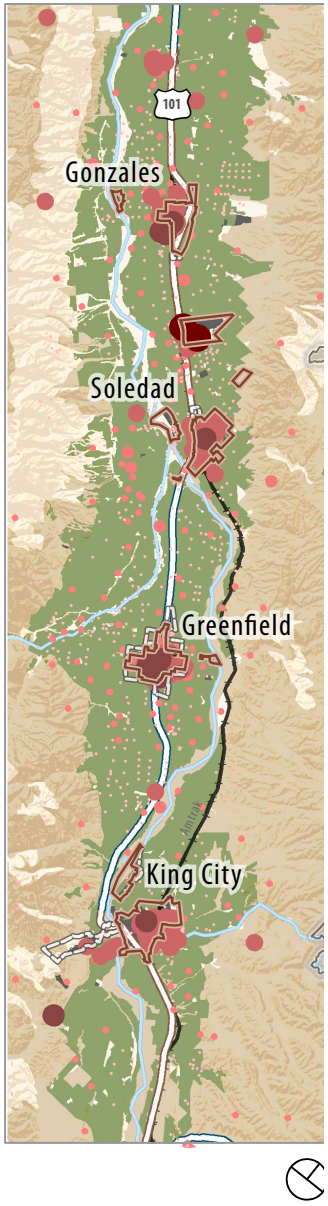
	2005	2010	2015	2020	2025	2030	2035
Monterey County	422,632	445,309	466,606	483,733	499,341	515,549	530,362
San Benito County	57,324	62,431	68,471	76,140	83,383	89,431	94,731
Santa Cruz County	260,092	268,041	273,983	280,493	285,735	290,597	295,621
Region	740,048	774,781	809,060	840,366	868,459	895,577	920,713

Monterey Bay Area Housing Growth, 2005 to 2035 by County

Source: AMBAG, Monterey Bay Area 2008 Regional Forecast

	2005	2010	2015	2020	2025	2030	2035
Monterey County	137,338	147,221	156,061	162,857	169,933	176,236	182,082
San Benito County	17,638	19,187	21,110	23,483	25,800	27,675	29,405
Santa Cruz County	102,872	105,509	107,496	110,143	112,040	113,865	115,590
Region	257,848	271,917	284,667	296,483	307,773	317,776	327,077





Geographic Distribution Of Monterey Bay Area Population, 2000

2000 Population by Census Block

- 0 - 5 persons
- 6 - 50
- 51 - 100
- 101 - 500
- 501 - 2000
- 2001 - 8693

Reference Map

Sources: California Department of Conservation Farmland Monitoring and Mapping Program; ESRI Business Analyst, US Census Bureau 2000 Census

land-use" will be exacerbated. The fiscalization of land-use means that local governments make land use decisions based on the added revenue each proposed use provides to the jurisdiction.

In California, because of Proposition 13, which restricts property taxes, local governments compete with each other for retailers. This competition often results in significant concessions on land use decisions. It results in "formula" approaches to project design, with over-supply of parking and other inefficient uses of land, at the expense of design that could otherwise fit the local context better.

The Aging of the Population

Overall, the median age of the Monterey Bay Region's population is expected to increase over the forecast period from 33.7 years in 2005 to 37 years in 2035. Ages 20-64 years remain at about 50 percent of the total regional population, while school aged children, 5-19 years, is expected to decrease by about two percent.

The 85 years and older population is growing the fastest within the region and is projected to more than double by 2035 with a population of 21,054 residents. Seniors, ages 65-84, are expected to grow almost as fast by nearly doubling their population to approximately 121,250 by 2035. Presently, the proportion of the region's population over the age of 65 is eight percent. By 2035, that proportion will be nearly double, to fifteen percent.

Each county in the Monterey Bay Area will see a dramatic increase in the size of the 65 and older population groups, compared to their sizes today.

While the 65 and older groups will still account for a relatively small proportion of total population, the fact that older households are significantly smaller than younger households means that as many as a quarter to a third of all households, depending on the area, will be headed by individuals over the age of 65. In some areas, such as Carmel and Capitola, an even higher share of households will be over the age of 65.

The aging of the population presents numerous challenges to the region. While the decline in school-aged children is low overall, regionally, the drop in school-aged children in coastal communities may be dramatic, forcing the closure of existing schools.

For commuters, an older population living in an area that is relatively rich in jobs will 'crowd-out' working aged residents, unless coastal communities build significantly more housing within their jurisdictions than they are currently projected to do.

Aging and Housing Choice

Demographers specializing in the housing market decisions of older Americans point to an emerging trend in housing markets. Sellers of existing homes provide 85% of the annual supply of homes sold, and home sales are driven by the aging of the population since seniors are net home sellers.
Since the population share of seniors to working-age residents is projected increase by 67% nationally and 90% regionally over the next two decades, there will likely be major shifts in the regional housing market. This shift could result in more single-family homes on the market than buyers, which could serve to hold prices stable or drive them somewhat lower for that housing product across the region, even if homes in more exclusive communities continue to be very expensive.

As people age, many prefer to do so without the demands of maintaining a traditional home with a yard. Given a large scale increase in retired residents in the region, it is likely that demand will increase for housing products such as condominiums and other smaller homes.

Aging and Trip Activities

Generally, those over 65 years drive less than other Americans. Residents older than 65 travel approximately 60 percent as much as the residents in the 20-29 age group. Unfortunately, under the Current Growth Patterns Scenario, the aging of the population actually contributes to increased Vehicle Miles Traveled. This increased level of miles traveled is the result of the increasing concentration of older residents near where the jobs are anticipated to be, forcing employers to attract workers from further away. Lower VMT characteristics of the older residents will be overshadowed by the higher VMT characteristics of longer commutes by younger drivers.

Seniors in 2035 will be different than seniors today, and so expectations of the transportation system and the land uses it accesses will be different. Seniors, both men

and women, may be more educated, may be more used to driving their entire lives, and may work more years in a full time or part time capacity than seniors today.

Deferred retirement or partial retirement will increase the size of the labor force, provide more disposable income. On the other hand, there will be greater demand for caregiving. These factors will extend many of today's challenges into the future. In many coastal communities, the spike in trips we often see during rush hours (peak trip periods) will smooth out, with higher levels of traffic at all hours instead of the traditional peak hours of 7:00 to 9:00 am, and 4:00 to 6:30 pm.

With increased housing opportunities near where jobs are, especially in the Monterey Peninsula, employers can draw workers from nearby, reducing commute trip lengths and readjusting per capita vehicle miles traveled downward. While migration, deferred retirement, and local variations in travel characteristics will modify results, we anticipate changes in both total trips and the trip attractions that generate those trips.

Over time, with improved access to jobs, residents in the Monterey Bay Area will travel fewer miles to work and will travel more often for medical, personal and recreational purposes. Good land use and transportation planning must consider not only the likely jobs-housing nexus but also the housing-other activities links as well.

Monterey Bay Area Employment Growth, 2005 to 2035 by County

Source: AMBAG, Monterey Bay Area 2008 Regional Forecast

	2005	2010	2015	2020	2025	2030	2035
Monterey County	193,110	196,430	203,660	211,160	218,830	226,780	235,460
San Benito County	16,910	17,380	18,090	19,050	19,970	20,980	21,700
Santa Cruz County	116,320	115,070	120,800	126,870	133,350	140,160	147,460
Region	326,340	328,880	342,550	357,080	372,150	387,920	404,320

Monterey Bay Area Employment Growth Rates, 2005 to 2035 by County

Source: AMBAG, Monterey Bay Area 2008 Regional Forecast

Annual Average Growth	2005-2010	2010-2015	2015-2020	2020-2025	2025-2030	2030-2035
Monterey County	0.3%	0.7%	0.7%	0.7%	0.7%	0.7%
San Benito County	0.6%	0.8%	1.1%	0.9%	1.0%	0.7%
Santa Cruz County	-0.2%	1.0%	1.0%	1.0%	1.0%	1.0%
Region	0.2%	0.8%	0.9%	0.8%	0.9%	0.9%

Monterey Bay Area Jobs to Housing Ratio, 2005 to 2035 by County

Source: AMBAG, Monterey Bay Area 2008 Regional Forecast

	2005	2010	2015	2020	2025	2030	2035
Monterey County	1.4	1.3	1.3	1.3	1.3	1.3	1.3
San Benito County	1.0	0.9	0.9	0.8	0.8	0.8	0.7
Santa Cruz County	1.1	1.1	1.1	1.2	1.2	1.2	1.3
Region	1.3	1.2	1.2	1.2	1.2	1.2	1.2

Total Employment Growth and its Regional Distribution

Similar to regional population trends, employment is anticipated to grow at a steady pace over the next 25 years. Consistent with severe recession conditions in the early years of the forecast, employment growth is initially slow and then becomes moderate after 2010.

Generally, employment in the Monterey Bay Area will grow by 24 percent between 2005 and 2035, or less than one percent annual growth, lagging growth in housing units. Not all employment sectors or counties grow at the same rate, however. San Benito employment will grow by 28 percent over the forecast period, while Santa Cruz is anticipated to grow by 27 percent and Monterey by 22 percent. For a description of population and employment forecast methodology see AMBAG's *Monterey Bay Area 2008 Regional Forecast*.

As described in the population section, San Benito is anticipated to experience more growth than it has in the past. With that growth there is increased demand for retail and various services. Santa Cruz employment is anticipated to grow in response to increased demand for professional and technical services, health care and public services, especially given the planned growth of University of California Santa Cruz.

Water Constraints

The forecast assumes that the severe potable water crisis along the coast continues into the future and will continue to constrain population and job growth along the coast. The impact of this crisis is that the natural population growth of the region will be directed away from the coast and will instead move inland where water supplies are less impacted. Placing housing where there is current availability of water may be good water policy.

However, placing development in those areas applies new demands on these water supplies. Additionally, if jobs do not follow housing in equal measure, then transportation facilities will be negatively impacted. It is likely that continued water resource constraints, especially in the Monterey Peninsula, will slow regional employment growth rather than redistribute that growth because the largest urban area industries—tourism and professional related services are strongly related to local attractions and agglomeration economies that tend to anchor future growth in the same area.

It is important to note that even with additional water supply in Santa Cruz, forecasted trends for Santa Cruz County will continue to show slow growth due to legislative growth controls at the city and County levels.

Regional Imbalance Between Jobs and Housing

AMBAG's forecast assumes that there is a growing jobs housing imbalance between the Monterey Bay Area and the San Francisco Bay Area. An imbalance means that one area is creating jobs but not enough housing for those jobs, forcing commuters to drive ever longer distances. Consequently, the forecast anticipates an increasing number of Monterey Bay Area residents will be long-distance commuters, driving to jobs in Silicon Valley in 2035. For some Monterey Bay Area jurisdictions there is a sense that the region houses the population of the San Francisco Bay Area, taking on public costs associated with housing without the public benefit of spending activity. With this trend, State transportation facilities, such as Highway 17, Highway 1, and Highway 101 will be adversely impacted.

Sub-Regional Imbalance Between Jobs and Housing

Just as there is a growing jobs-housing imbalance between regions, the balance of jobs and housing is anticipated to become worse within our region, with adverse impacts on Highway 68, Highway 101, State Route 1, SR 152, SR 129, SR 25 and SR 156. With higher levels of anticipated congestion on these roads, demand for superior transit services will be higher in the future.

Historically Urbanized and Agricultural Land

Monterey Bay Area, 1984

- Grazing Land
- Agricultural Land
- Urbanized Land
- City Boundaries
- Spheres of Influence
- State Highway
- Interstate Highway
- Passenger Rail - Amtrak

Reference Map

Sources: California Department of Conservation Farmland Monitoring and Mapping Program; ESRI; AMBAG

Technical Appendix C: Scenario Planning Methodology

SCENARIO PLANNING METHODOLOGY

In this Appendix, AMBAG provides additional information for sections included in Defining The Issues and Presenting An Alternative. Some issues expand upon matters only briefly discussed in the main text, while others elaborate points that are relevant to Blueprint but not specifically addressed in the main text.

What is Scenario Planning

Scenario planning is an analysis tool that allows the comparison of potential future outcomes of policy decisions. Scenarios are stories in which a narrative helps illustrate how present day decisions might yield future specific outcomes. The narrative is grounded in empirical work that supports the assessment of scenarios for credibility and likelihood. Simply put, AMBAG and its partners in the Policy Group used "what if" planning.

AMBAG and the Blueprint Policy Group, consisting of planning directors from around the region, evaluated a series of scenarios in terms of the impact on vehicle miles traveled, and several other related factors. Using quantitative inputs and producing statistical and visual output allows comparison of the outcomes of particular scenarios.

Scenario planning in the Monterey Bay Area starts from current conditions. There is an existing urban footprint and its dimensions, its varied character across jurisdictions, and the underlying economic mechanisms of the region that have been in place for many decades.

Through this effort, scenarios build on the existing urban footprint and are guided by identified emergent trends and local General Plans. What is at stake in scenario planning is not the past, but the future population and employment growth that will increase and shape the existing footprint over the next twenty five years.

For each scenario there is a set of necessary conditions or requirements.
In Envisioning the Monterey Bay Area, AMBAG and its partners developed several scenarios each making assumptions about how market trends and policies influence the future built environment of the region. We then looked at the consequences of that built environment in each scenario.

Walkability

In the Presenting An Alternative Section, AMBAG presents Blueprint Priority Areas. As discussed in that section, the Priority Areas were defined by access to transit and land uses that also support biking and walking. In this Walkability topic, AMBAG depicts in greater detail urbanized areas that already support biking and walking near existing transit stops.

By identifying the areas that are both walkable and transit accessible we identify potential Priority Areas areas that could be developed

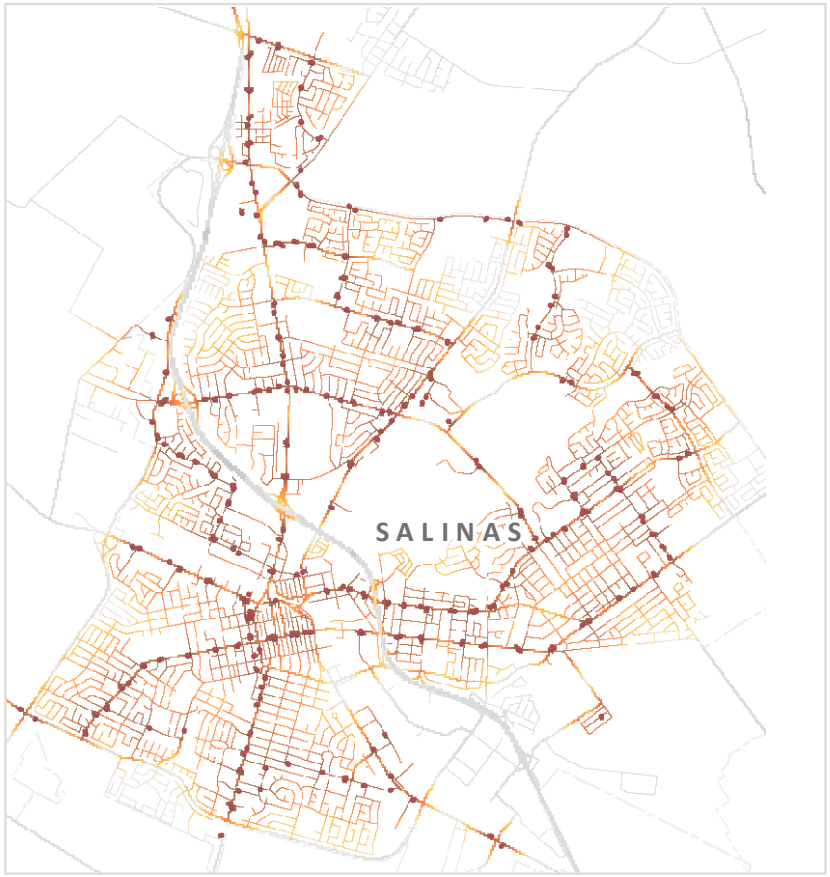
or redeveloped more intensely before currently undeveloped land is developed. With greater private and public investment and the right mix of policies, intensification of existing development and a balanced transportation system can meet Blueprint goals for reducing VMT and greenhouse gas emissions.
As shown in the following walkability maps, many of the region's cities have walkable and transit accessible downtowns and neighborhoods. Even smaller rural cities often have grid patterns that are accessible for pedestrians.

If you plan it, will developers come?

In 2004, a national survey of real estate developers indicated that these developers expressed strong interest in projects that were "Smart Growth" in character. Additionally, survey respondents stated that their interest in Smart Growth reflected market interest in a more diverse set of housing and transportation choices.

The principal obstacle to Smart Growth development, according to survey respondents, was the reluctance of local planning agencies to accommodate the market interest in Smart Growth. That reluctance, manifests in a refusal to relax the regulatory environment and tends to reinforce the low-density leapfrog patterns of development that we usually call 'Sprawl.'

While a cynical reading of the survey results might indicate that developers are shifting the



City of Salinas

Walkability Analysis of Street Networks Around Transit Stops by City/Place

Transit Stop

1 5 10 15

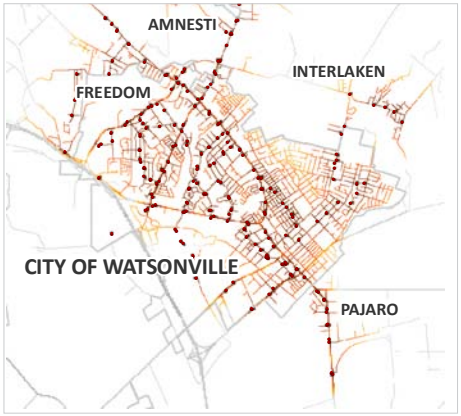
walking time (minutes)

Methodology Notes:

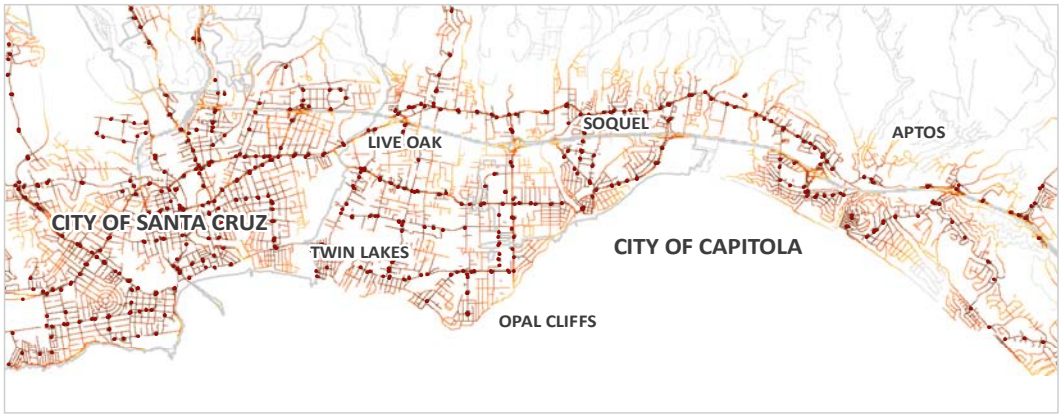
Walkability standards adopted from the American Planning Association publication, Planning and Urban Design Standards, © 2007. Walkability analysis conducted using the cost-weighted distance operation in ArcMap, based upon FHWA classifications, number of lanes and freeflow speed.

Sources: Transit routes, stops and traffic data sourced from the following: Association of Monterey Bay Area Governments; Monterey Salinas Transit; San Benito Council of Governments; Santa Cruz Metropolitan Transit District; Santa Cruz County Regional Transportation Commission; Transportation Agency of Monterey County

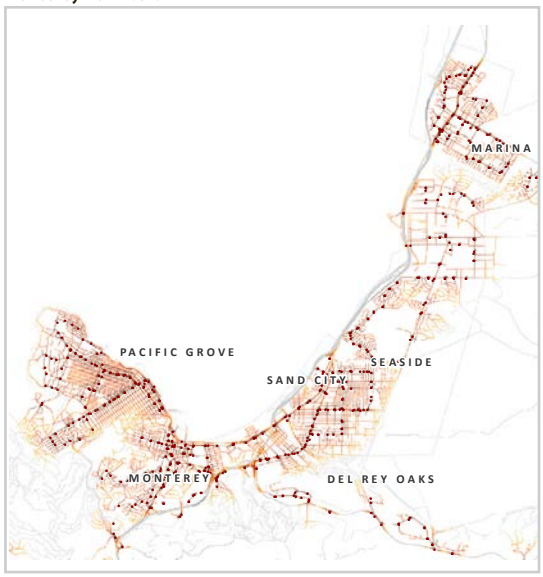
City of Watsonville | Freedom, Amnesti, Interlaken, Pajaro



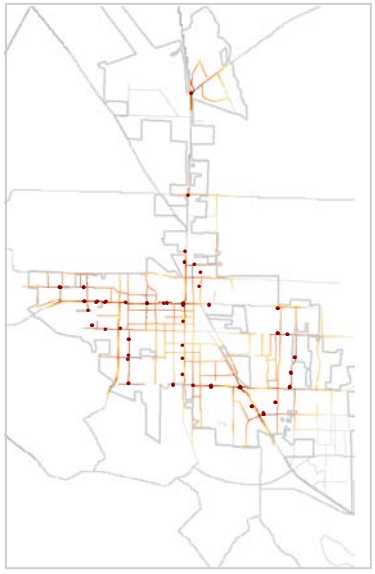
City of Santa Cruz + City of Capitola | Twin Lakes, Live Oak, Opal Cliffs, Soquel, Aptos + Rio Del Mar



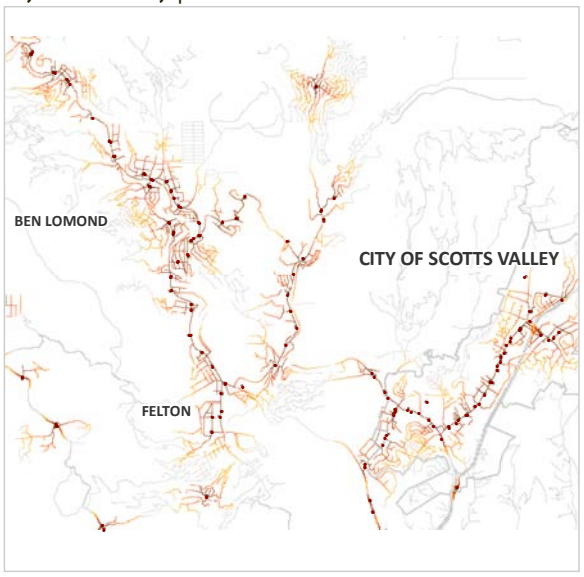
Monterey Peninsula



City of Hollister



City of Scotts Valley | Ben Lomond and Felton



blame for sprawling development to planners in order to weaken land use regulations, the study also suggests that land use regulation changes to accommodate more compact and dense development would be welcomed in the market place.

Source: Levine and Inam

Public Outreach

In AMBAG's public outreach, a central concern is to take the public's "pulse" regarding the overall Blueprint concept. Through workshops, surveys and web-based surveys, AMBAG attracted nearly 700 participants.

Survey results are reported in Appendix G. As noted throughout the text, even though survey technology was used in the workshops AMBAG conducted in the region, AMBAG does not claim that the survey is necessarily representative of the public in the Monterey Bay Area. Nevertheless, with 700 participants a significant number of people contributed their time to the effort.

VMT Components and Trends

Since the 1960s, VMT in the United States has increased at five times the rate of population growth. Understanding the root causes of this rapid growth in VMT is essential to policy development that reduces VMT growth even as the region's population and employment base continues to grow.

Growth in VMT is determined by the number of traveling persons, daily trip frequency, average trip lengths and the choice of transportation mode. These factors are in turn influenced by regional socioeconomic factors and local land use decisions.

In this section, we discuss each component of VMT growth, its past trends and its likely future direction. We also discuss which policy instruments could be most effective in shaping trends in ways that reinforce good local land use planning.

According to the Center for Urban Transportation Research, the single most important growth component in VMT is change in trip frequency, with per capita growth in the US of 49 percent since the 1970s. There are both direct and indirect causes for the growth in trip rates.
Foremost among the direct causes of trip rate growth is the large-scale entry of women into the labor force, beginning in the mid 1970s and accelerating through the 1980s. With many households sending two or more members into the labor force each day, a host of activities that previously were conducted within the household were 'outsourced' to daycare facilities, after-school programs, and restaurants, among many other land uses, compounding the initial growth in household travel activity with trips related to other supporting activities outside the home. Vehicle occupancy also dropped in this period, as auto ownership increased to about two vehicles per household, consistent with higher incomes and more far-flung trip destinations.

With two income families, real household income increased, and families spent their extra income on consumer goods and leisure activities that further resulted in increased trip rates.

With a concurrent growth in suburbanization under often strictly single use zoning districts, household activities were often spread across suburban and urban environments, directly contributing to average trip length. Also, with two income families one of the fundamental assumptions of residential location decisions—that workers choose to live near work—began to crumble as employed householders took jobs in locations different from their partner's.

Average trip lengths have increased since the 1970s but not at the same rate as trip frequency. The VMT component most directly connected to land use, average trip length has increased, according to one study, from nine to ten percent, and significantly more in other studies. In addition to the increasing distance between activities the trend of replacing non-motorized uses such as biking and walking with busing and carpools for school, and single-occupancy vehicle trips for adults added to increased trip length.

About 17 percent of VMT growth was the result of mode shifts in the direction of single-family vehicle use. While mode shift was the product of all of the above mentioned trends—those trends were reinforced by commonly shared American values highlighting personal independence, freedom and a certain infatuation with passenger vehicles that continues to this day.

But what about the future? Several studies indicate that many of the growth factors behind VMT have exhausted themselves. With regard to trip rates, female labor force participation is close to parity with men's, and is unlikely to change drastically in the future. While households will continue to have two participants or more in the labor force, real income growth has slowed and even shrunk in many parts of the United States. The emergence of internet based shopping may shift trips from personal vehicles to more freight movement and reduce VMT. These factors point to a deceleration in trip rate growth.

As with trip rates, change in modes is slowing down. Widespread vehicle ownership will likely continue. Given that most other components of VMT change have peaked, the one factor likely to grow is average trip length, a VMT component directly related to local land use decisions and the pattern of land uses throughout a region.

Source: Polzin.

Aging and Transportation

While many factors behind VMT growth have peaked, population and employment growth throughout the time period covered by the forecast are dynamic. Among the most important anticipated changes in the region is the aging of the coastal population in both Monterey and Santa Cruz Counties. The most dramatic aging impacts will occur in Santa Cruz, and aging will continue in Monterey Peninsula, but there are countervailing trends in the inland population.

Monterey County's inland population continues to grow and will remain relatively young. In contrast, by 2035 more than seventeen percent of the Santa Cruz County population will be over the age of 65. While many people of this age will continue to work, even at part-time jobs, many others may choose active lifestyles near downtown areas that support leisure activities.

While San Benito County's older population grows at high rate over the forecast, that segment of the population is a small proportion of the County's total population.

With a focus on where aging is the most significant, there are several implications of an aging coast for transit and VMT. The overall impact on VMT suggests that congestion may decrease during peak periods but congestion could spread over more hours of the day. With increased parallel demand for transit services, buses may carry more passengers over more hours of the day, reducing deadheading.

Because many seniors will be on a fixed income, shifting the burden of increased transit services costs to farebox recovery may be impractical. Instead, other means of financing superior transit services must be found.

Sources: Rosenbloom, Giuliano, AMBAG forecast

The Density "Sweet-Spot"

Much research has been undertaken in recent decades to identify at which residential densities various public facilities are most cost efficient. For example, at very low residential densities, such as one unit per four acres, it would be very expensive to install sewer laterals in such a low density community. Instead, such land uses would be better served by septic tanks. At higher densities, basic services including water, sewer and paved roads are more cost efficient.

Each chart below, including a summary chart which looks at the relationship between density and infrastructure on a standardized scale, depicts three 'sweet-spots' indicated in shades of grey. Each shade indicates a range of service levels from basic (for small urban or rural urbanized areas) to medium (for urbanized areas delivering higher quality services), and high for the highest quality of services including rapid transit.

Sources: Frank, Littman, Muro, Najafi

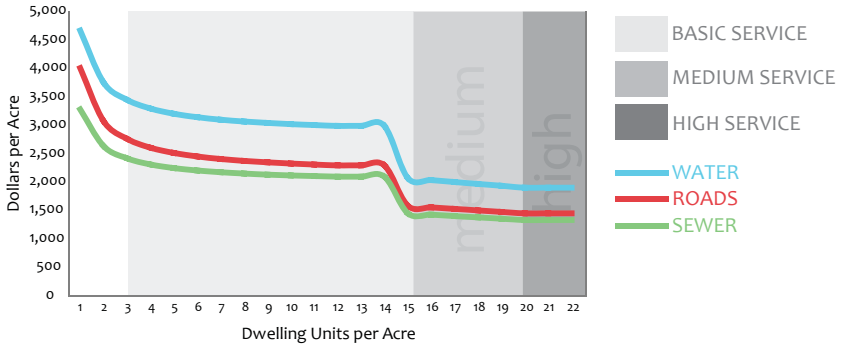
Pricing, VMT and Alternative Modes

Pricing refers to three different dimensions of the cost of travel in the Monterey Bay Area. Pricing can refer to changes in cost to a gallon of gasoline imposed by policy, such as gas taxes, or to cost changes resulting from market demand for gasoline. Pricing may also refer to fees such as congestion pricing which are levied to moderate demand for access to heavily congested areas.

While it is highly likely that fuel prices will be higher in the future given a limited supply and higher demand from growing newly industrialized countries such as China and India, AMBAG does not incorporate such assumptions into its modeling process.

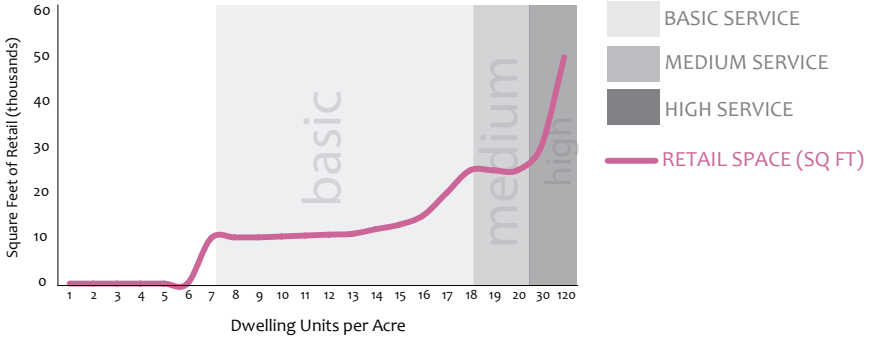
Infrastructure Costs vs Density

Source: AMBAG, 2010



Retail Space vs Density

Source: AMBAG, 2010



If indeed market prices were to increase substantially over the next 25 years, many households will take transportation costs into account in making their location decisions.

Greenhouse Gas Equivalents and Transportation

Greenhouse gas emissions from the transportation sector are calculated based upon total vehicle miles traveled, total vehicle trips, vehicle classifications and vehicle miles traveled by speed.

Along with other MPOs across the state, AMBAG is continually updating modeling capacities in order to better estimate how smart growth policies can reduce GHGs through reducing VMT and vehicle trips.

For Regional Blueprint modeling, AMBAG staff utilized the EMFAC 2007 model and adopted the metrics recommended by the California Air Resources Board's Regional Targets Advisory Committee.

Greenhouse Gas Equivalents and Desalination

Greenhouse gas estimates from desalination or from other water supply methods will vary greatly by assumptions regarding the power and emissions of the plant desalinating water.

Other variables influencing greenhouse gas emission results from desalination include the total number of housing units supplied by desalinated water, average household consumption versus other options such as groundwater pumping, environmental

mitigation measures and other factors.

AMBAG produced a greenhouse gas estimate for desalinated water using assumptions derived from a model available from the Pacific Institute.

For the purposes of the AMBAG calculation, AMBAG assumed an increment of roughly 65,000 housing units between 2005 and 2035. Furthermore, and for the purposes of simplicity, all of that increment was to be supplied by desalinated water. Using data from the Pacific Institute, which is drawn from a number of existing plants such as Carlsbad in San Diego County, per capita CO2 emissions were calculated.

Assuming an average water consumption rate of 0.25 acre feet, total demand for water will increase by about 16 thousand acre feet by 2035. This consumption rate assumes that the entire increment will consist of detached single family homes. With higher density development, that consumption rate could drop considerably. In the City of Santa Cruz, for example, multi-family development consumes a little more than half the average consumption rate for single family.

AMBAG's initial estimate is that per capita GHG emissions from desalination alone in 2035 will be around 0.2 pounds per day.

With more advanced technology, alternative energy and mitigation, that figure could be lower. Alternatively, a different set of assumptions on energy consumption could yield higher estimates. As such, 0.2 pounds per day per person is a ballpark yet reasonable assumption to make.
Sources: Wolff; AMBAG

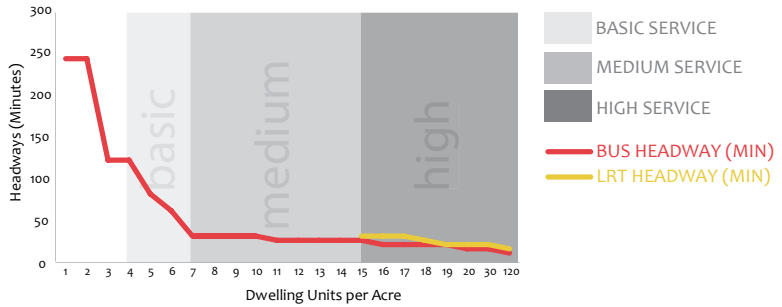
The Impact of Enterprise Zones on Jobs

Extensive research on the effect of Enterprise Zones on employment growth identifies two characteristic effects on employment trends and distribution. On the one hand, Enterprise Zones attract new jobs from nearby locations and their overall influence is modest. On the other hand, there are other studies in which Enterprise Zones are considered to be successful.

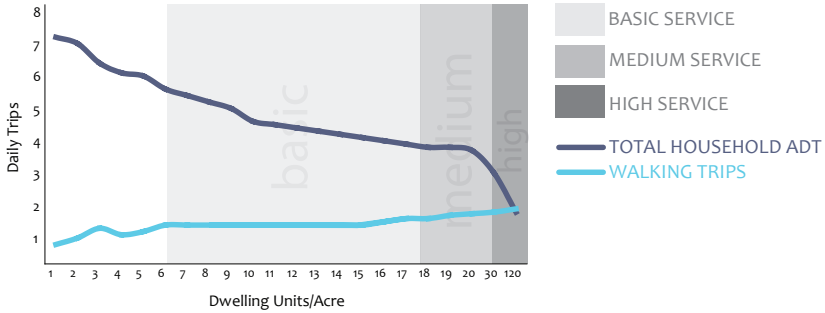
For the purposes of developing scenarios of the future, AMBAG took a conservative approach and assumed little sustained impact on creating new jobs from the Enterprise Zones.

Source: Kolko

Transit Service Headways vs Density
Source: AMBAG, 2010

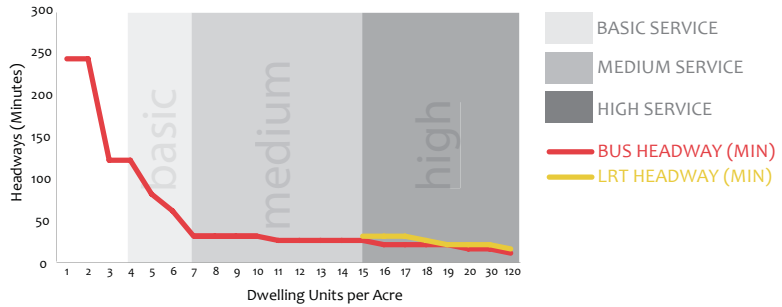


Average Daily Trips (ADT) and Walking Trips vs Density
Source: AMBAG, 2010



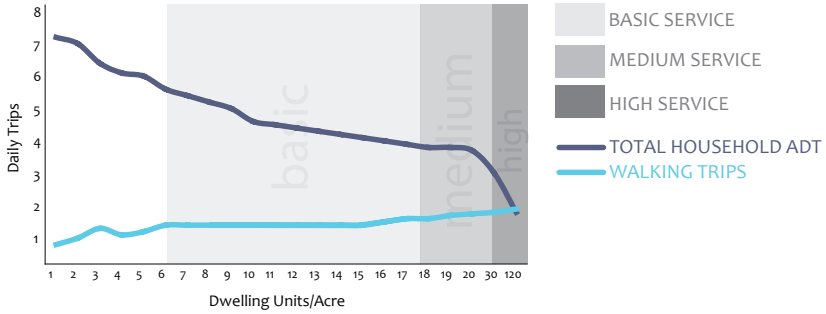
Transit Service Headways vs Density

Source: AMBAG, 2010



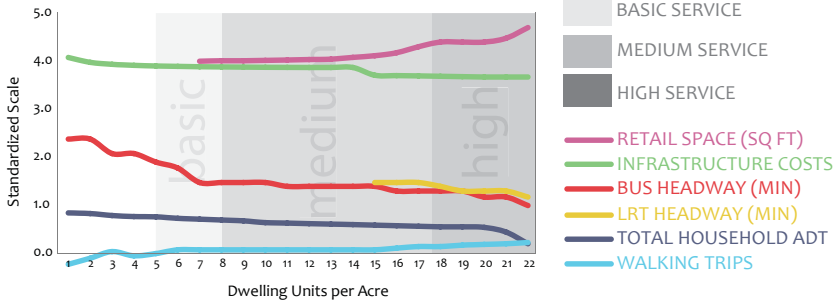
Average Daily Trips (ADT) and Walking Trips vs Density

Source: AMBAG, 2010



Summary Graph

Source: AMBAG, 2010



Distribution of Household Income

The future distribution of household income in the Monterey Bay Area is dependent on two factors: changes in the regional employment mix among industries; and a change in the distribution of the mix across the region. The adopted 2008 Forecast of Employment, Population and Housing anticipates that the kinds of jobs that we will see in the future in this region will be similar enough to jobs that are currently in the region. As such, there is little reason to expect major shifts in household spending.

Also, it is logical that the coastal areas will continue to attract residents with higher incomes than more rural areas. Interior rural areas more likely will attract younger families because of lower housing costs and the assumed continued dominance of agriculture in the economies of inland cities. Besides trip rates, average jurisdictional household income influences the number of retail and service jobs in each locality.

With tourism and higher incomes, for example, coastal cities enjoy higher rates of per capita retail and service employment, while the interior cities experience lower rates. This in turn generates longer shopping trips for inland residents to better served urban areas.

Technical Appendix D: Policy Resources

POLICY RESOURCES

In this Appendix we expand upon some of the market trends and policies described in Getting There From Here. Increasing the compactness of the Monterey Bay Area will require a concerted effort by public agencies to adjust local policies and to seek legislative changes for State policies that inhibit Smart Growth.

Trends in the Housing Market

In Getting There from Here, AMBAG describes research from peer-reviewed work that anticipates greater demand for smaller housing units, more rental opportunities, and homes closer to jobs and other activities.

References to each authority are cited in full in Appendix G: Sources.

Assumptions regarding increased demand for more rental opportunities is based on a number of studies, including a study by John McIlwain.

McIlwain points to a historically unprecedented and unsustainably high level of homeownership in the United States as the principal background factor behind the Subprime Mortgage Crisis of 2008 onwards. Looking ahead over the next 10 years, McIlwain points to the vast number of 'underwater' properties and a likely very slow economic recovery as indicative of a policy imperative in which new "for sale" housing construction is limited until housing prices begin to recover.

Looking over the long run, a more realistic national housing policy will focus less on maximizing homeownership, especially for families that cannot afford a home, and will instead focus on more rental opportunities for single, non-traditional and younger households since the population will increase even as real wages are stagnant.

Labor markets may also change in ways that reinforce the need for rental opportunities. The loss of manufacturing jobs, and the long-term stability that often went with those jobs means that younger people are more likely to be employed in service industries. Without over generalizing, many service occupations that young workers are employed in tend to have high turnover rates. The overall lack of job security throughout the economy in a slow recovery from a recession may drive the need for to provide housing that is more flexible than for-sale.

Factors influencing demand for smaller housing units tend to be strongly influenced by accessibility to jobs, activities and amenities with people trading larger homes for smaller homes in order to gain better access to those jobs, activities and amenities.

Without putting too much weight on the workshop surveys that AMBAG conducted in 2010, survey respondents reported that they preferred smaller housing units in conjunction with greater access to amenities and jobs over larger homes without similar access. Respondents' anticipated preferences for housing at retirement also generally favored more compact housing types than current preferences.

While the survey results are suggestive, market data findings do clearly and not surprisingly show that homes that are closer to activities and amenities tend to have higher per square foot values even when those homes are smaller than homes further away. In the Monterey Bay Area, proximity to jobs, activities and the coast itself add considerable value to square foot costs/values of housing.

Nelson also argues that life-cycle decisions will affect demand for housing by type and size and that demand for attached versus small detached and large detached housing will shift by 2025, because of changing demographics. By 2025, the existing inventory of large lot homes will actually exceed demand for that housing type, while demand from childless couples, both young and old, for small lot and attached housing will exceed supply.

Market Trends Influencing Transportation Choices

Data on the impact of fuel prices on the availability and cost of asphalt materials is taken from Steiner, although there are many other available sources for fuel price inflection points.

In terms of impact on transit ridership, Weinberg and Maley found in a study in Philadelphia that a $1 increase in gasoline costs increased rail ridership by 10% and bus by 5%.

Reviewing transit ridership data in the Monterey Bay Area both before and after gas price hikes in 2008 showed a much smaller but significant increase in transit ridership because of increasing gas prices.

Policies to Improve Housing & Neighborhood Choices

Implement a Graduated Density Bonus for Infill Projects

"Zoning that allows higher density (and thus higher land values) on larger sites can increase the incentive for owners to cooperate in a land assembly. It can also reduce the incentive to hold out by creating a new fear of being left out. If any holdouts from a land assembly are left with sites that cannot be combined with enough contiguous properties to trigger higher density, they lose a valuable opportunity."

Source: Shoup, 2009

Shoup has placed a version of this article on graduated density on his website. The URL is http://its.ucla.edu/shoup/GraduatedDensityZoning.pdf

Accommodate the needs of an aging population in a smart way

Seniors in 2035 will be different than seniors today, and so expectations of the transportation system and the land uses the system accesses will be different. Seniors will be more educated, will be more used to driving their entire lives, they will be healthier, and work more years in a full time or part time capacity than seniors today. They will likely be even more reluctant than today's seniors to give up driving.

As Americans age they cede certain activities that they are accustomed to as a matter of last resort. Any strategy for encouraging the public to take transit in the future must take into account the specific needs of seniors, especially with regard to perceptions of safety and security on transit, information on transit arrival and departure times, wait times and any special assistance seniors may need.

Experts on aging and transportation suggest that conventional services can be improved by making pre-trip and trip experiences more secure and by providing better information about the service. The bus fleet must be low-floor accessible with more service in off-peak periods and even provide scheduled services for specific needs such as shopping, health or recreation. Community buses have already worked in communities with large elderly populations in which the driver provides physical assistance to elderly riders, and guaranteeing them a seat.

Carpooling and vanpooling are essential mechanisms for elderly mobility. Government can provide group insurance coverage for carpools or insurance pools for volunteer drivers.

Through a survey of older drivers, experts have found that the following activities become more difficult for drivers as they grow older (with proportion of drivers responding in parentheses):

- Reading street signs in town (27 percent).
- Driving across an intersection (21 percent).
- Finding the beginning of a left-turn lane at an intersection (20 percent).
- Making a left turn at an intersection (19 percent).
- Following pavement markings (17 percent).
- Responding to traffic signals (12 percent).

Consequently, older drivers have reported the following characteristics of roadway design become important with age (with proportion of drivers responding in parentheses):

- Lighting at intersections (62 percent).
- Pavement markings at intersections (57 percent).
- Number of left-turn lanes at an intersection (55 percent).
- Width of travel lanes (51 percent).
- Concrete lane guides (raised channelization) for turns at intersections (47 percent).
- Size of traffic signals at intersections (42 percent)

There are numerous roadway improvements for both elderly drivers and pedestrians. Given the widespread difficulty with left-lane turns at intersections, engineers have begun promoting roundabouts at low volume intersections as a solution that both calms traffic and supports the higher safety demands of older drivers.

While roundabouts are sometimes initially confusing, roundabouts

Best Management Practice

Improve Neighborhood Site & Street Design

Source: AMBAG, 2010

Best Management Practices

Increase Mixed Use Redevelopment & Infill *Source: AMBAG, 2010*

BEFORE

are safer than most signalized intersections with left-turn lanes for all age cohorts of drivers. Pedestrians can also benefit, especially with countdown displays for crossings and adequate signage warning drivers of pedestrian movements.

The provision of median refuges throughout hazardous sections of wider, multilane roads, particularly in areas with many older pedestrians, has been identified as a potentially effective countermeasure for pedestrian safety. Refuges not only provide pedestrians a safe section in which to rest in the center of the road but also simplify the crossing task, enabling a more manageable two-stage crossing with attention focused in only one direction at a time. The provision of medians also may reduce vehicle travel speeds, further enhancing safety for pedestrians.

Increase opportunities for infill and redevelopment/reuse

Infill refers to more intensive development of under-utilized property with new projects that take advantage of existing infrastructure, and provide for housing, commercial uses or both. Over the long-run, many existing uses will age, lose value, become an eyesore or leave behind polluted land. Through a combination of local and state resources, re-developing land with residential, commercial or both uses can strengthen local communities. In some cases, there may be relief from the California Environmental Quality Act (CEQA), under SB 375 for projects that meet certain criteria. Tax credits, impact fee abatements and streamlined permitting are useful tools for expanding opportunities for redevelopment. Concerns include tort liability for condominium development. Financial institutions frequently demand that developers fit all projects into a risk-minimizing financing structure, which often complicates mixed-use projects.

Alter parking requirements and types of supply

Parking and particularly single level surface lots is one of the largest uses of land in the region. These lots increase stormwater runoff while providing no direct economic benefit to the region. Large lots are greatly under-utilized and are non-productive uses and therefore, are losses to the economy.

Maximum parking requirements for residential uses can be used to encourage residential use of transit and alternative modes. Shared parking facilities allow adjacent businesses to provide enough parking for patrons while not being forced to provide an over-supply of parking. One of the primary ways local planners can more appropriately control the supply of parking is by revising local zoning ordinances to more accurately reflect local parking demand and circumstances. The local zoning ordinances could potentially be revised to reduce parking requirements given a project's proximity to transit, surrounding land uses, demographics of prospective users, implementation of

transportation demand management programs, or payment of fees in lieu of parking. Other strategies that might be considered for incorporation in local ordinances include parking maximums, area-wide parking caps, and shared parking.

Improve employer parking management

Typically, employee parking at the place of work is free and employers receive tax incentives to provide this parking free of charge. Without limiting employee parking, employers will continue to subsidize free parking for employees. In some congested areas, downtown parking for employees is treated as a privilege that must be paid for, or alternatively can be swapped for transit passes or other benefits to encourage transit use and carpools. With current levels of congestion, there are not many places in the Monterey Bay Area where such a policy would be welcomed. However, there is value in considering parking "cash outs" for areas where competition for parking is high.

Implement employer based transportation demand management programs

Employer based transportation demand management programs are useful in that they can encourage the use of sustainable modes amongst a captured audience. Additionally, employer based programs organize commuters by common destination points. Employers can easily identify the needs of their employees and provide services that address those needs.

In rural areas, many workers are employed in agricultural activities. Van pooling these workers is a safer and more reliable means of transit that has been well received in other parts of California. If van pooling becomes widespread in the Monterey Bay Area, there will be a significant reduction in trips on rural roads. With about 60,000 to 80,000 peak season farm employees, van pooling eventually capturing five to ten percent of these trips will contribute to lowering traffic volumes on major roads.

Conserving Natural Resources

Adopt mechanisms to protect key natural resources

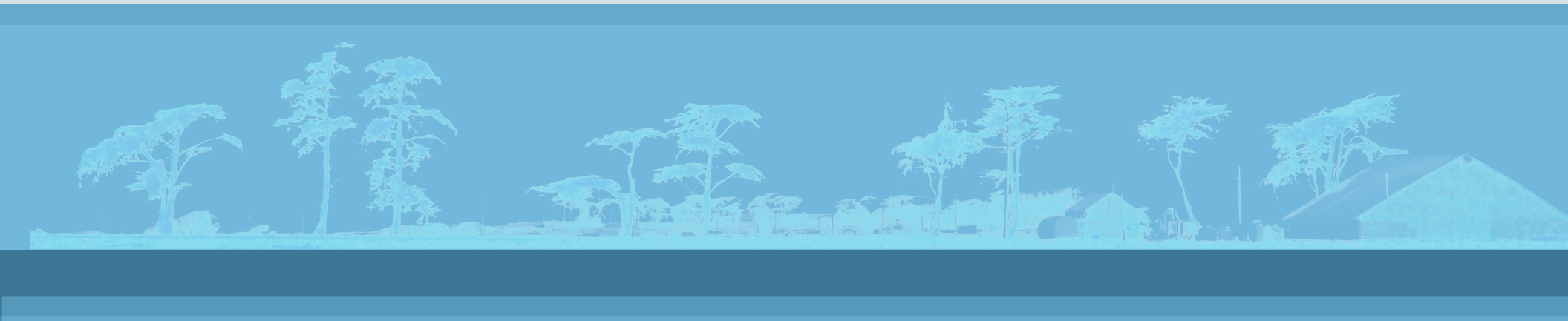
Greenbelts, urban reserves and other, similar, methods have been used to protect key resources and encourage compact development. Land Trusts within our region have had a successful record of preserving land from development. Local government may want to consider working more closely with land trusts to preserve natural resources.

Best Management Practices

Increase Mixed Use Redevelopment & Infill *Source: AMBAG, 2010*

AFTER

Technical Appendix E: Regional Blueprint Public Participation



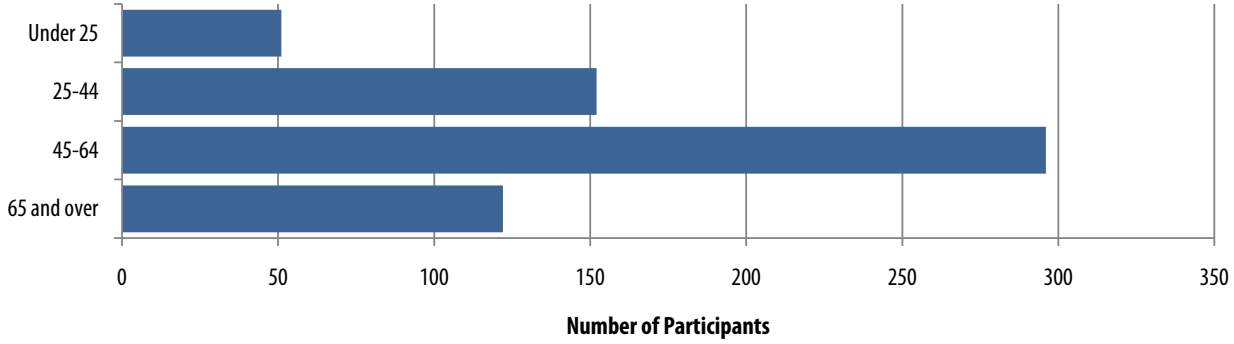
PUBLIC PARTICIPATION RESULTS

Public Acceptance of Smart Growth Principles.

From May to September of 2010, 669 residents of the Monterey Bay Area were surveyed through workshops, at group meetings and through online surveys to help determine current demographics and habits, and their tolerance for certain smart growth principles.

The following graphs are the cumulative responses from all participants. Where noted, v1.0 refers to questions only asked in the first version of the survey, and v2.0 refers to questions only asked in the second version.

What is your age?



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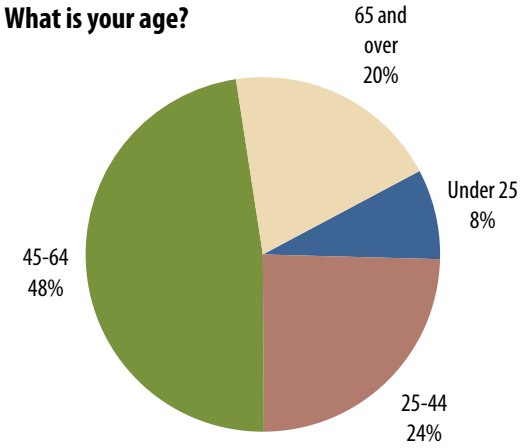
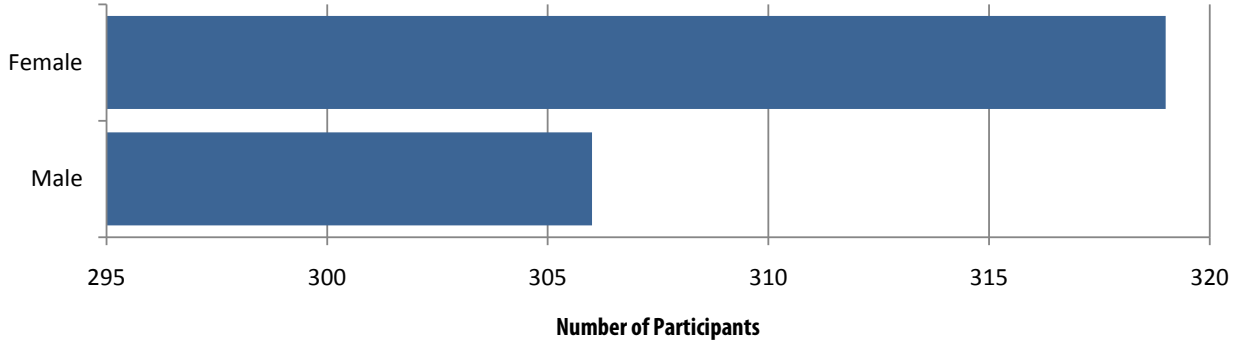
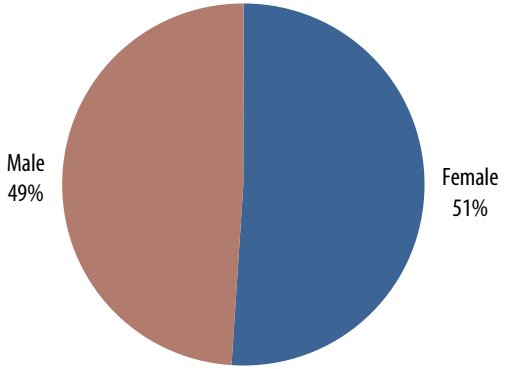


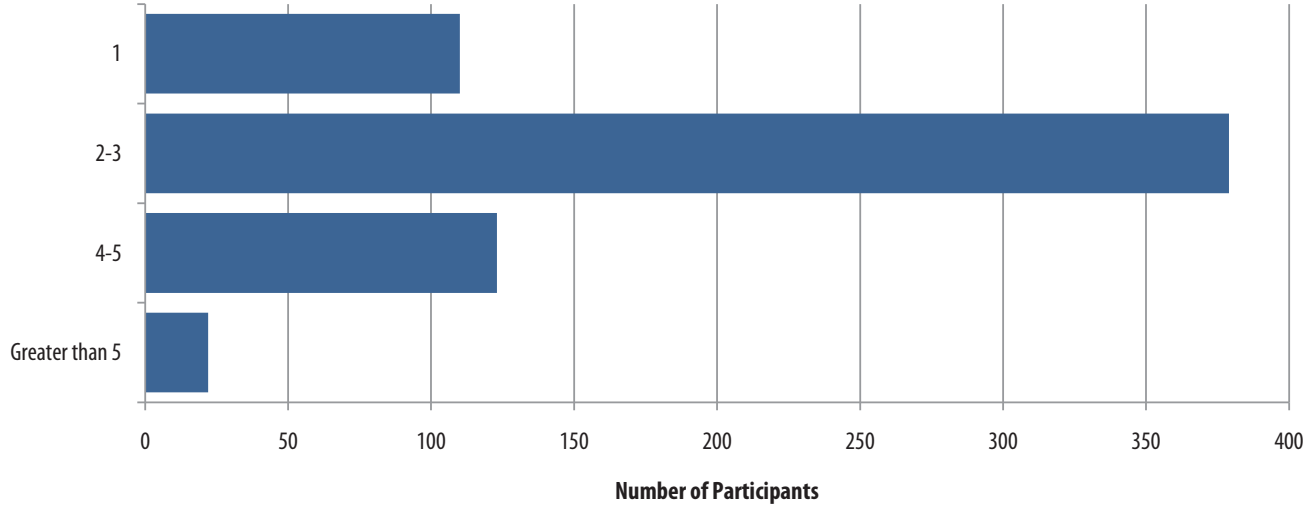
What is your gender?



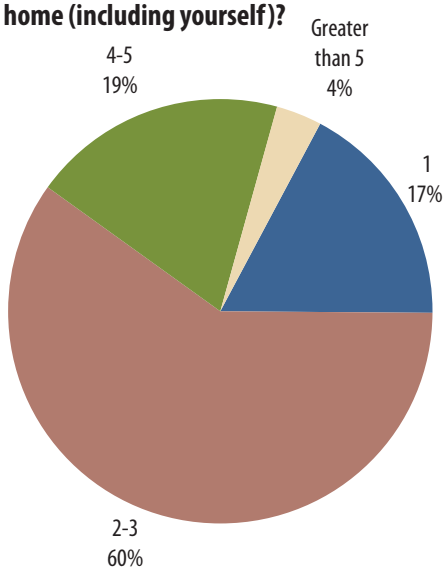
What is your gender?



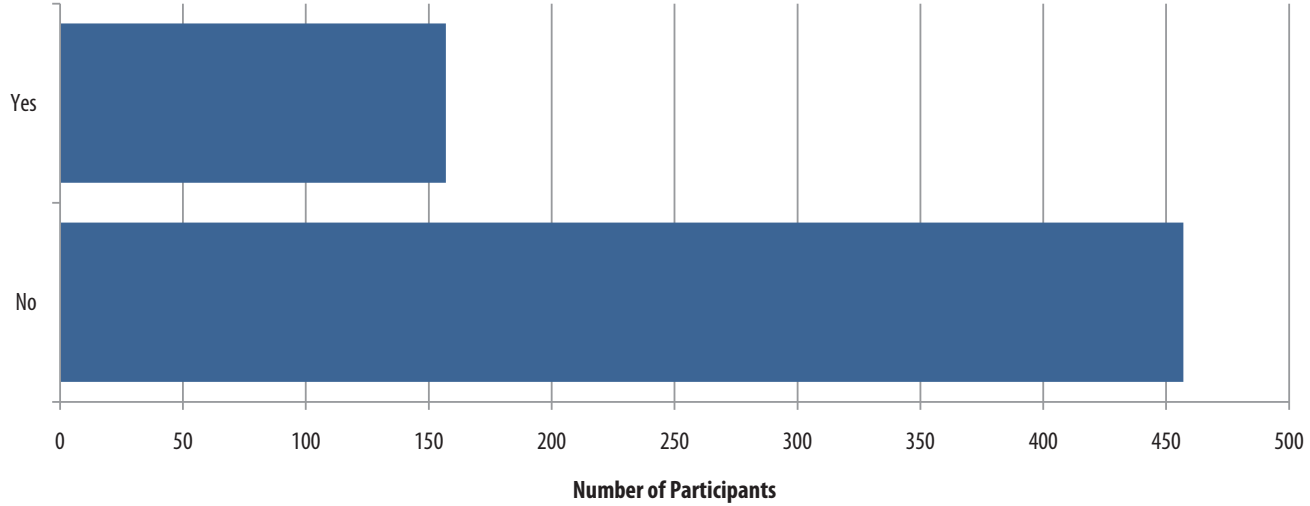
How many people live in your home (including yourself)?



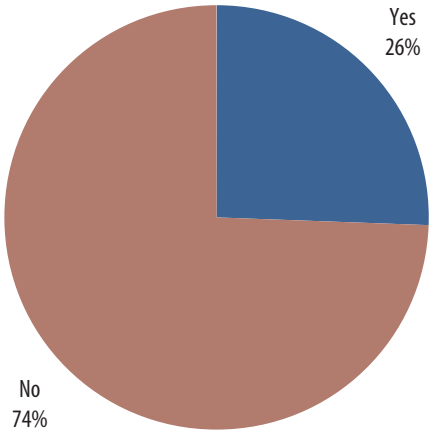
How many people live in your home (including yourself)?



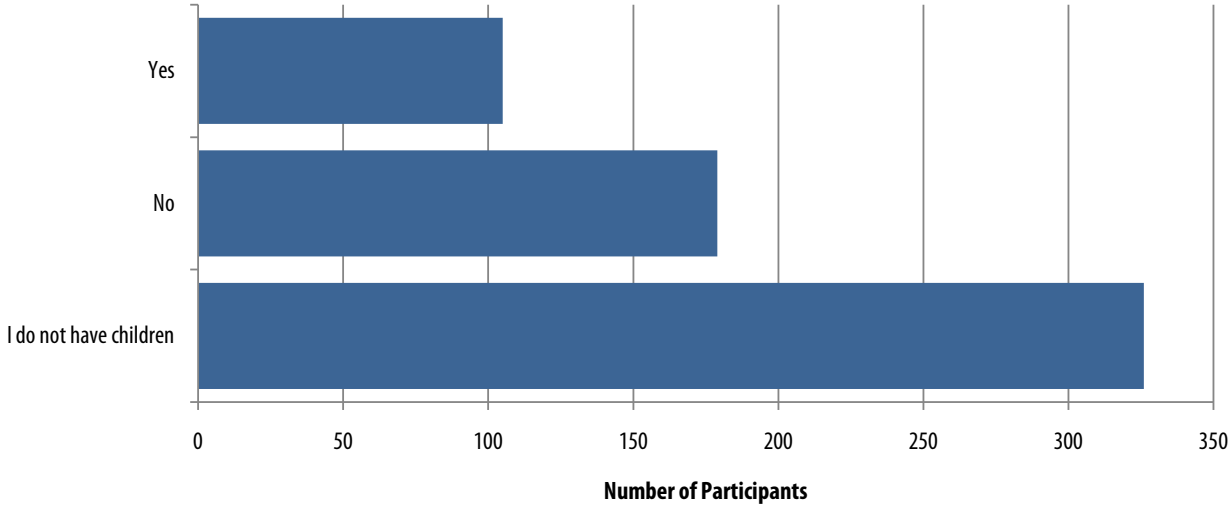
Do you have k-12 school-aged children in your home?



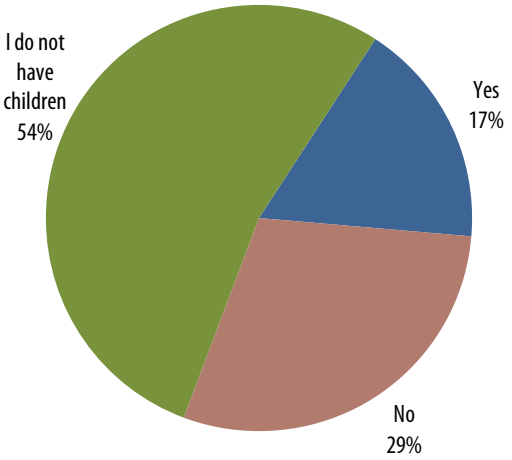
Do you have k-12 school-aged children in your home?



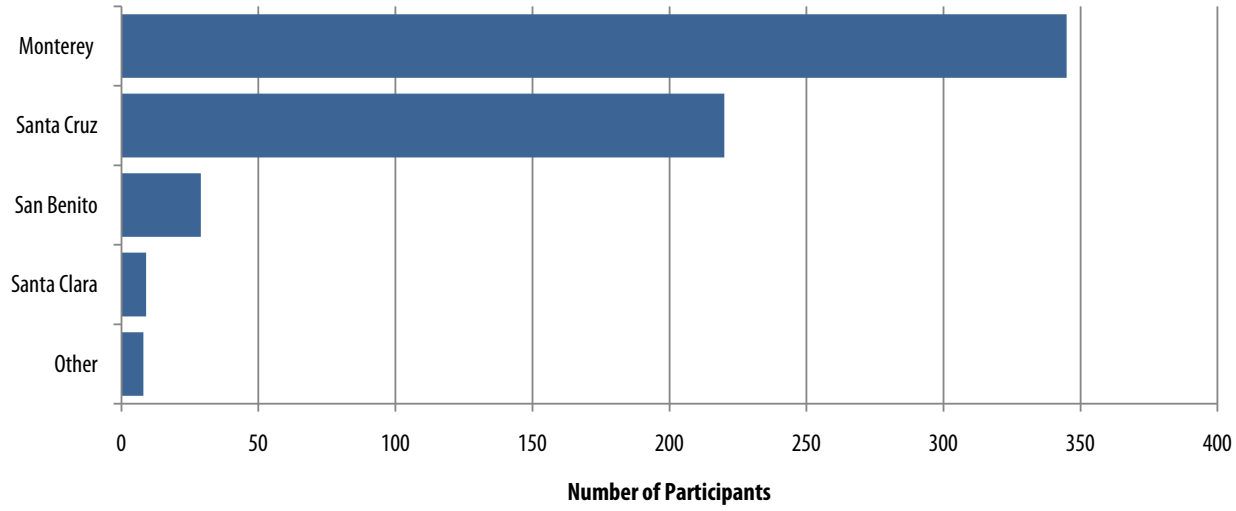
Do you drop your children off at school on your way to work/school?



Do you drop your children off at school on your way to work/school?



Which county do you live in?



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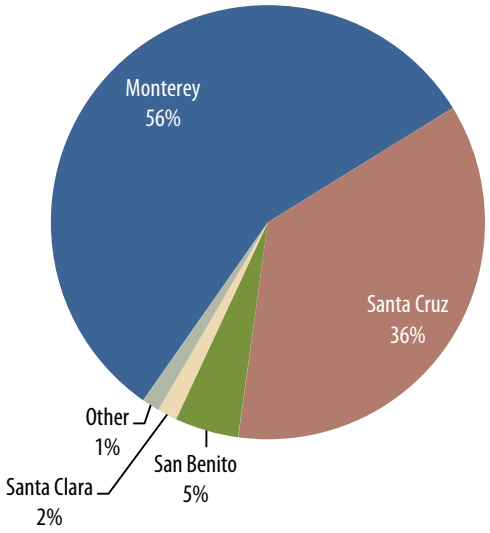
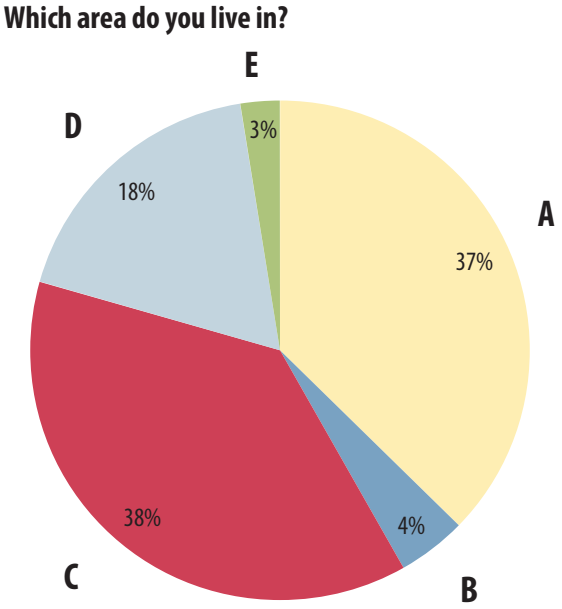
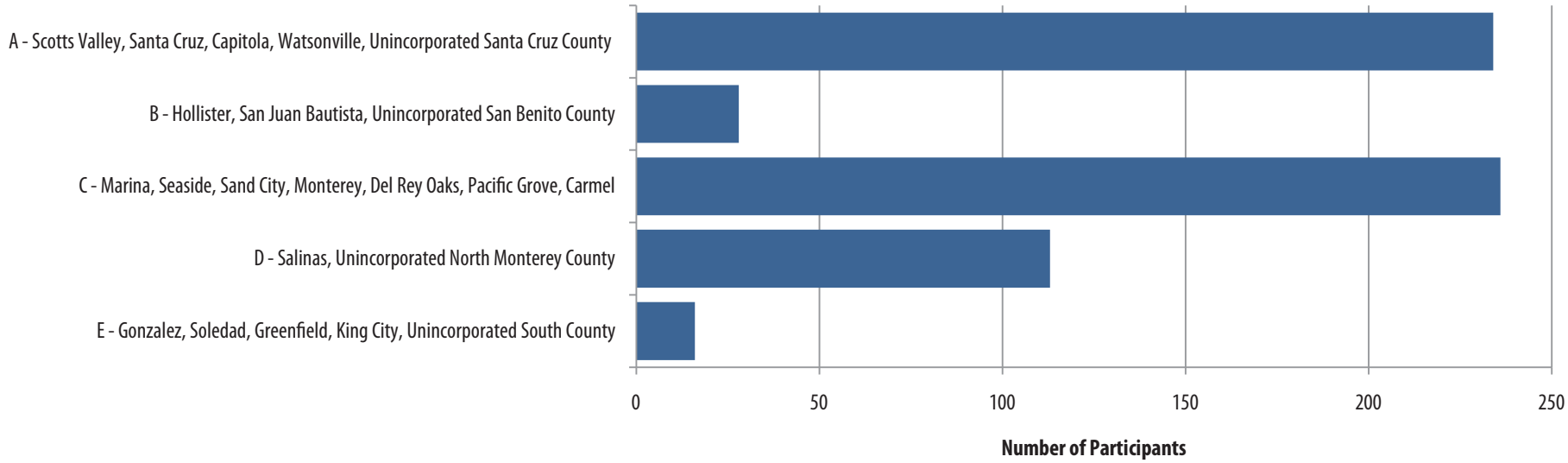
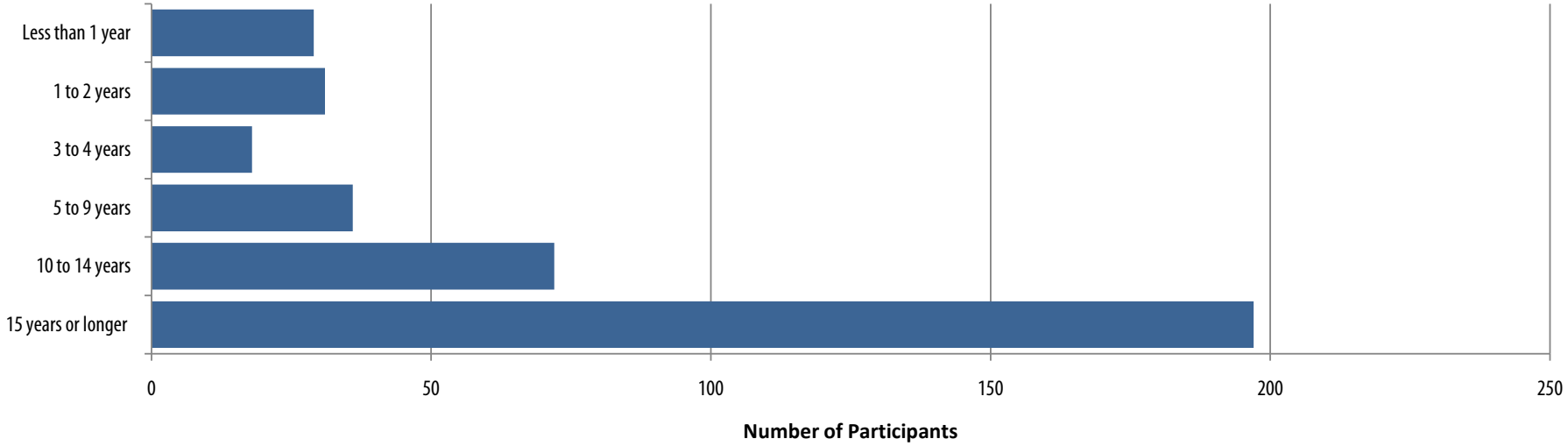




Which area do you live in?



How long have you lived in the Monterey Bay Area? (v2.0 only)



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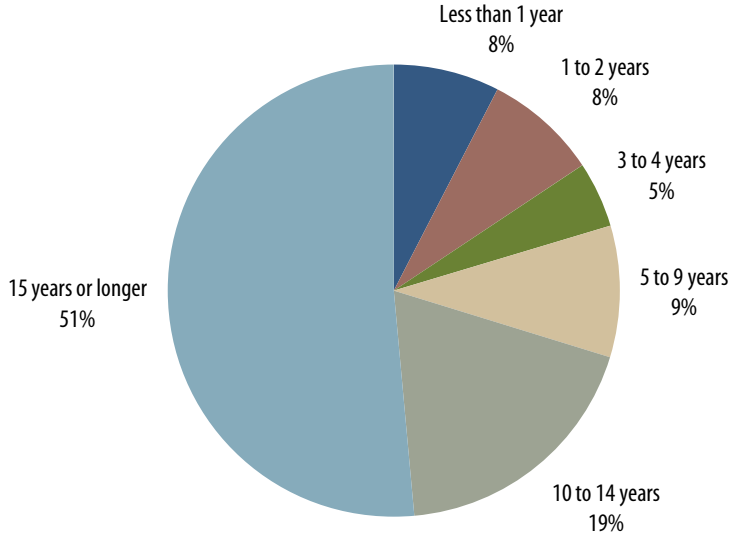
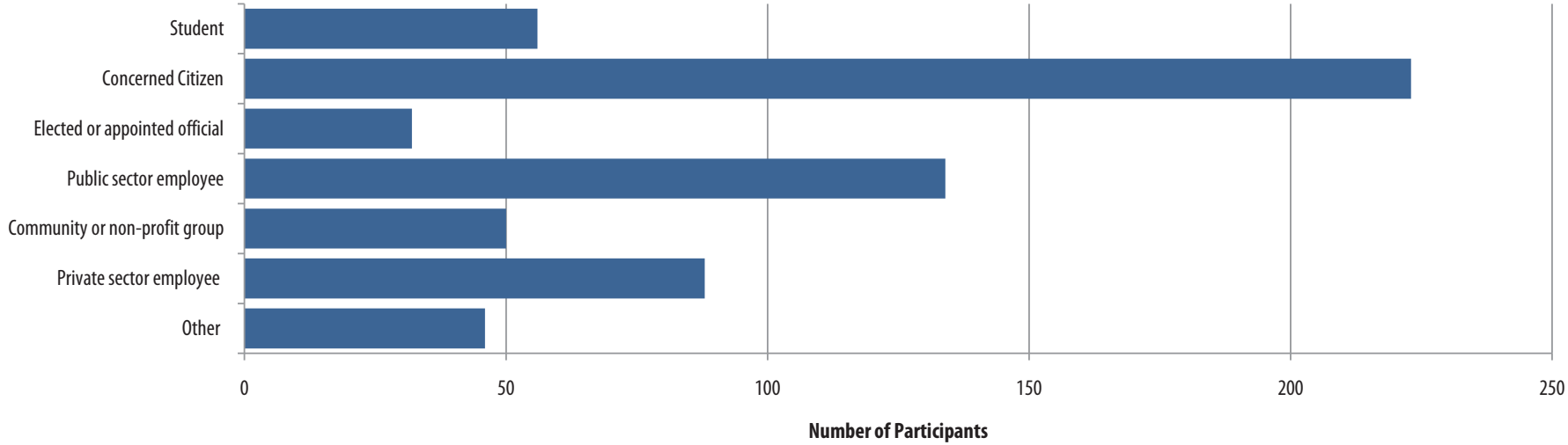
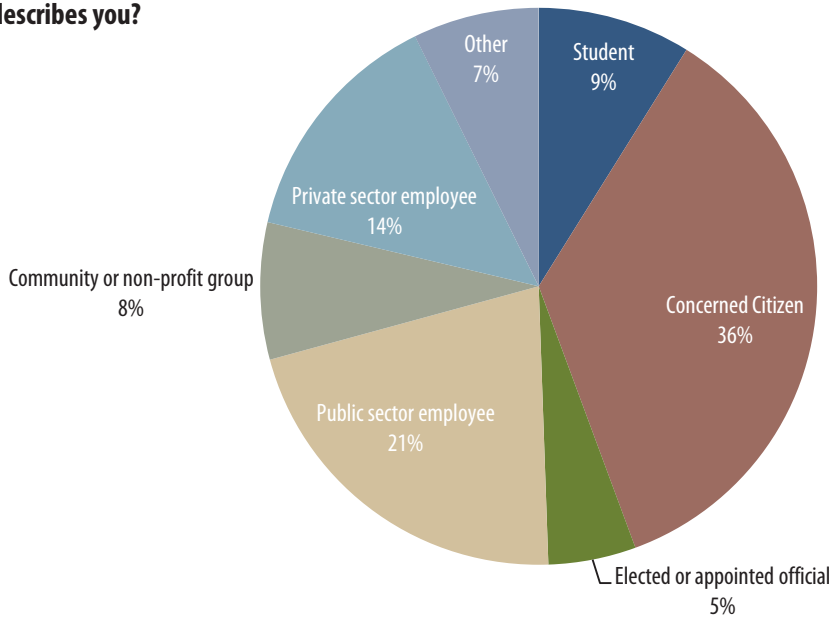


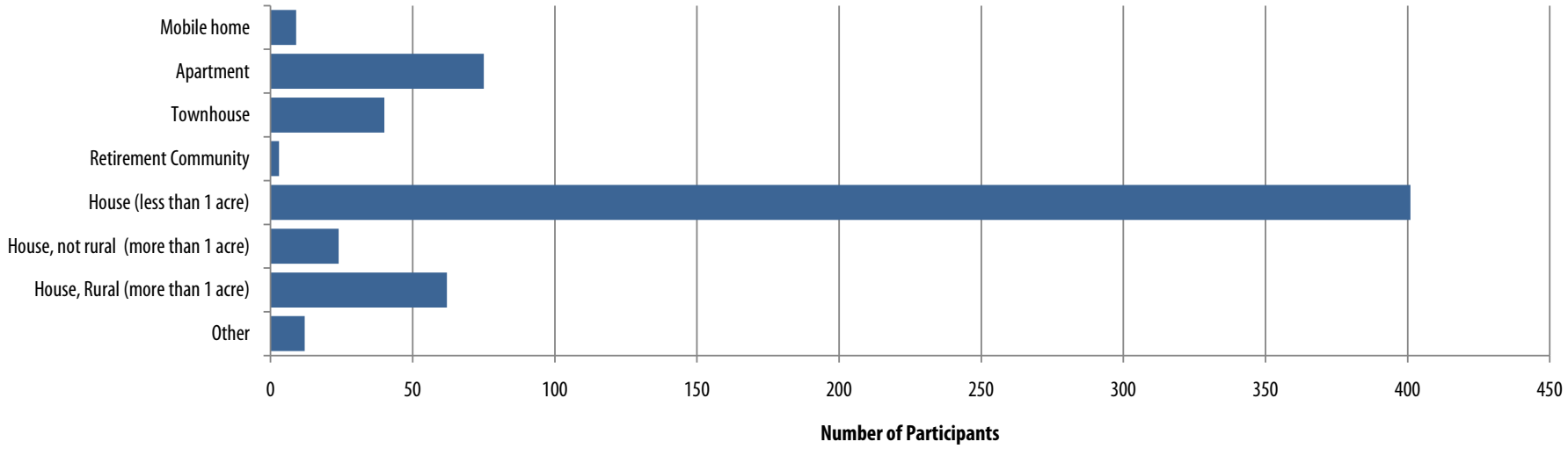
Which of the following categories best describes you?



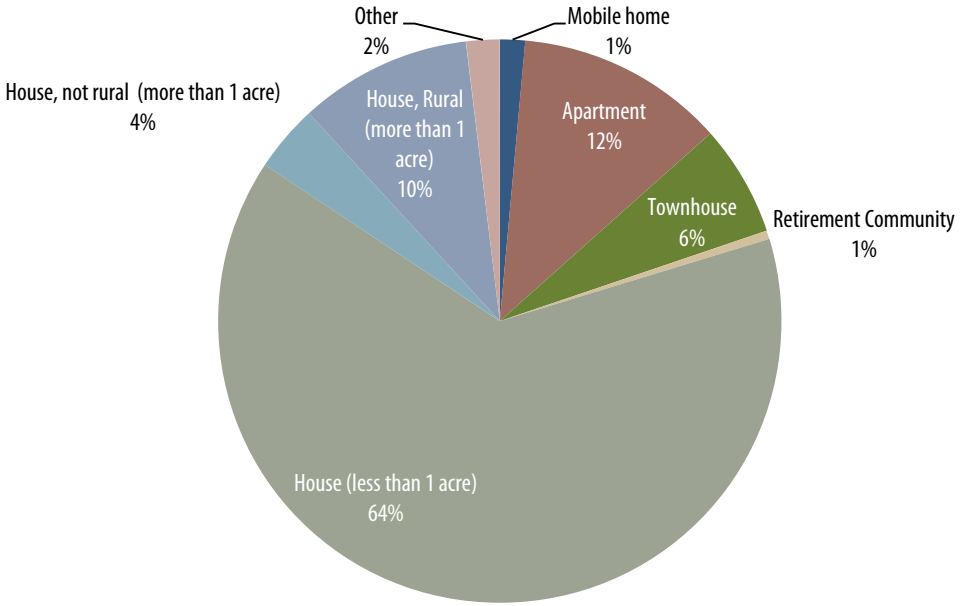
Which of the following categories best describes you?



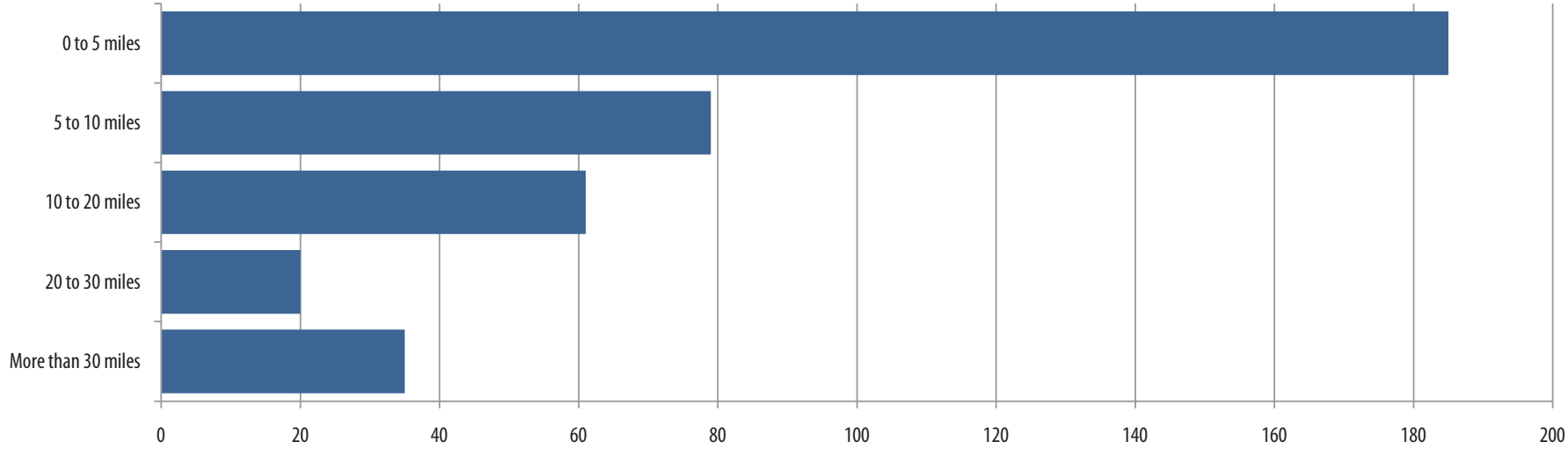
Please describe your home:



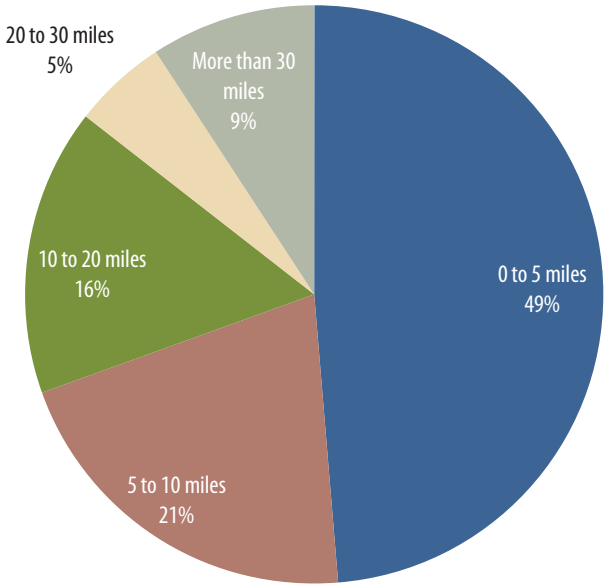
Please describe your home:



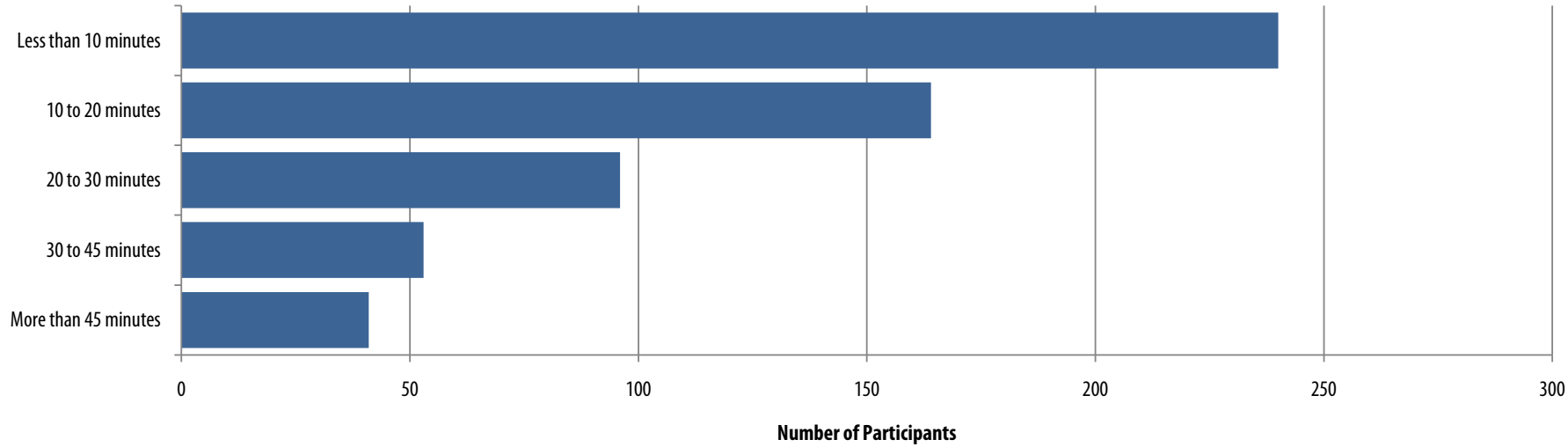
How many miles do you live from work/school? (v2.0 only)



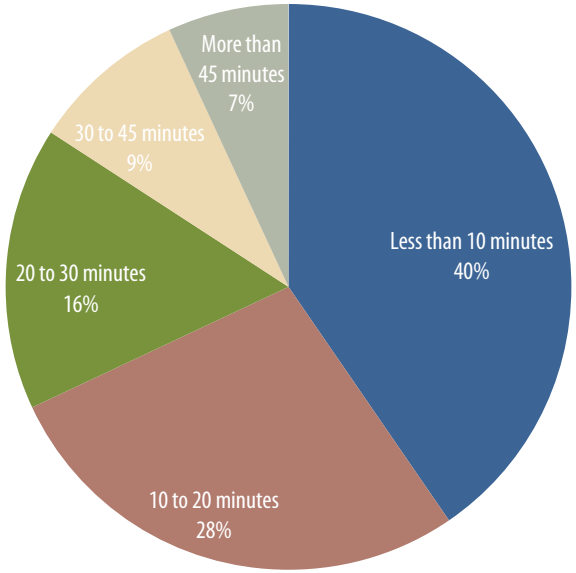
How many miles do you live from work/school? (v2.0 only)



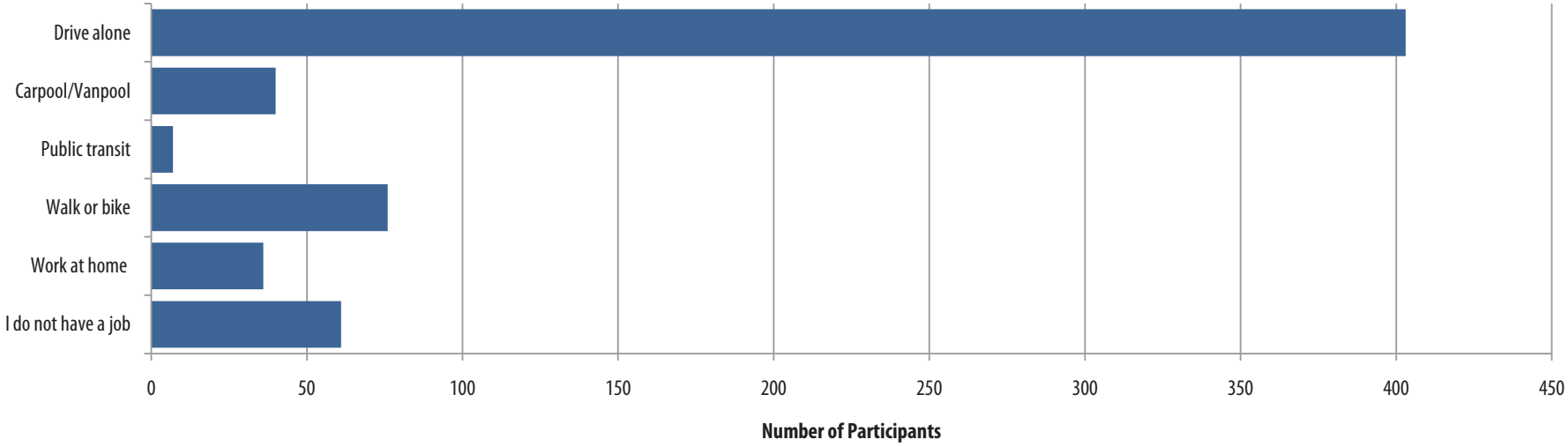
What is your average door to door travel time from home to work/school?



What is your average door to door travel time from home to work/school?



What is your usual method of transportation to and from work/school?



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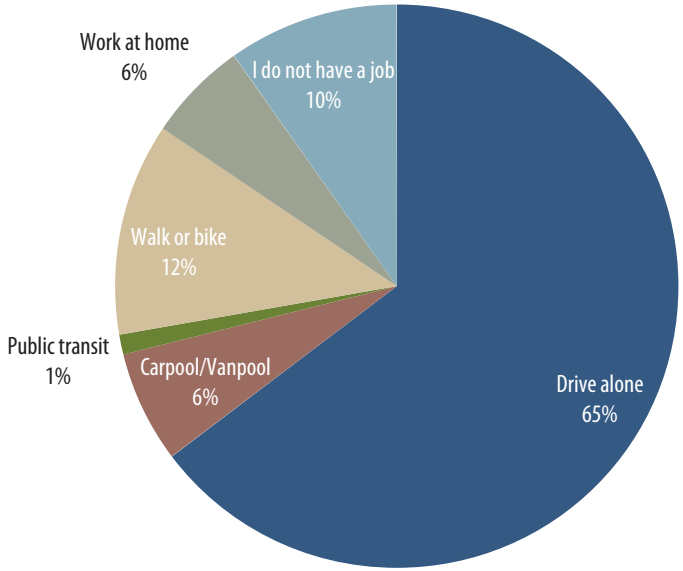
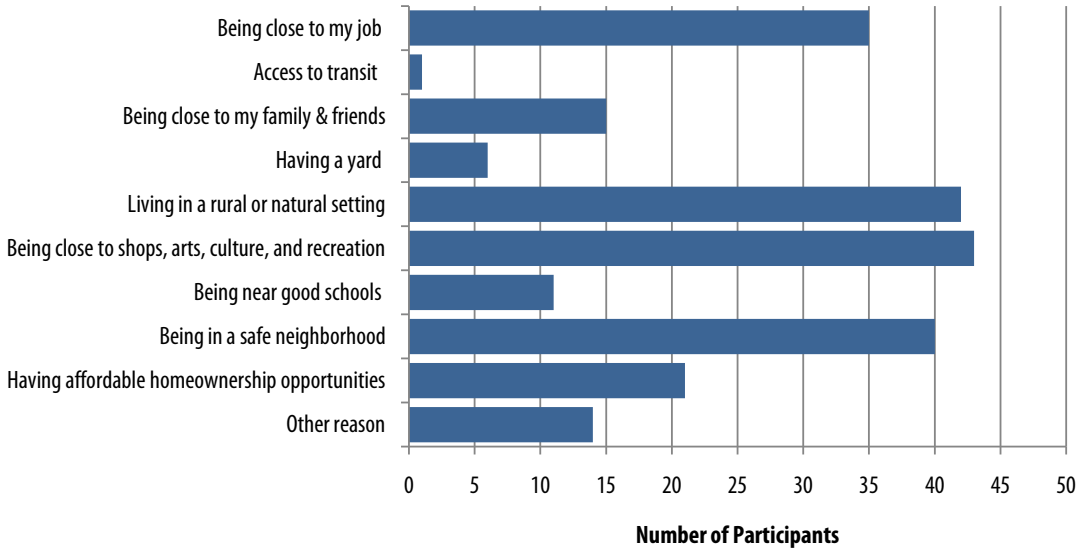
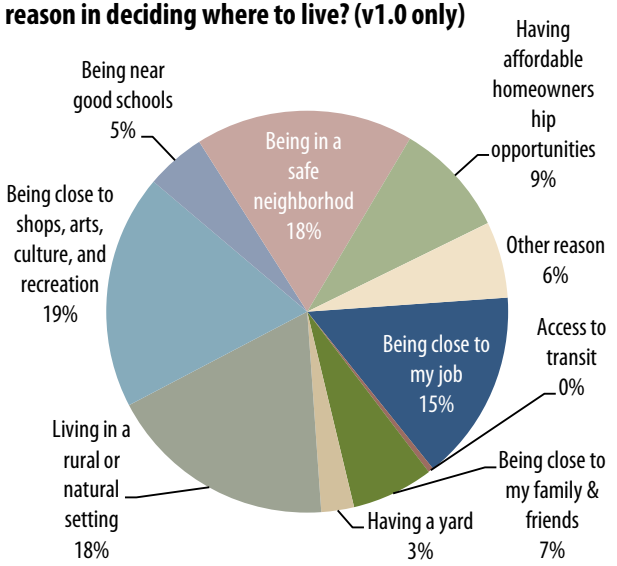


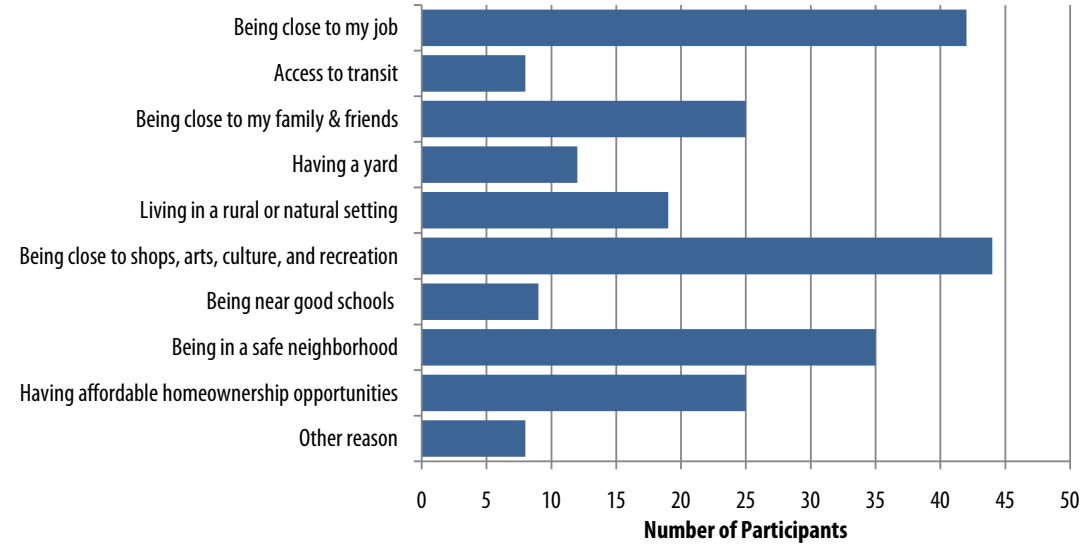
Part 1 of 2: What is your most important reason in deciding where to live? (v1.0 only)



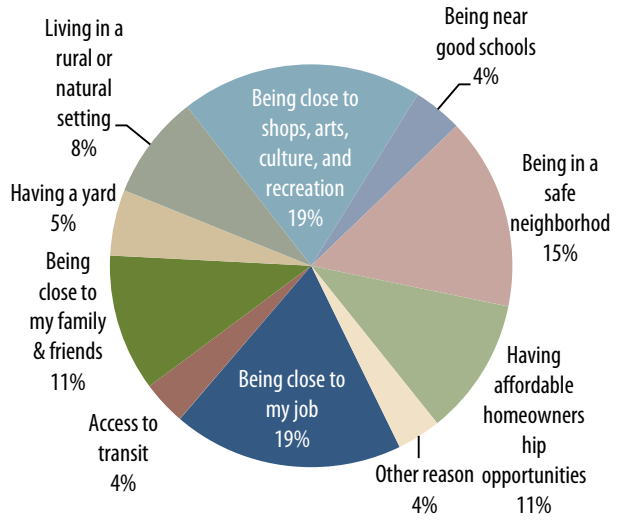
Part 1 of 2: What is your most important reason in deciding where to live? (v1.0 only)



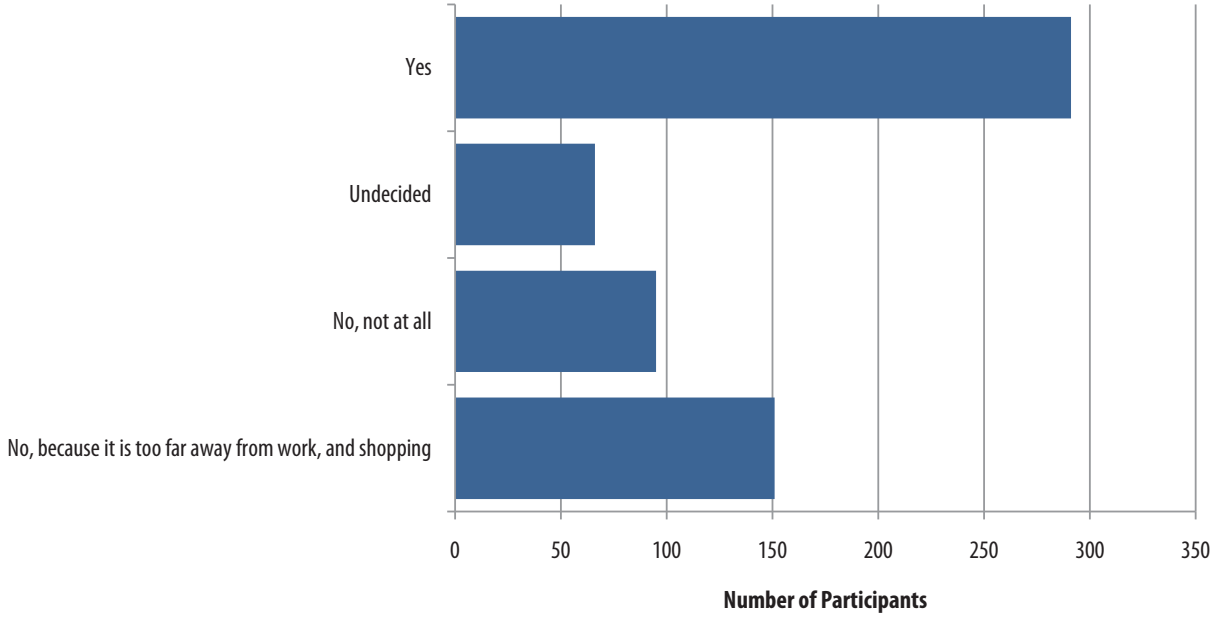
Part 2 of 2: What is your next most important reason in deciding where to live? (v1.0 only)



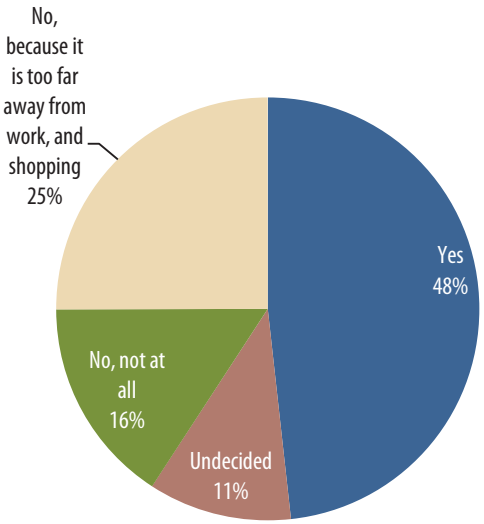
Part 2 of 2: What is your next most important reason in deciding where to live? (v1.0 only)



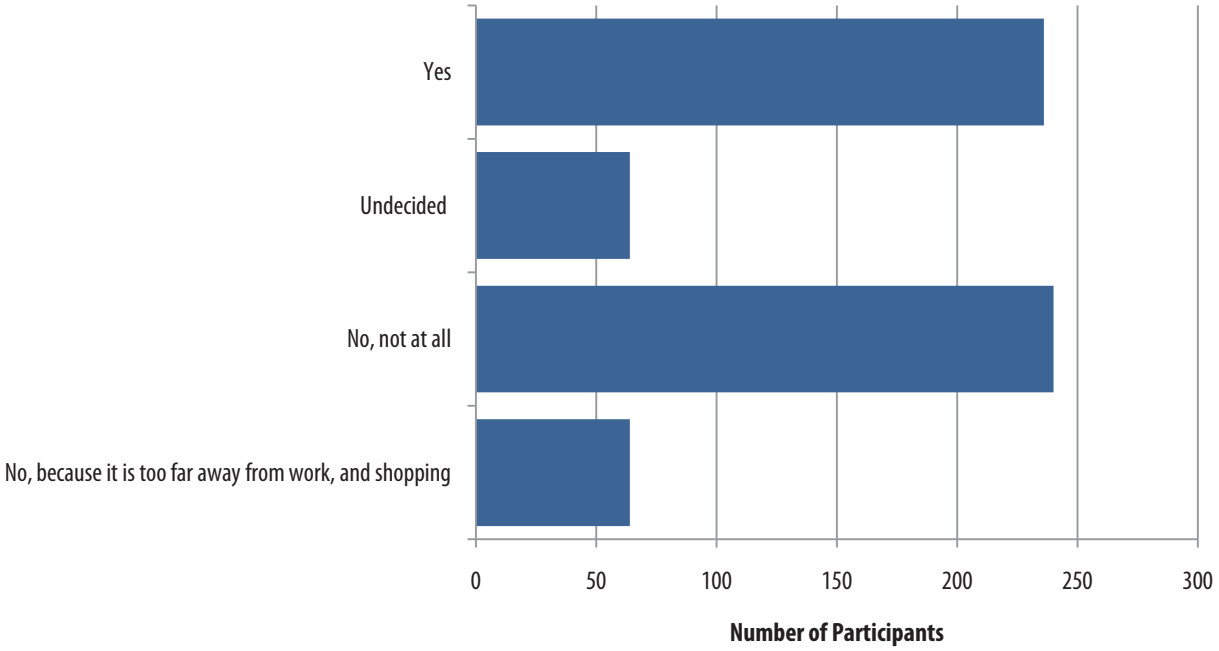
Would you like to live in any of these types of housing?



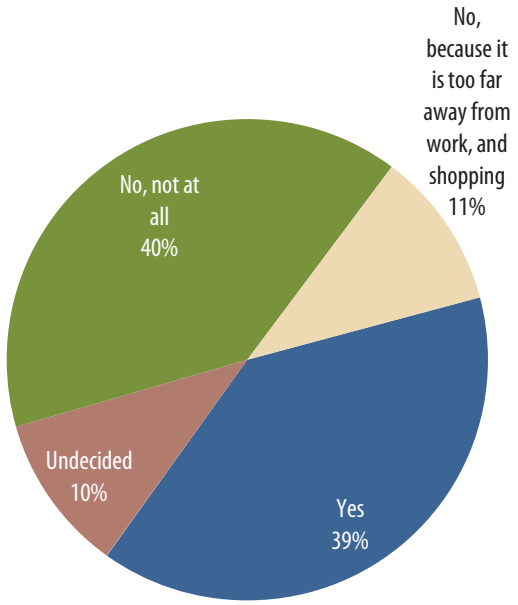
Would you like to live in any of these types of housing?



Would you like to live in any of these types of housing?

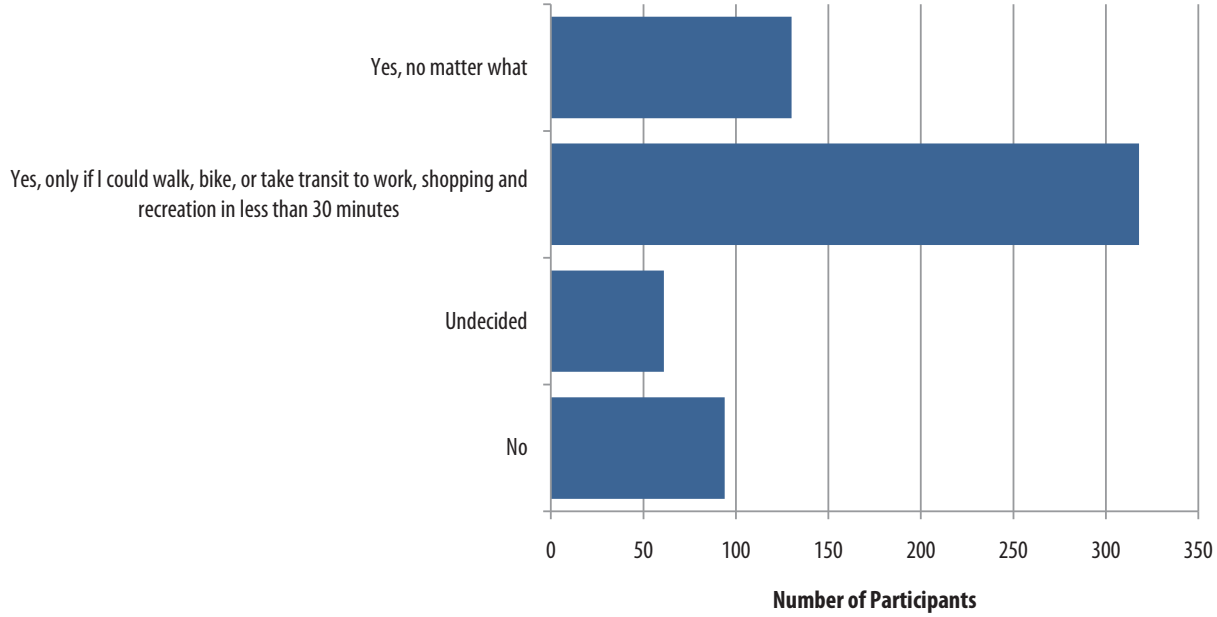


Would you like to live in any of these types of housing?

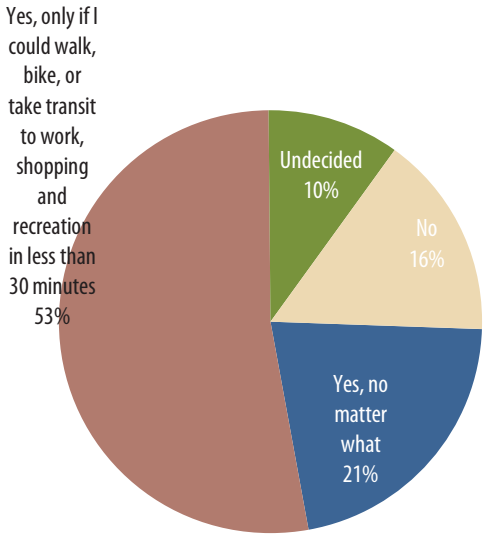


SMALL LOT SINGLE FAMILY HOMES

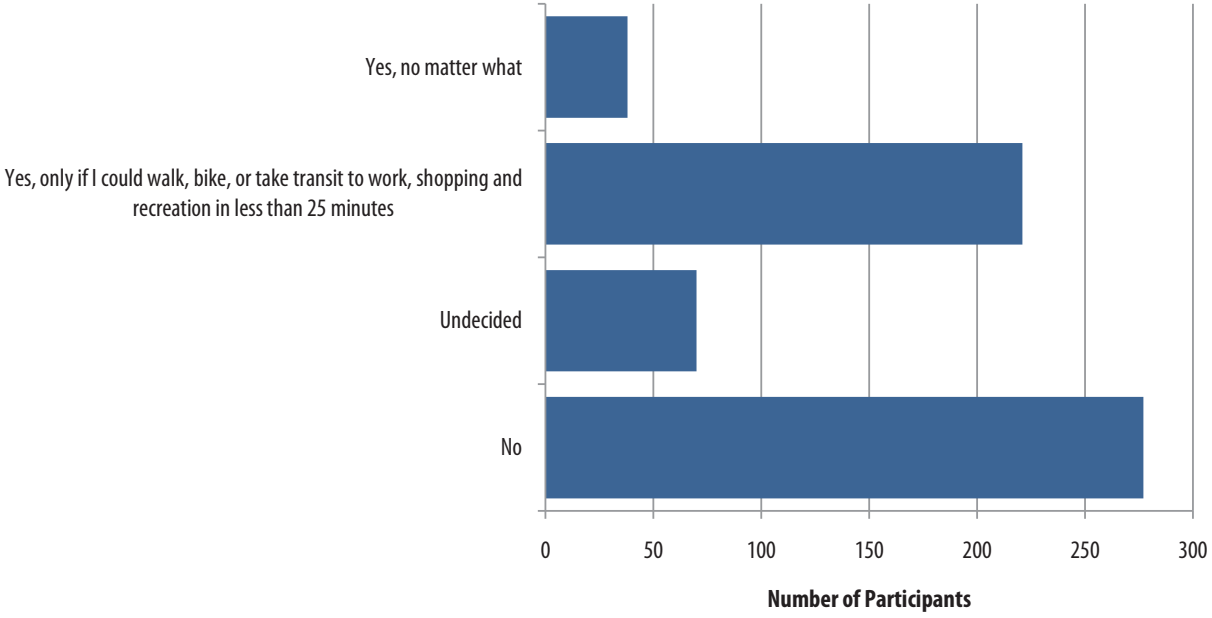
Would you like to live in any of these types of housing?



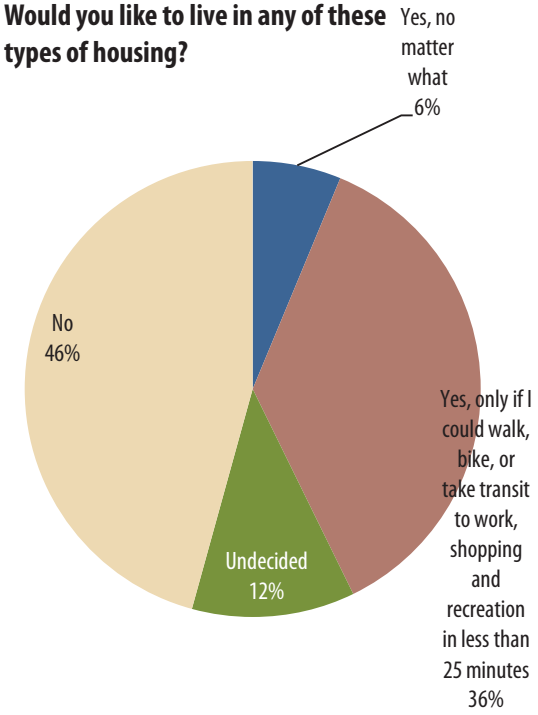
Would you like to live in any of these types of housing?



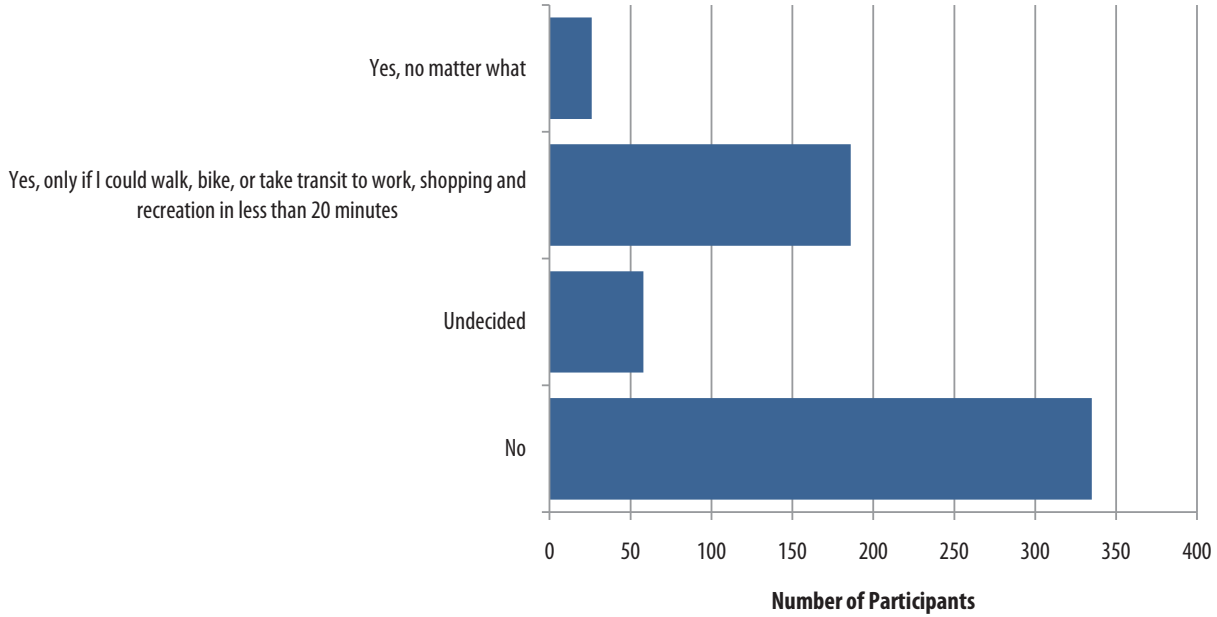
Would you like to live in any of these types of housing?



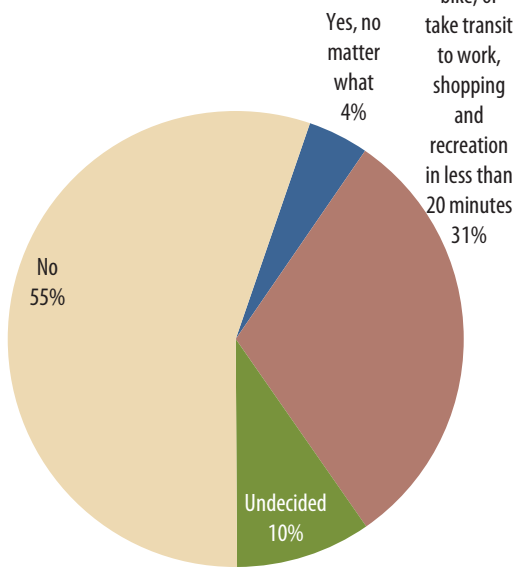
Would you like to live in any of these types of housing?



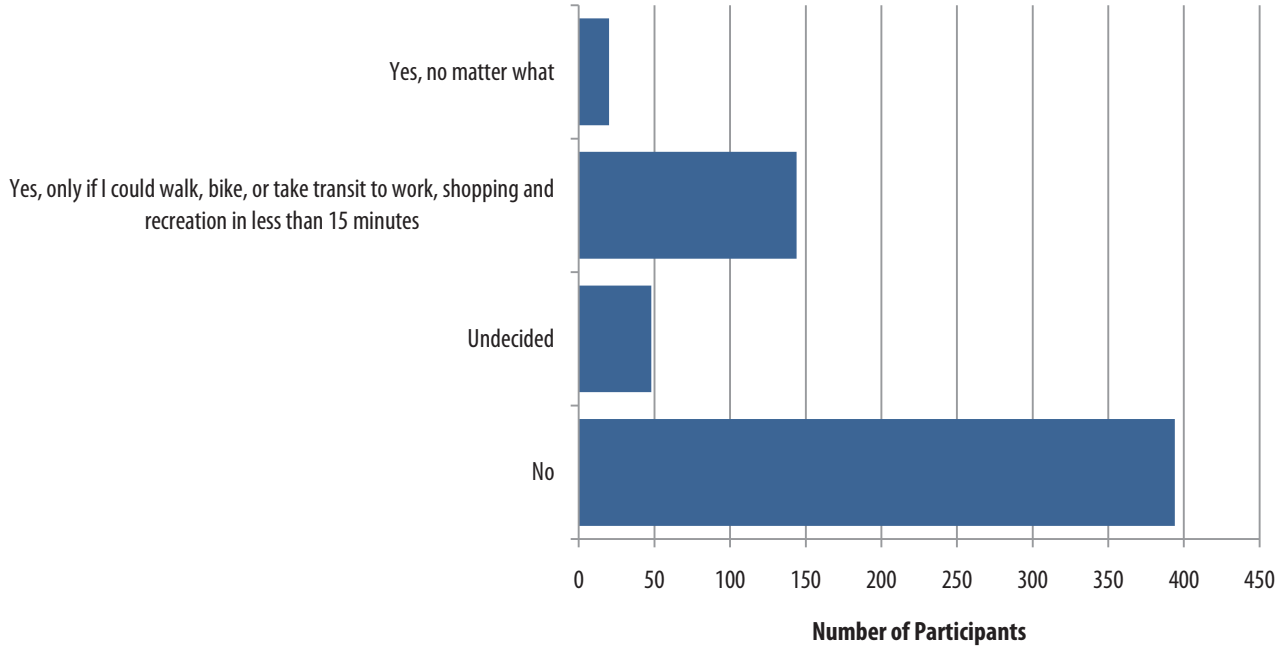
16.) Would you like to live in any of these types of housing?



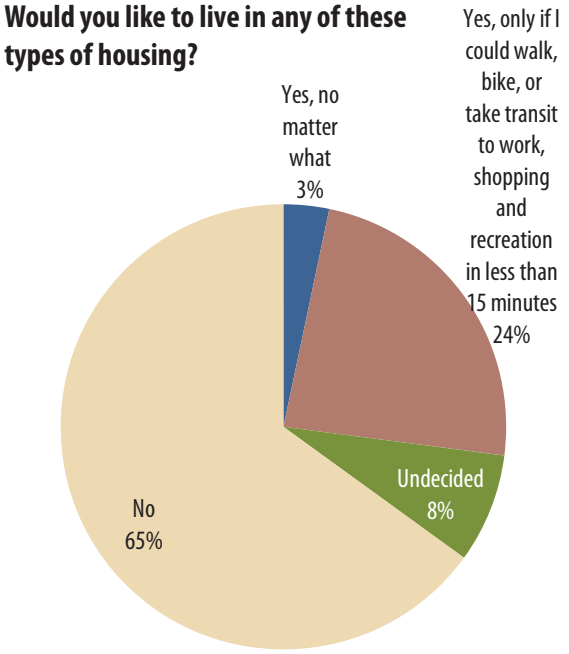
Would you like to live in any of these types of housing?



Would you like to live in any of these types of housing?

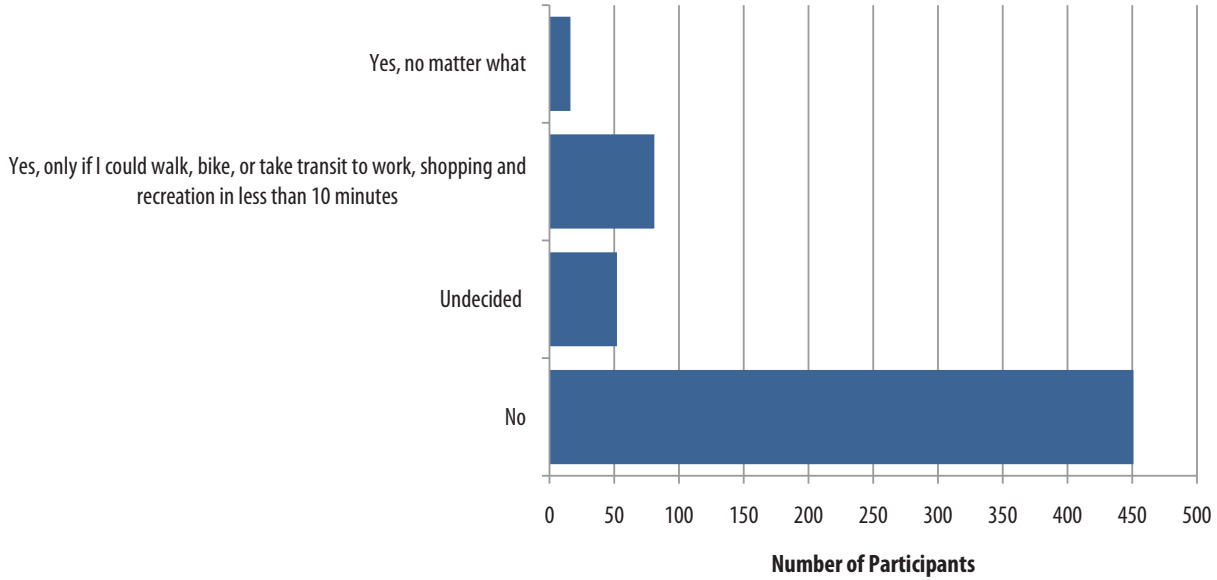


Would you like to live in any of these types of housing?

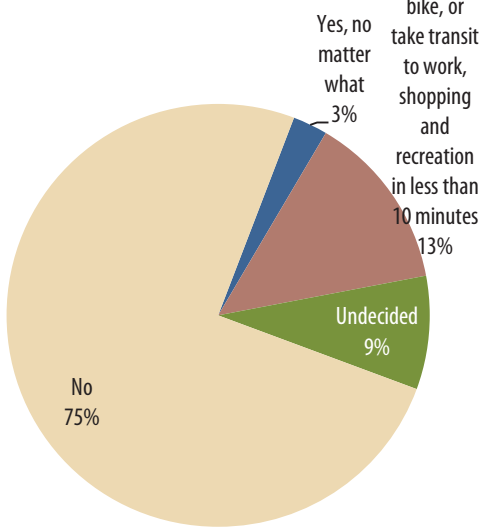


HIGH RISE APARTMENTS (9 OR MORE STORIES)

Would you like to live in any of these types of housing?



Would you like to live in any of these types of housing?

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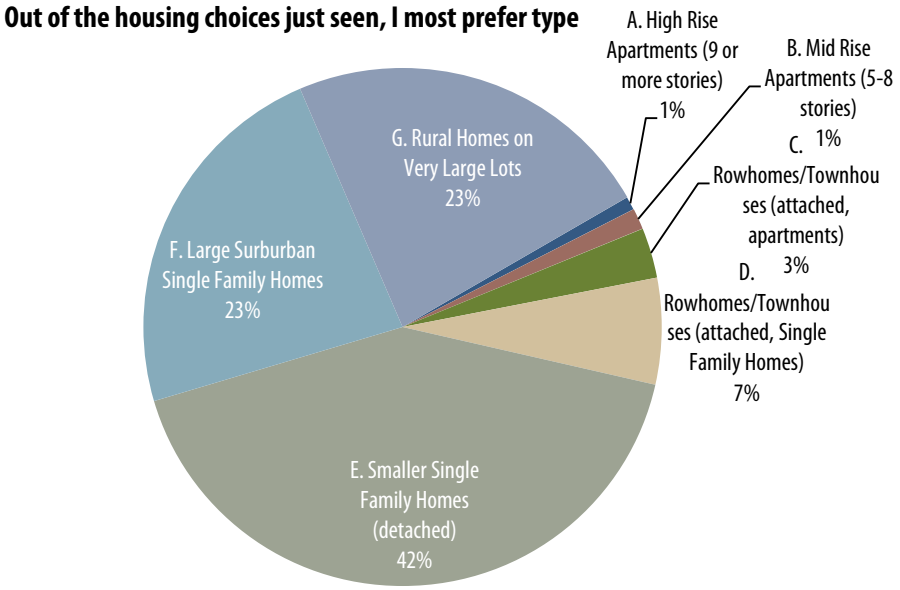
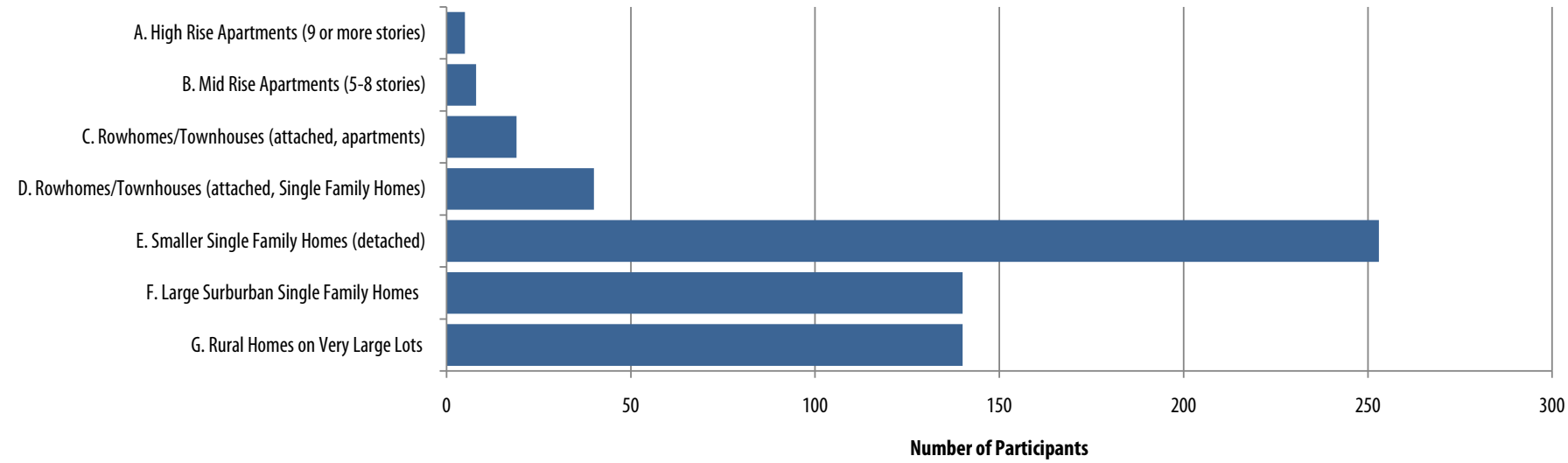
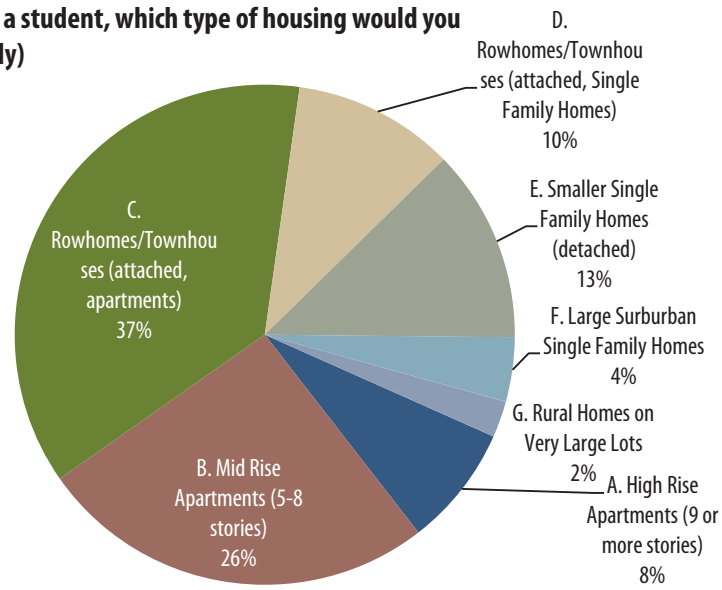
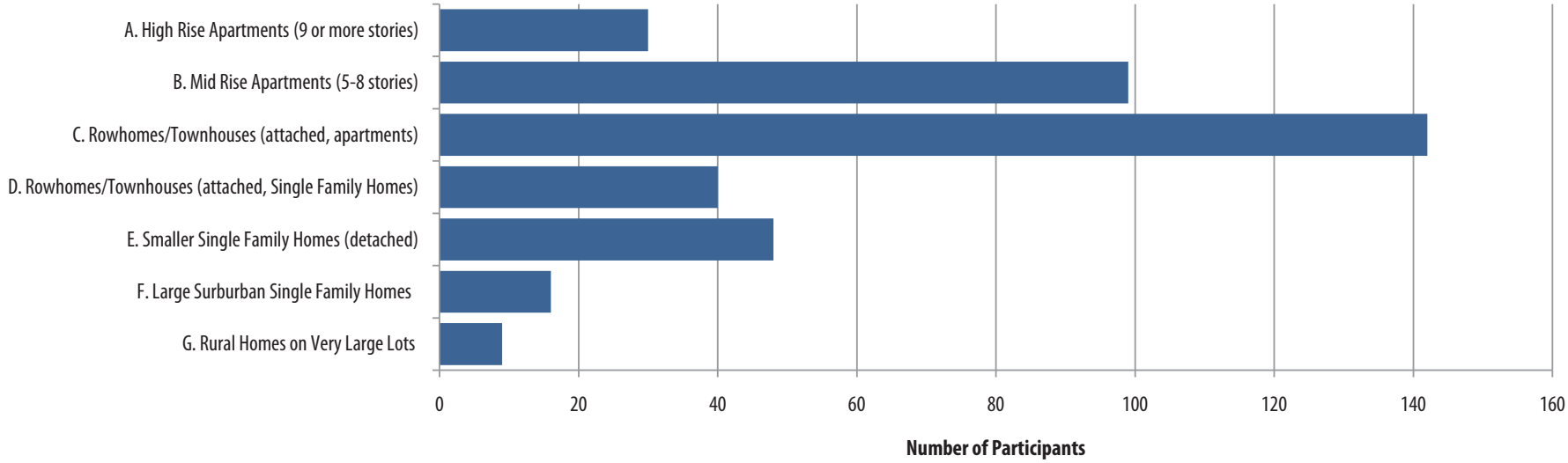

Out of the housing choices just seen, I most prefer type
A. High Rise Apartments (9 or more stories) 1%
B. Mid Rise Apartments (5-8 stories) 1%
C. Rowhomes/Townhouses (attached, apartments) 3%
D. Rowhomes/Townhouses (attached, Single Family Homes) 7%
E. Smaller Single Family Homes (detached) 42%
F. Large Surburban Single Family Homes 23%
G. Rural Homes on Very Large Lots 23%


Out of the housing choices just seen, I most prefer type
A. High Rise Apartments (9 or more stories)
B. Mid Rise Apartments (5-8 stories)
C. Rowhomes/Townhouses (attached, apartments)
D. Rowhomes/Townhouses (attached, Single Family Homes)
E. Smaller Single Family Homes (detached)
F. Large Surburban Single Family Homes
G. Rural Homes on Very Large Lots
0
50
100
150
200
250
300
Number of Participants

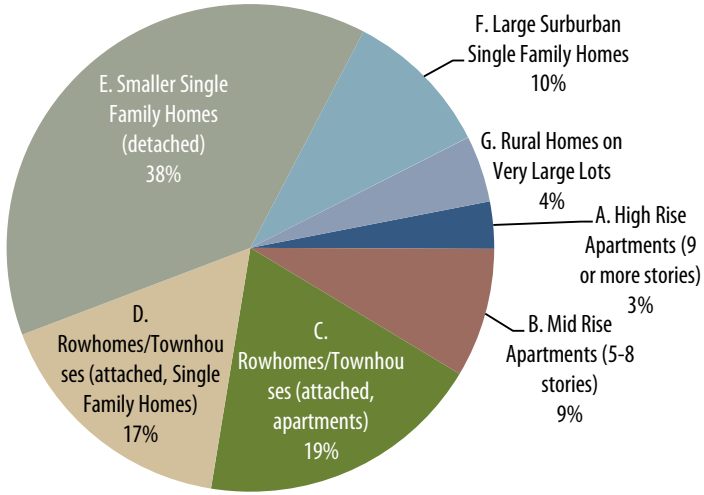
Imagine you are a student, which type of housing would you prefer? (v2.0 only)



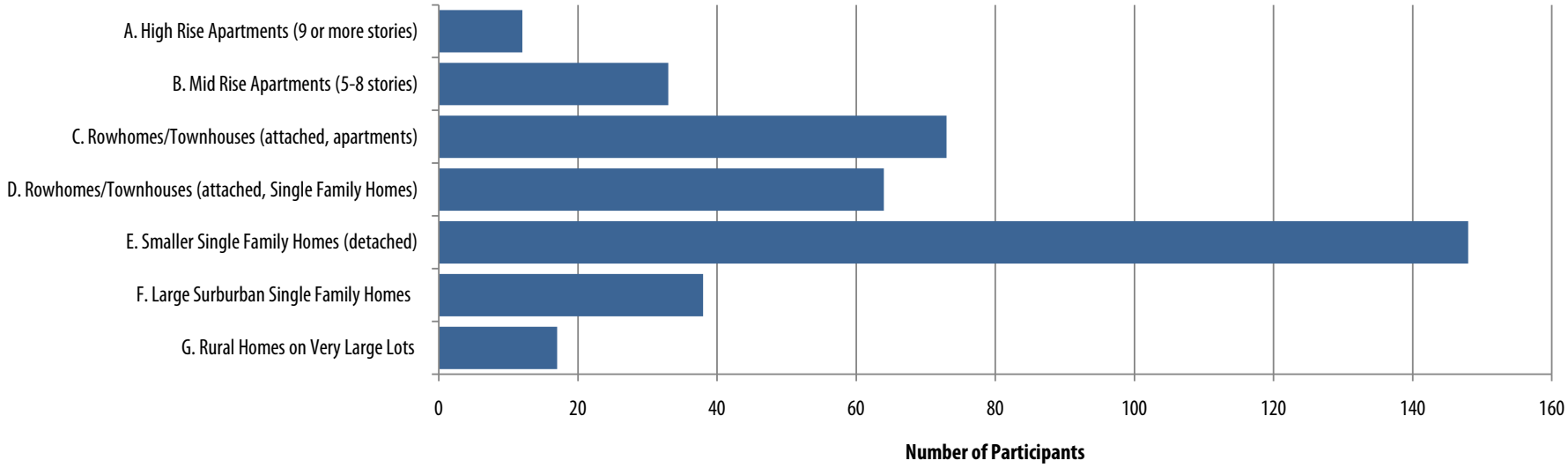
Imagine you are a student, which type of housing would you prefer? (v2.0 only)



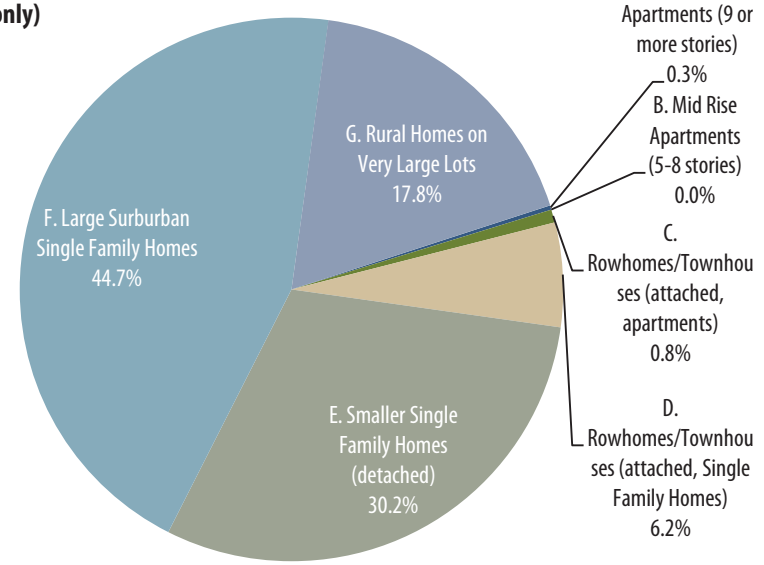
Imagine you are a younger single or couple, which type of housing would you prefer? (v2.0 only)



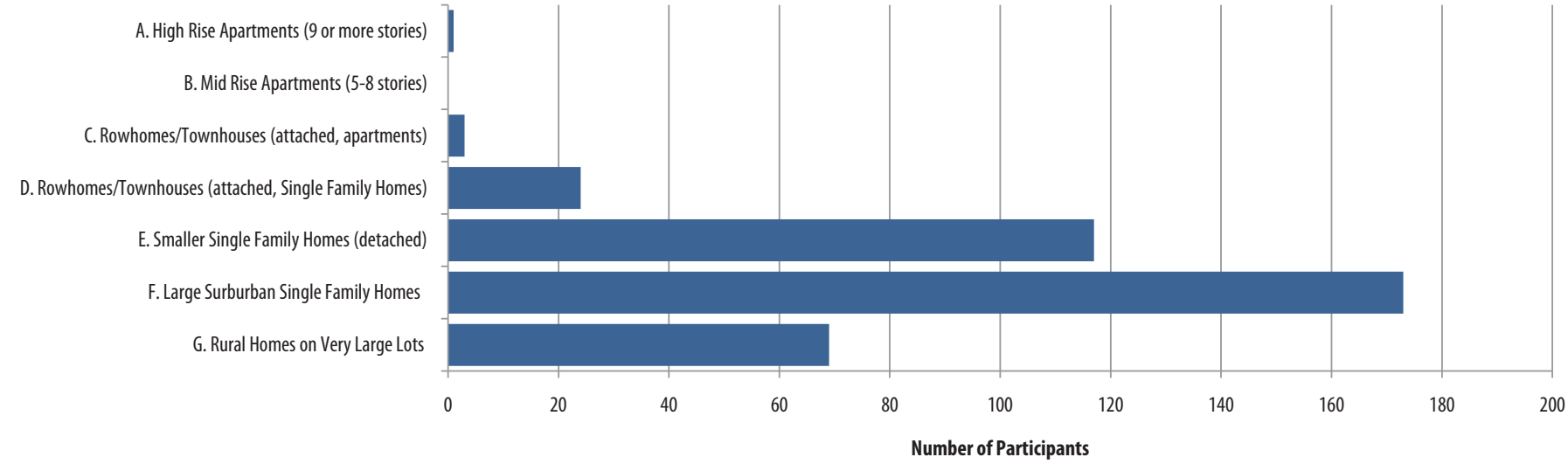
Imagine you are a younger single or couple, which type of housing would you prefer? (v2.0 only)



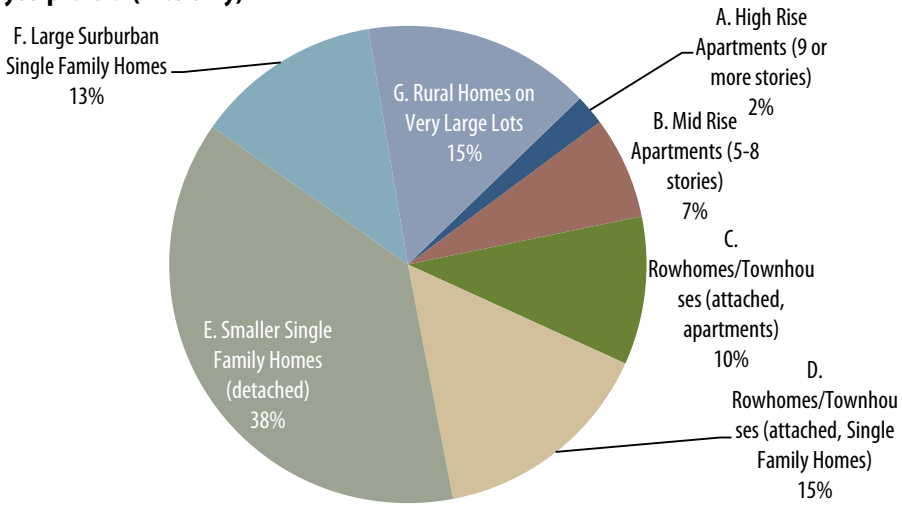
Imagine you are a family with children, which type of housing would you prefer? (v2.0 only)



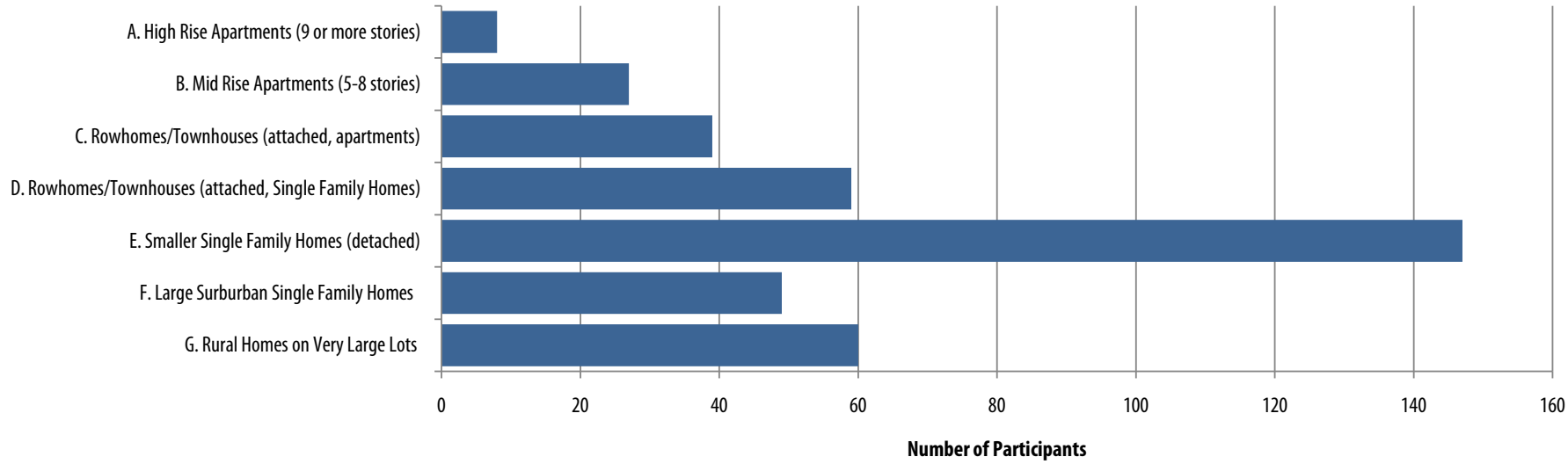
Imagine you are a family with children, which type of housing would you prefer? (v2.0 only)



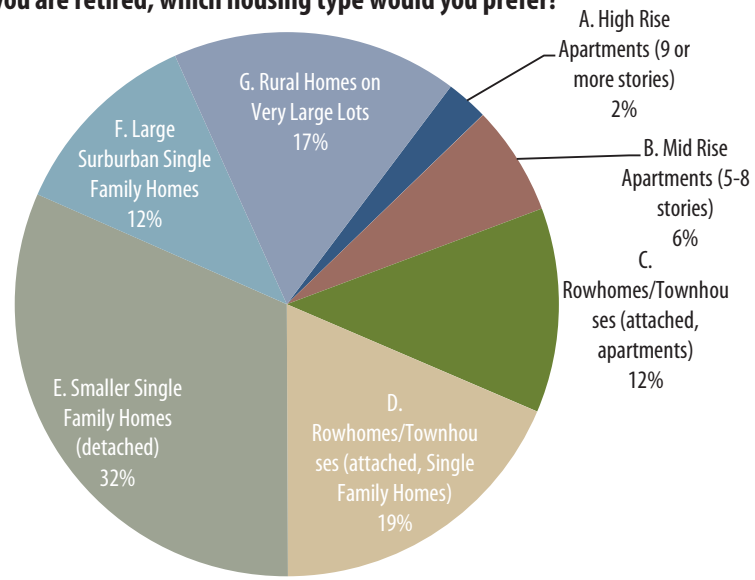
Imagine you are an "empty nester", which type of housing would you prefer? (v2.0 only)



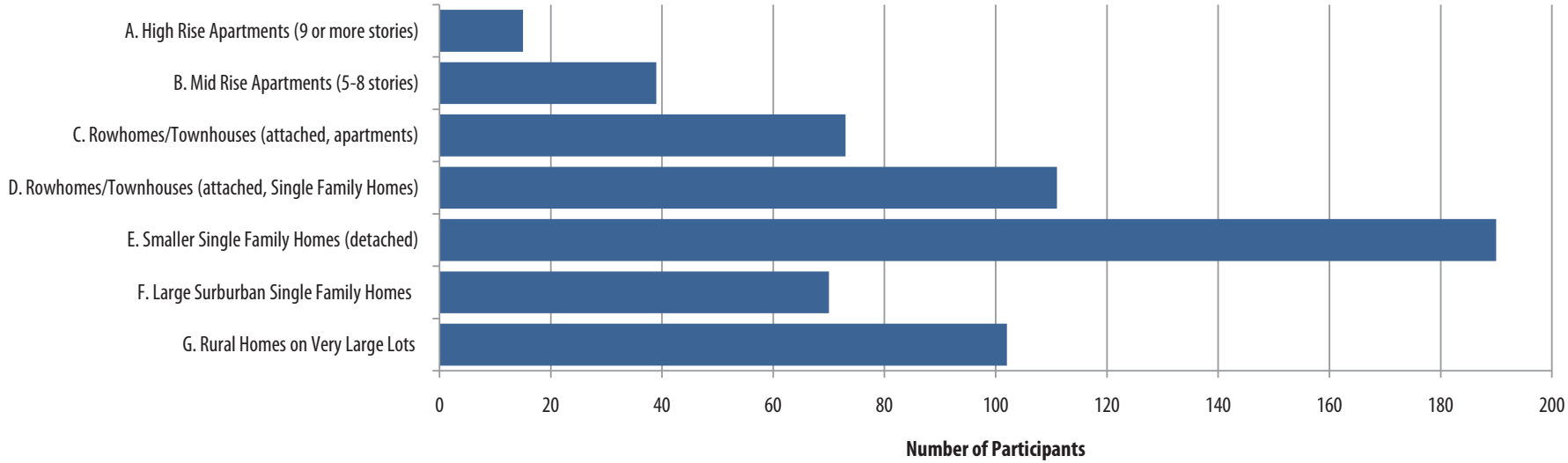
Imagine you are an "empty nester", which type of housing would you prefer? (v2.0 only)



Imagine you are retired, which housing type would you prefer?



Imagine you are retired, which housing type would you prefer?

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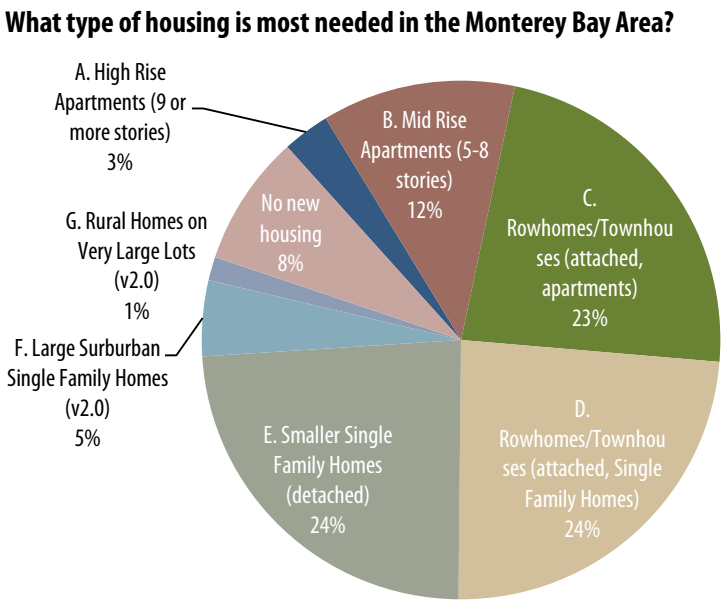
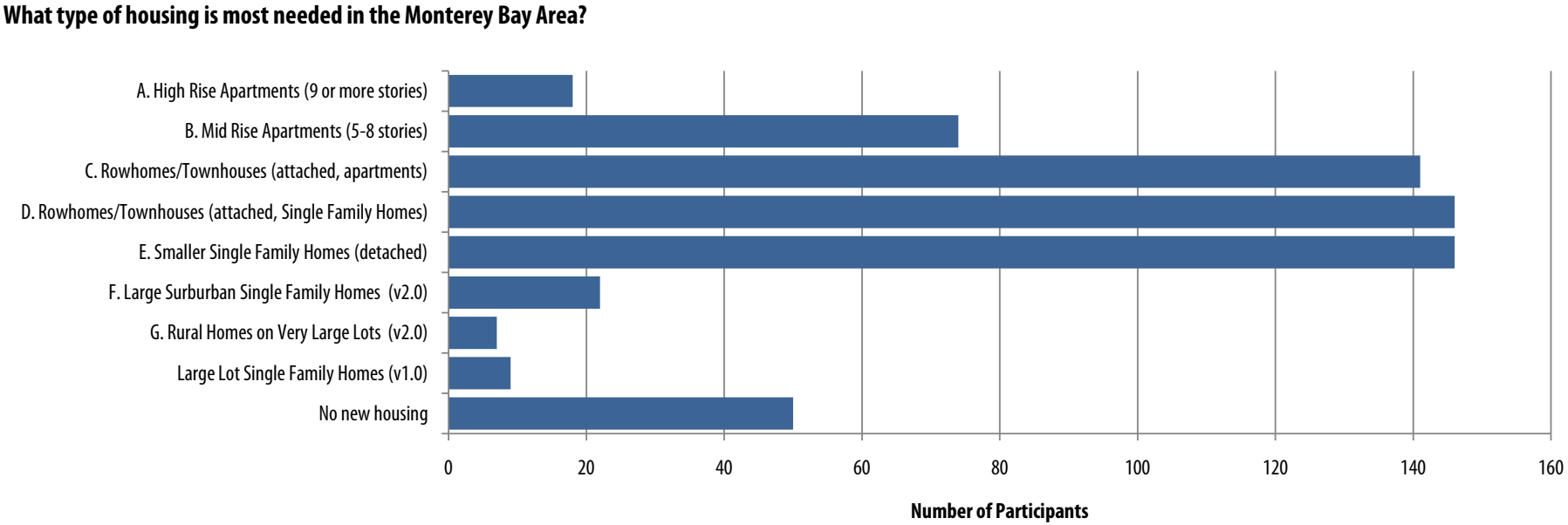
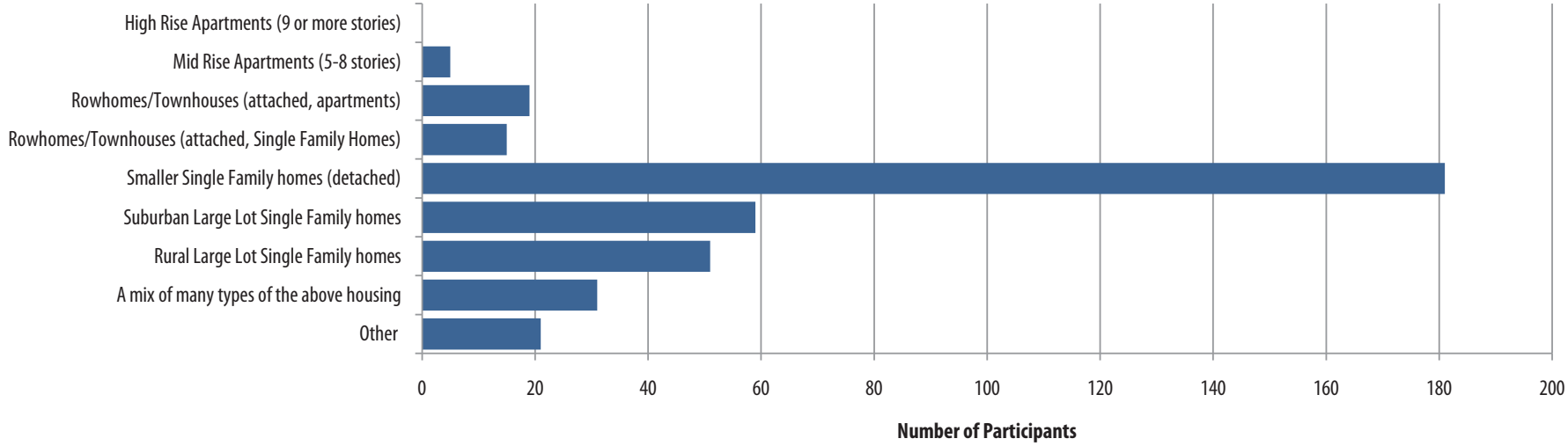
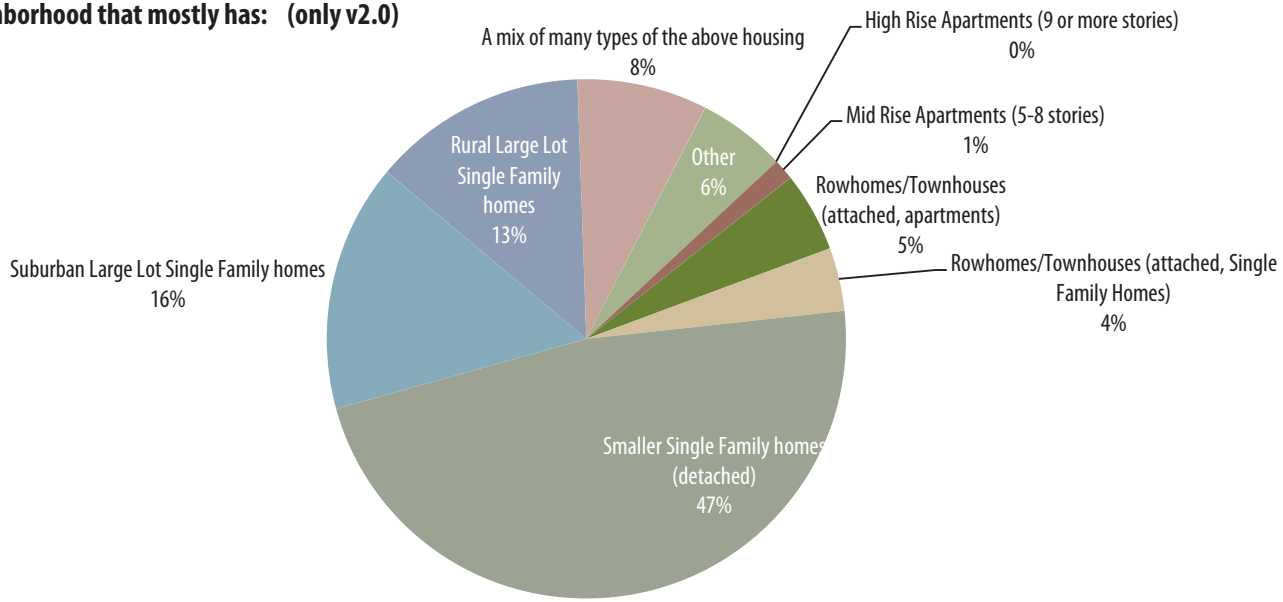

What type of housing is most needed in the Monterey Bay Area?
A. High Rise Apartments (9 or more stories) 3%
B. Mid Rise Apartments (5-8 stories) 12%
C. Rowhomes/Townhouses (attached, apartments) 23%
D. Rowhomes/Townhouses (attached, Single Family Homes) 24%
E. Smaller Single Family Homes (detached) 24%
F. Large Surburban Single Family Homes (v2.0) 5%
G. Rural Homes on Very Large Lots (v2.0) 1%
No new housing 8%


What type of housing is most needed in the Monterey Bay Area?
A. High Rise Apartments (9 or more stories)
B. Mid Rise Apartments (5-8 stories)
C. Rowhomes/Townhouses (attached, apartments)
D. Rowhomes/Townhouses (attached, Single Family Homes)
E. Smaller Single Family Homes (detached)
F. Large Surburban Single Family Homes (v2.0)
G. Rural Homes on Very Large Lots (v2.0)
Large Lot Single Family Homes (v1.0)
No new housing
0
20
40
60
80
100
120
140
160
Number of Participants

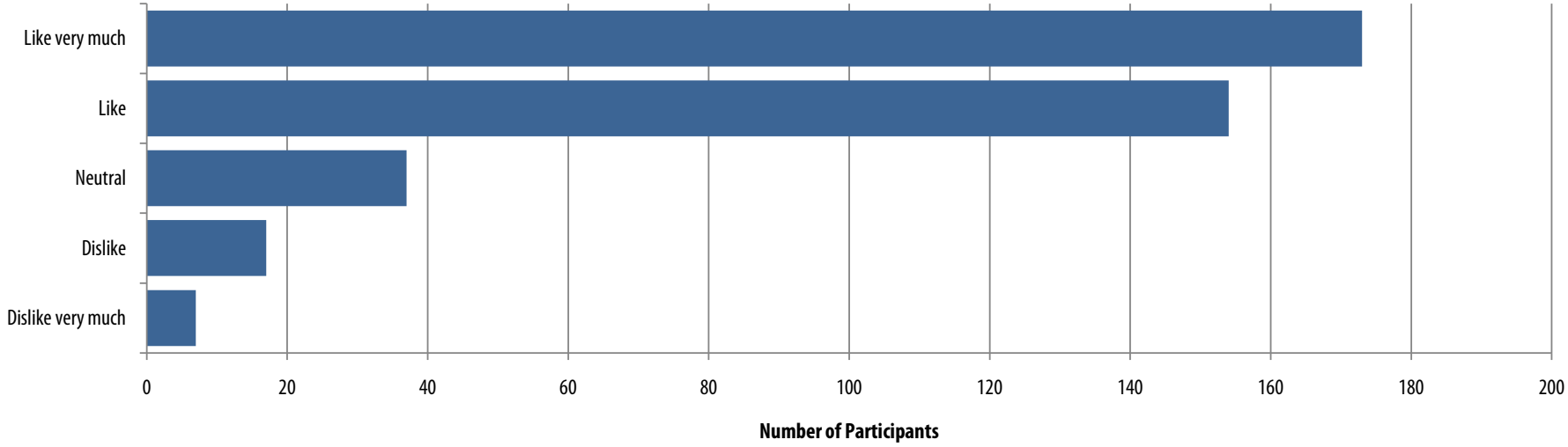
Currently, I live in a neighborhood that mostly has: (only v2.0)



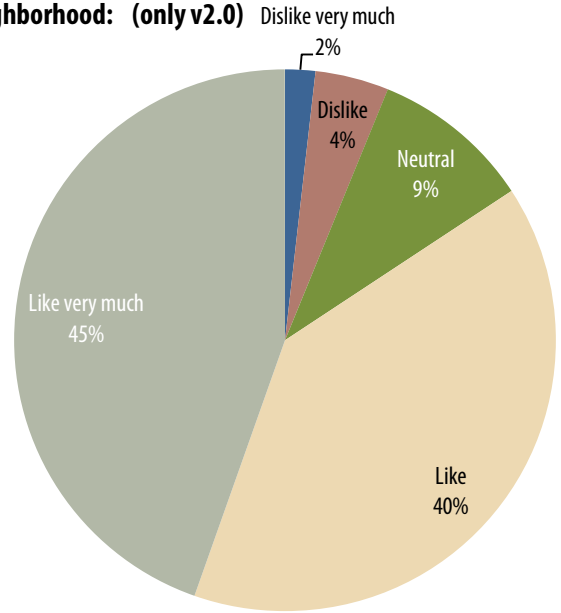
28.) Currently, I live in a neighborhood that mostly has: (only v2.0)



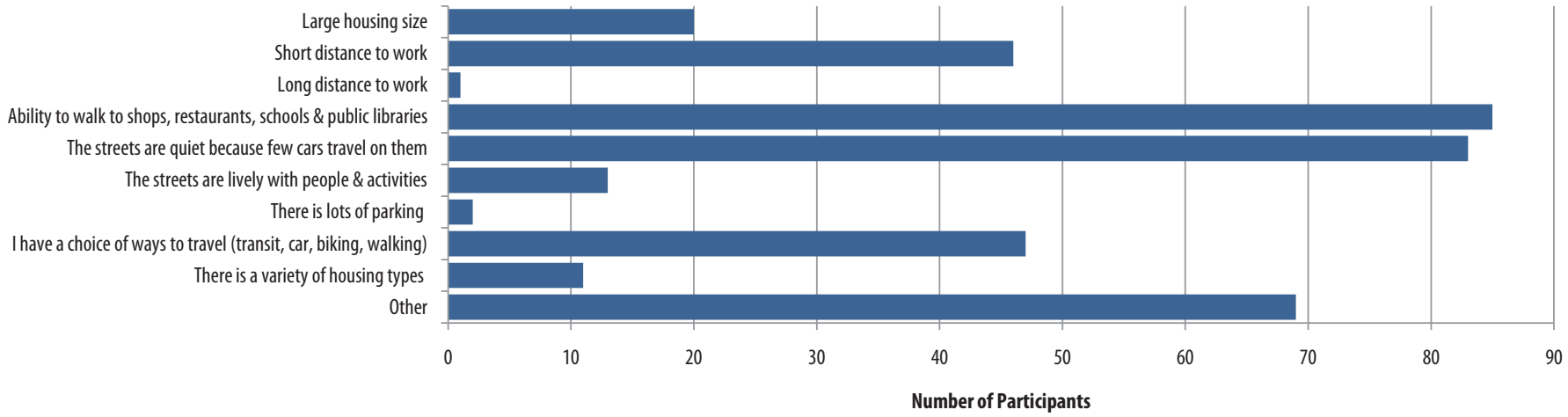
Please rate your level of satisfaction with your current neighborhood: (only v2.0)



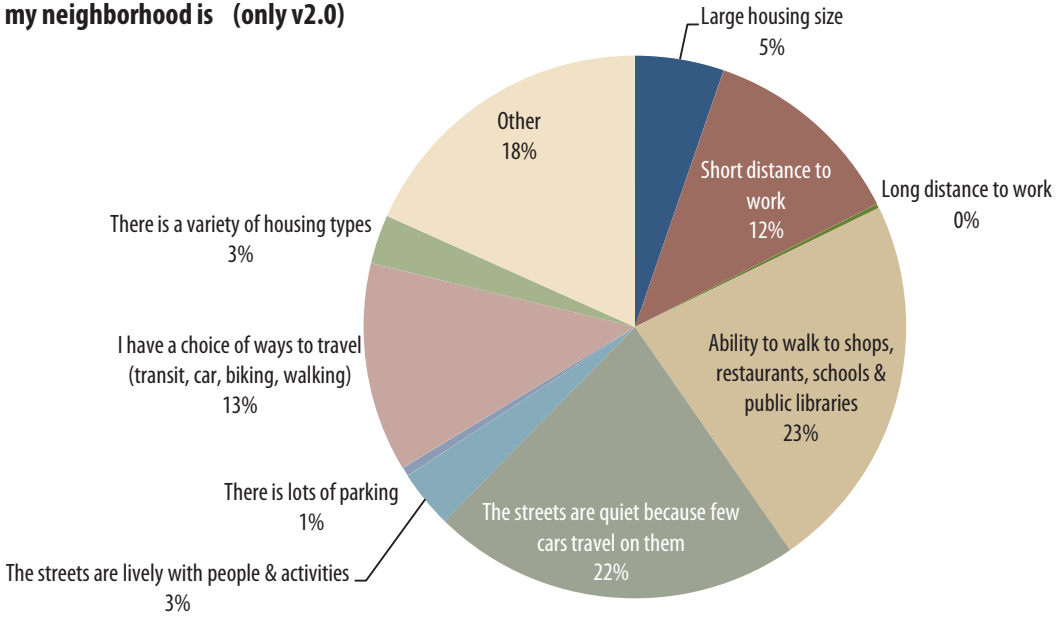
Please rate your level of satisfaction with your current neighborhood: (only v2.0)

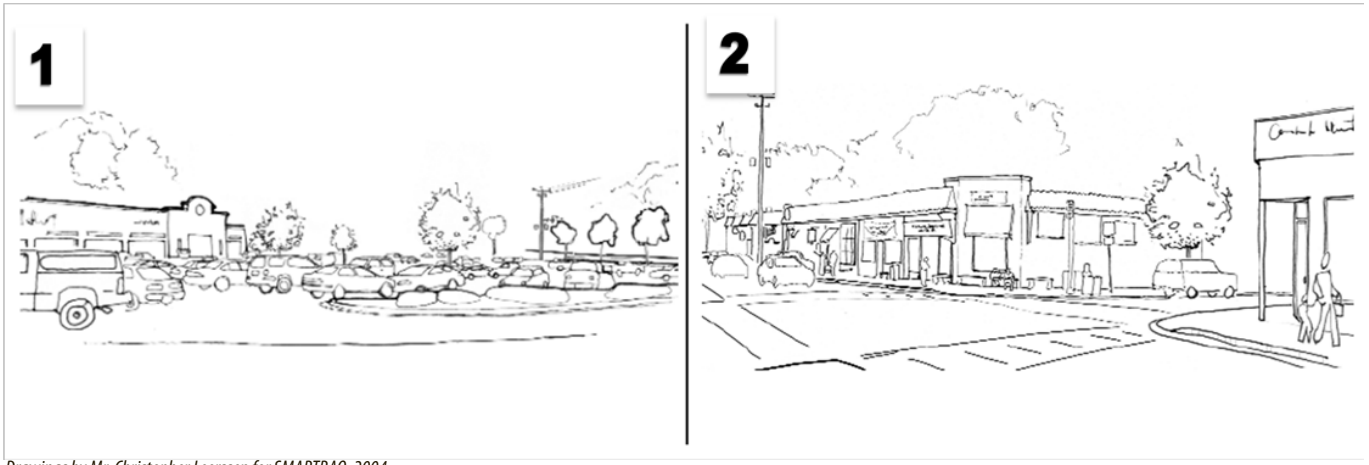


What I like most about my neighborhood is (only v2.0)



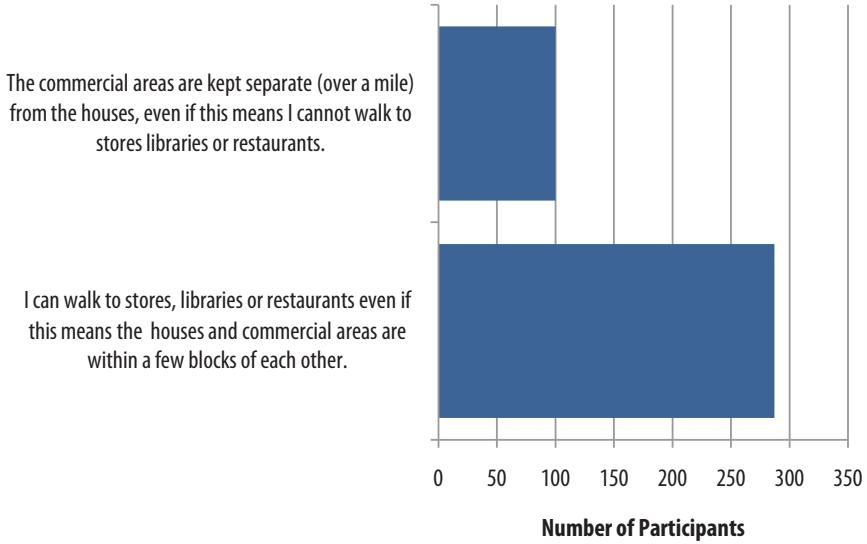
What I like most about my neighborhood is (only v2.0)



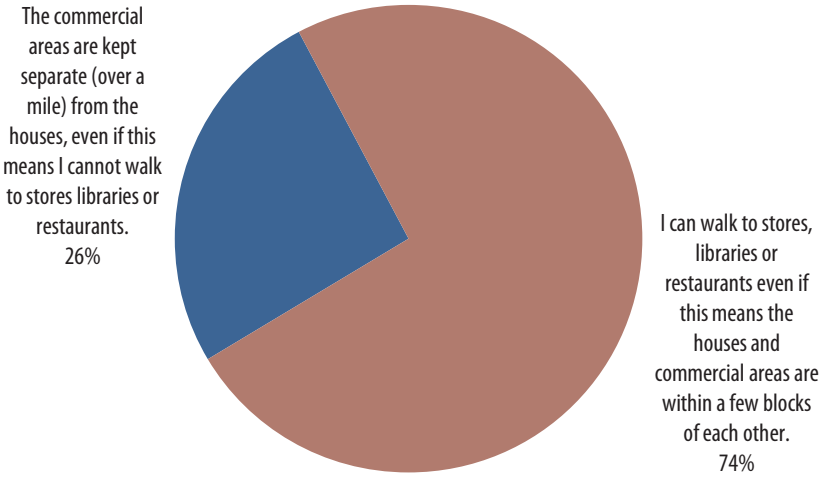


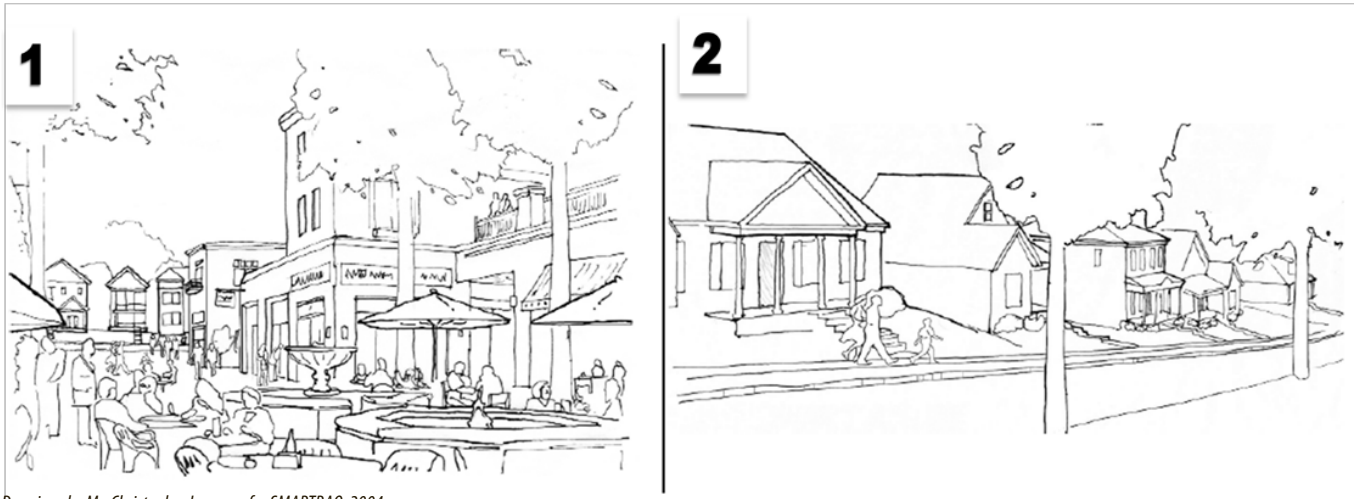
Drawings by Mr. Christopher Leerssen for SMARTRAQ, 2004.

I would prefer to live where (v2.0 only)



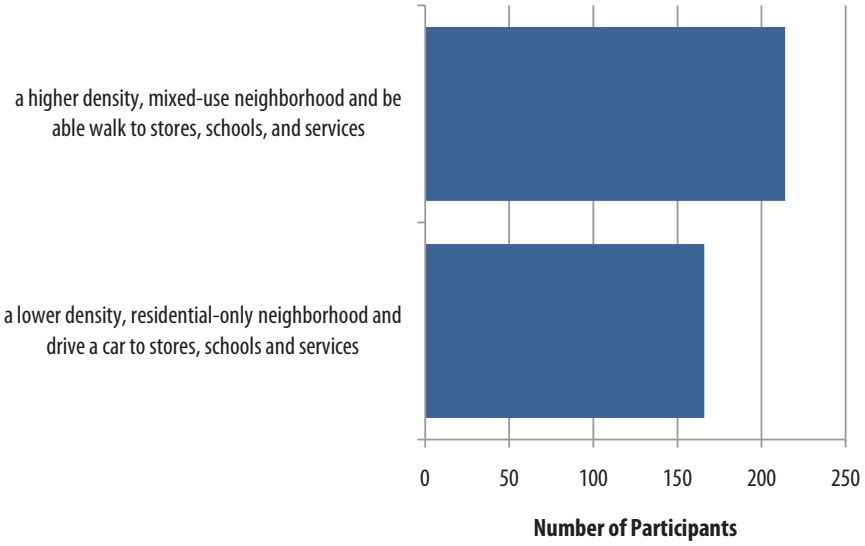
I would prefer to live where (v2.0 only)





Drawings by Mr. Christopher Leerssen for SMARTRAQ, 2004.

I would prefer to live in (v2.0 only)



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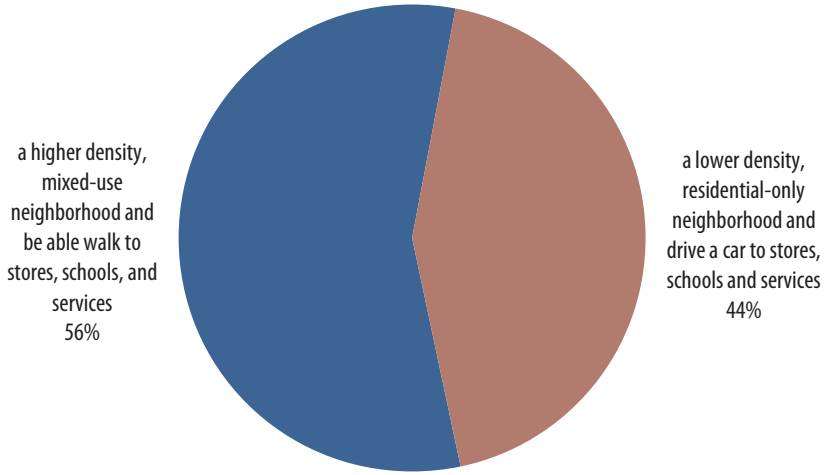

Drawings by Mr. Christopher Leerssen for SMARTRAQ, 2004.

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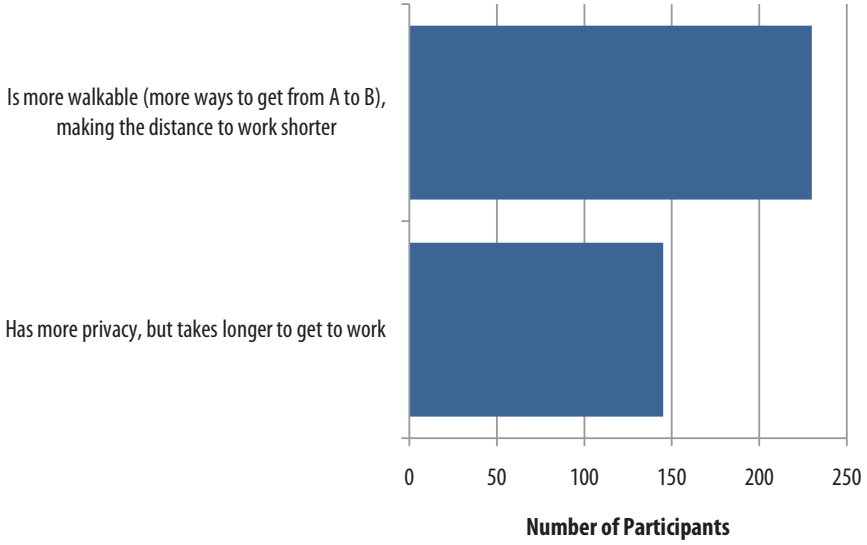

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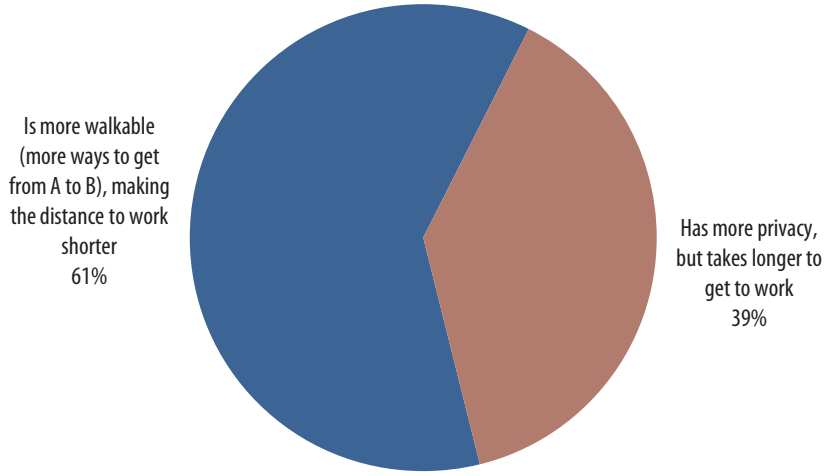

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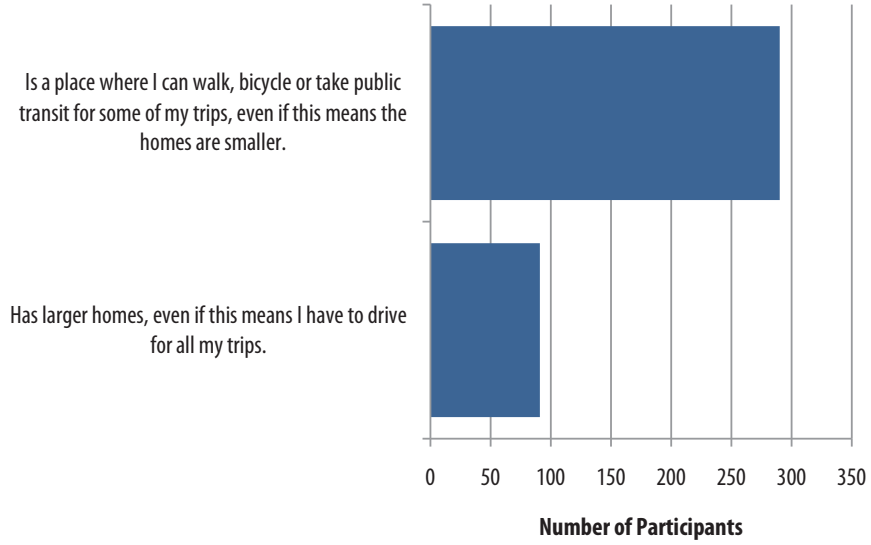

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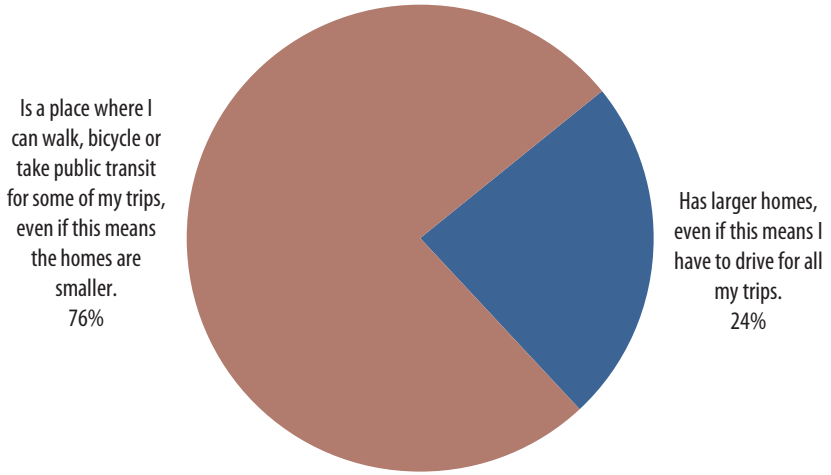

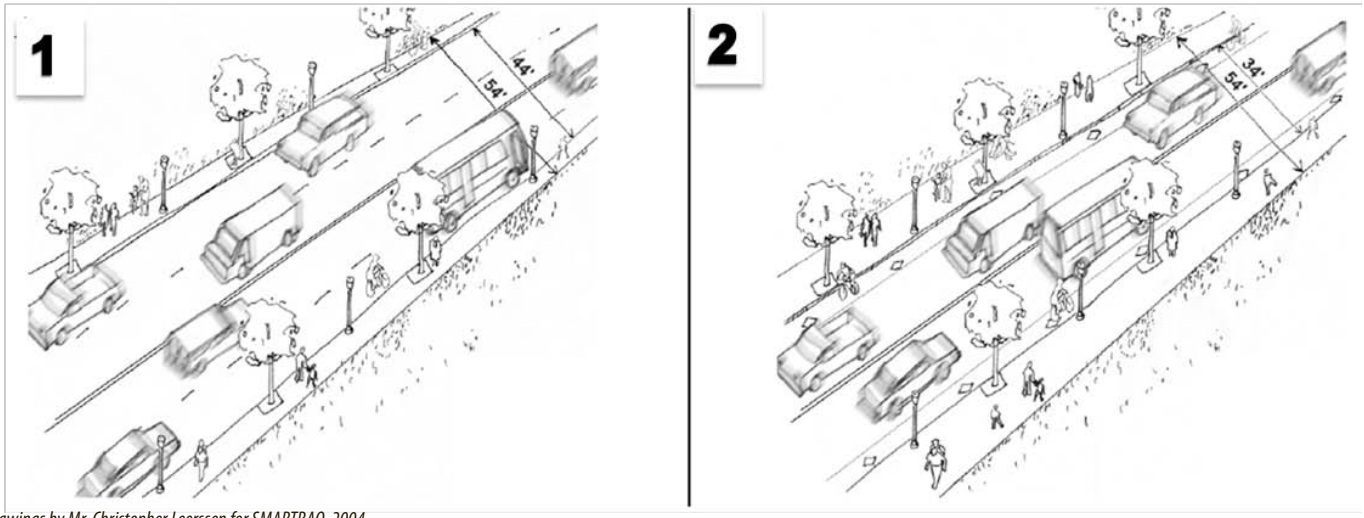

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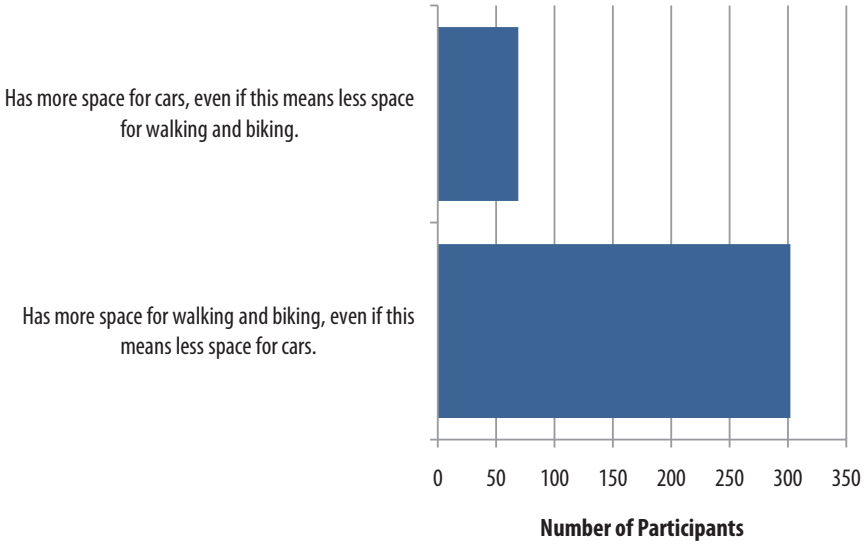

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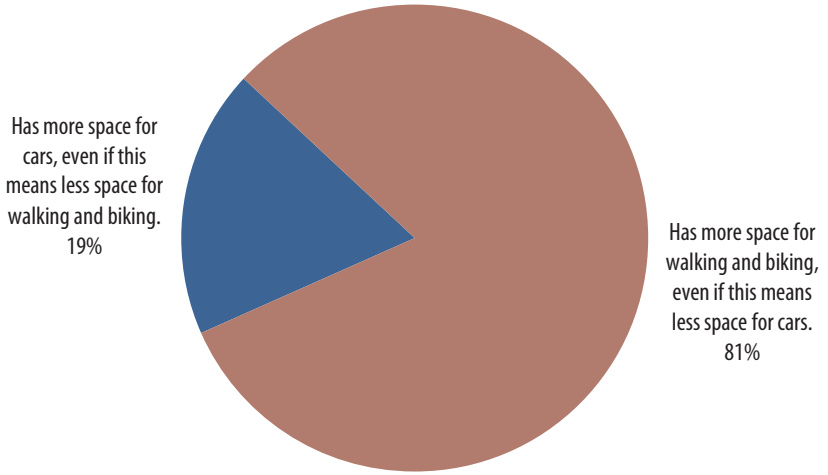

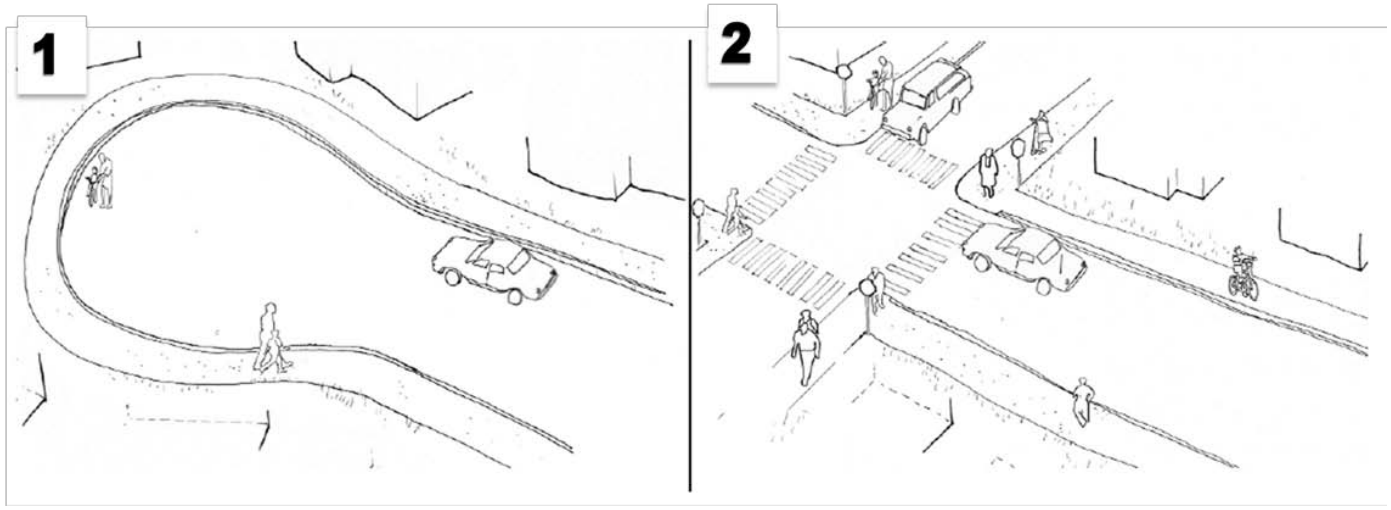

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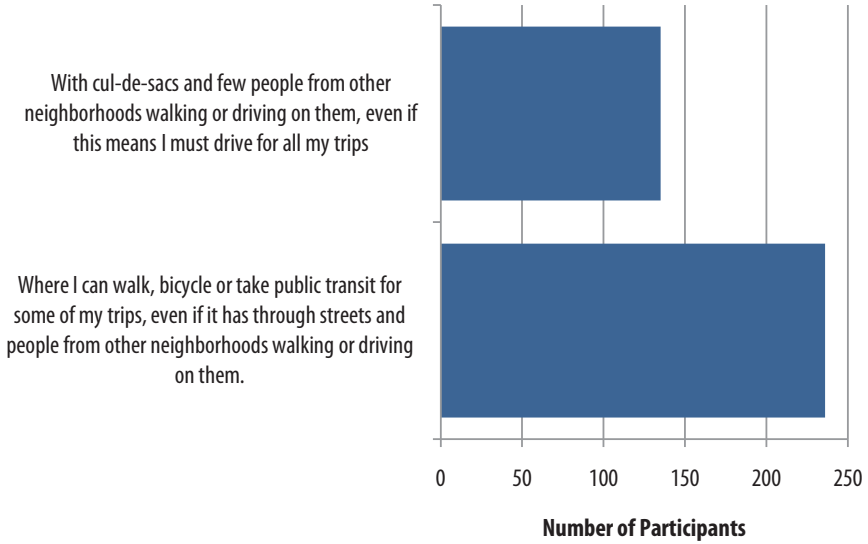

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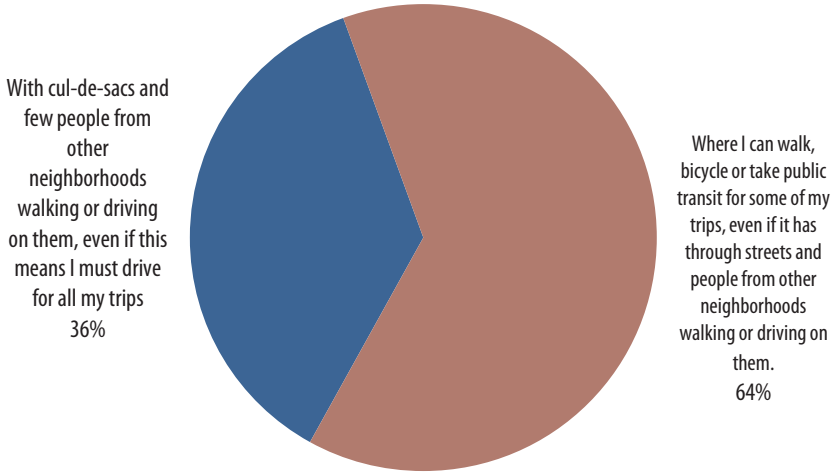
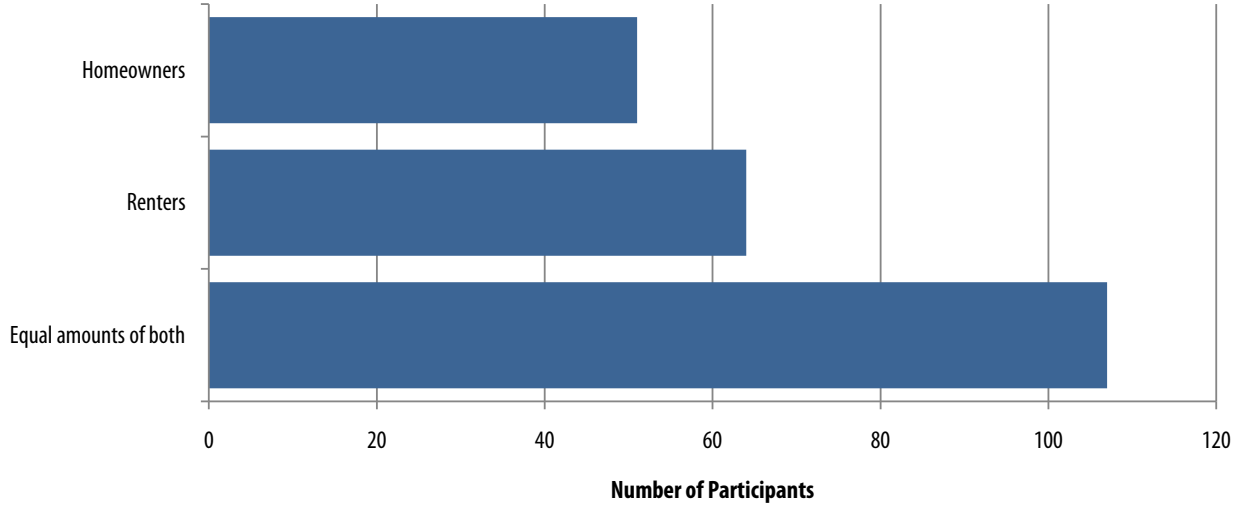


Does the Monterey Bay Area need more housing for homeowners or renters? (v1.0 only)



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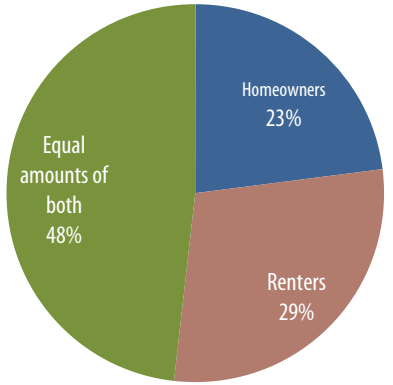
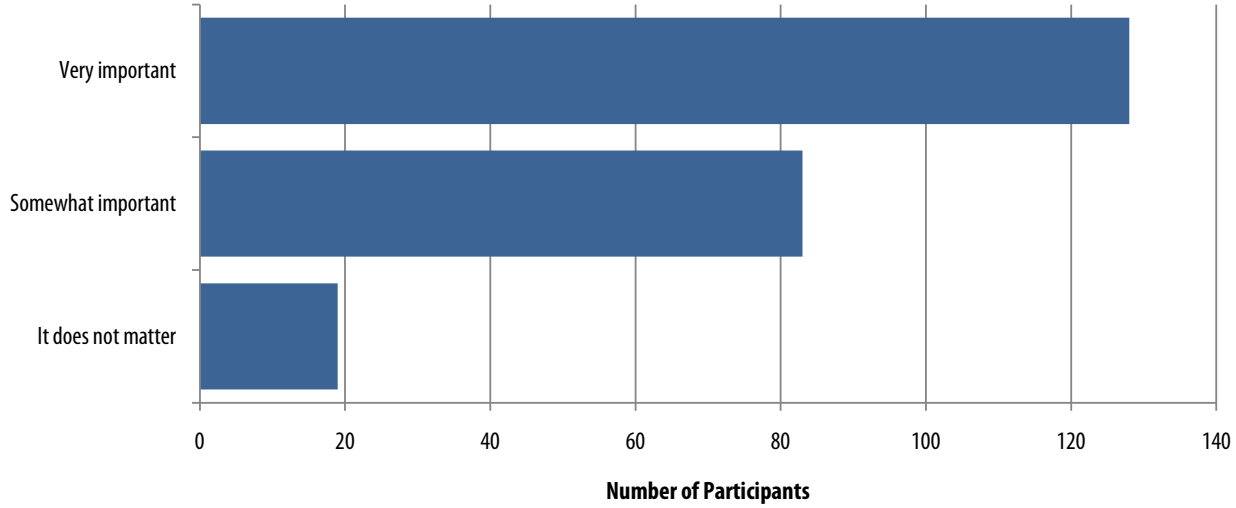


How important is it for homes to be near jobs (within 5 miles)? (v1.0 only)



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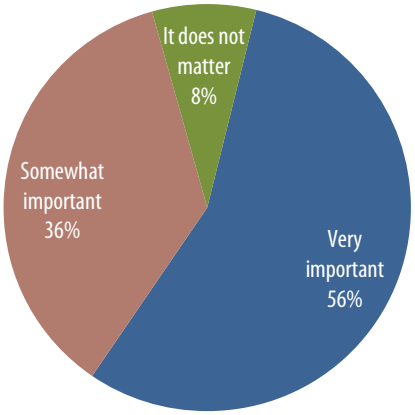
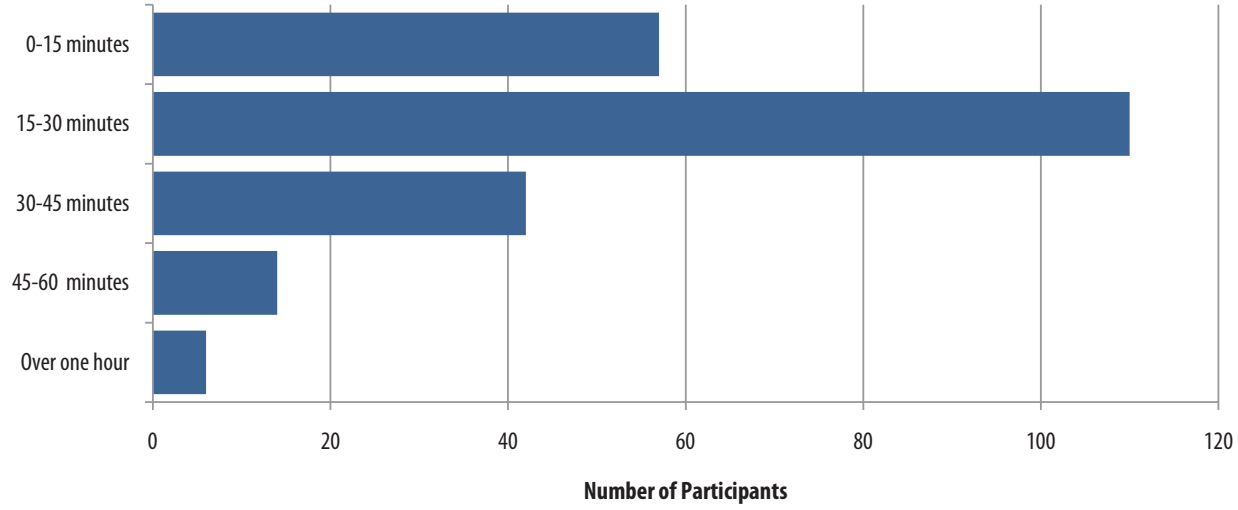


To live where I prefer, I would be willing to commute____ to work. (v1.0 only)



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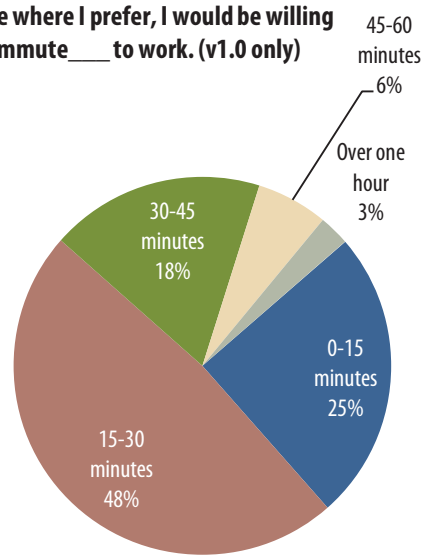
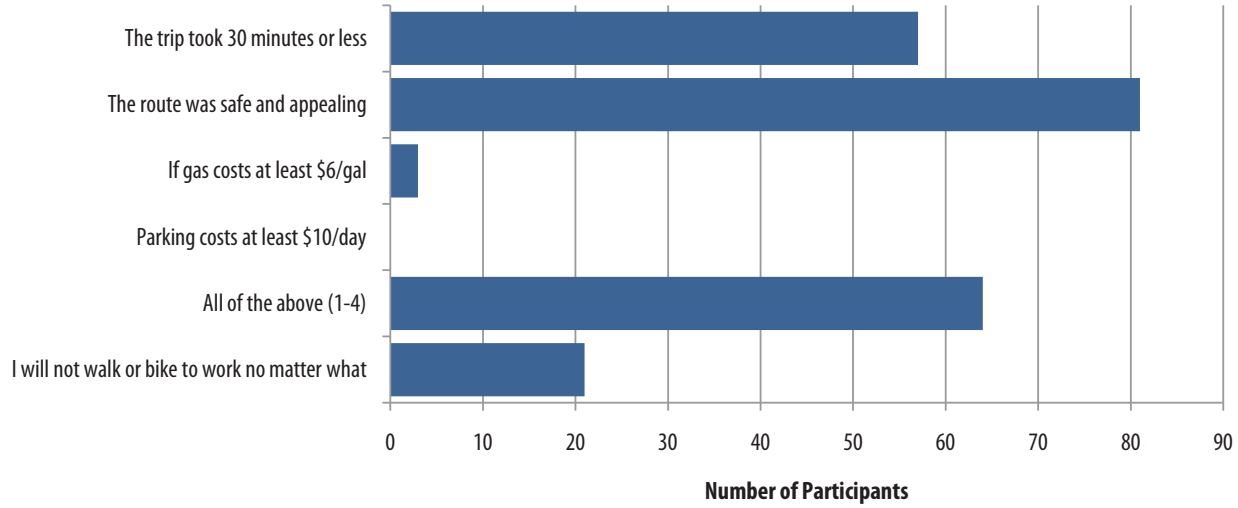


I would walk or bike to work if (v1.0 only)



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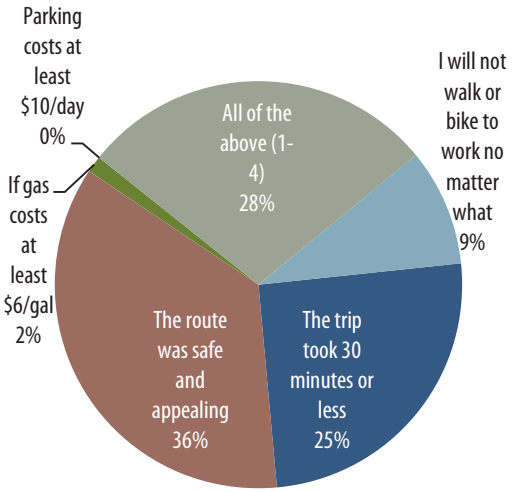
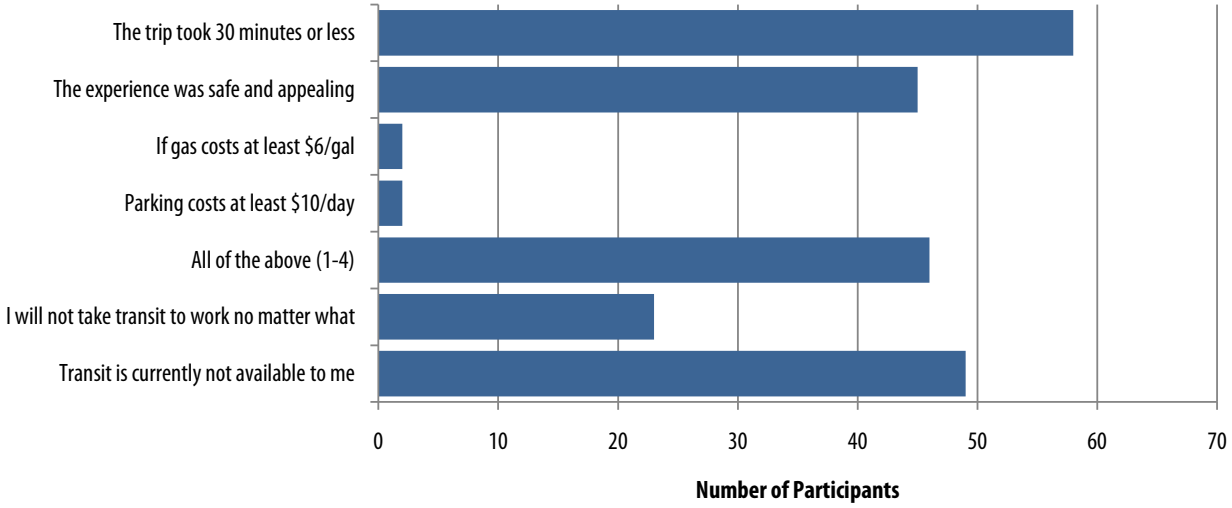


I would take transit to work if (v1.0 only)



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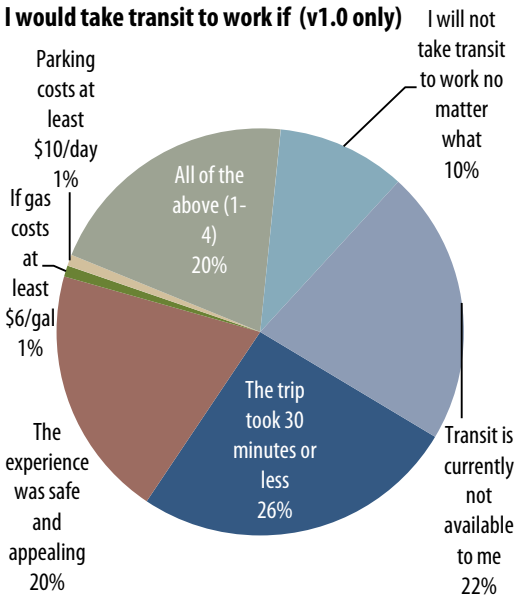
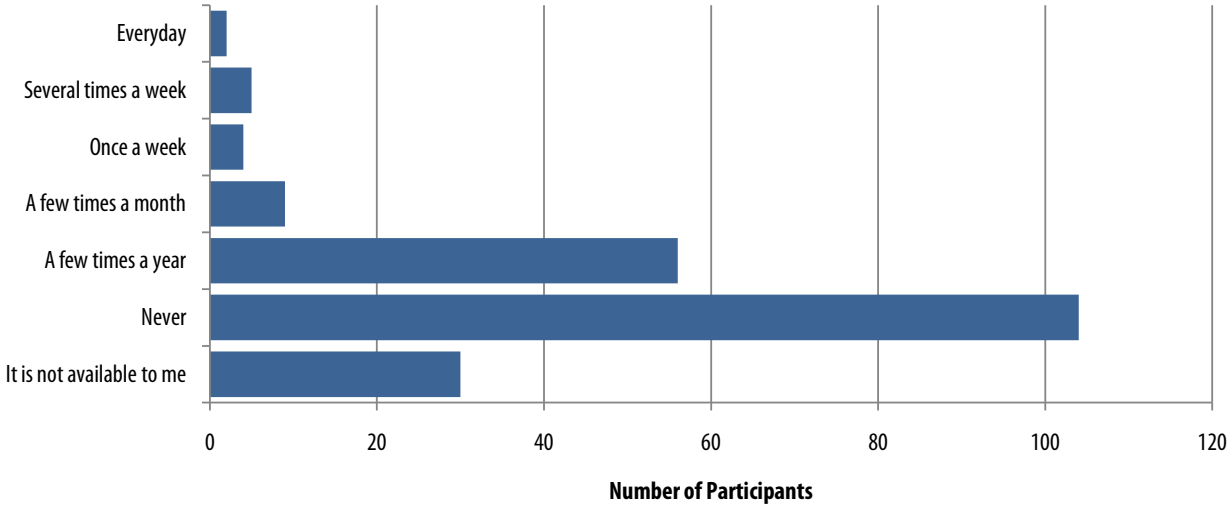


Do you take the bus? (v1.0 only)



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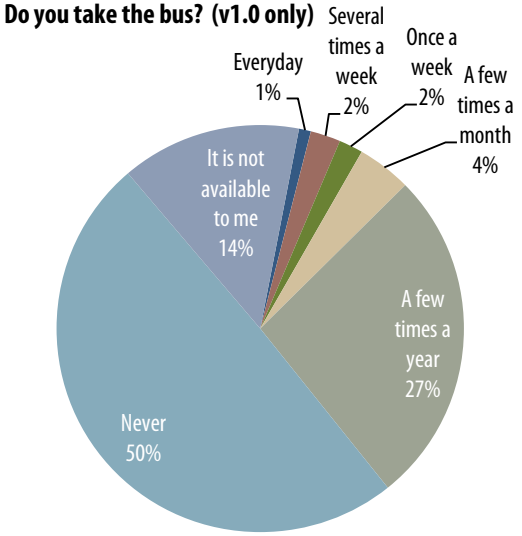
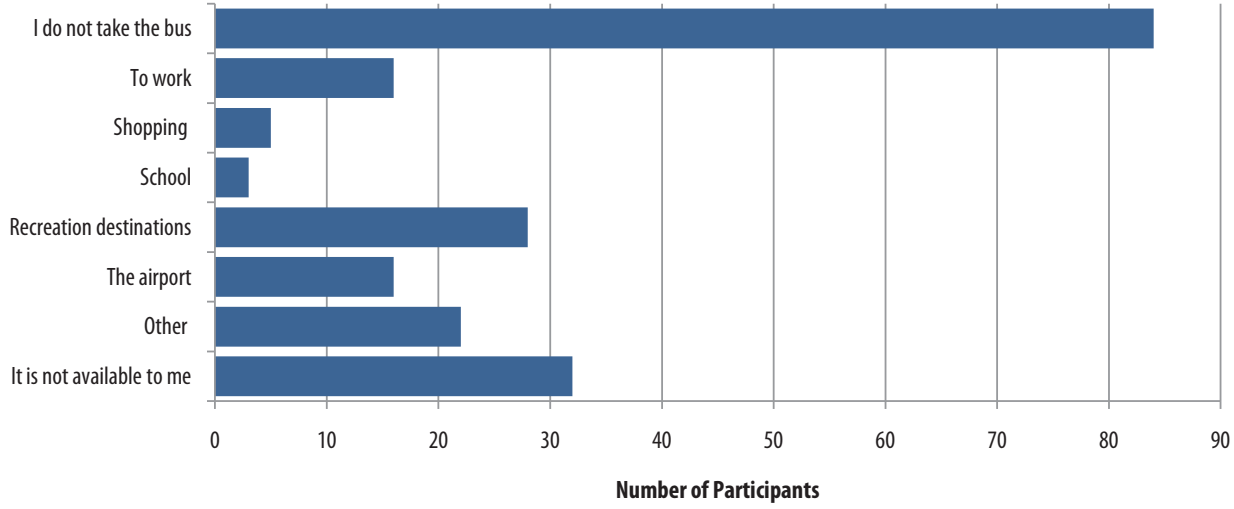
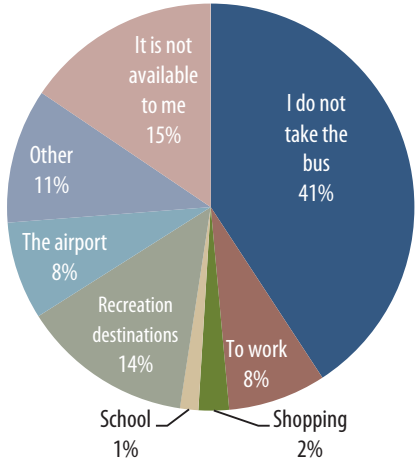


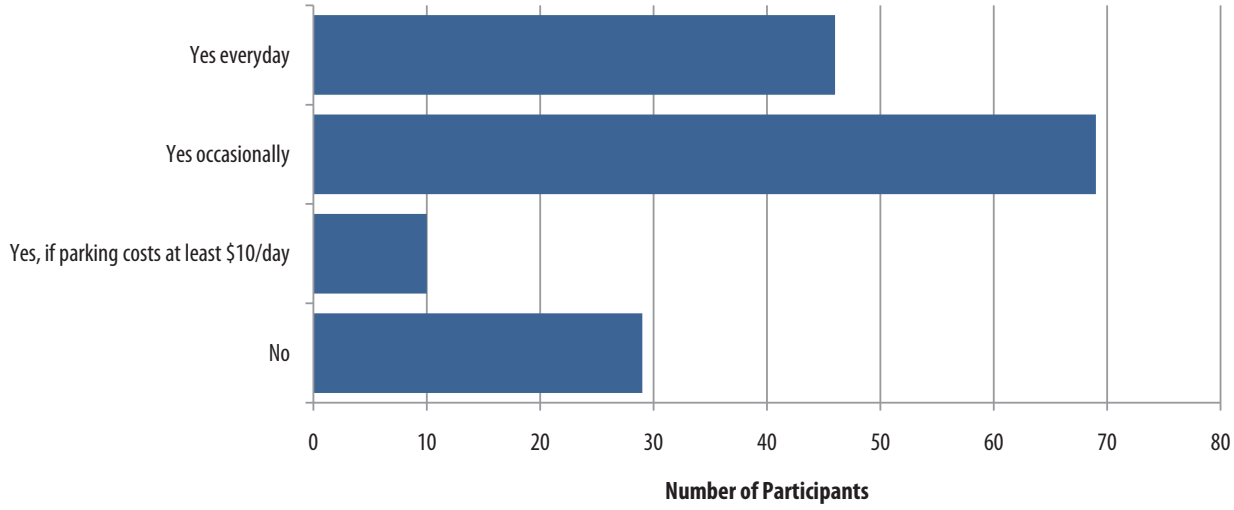
When you take the bus, where do you most often go? (v1.0 only)



30.) When you take the bus, where do you most often go? (v1.0 only)



I would take transit from home to work if the trip took 30 minutes or less. (v1.0 only)



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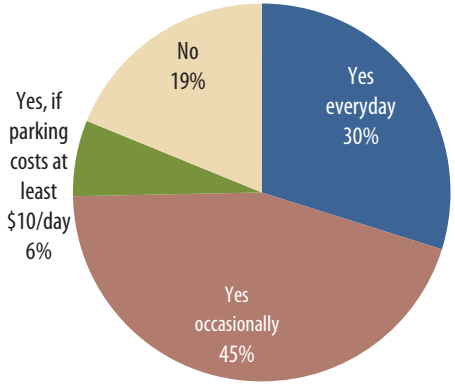
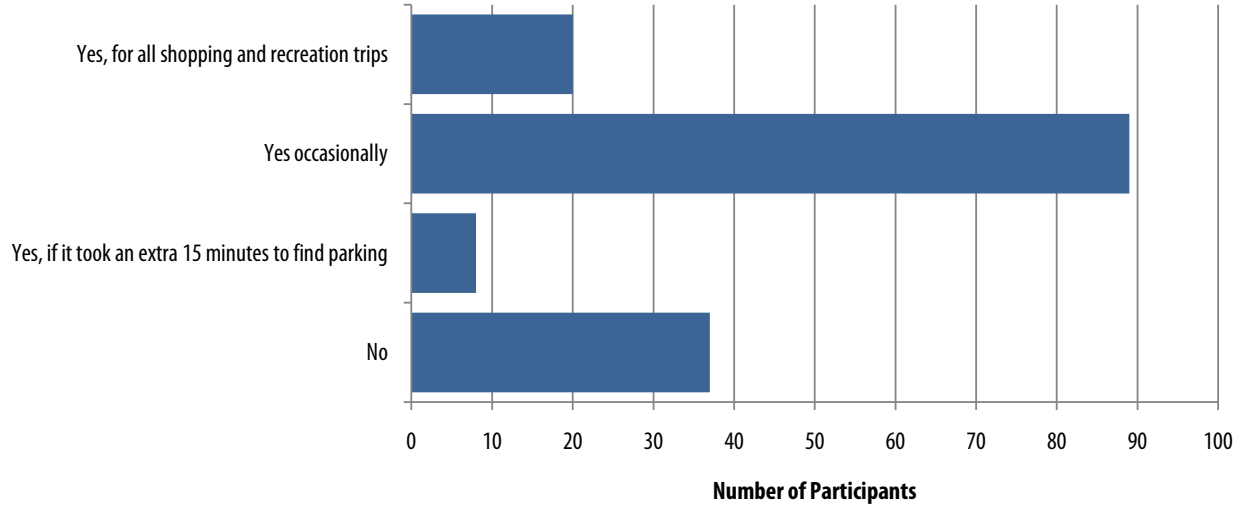


I would take transit to shopping and recreation if the trip took 30 minutes or less. (v1.0 only)



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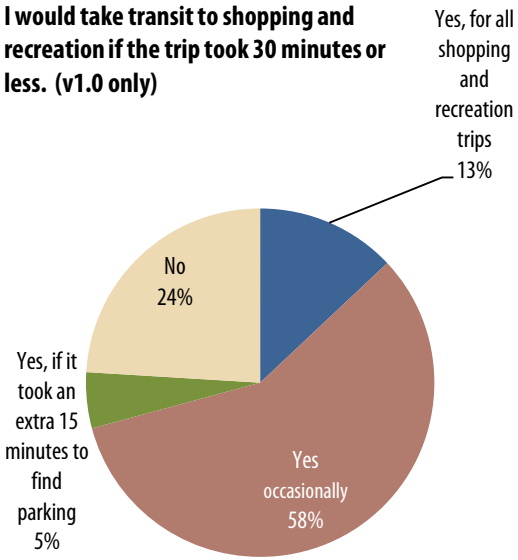
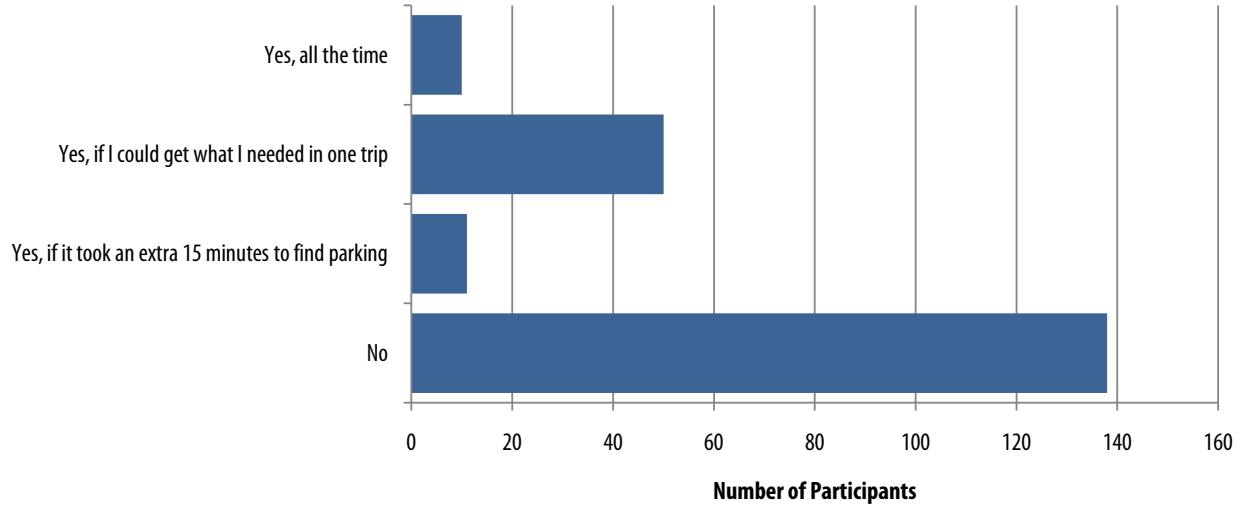


Would you take transit to shopping if it took twice as long compared to driving? (v1.0 only)



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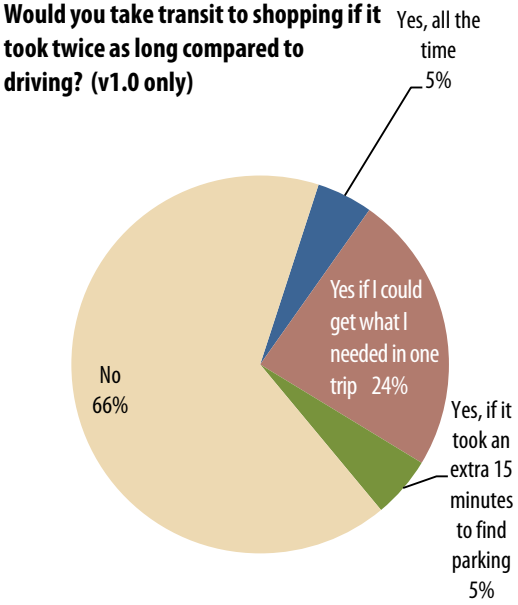

If gas prices were to go up to $8.00 a gallon….

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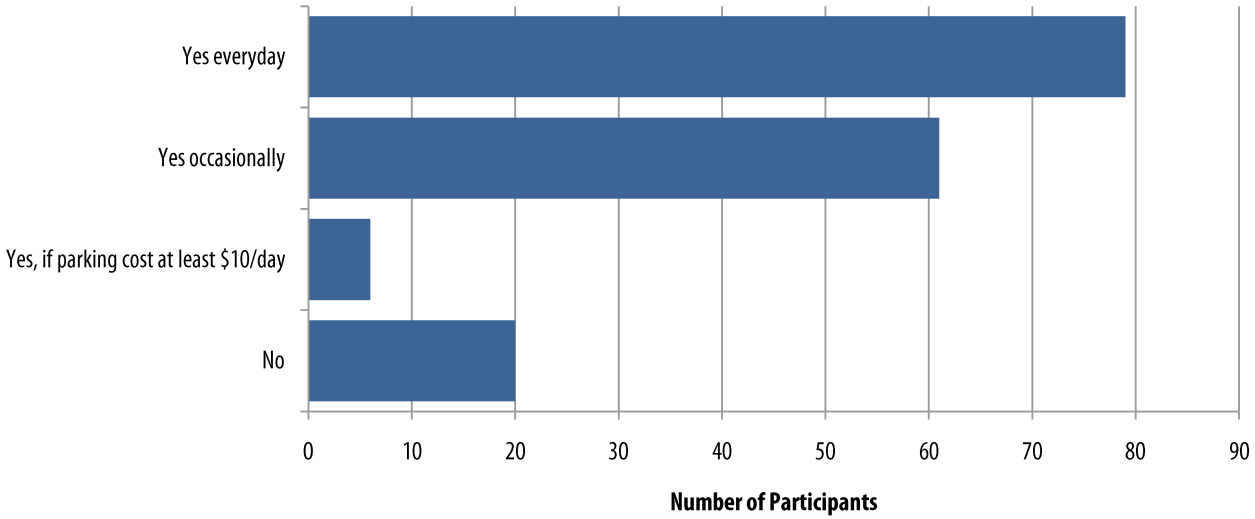

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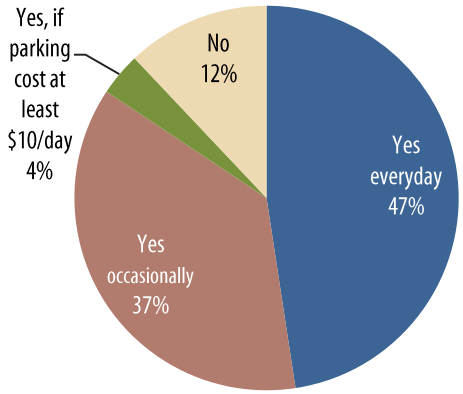

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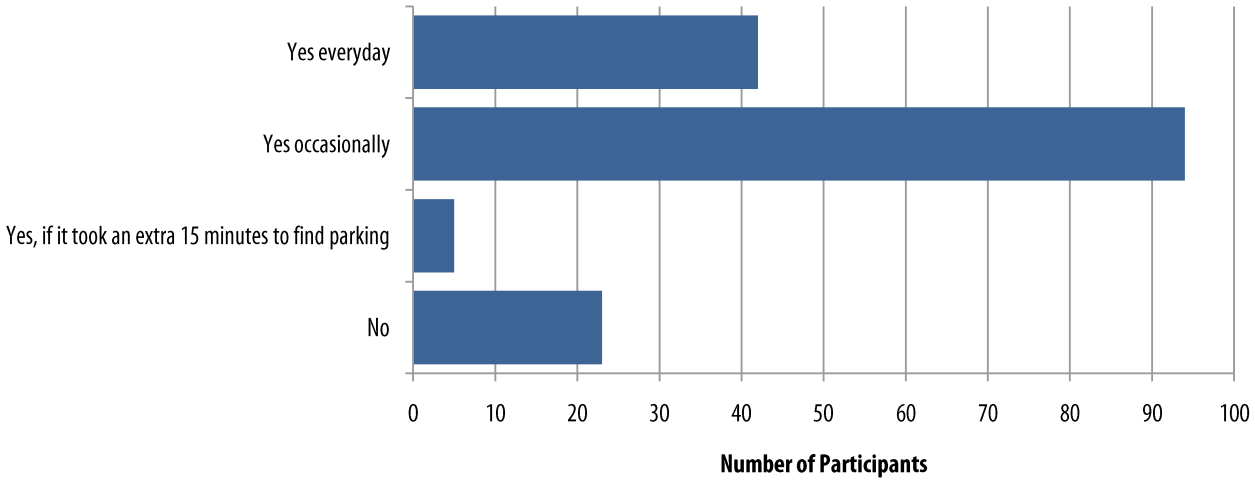

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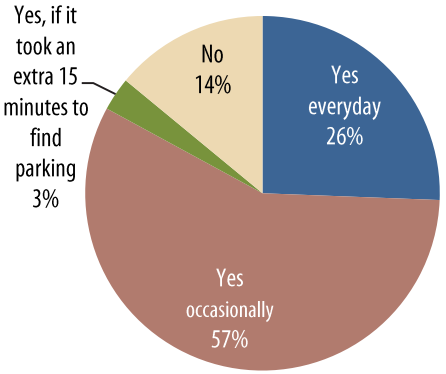

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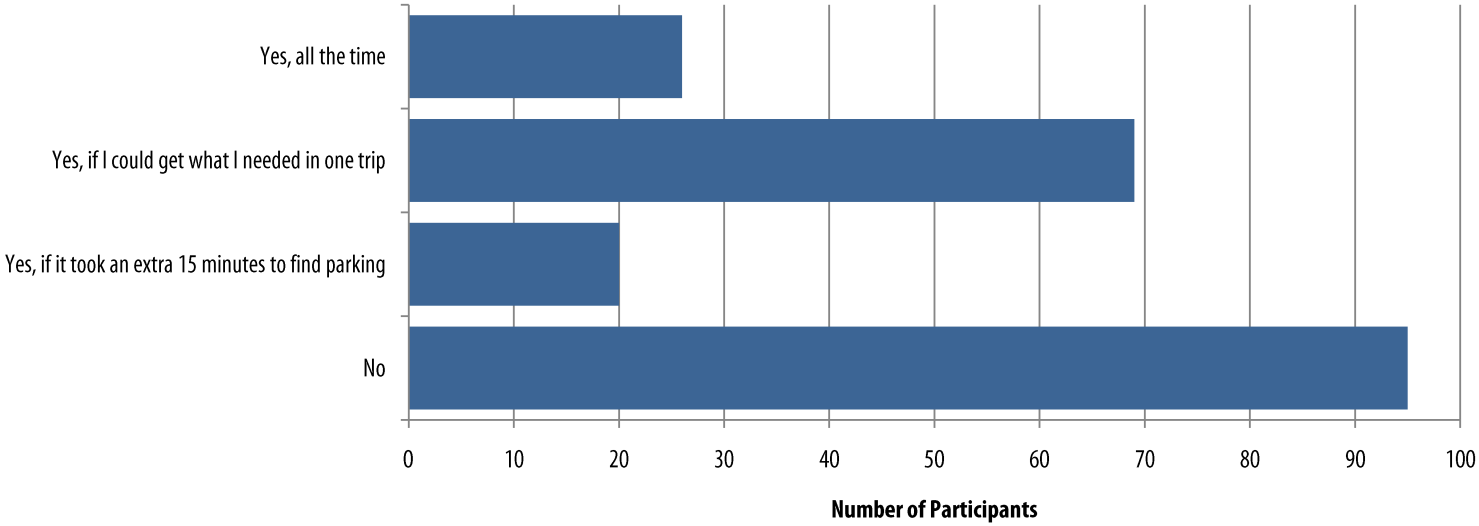

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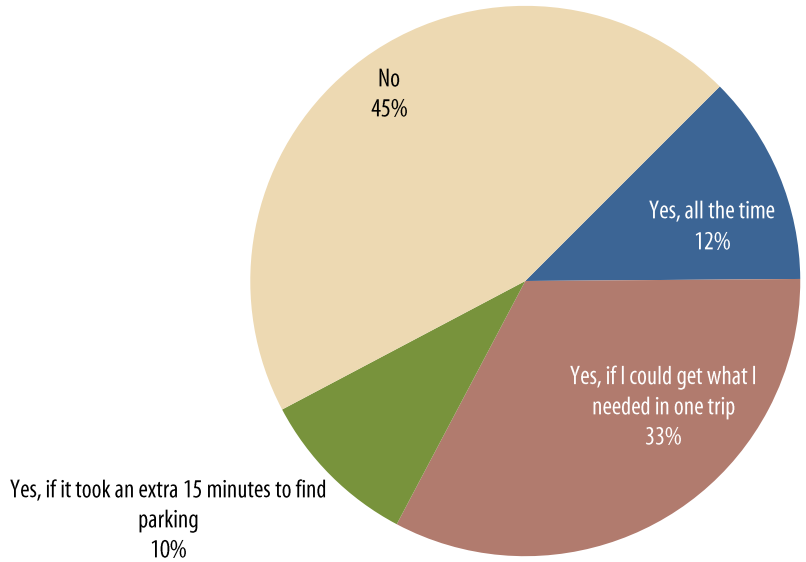
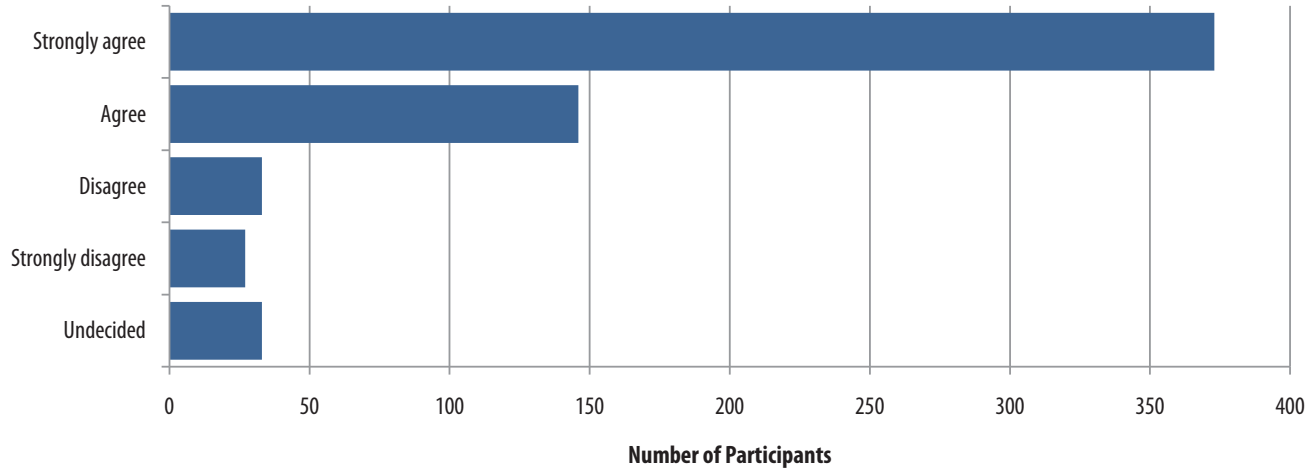


We should encourage future growth within existing developed areas rather than expand into existing agricultural and habitat areas.



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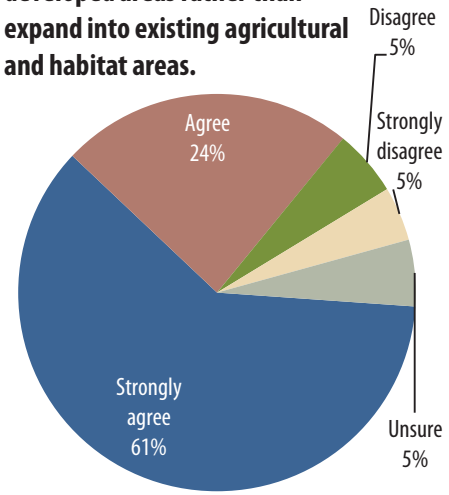
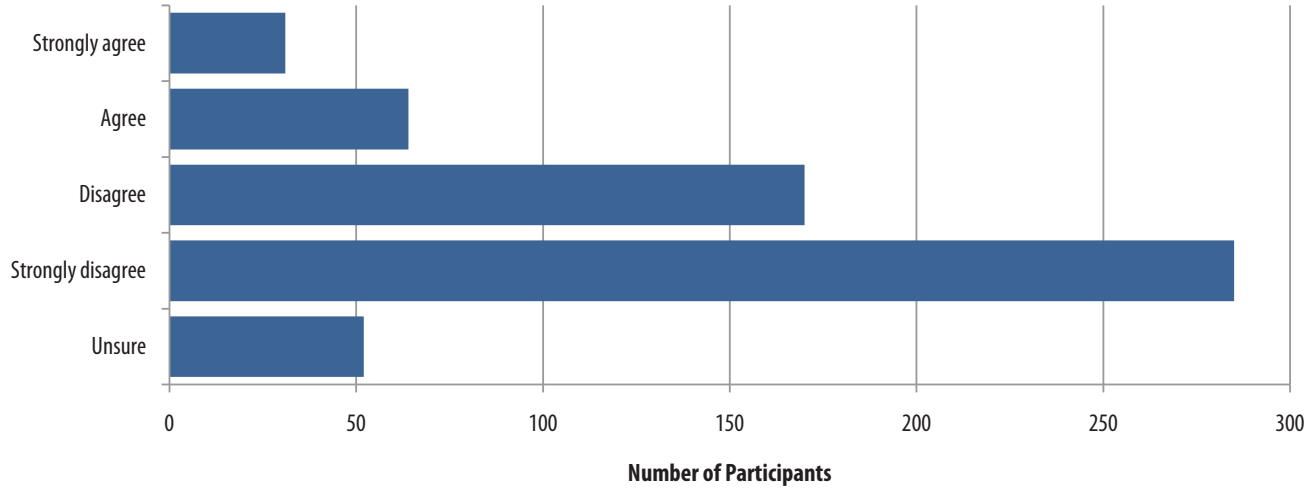


We should encourage future development to go into agricultural and habitat areas if it helps bring the cost of housing down by 10 %.



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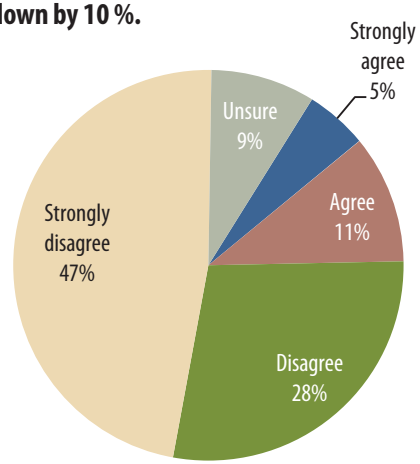
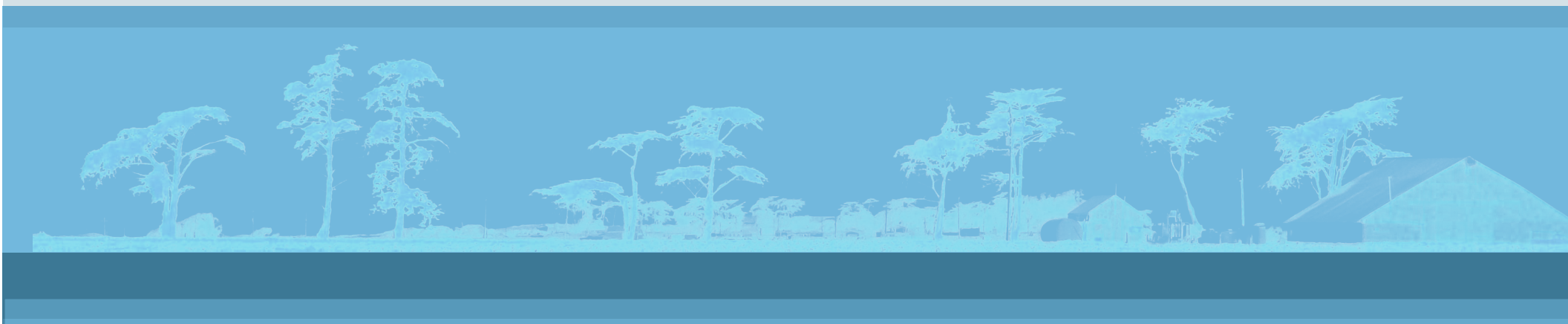


Technical Appendix G: Glossary, Endnotes and Sources



GLOSSARY

Acronym/Term	Definition
Affordable Housing	Housing for which the occupant is paying no more than 30 percent of his or her income for gross housing costs, including utilities. (For more information: http://www.hud.gov/offices/cpd/about/index.cfm)
AMBAG	Association of Monterey Bay Area Governments: the MPO for Monterey, San Benito and Santa Cruz Counties.
APS	Alternative Planning Scenario - If the GHG emissions reduction targets set through SB 375 cannot be met through the SCS, an Alternative Planning Strategy (APS) may be developed showing how those targets would be achieved through alternative development patterns, infrastructure, or additional transportation measures or policies.
Baby Boomer	Young males returning to the United States, Canada, and Australia following tours of duty overseas during World War II began families, which brought about a significant number of new children into the world. This dramatic increase in the number of births from 1946 to 1964 (1947 to 1966 in Canada and 1946-1961 in Australia) is called the Baby Boom.
Blueprint	Collaborative transportation and land use planning processes that engages residents of a region in articulating a vision for the long term future of their region. (For more information: http://calblueprint.dot.ca.gov/)
Blueprint Priority Areas	Areas that are 1) within 1/2 mile of stops for BRT, LRT and other transit nodes as identified by the Blueprint Policy Group or 2) identified in City and County General Plans as allowing 15 dwelling units per acre or higher for residential use and high density for commercial or industrial use.
BRT	Bus Rapid Transit - Integrated system uses buses or specialized vehicles on roadways or dedicated lanes to quickly and efficiently transport passengers to their destinations, while offering the flexibility to meet a variety of local conditions. (For more information: http://www.nbrti.org/index.html)
Caltrans	California Department of Transportation
CARB (aka ARB)	California Air Resources Board
CEQA	California Environmental Quality Act - A California statute passed in 1970, shortly after the United States federal government passed the National Environmental Policy Act (NEPA), to institute a statewide policy of environmental protection. CEQA does not directly regulate land uses, but instead requires state and local agencies within California to follow a protocol of analysis and public disclosure of the potential environmental impacts of development projects.
CH4	Methane (a GHG) - very high global warming potential
CO	Carbon Monoxide - indirect/precursor gas
CO2	Carbon Dioxide (a GHG) - over 84% of all emissions
CO2e	Carbon Dioxide Equivalent
COG	Council of Government

Compact Growth/Development	An important part of Smart Growth is using land more efficiently and preserving those lands that are most environmentally sensitive. By building in a more compact way, these goals can be achieved. Compact development also reduces development costs through more efficient use of infrastructure, which in turn makes housing more affordable. (For more information: http://www.vtpi.org/tdm/tdm81.htm)
Conjunctive Use	Combining the use of both surface and groundwater water in order to minimize the undesirable physical, environmental and economical effects of each solution and to optimize the water demand/supply balance. (For more information: http://www.cd.water.ca.gov/groundwater/conjunctiveuse.cfm)
CTC	California Transportation Commission
Desalination	Any of several processes that remove salt and other minerals from water. Water is desalinated in order to convert salt water to fresh water so it is suitable for human consumption or irrigation. Most interest in desalination is focused on developing cost-effective ways of providing fresh water for human use in regions where the availability of fresh water is, or is becoming, limited. (For more information: http://www.desware.net/)
DOF	Department of Finance
DU/AC	Dwelling units per acre - a unit of measurement for residential density.
EIR	Environmental Impact Report: Under CEQA, a detailed review of a proposed project, its potential adverse environmental effects, possible changes that can be made to reduce adverse effects, and possible alternatives.
EMFAC	Emission Factors Model developed by CARB
FHWA	Federal Highway Administration
FTA	Federal Transit Administration
FTIP	Federal Transportation Improvement Program (same as MTIP) - All federally funded projects, and regionally significant projects (regardless of funding), must be listed in an Federal Transportation Improvement Program (FTIP) per federal law. The Metropolitan Planning Organizations (MPOs) are responsible for developing and maintaining the FTIP. A project is not eligible to be programmed in the FTIP until it is programmed in the State Transportation Improvement Program (STIP) or in the State Highway Operations and Protection Program (SHOPP). Other types of funding such as Federal Demonstration, Congestion Mitigation and Air Quality (CMAQ), Transportation Enhancement Activities (TEA), or Surface Transportation Program (STP) must be officially approved before the projects can be included in the FTIP.
Generation Y	Generation Y describes the demographic cohort following Generation X. As there are no precise dates for when the Millennial generation starts and ends, commentators have used birth dates ranging somewhere from the mid-1970s to the early 2000s. Members of this generation are called Echo Boomers, due to the significant increase in birth rates through the 1980s and into the 1990s, and because many of them are children of baby boomers
GHG	Greenhouse Gas Emissions
Graduated Density	Incentivizes land assembly by allowing higher density for projects as the site gets larger. (For more information: www.its.ucla.edu/shoup/GraduatedDensityZoning.pdf)

HC	Hydrocarbons - indirect/precursor gas
HCD	California Department of Housing and Community Development
Infill Development	the development of vacant land-or rehabilitation of existing structures-in already urbanized areas where infrastructure and services are in place. Prime locations for infill development include downtowns, transit corridors and locations near employment, shopping, and recreational and cultural amenities. (For more information: http://policylink.info/EDTK/Infill/)
ITS	Intelligent Transportation Systems
Jobs-Housing Balance	Jobs-housing balance refers to the approximate [equal] distribution of employment opportunities and workforce population across a geographic area. It is usually measured in terms of the proportion of jobs per household. (For more information: http://www.plan4sustainabletravel.org/key_themes/jobs_housing_balance/)
LOS	Level of Service
LTC	Local Transportation Commission - In the Monterey Bay Area: SBtCOG, SCCRTC, TAMC.
LRT	Light Rail - A form of urban rail public transportation that generally has a lower capacity and lower speed than heavy rail and metro systems, but higher capacity and higher speed than traditional street-running tram systems.
MBUAPCD	Monterey Bay Unified Air Pollution Control District
METRO	Santa Cruz Metropolitan Transit District - same as SCMTD
MPO	Metropolitan Planning Organization - A federally required planning entity responsible for transportation planning in its region.
MST	Monterey-Salinas Transit
MTIP	Metropolitan Transportation Improvement Program - same as FTIP
MTP	Metropolitan Transportation Plan - Similar to the RTP, MPOs are required to adopt and submit a plan to the CTC and Caltrans every four to five years depending on air quality attainment in the region. Regional transportation projects proposed to be funded in whole or in part, in the State Transportation Improvement Program must be included in the MTP.
N20	Nitrous Oxide (a GHG) - very high global warming potential
New Urbanism	A growing movement, New Urbanism recognizes walkable, human-scaled neighborhoods as the building blocks of sustainable communities and regions. It emphasizes compact, mixed-use urban form, transportation and housing choices, as well as promotes efficient use of infrastructure and preservation of habitats and farmland. (For more information: http://www.cnu.org/Intro_to_new_urbanism)
NOx	Nitrogen Oxide - indirect/precursor gas
Open Space	A portion of a site which is permanently set aside for public or private use and will not be developed. The space may be used for passive or active recreation, or may be reserved to protect or buffer natural areas.

Paratransit	Paratransit is an alternative mode of flexible passenger transportation that does not follow fixed routes or schedules. Under the ADA, complementary paratransit service is required for passengers who are 1) unable to navigate the public bus system, 2) unable to get to a point from which they could access the public bus system, or 3) have a temporary need for these services because of injury or some type of limited duration cause of disability (49 CFR 37.123). Title 49 Part 37 details the eligibility rules along with requirements governing how the service must be provided and managed. In the United States, paratransit service is now highly regulated and closely monitored for compliance with FTA standards.
Per Capita	By or for each individual person, ex: income per capita.
Permeable Surface	A surface that has inlets or holes which allow water to enter the soil or construction below.
RHNA	Regional Housing Needs Allocation - (Pronounced "reena") Mandated by State Housing Law as part of the periodic process of updating local housing elements of the General Plan, the RHNA quantifies the need for housing within each jurisdiction during specified planning periods.
RSTP	Regional Surface Transportation Program - a funding source
RTAC	Regional Target Advisory Committee - the group who provided recommendations on factors to be considered and methodologies to be used in the ARB target setting process
RTDM	Regional Travel Demand Model
RTIP	Regional Transportation Improvement Program - prepared by RTPAs, similar to the MTIP
RTP	Regional Transportation Plan
RTPA	Regional Transportation Planning Agency - In the Monterey Bay Area SBtCOG, SCCRTC, TAMC.
SAFETEA-LU	Safe, Accountable, Flexible, Efficient Transportation Equity Act: A Legacy for Users (August 10, 2005 Federal Transportation Authorization) - Guaranteed funding for highways, highway safety, and public transportation totaling $244.1 billion. (For more information: http://www.fhwa.dot.gov/safetealu/summary.htm)
SB 375	SB 375 requires ARB to develop regional greenhouse gas emission reduction targets for passenger vehicles. ARB is to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations (MPOs). Each of California's MPOs then prepare a "sustainable communities strategy (SCS)" that demonstrates how the region will meet its greenhouse gas reduction target through integrated land use, housing and transportation planning.
SBtCOG	Council of San Benito County Governments
SCCRTC	Santa Cruz County Regional Transportation Commission
SCMTD	Santa Cruz Metropolitan Transit District - same as METRO.
SIP	State Implementation Plan - a United States state plan for complying with the federal Clean Air Act, administered by the Environmental Protection Agency. The SIP consists of narrative, rules, technical documentation, and agreements that an individual state will use to clean up polluted areas.

Smart Growth	Smart growth is an urban planning and transportation theory that concentrates growth in compact walkable urban centers to avoid sprawl and advocates compact, transit-oriented, walkable, bicycle-friendly land use, including neighborhood schools, complete streets, and mixed-use development with a range of housing choices
Smart Infrastructure	Smart Infrastrucutre is a corrolary to Smart Growth in which compact walkable urban centers yield long term savings on infrastructure costs
Special Use District	A special district means a local unit of government, other than a city, town, or county, authorized by law to perform a single function or a limited number of functions, and including but not limited to, water-sewer districts, irrigation districts, fire districts, school districts, community college districts, hospital districts, and transportation districts.
SRTP	Short-Range Transit Plan
Stormwater Runoff	Surface water that fails to infiltrate the soil after a rainstorm. In developed watersheds it flows off roofs and pavement into storm drains which may feed directly into streams; stormwater carries pollutants from urban areas directly into local waterways.
Sustainable Communities Strategy	The SCS must demonstrate how the development patterns and the transportation network, policies, and programs can work together to achieve the greenhouse gas (GHG) emission reduction targets for cars and light trucks established by the California Air Resources Board, if there is a feasible way to do so. If a MPO cannot meet the targets through the SCS, then the region is required to develop an Alternative Planning Strategy that demonstrates how the emission reduction targets could be achieved. (For more information: http://www.arb.ca.gov/cc/sb375/sb375.htm)
TAMC	Transportation Agency for Monterey County
TAZ	Traffic Analysis Zone
TCM	Transportation Control Measures - strategies that are specifically identified and committed to in State Implementation Plans (SIPs); and are either listed in Section 108 of the Clean Air Act (CAA), or will reduce transportation-related emissions by reducing vehicle use or improving traffic flow.
TDA	Transportation Development Act - a locally generated funding source.
TDM	Transportation Demand Management
TDR	Transfer Development Rights: A form of incentive for developers in which the developer purchases the rights to an undeveloped piece of property in exchange for the right to increase the number of dwelling units on another site. Often used to concentrate development density in certain land areas
TMA	Transportation Management Association
TPP	Transportation Priority Project
Transit Nodes	A point or intersection of concentrated public transportation activity, usually a bus or passenger rail stop.
TSM	Transportation System Management
USDOT	United States Department of Transportation
VMT	Vehicle Miles Traveled

VT	Vehicle Trips
Water Basin	A water basin is an extent or area of land where surface water from rain and melting snow or ice converges to a single point.
Watershed	An area of land that drains water, sediment and dissolved materials to a common receiving body or outlet. The term is not restricted to surface water runoff and includes interactions with subsurface water. Watersheds vary from the largest river basins to just acres or less in size. In urban watershed management, a watershed is seen as all the land which contributes runoff to a particular water body.
Williamson Act	Enables local governments to enter into contracts with private landowners for the purpose of restricting specific parcels of land to agricultural or related open space use. In return, landowners receive property tax assessments which are much lower than normal because they are based upon farming and open space uses as opposed to full market value. Local governments receive an annual subvention of forgone property tax revenues from the state via the Open Space Subvention Act of 1971. (For more information: http://www.conservation.ca.gov/dlrp/lca/Pages/Index.aspx)
Workshop Survey	A partial collection, of facts, figures, or opinions taken at workshops open to the public and used to approximate or indicate what a complete collection and analysis might reveal.
Zoning	Zoning codes have evolved over the years as urban planning theory has changed, legal constraints have fluctuated, and political priorities have shifted. The various approaches to zoning can be divided into four broad categories: Euclidean, Performance, Incentive, and Design-based. Euclidean zoning codes are the most prevalent in the United States. Euclidean zoning is characterized by the segregation of land uses into specified geographic districts and dimensional standards stipulating limitations on development activity within each type of district.

ENDNOTES

DEFINING THE ISSUES: CURRENT GROWTH PATTERNS

"Since the 1960s, the total miles traveled (Vehicle Miles Traveled, or VMT) in the United States has" on page 14

Source: US population data - US Decennial Census, data for 1990-2000 available through American FactFinder, http://factfinder.census.gov/home/saff/main.html?_lang=en. Historical VMT data - Bowman

"Our population is growing but employment growth is not keeping up." on page 14

Source: AMBAG Forecast 2008.

"AMBAG forecasts that VMT...will grow nearly three times as fast as our population through 2035" on page 15

Source: AMBAG Regional Travel Demand Model, 2010.

Population Trends in the Monterey Bay Area

"A very significant emergent trend is the...rise in retirement age people living in our region" on page 14

Source: AMBAG Forecast 2008.

Aging and its Fiscal Consequences for Transportation Infrastructure

"a wave of national household spending activity that began in the late 1940s is peaking" on page 16

Source: Lee and Skinner, 117.

Current Growth Patterns in the Monterey Bay Area

"Housing choices...are limited" on page 14

Source: Drawn from analysis of Department of Finance E-5 reports, an analysis of market data on average housing prices and input from policy group members.

"Due to a number of factors including the elimination of tax advantage for investors in multi-family" on page 14

Source: Dunstan and Swanson pgs 2-3.

"and nearly a decade of construction defect litigation" on page 14

Source: Lewis and Neiman, 80-81.

"by 2035, more single family detached housing will be built at the urban fringe" on page 17

Source: Policy group members, staff analysis of General Plans.

"Even though the coastal communities are not currently experiencing significant population growth" on page 17

Source: AMBAG Forecast 2008, AMBAG Regional Travel Demand Model, 2010.

Commute Patterns

"over one-third of all Monterey Bay Area residents work outside the county they live in" on page 17

Source: U.S. Census Bureau, Longitudinal Employer-Household Dynamics, 2008, http://lehd.did.census.gov/led/

Vehicle Miles Traveled versus Population Growth

"women entered the labor force in large numbers, ushering in vast changes in commute patterns" on page 19

Source: Polzin, 8-10

"VMT grew at twice the rate of the population growth through 2007" on page 19

Source: Bowman, 2008.

"a wave of suburbanization that fundamentally shifted the balance of our transportation choices" on page 19

Source: Ewing et al, 20-23.

"the overwhelming majority of residents in our region drive alone to work every day" on page 19

Source: AMBAG Regional Travel Demand Model, 2010.

"Based on their 2002 Household Travel Survey...the average travel time...on public transit is 50 min." on page 20

Source: Transportation Agency for Monterey County.

"In a 2009 survey...respondents who indicated that they did not regularly take the bus were asked why" on page 14

Source: Monterey-Salinas Transit.

Sprawl Costs (more and more...)

"Annually, all Americans pay about $31 billion for sprawl" on page 20..."according to a recent study, if 25 percent of low density growth shifted to a more compact pattern" on page 21

Source: Robert Burchell, http://cascadeagenda.com/files/speakers-bureau/sprawl%20costs.pdf

"Higher gasoline costs...incentivize oil refiners to refine petroleum...driving up the price of oil" on page 21

Source: Steiner, 43.

Congestion

"Around $6 a gallon, the cost of building a road will be dramatically higher than at lower prices" on page 22

Source: Steiner, 43.

"As of 2005, AMBAG estimates that there were 49,730 daily hours of delay due to congestion" on page 22

Source: AMBAG Regional Travel Demand Model, 2010.

"The think tank RAND estimates that each hour of delay for passenger vehicles costs the economy $14.6" on page 22

Source: http://ca.rand.org/stats/community/trafficcong.more.html

Greenhouse Gas Emissions from the Transportation Sector

"In September of 2010, the...Air Resources Board adopted regional per capita greenhouse gas targets" on page 22

Source: http://www.arb.ca.gov/cc/sb375/final.resolution.10.31.pdf

Public Health

"National studies indicate that increasing the time spent walking each day significantly reduces obes" on page 23

Source: Edwards.

Risks to Natural Resources in the Monterey Bay Area

Water Supply

"With only 12% of the region's water supply supports urban uses" on page 24

Source: Damitz, Pg 18. Please note that the numbers in the original Damitz table are summed incorrectly. The corrected numbers are used in the calculation in the Blueprint text.

"more compact growth minimizes the demand on urban water uses" on page 24

Source: EPA Protecting Water Resources with Higher-Density Development

"using data from the Pacific Institute, a water policy think tank based in Oakland" on page 25

Source: Wolff, Gaur and Winslow.

Agricultural Land

"With some of the most productive soil in California" on page 27

Source: http://www.co.monterey.ca.us/ag/2009_cropreport.htm

"these two areas in the region experienced a net gain in farmland from 1984 to 2006 of over 10,000 ac" on page 27

Source: Department of Farmland Mapping and Monitoring Program http://redirect.conservation.ca.gov/DLRP/fmmp/product_page.asp

PRESENTING AN ALTERNATIVE: SUSTAINABLE GROWTH PATTERNS

Can Blueprint Priority Areas Accommodate the Region's Growth?

"Compare this to a 2005 study by John Landis" on page 34

Source: Landis.

ENVISIONING THE MONTEREY BAY AREA: GETTING THERE FROM HERE

Market Trends that Support Sustainable Growth

Trends in the Housing Market

"Based on an analysis of...research, AMBAG anticipates greater future demand for smaller housing unit" on page 41

Source: Nelson, McIlwain.

"In a national study housing...Nelson forecasted that the aging of the population will drive demand" on page 41

Source: Nelson

"At the other end of the age spectrum is Generation Y" on page 42

Source: McIlwain.

Market Trends Influencing Transportation Choices

"At around $6 a gallon, the cost of building a road will be dramatically higher" on page 43

Source: Steiner 43.

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ENVISIONING
THE MONTEREY BAY AREA

A Blueprint for Sustainable Growth and Smart Infrastructure

June 2011

The Association of Monterey Bay Area Governments (AMBAG) serves the many planning needs of the tri-county area (Monterey, San Benito, and Santa Cruz) by producing common future growth assumptions for the region as a whole and all of its localities. In addition, AMBAG is involved with the following regional planning issues: Water Quality, Transportation and Air Quality Planning, and Housing.

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