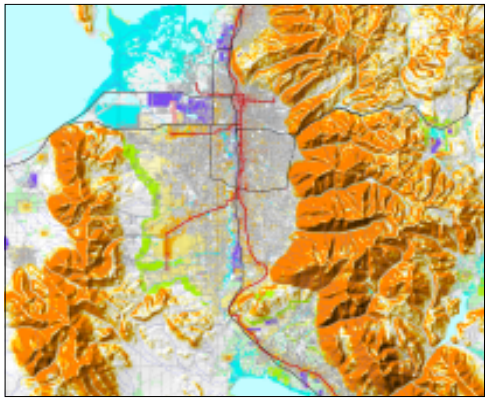
Envision Utah

Producing a Vision for the Future of the Greater Wasatch Area






April 2000

Calthorpe Associates
URBAN DESIGNERS
PLANNERS
ARCHITECTS

Envision Utah
A Partnership for Quality Growth

Fregonese Calthorpe
ASSOCIATES
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Table of Contents

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Envision Utah Quality Growth Strategy and Technical Review, January 1999
Envision Utah Scenario Analysis, December 1998

INTRODUCTION

The Greater Wasatch Area in Utah is a region known for its scenic beauty, family-oriented residents, and strong sense of community. Residents, with access to good schools, diverse recreational opportunities, and a healthy job market, cherish their high quality of life, and hope that their children and grandchildren can enjoy and succeed in the region as they have.

However, recent focus on projected growth for the Greater Wasatch Area has highlighted the challenges of maintaining the region's assets in the wake of increasing population and development pressure. Like many cities and regions in the western United States, the Salt Lake City region has experienced rapid population growth over the past decade, placing increasing pressure on water and transportation infrastructure, housing supply, schools, natural resources, and air quality. The State's most recent projections show the region, currently home to 1.6 million residents, growing to more than 2.2 million by 2020, and to more than 5 million residents by the year 2050. These increases represent a population growth rate of approximately twice the national average, with more than two-thirds of growth resulting from the state's high birth rate. Use of highway infrastructure is expected to increase at an even faster rate than population, and emissions of harmful air pollutants are expected to exceed new federal air quality standards.

THE ENVISION UTAH PROCESS

This project arose out of an effort to educate the public about the issues and consequences associated with this growth, and to begin thinking about ways to accommodate growth and maintain the quality of life that today's residents value and enjoy. Guided by a comprehensive study of the values of local residents, the first year of the Envision Utah process utilized an extensive public workshop process to develop regional development strategies and a series of alternative growth and infrastructure scenarios for the Greater Wasatch Area. A sophisticated land use-transportation model then analyzed the scenarios for their effects on a variety of factors, including housing cost, air quality, and impacts on transportation and other infrastructure. The second year of the process built on the efforts of the first year to develop a preferred regional growth strategy for the Greater Wasatch Area. Built through public workshops and participation, this Quality Growth Strategy (QGS) consists of a series of regional growth concept maps as well as a toolbox of implementation strategies to that help reach regional goals. As in the first year of the process, the QGS was modeled for its impacts on regional growth and its consistency with the values and regional vision of the area's residents.

ORGANIZATION OF THIS DOCUMENT

This document presents the process involved in soliciting public input, developing regional growth alternatives, and modeling the effects and consequences of new growth. It begins with a discussion of the Values Framework that formed the core structure of the process, and then describes the existing, or base conditions from which the public input and scenario development stages emerged. The public workshop and input process is then described, followed by a presentation and discussion of the four regional growth alternatives. The first year's work concludes with the results of an extensive survey of the region's residents on a preferred growth scenario and key regional growth issues. Moving to the second year's work, the document focuses on the development of the Quality Growth Strategy, from the formulation of a quality growth strategies toolbox to the creation of the Quality Growth Strategy concept maps.

THE VALUES FRAMEWORK

Charting a course for Utah's growth is not an easy task. The differing perspectives regarding the direction Utah should take are multiple, complex, and sometimes competing. As a result, the public is often frustrated by the debate over issues regarding growth and what it means for their quality of life.

First and foremost, we want to ensure that the Envision Utah process and its outcomes reflect the values and priorities of the people who live in the Greater Wasatch area. As one of the first steps in our work, we have developed a Values Framework by which the process will be guided and measured. This framework is based on an extensive study completed in 1997 by Wirthlin Worldwide, which attempted to uncover and understand the personal values underlying attitudes and behaviors relating to growth in Utah.

The Wirthlin Study found that, despite our differing opinions on issues that confront the state, for the most part we share many core values that bring us together. These shared values tie current residents to their communities and beckon future residents to come to the state. They guide our attitudes, opinions, and behaviors. By identifying these core values and the attitudes and priorities behind them, political leaders and policy makers can be guided to pursue actions and future growth scenarios that best protect, promote, and preserve the quality of life that is central to what it means to be a Utahn.

The study found that the values system of those living along the Wasatch Front and Back centers on a sense of *peace of mind* based on living with people who prize and share a common sense of honesty, morality, and ethics. Utahns conveyed their dedication to family and the raising of children, as well as an appreciation for the scenic beauty and recreational opportunities of the natural landscape. Utahns measure the potential impacts of growth, whether positive or negative, based on how growth might affect these priorities or values.

We have identified four primary "Gateway Values" from the Wirthlin study to serve as a framework for understanding the concerns of Utahns, and as a means of guiding the Envision Utah process. These "Gateway Values" reflect Utahns' concerns regarding growth in the Greater Wasatch Area. We can begin to measure the impact of future growth by understanding the impact such growth has on these values. The four Gateway Values reflect Utahns' concerns about:

- Safe & Secure Environment
- Personal & Community Enrichment
- Personal Time & Opportunities
- Financial Security

GATEWAY VALUE: SAFE & SECURE ENVIRONMENT

The value placed on personal safety and security plays the most important role in the value structure of Utahns. As indicated in the Wirthlin study, real and perceived threats to personal safety affect stress levels, the sense of freedom that Utahns value, and overall peace of mind. Safety is especially significant given the importance that Utahns place on the family and raising children. The following attributes reflect the specific safety/security concerns of Utahns along the Wasatch Front.

ATTRIBUTE - CROWDING

The perception of crowding can affect perceived safety and freedom. Crowding and congestion are often associated with high-density cities or communities (i.e. Manhattan), and can affect the attractiveness of a community or neighborhood. Crowding is a complex issue, and must be researched carefully to understand the basis for Utahns' perception of crowding. Perhaps more important than simple residential density, lines at the grocery store and traffic congestion have a significant impact on one's feeling of crowding and stress in everyday life. People may also feel crowded if they are always surrounded by people they do not know or trust; neighborhoods or communities where people know their neighbors or run in to people they know while shopping or exercising make people feel more secure and less vulnerable. Crowding is also an issue in natural areas around the region, which are often seen as a means of escaping urban environments; the perception of overall crowding is heightened if people have to compete for time or space in these natural areas (i.e. state parks, trails). Local and community parks that are both visually and physically accessible may also contribute to the level of perceived crowding, and reduce the need to "escape" from the urban environment.

Criteria

- Housing density
- Traffic congestion
- Population density
- Demands on recreational resources
- Demands on retail and commercial services: are stores too crowded? (look at prorated retail space per household)
- Locally accessible parks and open space per capita (need to define locally accessible)

ATTRIBUTE - CRIME

Crime, whether real or perceived, influences one's sense of safety and security, and thus one's overall peace of mind. Crime negatively affects the value structure of Utahns by threatening family, children, and freedom. There is a tendency to associate higher density housing types and communities with higher incidences of crime and violations of personal safety. Thus it is important to understand the underlying causes of crime in our communities. Is it density, or are their other social or institutional factors that contribute to crime? Do all high-density communities have a higher incidence of crime? Are concentrations of poverty a better indicator of crime than density?

Criteria

- Crime rate (real and perceived)
- Poverty concentration
- Other social indicators

ATTRIBUTE - SHARED IDEAS,VALUES & MORALS

As noted in the Wirthlin study, proximity of population with commonly held values is seen as an important factor in the perceived safety and peace of mind of Utahns. People feel more safe and secure if they know that those living and working around them will respond in a helpful and friendly way in times of need and in everyday social interaction. Above religious and moral similarities, people want to be around people they can trust, among whom children can play safely and interaction can flourish.

Criteria

- Neighbors with similar values and priorities
- Conduct surveys in areas that have components similar to the content of each alternative, including the baseline, to try to determine how this attribute fares in each alternative scenario.

ATTRIBUTE - TRAFFIC SAFETY/ACCIDENTS

There is a strong perception among Utahns that increasing traffic congestion and population adversely affects traffic safety, thereby threatening personal safety, increasing stress, and reducing time and energy for family and personal growth.

Criteria

- Number of accidents reported/covered by the media
- Actual number of accidents/mortality rate
- Number and type of vehicles on the road
- Condition and safety of transportation infrastructure
- Capacity and levels of service of transportation infrastructure

GATEWAY VALUE: PERSONAL & COMMUNITY ENRICHMENT

The overall quality of life in the Wasatch region is strongly related to opportunities for personal and community enrichment, and also makes the region a good place to raise a family and children. Scenic resources, recreational and cultural opportunities, the natural environment, and education all play a major role in the value system of Utahns. The effect of growth on these opportunities and values is thus a major concern.

ATTRIBUTE - OPEN SPACE

Recreational access and opportunities, as well as both visual and physical access to the region's scenic resources is very important to residents of the Wasatch region. The region's open spaces provide diverse opportunities and activities to be enjoyed with the family, relieve stress, and contribute to peace of mind, freedom, and enjoyment. Open space refers to both regional resources such as state parks, trails, and ski areas, and local open spaces, such as parks and play fields. It is important that people do not feel they need to leave their own neighborhoods or communities to exercise or relieve stress. Even the presence of ample street trees and green spaces within the built environment may contribute to a feeling of open space and help reduce the stresses of everyday life.

The effect of growth on these important resources and the values that they reflect in the community is of great concern to Utahns. Agricultural lands are also valued for both their productive and cultural assets in some communities in the region; while farm land need not be physically accessible to most residents, visual access to agricultural land can help preserve a sense of open space and can help to preserve many of the rural and small town qualities Utahns value.

Criteria

- Viewsheds (clear views of mountains, lakes, and other visual amenities)
- Percent of households within 1/2 mile of a park (10 minute walk)
- Percent of households within 1/2 mile of a nature trail (10 minute walk)
- Percent of households within 1/2 mile of a bicycle path (10 minute walk)
- Percent of households within 30 minutes of a recreational area
- Percent of households within 4 hours of a national park
- Quality of nearby recreational experiences (crowding, parking, services, are reservations required?)
- Agricultural land inventory (prime farm land)

ATTRIBUTE - LEARNING OPPORTUNITY/SCHOOL QUALITY

Because Utahns feel so strongly about their families and the raising of children, they are particularly concerned with the maintenance of quality education and learning opportunities for their children, and how growth may affect that quality and opportunity.

Criteria

- Quality of educational system, as indicted by (test scores, student-teacher ratios, college placement, dropout rate)
- Level of parental involvement
- Quality of facilities
- Financing available for schools, competition for funds
- Location of schools

ATTRIBUTE - INSTITUTIONS THAT FOSTER GOOD VALUES

The importance of a strong value system is related to the availability and prominence of institutions within the community that support and promote such values. The role of religious and cultural institutions in family matters and the raising of children is an consideration in how Utahns perceive growth and other potential changes in the region.

Criteria

- Number and accessibility of community facilities and organizations (community centers, children's clubs and teams, etc.)
- Number and accessibility of religious institutions and facilities (churches, ward houses, etc.)

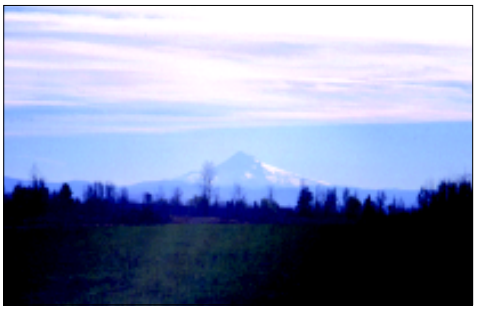
ATTRIBUTE - SENSE OF COMMUNITY

In describing the best aspects of their state, Utahns turn to the strong values of the people and the commonly held morals and ethics of their communities. The consequences of increasing growth on the maintenance of such strong communities are a significant concern. Trust and social interaction are important factors in developing and maintaining a sense of community. Communities in which people know their neighbors, and where they meet casually in the public realm breed trust and a feeling of security. In addition, interaction with other people, especially those that bring different perspectives and cultures, helps people to understand and value diversity. Common area such as parks, schools, and open spaces help to bring people together and thus can help foster a sense of community.

Criteria

- Neighbors with similar values and priorities
- Common spaces (parks, schools, open spaces, etc.) within neighborhoods
- Forums for interaction and input (homeowners associations, community organizations, etc.)

ATTRIBUTE - NATURAL SYSTEMS



Utahns are concerned about the effects of growth on the quality and viability of natural systems, including air and water systems, and the natural habitat in the region. Air quality is of particular concern, as the region tries to satisfy increasingly stringent federal guidelines for air pollutants. As a significant quality of life issue, air pollution, mostly from the private automobile, affects visual access to scenic assets, as well as personal health. Water quality, especially that of the Great Salt Lake, is also at risk as development increases, as is the habitat of various animal and plant species living in the region. The functional qualities of open space to help preserve water and air quality (wetlands, forestlands, etc.) are also significant. As an important part of their value system, Utahns want to ensure that the quality of natural resources is sustained for future generations.

Criteria

- Amount of sensitive land urbanized (wetlands, steep slope, habitat, etc.)
- Air quality (Particulates, Ozone, NOX, CO, HC)
- Water quality
- Habitat land/species count (inventory over time)
- Agricultural land inventory (prime farm land)
- Wetland inventory

ATTRIBUTE - CULTURAL OPPORTUNITIES

Utahns favor the diversity of opportunities for cultural and spiritual enrichment that can result with increasing growth, but do not want to sacrifice the small-town feel of most communities in the region. As noted in the Wirthlin study, they prefer a small-town feel with big-city amenities.

Criteria

- Percent of households within 1/2 mile of a museum (10 minute walk)
- Percent of households within 1/2 mile of a movie theater (10 minute walk)
- Percent of households within 1/2 mile of a gallery (10 minute walk)
- Percent of households within 1/2 mile of a video store (10 minute walk)
- Percent of households within 1/2 mile of a library (10 minute walk)
- Percent of households within 1/2 mile of a music store (10 minute walk)
- Percent of households within 1/2 mile of a pedestrian mall (10 minute walk)

GATEWAY VALUE: PERSONAL TIME & OPPORTUNITY

As the Wasatch region sees more growth and development, residents are finding that everyday activities such as their work commute, shopping, and other daily tasks are taking more time, and thus taking away from time with their families and opportunities for personal enrichment and enjoyment. Utahns are concerned that such adverse effects on their core values will increase stress and reduce peace of mind and freedom.

ATTRIBUTE – TIME-CONSUMING ACTIVITIES

Travel Time

More time spent in traffic or on congested roads and highways is less time spent with the people and activities that Utahns value most. As more and more people move to the Wasatch region, residents are concerned that more of their time will be spent traveling to and from work and other destinations, thus negatively affecting Utahns' core values. Travel time to and from sources of transportation, especially transit stops and hubs, is also an important factor.

Criteria

- Average rush hour speeds
- Average trip time, length
- Total VMT
- Congested road miles
- Transit ridership and service levels
- Frequency of accidents and related delays

Work-related activities

Much like travel, work-related activities can also consume additional time that would otherwise be spent with family or engaging in leisure activities. The amount of time one needs to spend working is directly related to the cost of providing for one's needs.

Criteria

- Cost of living
- Food
- Housing
- Taxes
- Average income levels
- Does the cost of living require both spouses to work?
- Develop an affordability index: number of person-hours of work needed to sustain a household.

ATTRIBUTE - LEISURE ACTIVITY ACCESSIBILITY

The location of homes in relation to work places and other common destinations, and the variety of travel options available to residents can contribute to the amount of time and range of opportunities available for the activities that Utahns value.

Criteria

- Percent of households within 1/2 mile of a park (10 minute walk)
- Percent of households within 1/2 mile of a nature trail (10 minute walk)
- Percent of households within 1/2 mile of a bicycle path (10 minute walk)
- Percent of households within 30 minutes of a recreational area
- Percent of households within 4 hours of a national park
- Percent of households within 1/4 mile of a transit service (5 minute walk)
- Percent of households within 1/2 mile of a transit service (10 minute walk)
- Mode split (auto, transit, bike, walk, etc.)

ATTRIBUTE - PERSONAL HEALTH

The perception of declining air and water quality, and the stress of longer work commutes and congestion have many Utahns concerned with the health effects of growth. As more people move into the region's communities and drive on the region's roads, Utahns are concerned that the adverse health effects of such growth will interfere with their core value system and peace of mind by reducing the time they can spend with their families and by minimizing opportunities for personal and community enrichment. It is important to convey how different development and growth opportunities and patterns can affect factors such as air quality, and thus affect the health of the community.

Criteria

- Water quality
- Air quality
- Use of health system for environmentally related illnesses
- Traffic congestion, length of commute

GATEWAY VALUE: FINANCIAL SECURITY

Many Utahns frame their concerns about growth around the effects that such growth may have on the ability for both current residents and future generations to make a living and build a secure financial future. While future growth may provide more business and job opportunities, the increasing cost of living may negatively affect Utahns' core set of values, such as the time and energy devoted to family concerns, the raising of children, and personal growth. Cost of living issues can also affect stress levels, reduce discretionary time, and infringe on real and perceived freedom. As indicated in the Wirthlin study, the following attributes are of particular concern to Utahns in terms of their effects on this core set of values. The amount of discretionary income available to people can be simply determined by this formula: Income - Expenses (housing, food, clothing, taxes, utilities, other necessities)

ATTRIBUTE - BUSINESS AND JOB OPPORTUNITIES

Utahns are concerned about the availability of sufficient job opportunities for current and future residents, and that the supply and type of jobs in the region does not adversely affect the core values of current residents. The availability of employment opportunities is essential in assuring that future job-seekers will not need to leave the state in search of gainful employment; these opportunities will allow more families to stay together. Job security, as well as the overall health of the business community, is especially important in that it allows Utahns to pursue peace of mind through their family and personal growth activities.

Criteria

- Number of jobs added to region
- Industries locating in region

ATTRIBUTE - INCOME LEVELS

Utahns are concerned about current and future income levels as they relate to cost of living increases, job availability, and the cost of living and income in other regions around the country. Cost of living increases without concurrent income increases affects financial security and peace of mind, leaving less time and energy for Utahns to spend with their families and in activities which they value.

Criteria

- Income level vs. cost of living indices
- Cost of living and income comparisons to other regions and states

ATTRIBUTE - AFFORDABLE LIVING

Utahns are concerned with the current and long term affordability of living in the Greater Wasatch Area. They are particularly concerned with increasing housing and infrastructure costs, and want to ensure that their children and grandchildren will be able to afford a decent home to raise their own families. Increasing housing costs may also threaten family cohesion, as younger family members are priced out of neighborhoods or communities where multiple generations may have lived for decades. The effect of new development and various development types on property values is also of concern to many Utahns. Questions arise as to how higher density developments or smaller lot sizes will affect such values, especially if such development types are mixed with or located in close proximity to standard and large lot development.

As indicated in the Wirthlin study, residents of the Greater Wasatch Area are also concerned about the effect of population growth, future development, and infrastructure expansion on the cost of transportation. Longer commutes mean more driving and higher personal transportation costs, and infrastructure improvements (highways, transit, maintenance) will further increase the cost of transportation. Where individuals decide to live, and the transportation options available to them will affect the cost of transportation both for the individual and the region.

Criteria

- Housing costs over time
- Transportation costs over time
- Mortgage rates
- Property values
- Jobs/housing balance
- New arterial and highway lane miles added
- New transit systems, equipment, rail miles, etc.
- Total VMT
- Congested road miles
- Transit efficiency (rides per service hour)

ATTRIBUTE - TAXATION

In the wake of increasing growth in the region, questions are raised as to who will pay for new development, improvements, and amenities. The concern over the level of taxation, and the origin of taxes (state, region, local) is related to how taxation can reduce time and income that would otherwise be spent on quality of life improvements and positive personal and family activities. In addition, taxation raises the issue of the role of government in the lives of Utahns.

Criteria

- Tax levels (absolute and relative)
- Utility rates
- Infrastructure improvement funding (will taxes help to find improvements?)

THE BASELINE SCENARIO

EXECUTIVE SUMMARY

The Greater Wasatch Area includes a 10-county region along the front and back of the Wasatch Mountain Range and can reasonably be considered the commutershed for the Salt Lake-Ogden and Provo-Orem metropolitan areas. The area includes 10-counties, 98 cities, and 157 special service districts. These multiple jurisdictions, along with state government and the Utah Transit Authority, share responsibility for providing infrastructure and services to 1.6 million people. The steady and rapid population growth within the region places increasing demands on these entities. The growth also places a strain on the environment because of the unique geographical layout of the area which is bounded by mountain ranges and water bodies and includes land that is essentially arid.

The Quality Growth Efficiency Tools (QGET) Technical Committee, whose mission it is to improve the quality of information available about Utah's future, has authored this baseline to provide a comprehensive depiction of what current projections indicate regarding the demographic, economic, transportation, air quality, water, and land use future of the Greater Wasatch Area. The purpose of a baseline is to provide a benchmark against which the effects of alternative future actions can be evaluated. This baseline will be used by the Quality Growth Partnership to design alternative scenarios which QGET will also analyze. It is a work in progress and will be revised and updated over time.

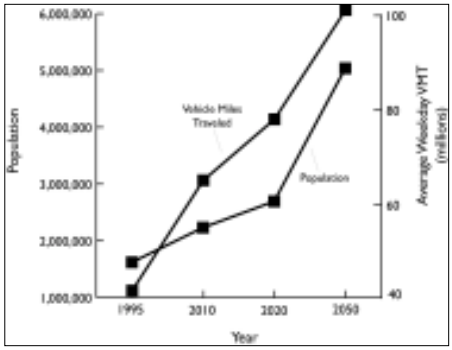
Demographics and Economics

The Greater Wasatch Area is projected to increase from 1.6 million people in 1995 (a population slightly smaller than the Portland metro area) to 2.7 million by 2020 (a population roughly equivalent to the current San Diego metro area.). By 2050 an estimated 5.0 million people will live in the area, a population similar to the current size of Philadelphia.

The projections to 2020 indicate a population growth rate approximately twice the national average. Two-thirds of the new growth is projected to originate from residents' own children and grandchildren. The population is projected to increase by an average of 43,000 new residents a year, a population about the current size of Bountiful. Throughout the projection period the economy is projected to create more than enough jobs for residents, although slowdowns are anticipated after the current construction boom subsides and following the 2002 Winter Olympics.

TRANSPORTATION

The use of roads in the Greater Wasatch Area is projected to increase at a faster rate than that of population. This is projected to occur as residents continue to increase vehicle ownership, drive farther for work trips, and make more non-work trips. While the current investment will improve the transportation system's performance in the early years, over the entire 25 year period average speeds are projected to decline from 29 mph to 23 mph and minutes of delay per trip increase from 4.4 to 9.7. This means that the average



commute in 1995 of 24 minutes will increase to 34 minutes in 2020. The performance of the transportation system, however, would be far worse without the current levels of investment. Average speeds in the Salt Lake-Ogden area would decline to 12 mph in 2020 without the additional capacity investments identified in the transportation plans.

Transportation infrastructure investment is projected to exceed $9.7 billion (current 1997 dollars) between 1995 and 2020. This equates to $3,599 per person and $10,121 per household in the year 2020. Some estimates are even higher.

AIR QUALITY

During the next 25 years emissions of all five of the major monitored pollutants are projected to increase. Increases in particulate matter (PM10) pose the most pressing problems in terms of meeting federal health and safety standards. Automobiles are the single largest source for several pollutants and are a major factor contributing to air pollution. New federal standards will make attainment much more difficult. Consequently, air quality is a major challenge in the Greater Wasatch Area and a possible constraint to future growth.

WATER

Water is not a constraint to population growth in the Greater Wasatch Area as long as residents are willing to pay for additional water development and water providers are willing to work together to deliver adequate supplies. Residents are expected to decrease per capita water consumption because of a continuation of current trends in the use of low flow plumbing, xeriscaping[1], and price increases. Water rates even after adjusting for inflation, are projected to increase by 50 percent from 1995 to 2020 to help pay for new development.

Water infrastructure development is projected to cost more than $3.1 billion between 1995 and 2020 (current 1997 dollars). This equates to approximately $1,200 per person and $3,300 per household.

LAND USE

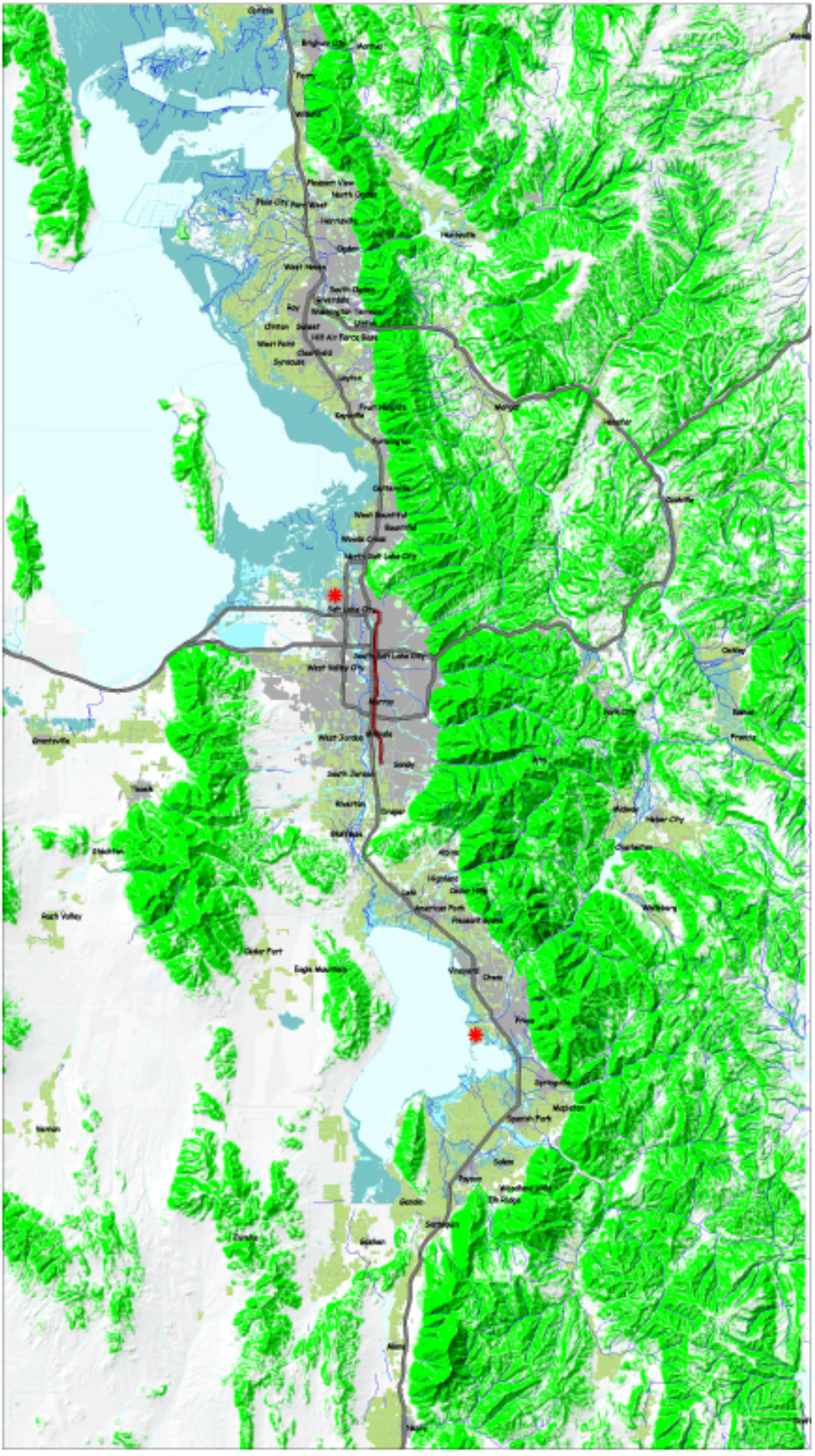
Population growth will change land use patterns as new homes and businesses are built. The current urban area occupies an estimated 320 square miles of land and is projected to increase to 590 square miles in 2020 and 1350 square miles in 2050. Agricultural and other land uses will be converted to resident use as the demand for new housing continues to increase. Population densities for the entire ten county area are projected to increase from 72 persons per square mile in 1995 to 119 in 2020.

[1] Defined as an integrated approach to landscape water conservation. Xeriscapes are designed through wise planning, proper selection of plant and construction materials, and proper installation and use of irrigation systems.

Summary Baseline Statistics for the Greater Wasatch Area
Davis, Salt Lake, Utah, Weber, Box Elder, Juab, Morgan, Summit, Tooele, and Wasatch Counties

	1995	2010	2020	AARC (1995-2020)	2050
Demographics					
Population	1,621,750	2,233,488	2,695,278	2.05%	5,039,000
Increase From Previous Year1	32,901	53,209	40,486	0.83%	---
Net Migration1	8,460	22,104	7,367	-0.55%	---
Natural Increase1	24,442	31,103	33,119	1.22%	---
Births1	32,900	43,817	49,678	1.66%	---
Deaths1	8,458	12,714	16,559	2.72%	---
Households	523,517	775,190	958,454	2.45%	---
Persons Per Household	3.05	2.85	2.78	-0.37%	---
% of Population 0 through 17 Years	34.4%	31.5%	30.8%	-0.44%	---
% of Population 18 through 64 Years	57.3%	60.1%	58.7%	0.10%	---
% of Population 65 Years and Over	8.2%	8.4%	10.5%	0.99%	---
Median Age	26.8	29.5	30.8	0.56%	---
Economics					
Total Employment	933,485	1,380,452	1,643,179	2.29%	---
Non-Ag Employment	780,553	1,149,097	1,368,024	2.27%	---
Population to Jobs Ratio2	2.08	1.94	1.97	-0.21%	---
Transportation					
Average Weekday VMT (millions)	40.7	64	76.9	2.58%	100
Average Peak Period Speed (mph)3	29	25	23	-0.92%	---
Average Peak Period Delay (veh-hrs)3	70,000	180,000	250,000	5.22%	---
Peak Period Delay Per Trip (min)3	4.4	6.8	9.7	3.21%	---
VMT Per Capita	25.1	27.9	28.5	0.51%	---
Vehicles Per Capita	0.65	0.70	0.71	0.32%	---
Mass Transit Ridership (millions)	23.5	32.1	39.2	2.07%	---
Air Quality					
Particulate Matter (PM10 - tons per summer day)	219.38	271.72	326.14	1.60%	---
Sulfur Oxides (SOx - tons per summer day)	61.94	62.31	73.03	0.66%	---
Nitrogen Oxides (NOx - tons per summer day)	277.88	343.57	411.79	1.59%	---
Volatile Organic Compounds (VOC - tons per summer day	674.04	917.43	1,136.08	2.11%	---
Carbon Monoxide (CO - tons per summer day)	1,783.00	2,099.53	2,563.98	1.46%	---
Water					
Demand (Ac-ft)	698,800	852,000	954,200	1.25%	1,339,200
Supply (Ac-ft)	852,600	925,800	1,040,700	0.80%	1,339,200
Per Capita Use (gcpd)	319	296	279	-0.53%	239
Cost (per 1,000 gallons)	1.29	1.64	1.93	1.62%	3.69

Land Use					
Urban Area (square miles)4	320	462	590	2.48%	1,350
Population Per Square Mile	72	99	119	2.03%	221
Total Infrastructure Costs					
Transportation (billions)	---	---	$9.7	---	---
Per Capita	---	---	$3,599	---	---
Per Household	---	---	$10,121	---	---



ENVISION UTAH

A Partnership for Quality Growth

ENVIRONMENTAL CONDITIONS

LEGEND

Transportation Infrastructure

- Light Rail
- Freeway
- Airport

Land Use

- Existing Development
- Open Space
- Irrigated Farms

Water Features

- River & Stream
- Canal or Wash
- Intermittent Stream
- Body of Water
- Wetland
- Riparian
- Floodplain

Slope

- 0 - 12%
- 12 - 18%
- 18 - 25%
- 25% & More

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URBAN DESIGNERS
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ARCHITECTS

Fregonese Calthorpe
ASSOCIATES
Urban & Regional Planning

QGET

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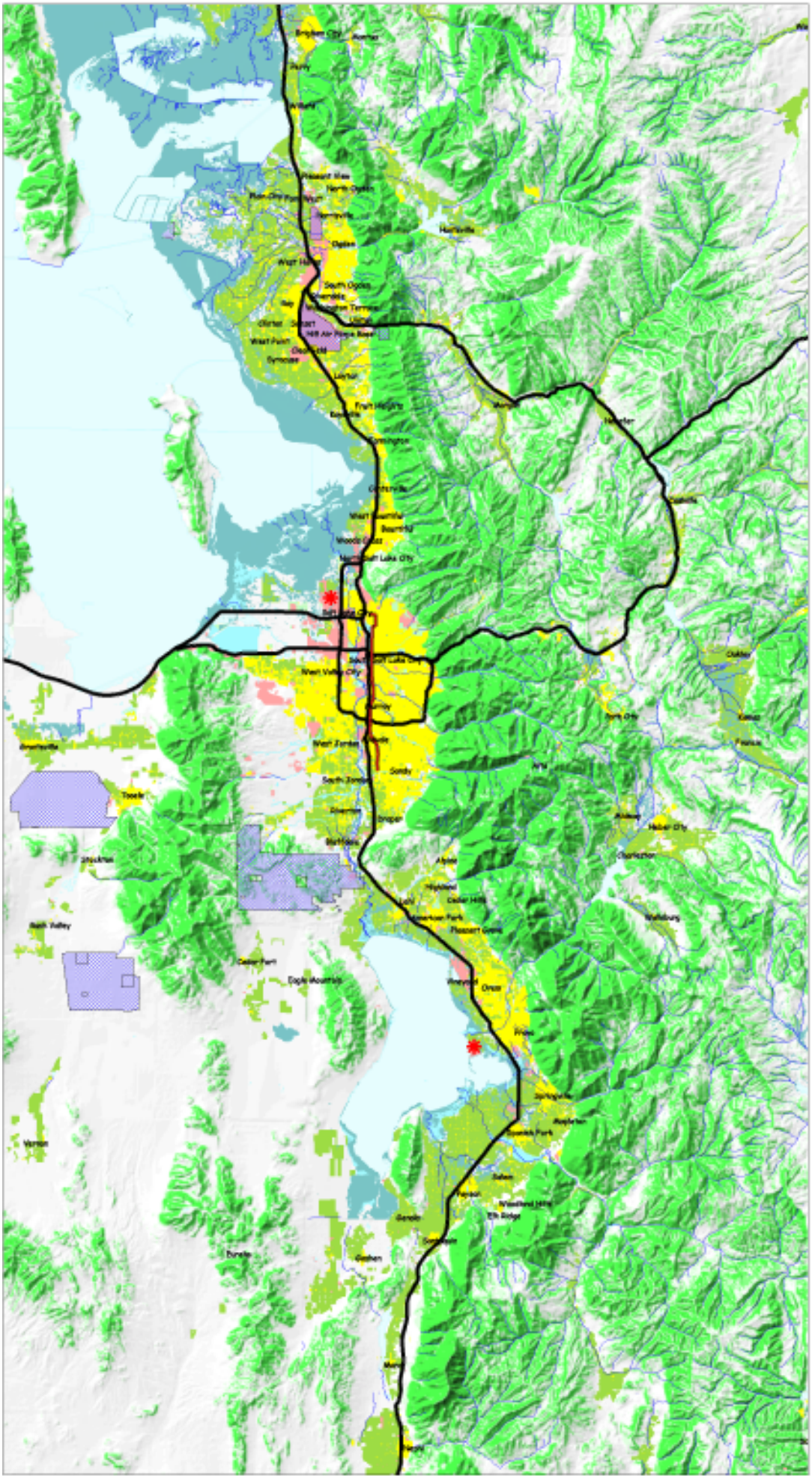

ENVISION UTAH

A Partnership for Quality Growth

EXISTING URBAN AREAS

LEGEND

Transportation Infrastructure

- Light Rail
- Freeway
- Airport

Existing Land Use

- Residential/Urban
- Commercial/ Industrial
- Open Space
- Irrigated Farms
- Military Bases

Water Features

- River & Stream
- Wetland
- Riparian
- Body of Water
- Floodplain

Slope

- 0 - 12%
- 12 - 18%
- 18 - 25%
- 25% & More

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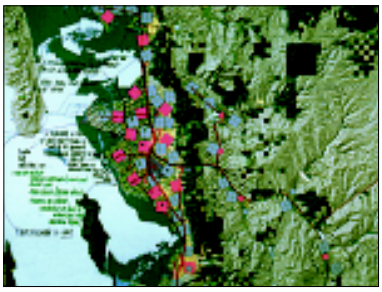
Creating Regional Scenarios

Public input and participation was perhaps the most important aspect of the Envision Utah process. The public's role in the planning process serves as an essential educational tool in helping people grapple with the issues surrounding growth and development. Public input helped to guide the development of the regional growth alternatives and the Quality Growth Strategies described later in this document. This section describes the Envision Utah public participation process, including the major regional workshops held over the two-year process, local planning workshops, and the Community Options Workshops.

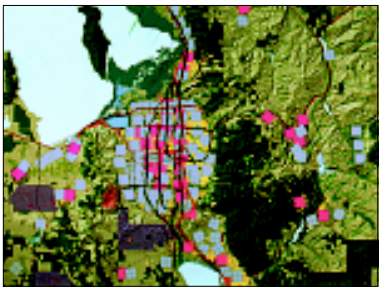
Regional Workshop #1: "Where do we grow?"

With over 200 participants from the business community, government agencies, and public stakeholder groups, the first workshop challenged Utahns with the task of deciding where new growth should and should not occur within the Greater Wasatch Area. Participants grappled with the issues and trade-offs related to placing growth in different locations throughout the region given environmental, institutional, and infrastructure constraints.

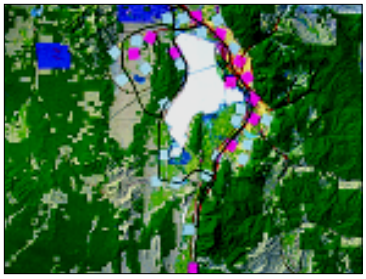
Participants worked together in groups of 10 within the subregion of the Greater Wasatch Area in which they lived or were most familiar. Each group received a base map on which it worked, and an atlas of more detailed maps which participants referred to for detailed information, including environmental constraints, existing and proposed transportation networks, and city and county boundaries. The base map included such information as developed areas (residential and commercial), wetlands, public lands, flood prone areas, steep slopes, and transportation networks.



To begin, each participant identified his or her home and workplace on the map with a dot or sticker. This helped familiarize people with the map and "break the ice" within the group. Then the group decided on areas within their subregion which were off-limits to development. For example, a group may have decided that wetlands should not be developed, or that some specific areas should be preserved.



After delineating areas where growth should not occur, participants used marking pens to identify areas in their subregion where redevelopment or intensification of existing development was possible or desirable. Then, using chips representing the projected 2020 population for the subregion (from the QGET Baseline scenario), participants worked together to locate future growth around the region. Each chip represented approximately 16,000 people, and was scaled to represent the space such population would occupy if development occurred at roughly the same overall density as current development along the Wasatch Front. Participants could stack chips if they wanted to add density in certain locations. This exercise forced workshop participants to



grapple with the trade-offs associated with dispersed vs. concentrated development, as well as open space and other concerns. After placing 2020 growth on the base map, participants placed additional chips representing the increased population to the year 2050.

Finally, given each group's designated development areas, participants were asked to add the transportation infrastructure they felt would be necessary to accommodate the 2020 growth; options included highway and transit infrastructure. Atlas maps delineated existing and proposed road and rail alignments, as well as the capacity of existing highways in the region. Participants were also presented with the current water supply and demand of select areas throughout the region.

At the conclusion of the first workshop, each workshop table presented its work to the other groups in their subregion, and then one group from each subregion presented their map to the entire workshop group. This allowed people to see how different tables managed to accommodate growth and to discuss some of the major issues encountered during the workshop exercise.

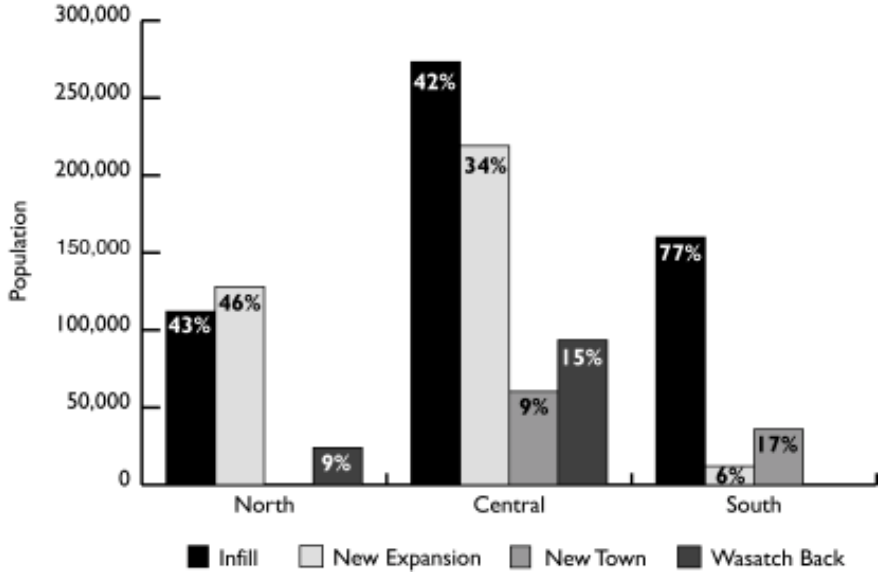
In addition to this workshop, 15 local workshops were held in communities throughout the Greater Wasatch Area. Local facilitators were trained to run the workshops, and input from the local workshops was integrated into the development of the regional development scenarios.

Major Findings From regional Workshop #1

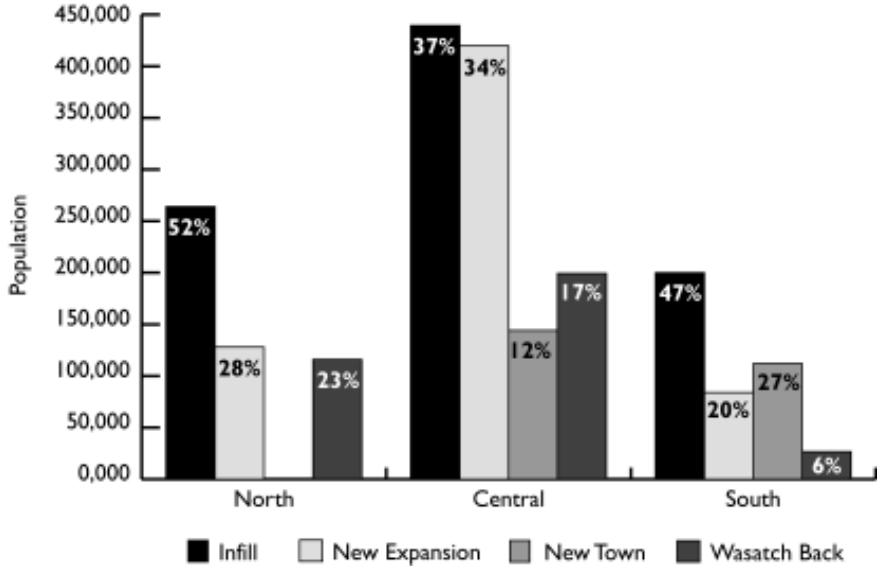
The major findings from Workshop #1 are as follows:

- Perhaps the most significant finding was that participants placed greater population numbers in infill areas than in new expansion or new town areas (see charts opposite). This was true for both 2020 and 2050 populations, indicating that participants favored more compact growth scenarios that preserved more open space and were more amenable to transit and other non-auto transportation modes.
- Nearly all participants indicated that development should be barred above the benchline across the Greater Wasatch Area.
- There was general consensus that viable agricultural lands should be preserved in the southern part of the region, while most irrigated farm lands will be developed in the central and northern parts of the region.
- Rail and other non-automobile travel modes were seen are essential components of the region's growth.
- There was agreement that east-west transportation links (both road and rail) need to be added and improved throughout the region.
- Most groups of participants felt that waterways should be preserved as greenway and trail networks throughout the Wasatch Front and Back.
- Nearly all participants indicated that development on the Wasatch Back should be minimized.

Workshop #1 Population Allocation - 2020

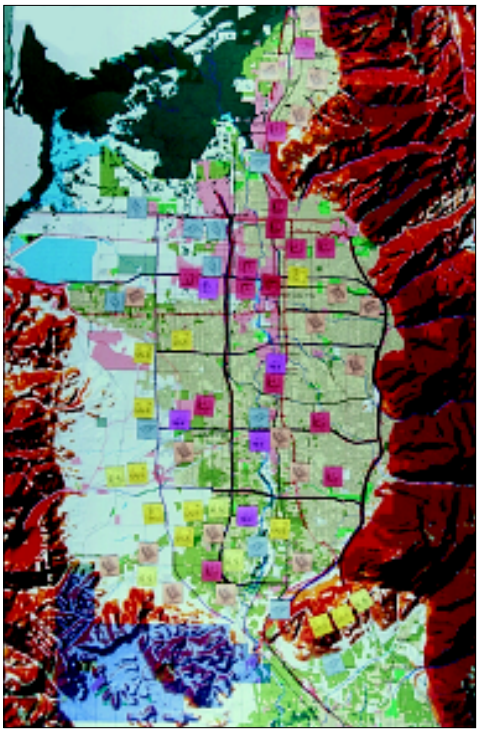


Workshop #1 Population Allocation - 2050



REGIONAL WORKSHOP #2: "HOW DO WE GROW?"

In the second regional workshop participants worked hands-on to place projected population within the Greater Wasatch Area in particular types of development. Like in the first workshop, groups were formed based on where participants lived or were most familiar. Each group was presented with a base map on which to work, and was challenged with distributing population across their subregion using a combination of different development types. These development types were represented by one-square mile icons ranging from walkable and transit-friendly downtown, village, and town types, to more traditional residential and large-lot subdivisions, industrial/office parks, and suburban activity centers. Each development icon, while occupying the same amount of space on the maps, consisted of varying levels of population and employment . Thus, a combination of walkable, higher density icons would require less land than a combination of lower density subdivision, office park, and activity center icons. Each group put together their own combination of walkable and non-walkable icons to meet the population requirements for their subregion. The development icons are described in more detail below:

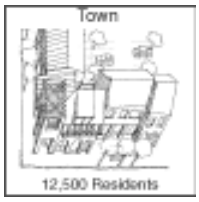


Development Type	Households	Residents (2.78 x households)	Jobs	Net Housing Density* (dwelling units/acre)
Walkable				
Downtown	7,300	20,300	27,400	50
Town	4,500	12,500	6,000	15
Village	3,300	9,200	1,800	8
Auto-Oriented				
Activity center	3,000	8,300	10,100	20
Office/Industrial Park	-	-	13,100	-
Residential Subdivision	2,400	6,700	300	5
Large Lot Subdivision	1,000	2,800	-	2

* Net density reflects housing density after land for streets, parks, and other civic uses have been removed.

Walkable Types

Downtown: The Downtown designation exhibits a high level of integration of uses, with a mix of residential, employment, and commercial uses within a pedestrian and transit-friendly environment. Residents and other users can easily walk for daily needs and activities, and are well connected to other parts of the community via transit service.



Town: The Town designation maintains the integration of uses and walkability of the Downtown type, but with lower densities. Provo may be a good example of the Town development type, with a pedestrian friendly mixed-use core surround by fairly integrated medium density housing.

Village: Like its higher density counterparts, the Village development type exhibits a mix of residential, commercial, and employment uses into a walkable environment. Though density is lower, including a large percentage of single-family residential development, the spacing of uses and street connectivity maintain a pedestrian-friendly landscape and the potential for efficient transit service.

Non-Walkable Types

Large-lot subdivision: This single-use residential development type is notable for its very low density, large lots (1/2 acre+), and separation from other uses. Travel to and from other uses, and even within the development, is primarily by automobile. This type is also characterized by its lack of street connectivity and a streetscape that is designed for the needs of the auto rather than the pedestrian, bicycle, or other form of transportation.

Residential subdivision: The Residential Subdivision type is also wholly residential, with access to and from other uses primarily via automobile. Density is fairly low, with standard lots of between 1/8-1/4 acre, and street connectivity is generally poor.

Activity center: A suburban Activity Center is a medium density agglomeration of jobs and housing, but unlike its Town counterpart, is not walkable or pedestrian-friendly. Most access to and within an activity center is via automobile, though in some regions centers may be located on major transit lines. Activity usually falls off after work hours, and street connectivity is generally poor.

Industrial/office park: This designation is employment-oriented, with access to and from other uses via automobile. Low to medium density agglomerations of office buildings and industrial facilities are often organized into campus-like settings, with large numbers of employees commuting to the site from around the region.

After each group decided on a combination of development icons, they were asked to draw the transportation infrastructure (roads and transit) needed to meet the demands of their chosen development pattern. Participants could modify the placement of their development icons based on new information learned while laying transportation infrastructure.

Like in the first workshop, each workshop table presented its work to the other groups in their subregion, and then one group from each subregion presented their map to the entire workshop group. The input gained from this workshop and workshop #1 was instrumental in the development of the alternative development scenarios.

MAJOR FINDINGS FROM REGIONAL WORKSHOP #2

The major findings from Workshop #2 were as follows:

- By in large, participants favored the walkable development types. The development type combinations from the groups working on the central portion of the Greater Wasatch Area (including Salt Lake City and surrounding areas) consisted of more than 75 percent walkable icons. Groups working in the Northern and Southern sections used an average of 49 percent and 56 percent walkable icons, respectively.
- Like in the first workshop, participants emphasized the need for better east-west transportation connections (roads and transit), and indicated a general preference for transportation systems that balance the needs of the automobile with non-auto travel modes such as walking, bicycling, and transit use.

COMMUNITY OPTIONS WORKSHOPS

To encourage wider public participation in the Envision Utah process, a series of seven Community Options Workshops were held in communities throughout the Greater Wasatch Area to measure residents' reactions to varying kinds of development and growth patterns. Participants in these workshops were asked to rate a series of photographs on a scale of -5 to +5 for their overall desirability, and fill out a survey about their development and building type preferences. The following photographs and their average scores represent a sampling of the workshop results. Text and photos are excerpted from the report *Community Options Workshops: Results* by Professor Barbara Brown at the University of Utah.

Desirability Score: +2.00

Desirability Score: -0.14

The first set of photographs explores Utahns' reactions to housing types and streetscapes. Many Utahns worry that safe havens are turning into unsafe and hectic places to live. The sense of a loss of community can arise from many sources. The symbolic and functional values of homes can be part of an effort to reclaim the human soul of our favorite places. The positive qualities attributed to the left picture include a sense of respect for the past and a human scale and neighborly place. Although Utahns said they like their garages, especially for snowy weather, they do not want them to be the most prominent part of the street.

Desirability Score: +3.75

Desirability Score: -1.79

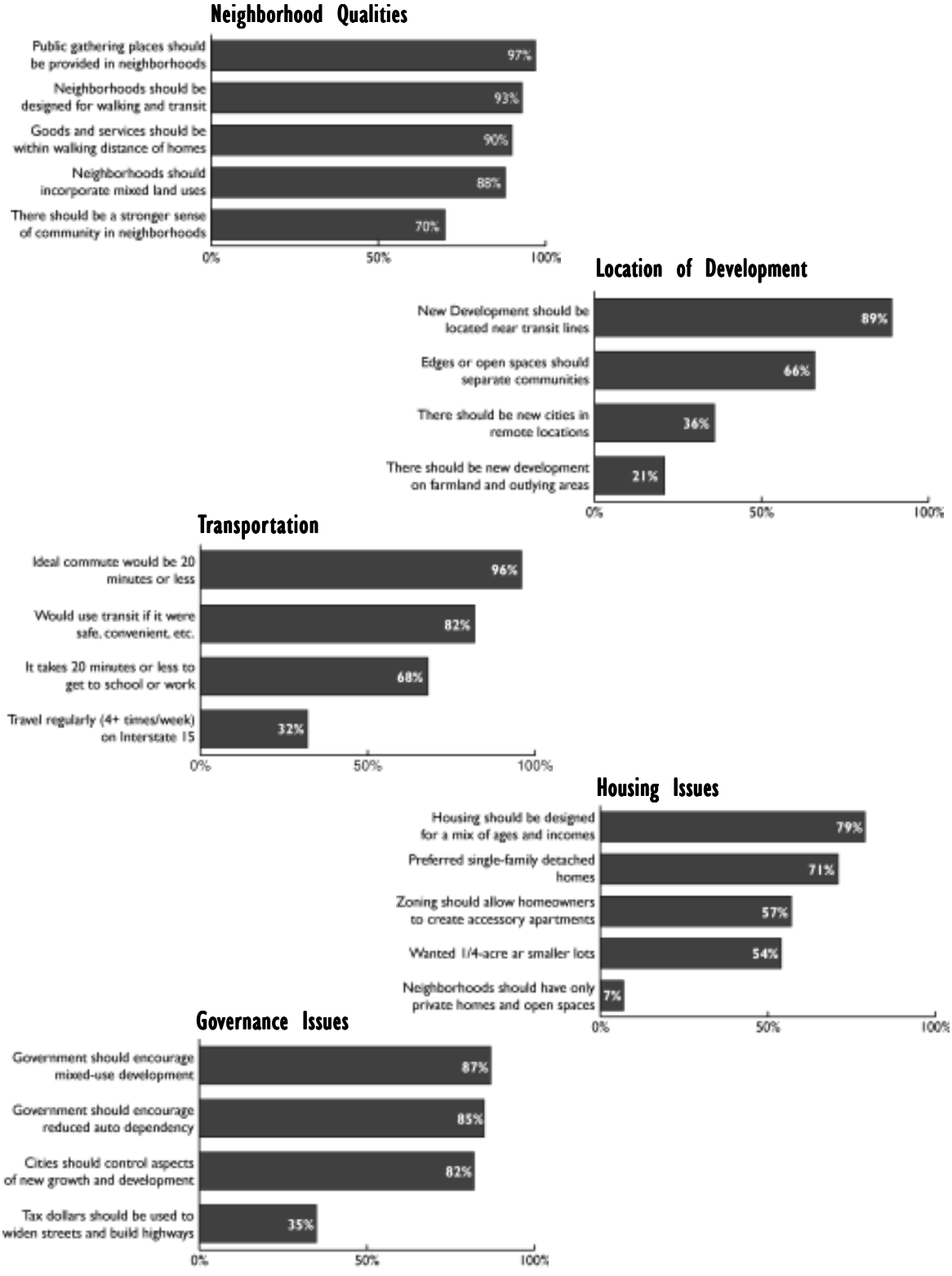
The second set of photos rates the desirability of different streetscapes. While the street on the right is designed with the car in mind, the street on the left accommodates the automobile while maintaining a pleasant and safe place for people to walk and explore their neighborhoods.

This set of photographs rates residents' feelings about the scenic environment and conservation. Participants rated the housing in the left picture desirable, appreciating the line dividing development from the mountainside. These residents would favor investigating foothills protection ordinances for their local communities. The photo on the right evoked the most polarized responses of the workshop. It was intended to show development creeping up the mountainside. As many people rated it a +2 as rated it a -5. Some people liked it because housing was dense (preserving open space); others liked it because the ridgetops were preserved from development. Still others disliked the photo because they wanted the mountainside preserved.

Desirability Score: +1.57

Desirability Score: -0.59

The results of the photo ratings indicate a general preference for more walkable communities that foster social interaction and allow for transportation choice. The survey of workshop participants had similar results, as can be seen from the following charts:



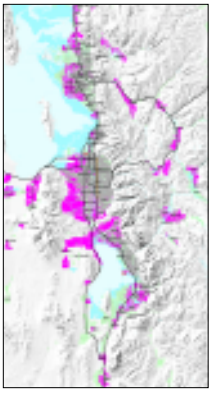
The Development Scenarios

Incorporating input and information gained from the regional and local workshops, four alternative development scenarios were created to illustrate a spectrum of ways by which the Greater Wasatch Area can develop, and the varying consequences of different growth and development practices. The scenarios range from a low-density alternative consisting of predominately non-walkable development types, to a transit-oriented, higher-density alternative with more compact growth and higher levels of infill and redevelopment. The Baseline Scenario, referred to as Scenario B in this section, is included among the four development alternatives. This section presents the scenarios and describes the major features and differences among the four alternatives. Full page maps of the four scenarios are presented at the end of this section.

All four scenarios used the same assumptions for environmentally constrained land. That is, no growth was allocated to wetlands, floodplains, riparian areas, or slopes over 25%. This is a conservative assumption, as few local governments currently prohibit growth in these areas.

The Scenarios

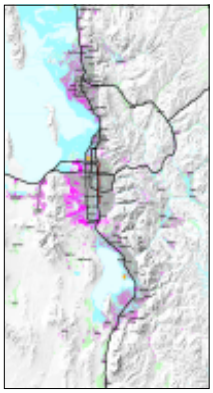
Scenario A



Scenario A shows how the region could develop if the pattern of dispersed development occurring in some communities today were to continue. New development would primarily take the form of single-family homes on larger, suburban lots. Most development would focus on convenience for auto users, and transportation investments would support auto use.

Average lot sizes and the distance between homes would continue to increase. Most of the new housing would be single-family homes on larger lots (1/4 acre and larger), providing many residents with opportunities for large yards and suburban living. This could, however, create a shortage of rental housing in the region, which the market would accommodate by encouraging people to convert more single family homes into rental properties. The larger lot sizes would cause more new land to be developed in Scenario A than in any of the other scenarios, leaving less land for open space and agriculture. The supply of undeveloped land would diminish more quickly, possibly causing an increase in land and housing costs. Infrastructure costs (transportation, water, sewer, and utilities) would also increase because of additional roads and longer transmission lines, and would be the highest of all scenarios. Because development would cover a larger area and travel would be more auto-oriented, Scenario A would require a significant expansion of the freeway system and more miles of new arterial streets. Expansion of mass transit would not serve the dispersed population very effectively. Most of the transportation investment would be geared toward improving automobile use. The increased investment would result in faster speeds, but the dispersed development pattern would cause longer trips, with the end result being about the same amount of time spent on the road.

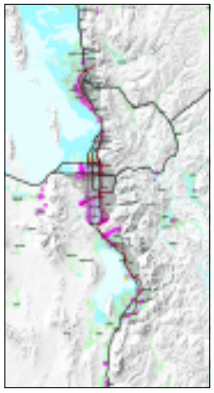
Scenario B



Scenario B (Baseline Scenario) shows how the region would develop if state and local governments follow their 1997 municipal plans. Development would continue in a dispersed pattern, much like it has for the past 20 years, but would not be as widely dispersed as in Scenario A. New development would primarily take the form of single-family homes on larger, suburban lots (1/4 acre and larger). Most development would focus on convenience for auto users and transportation investments would support auto use.

Lot sizes and distance between homes would remain near their current averages. Most new housing would be single-family homes on large lots, providing many residents with opportunities for large yards and suburban living. There could be a few more rental opportunities than in Scenario A, but could still fall short of meeting current market demands. Many single family homes would likely be converted into rental properties to meet the extra demand. This scenario would consume a large amount of raw land, although not as much as Scenario A, limiting the land available for open space and agriculture. The available supply of land would be consumed quickly, possibly leading to increased land and housing costs. Infrastructure costs (transportation, water, sewer, and utilities) would also increase over the next 20 years, and would be the second highest of all scenarios. Transportation expenditures would be focused on upgrading the existing freeway system and extending surface streets into newly developed areas. Street and highway expenditures would be lower than in Scenario A, but speeds would be lower as well. Although this scenario does not add any rail transit beyond the Downtown-Sandy line currently under construction, it does envision some expansion and reconfiguration of bus service.

Scenario C

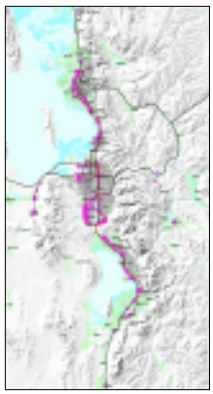


Scenario C shows how the region might develop if we were to focus much of our new development in walkable communities that contained nearby opportunities to work, shop, and play. Communities would accommodate a portion of new growth within existing urbanized areas, leaving more undeveloped land for open space and agriculture. New developments would be clustered around a town center, with a mixture of retail services and housing types close to a transit line. These communities would be designed to encourage walking and biking, and would contain a wide variety of housing types, allowing people to move to more or less expensive housing without leaving the community.

Average lot sizes would be smaller than today. Most of the new housing provided would still be single-family homes on large lots, but more apartments, townhouses, condominiums, and small-lot single-family homes would be provided than in A or B. This would likely meet the market demand for rental housing. Smaller lot sizes would allow Scenario C to consume raw land less quickly, leaving more land available for open space and agriculture, and providing suburban and rural living opportunities further into the future. Infrastructure costs (transportation, water, sewer, and utilities) would be lower in Scenario C than in any other scenario. Because Scenario C focuses new development into more compact land use

patterns, walking and biking would become more feasible. This would also make mass transit a highly effective means of serving the population, providing a greatly increased number of people with convenient alternatives to the automobile. Scenario C would therefore propose large-scale expansion of the rail system, and reconfiguration of bus service to complement rail service. Transportation investments would be focused much more heavily on transit than they are today, with most road investments going into improvement of existing roads rather than construction of new ones.

Scenario D



Scenario D shows how the region might develop if Scenario C were taken one step further, focusing nearly half of all new growth in existing urban areas. This would leave more undeveloped land for open space and agriculture than any of the other scenarios. When new land is used, development would be clustered around a town center, with a mixture of commercial and housing types close to some portion of a greatly expanded transit system. These communities would be designed to permit and encourage walking and biking, and would contain the widest variety of housing types of any scenario.

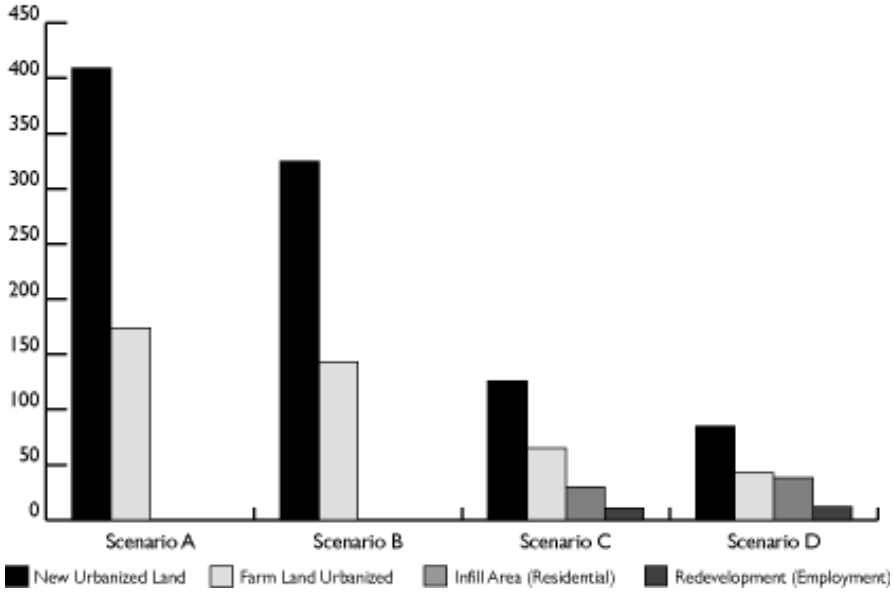
Average lot sizes would be smaller than in all other scenarios. Most new housing would be townhouses and single-family homes on small lots, and more apartments, townhouses, condominiums, and small lot single- family homes would be available than in the other scenarios. Scenario D would consume the smallest amount of new land, leaving more land available for open space and agriculture than in any other scenario. Infrastructure costs in Scenario D would be lower than A and B, but somewhat higher than C, as clustering of so many new residents into existing urban areas would necessitate improvements to existing infrastructure. Because Scenario D focuses new development into more compact land use patterns, mass transit would serve a larger share of the population, providing many more people with convenient alternatives to the automobile. Scenario D would propose large-scale expansion of the rail system, with additional spurs for access to downtown Ogden and BYU. Transportation investments would be focused very heavily on transit, with most road investments going into improvements of existing roads, rather than construction of new ones.

Land Consumption

In the table below, the most compelling figure is the difference in the amount of land consumed in Scenario A compared to the other three scenarios. In this scenario, the strategy was to accommodate most new growth by urbanization of new land at relatively low densities. As the areas adjacent to existing urban areas were quickly used up, new areas were added in Tooele and Cedar Valley. Most of the valley floors in the Wasatch Back were developed in acre-lot homes as well. While Scenario A contains substantial areas of infill and redevelopment, these areas are very different than in Scenarios C and D. In Scenario A, all new growth is placed at the edge, and the redeveloped areas are low density (one house per two acres on average) at the edge of the urban area. In Scenarios C and D, most redeveloped land consisted of underutilized (often industrial) lands in the cores of cities and towns, and infill in areas close in to the urban area.

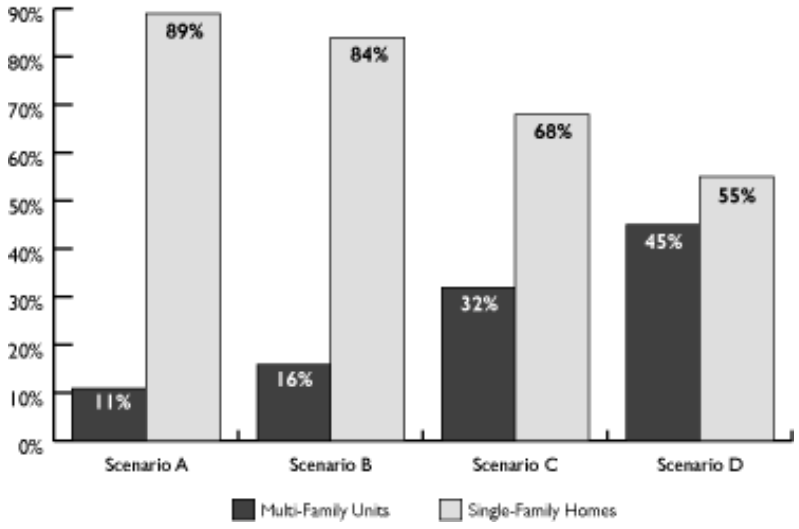
Land Consumption (Square Miles)

	Scenario A	Scenario B	Scenario C	Scenario D
Total Area	840	755	557	516
New Urbanized Land	409	325	126	85
Farm Land Urbanized	174	143	65	43
Infill Area (Residential)	-	-	30	38
Redevelopment (Employment)	-	-	11	12



Housing Type Distribution

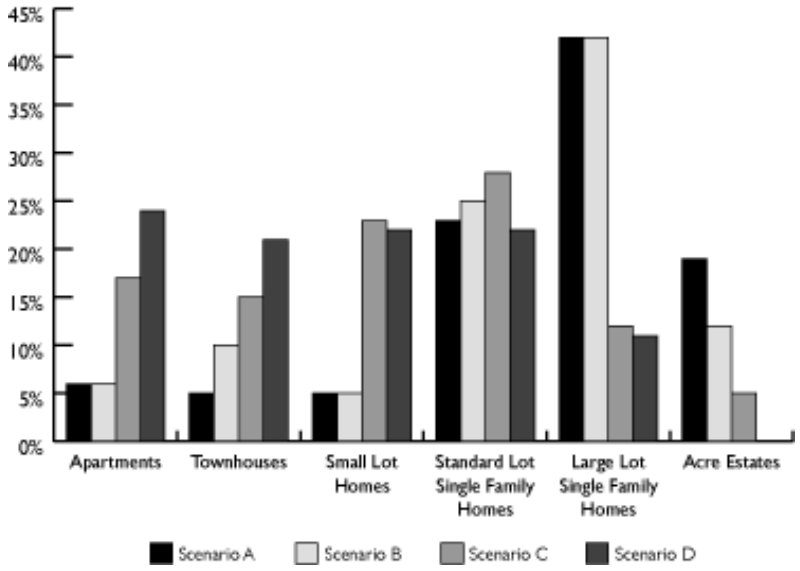
Housing Type	Density (Units/Gross Acre)	Scen. A	Scen. B	Scen. C	Scen. D
High Density Apartments	60	1%	1%	5%	10%
Medium Density Apartments	20	5%	5%	12%	14%
Townhouses	12	5%	10%	15%	21%
Small Lot Homes	8	5%	5%	23%	22%
Standard Lot Single Family Homes	4	23%	25%	28%	22%
Large Lot Single Family Homes	2	42%	42%	12%	11%
Acre Estates	0.5	19%	12%	5%	0%



HOUSING TYPE DISTRIBUTION

The table below depicts approximate housing mixes that would result in the average densities of the incremental growth in the scenarios. Scenario A demonstrates the largest percentage of large lot homes, and most housing is single family detached homes. In scenario A, only 9% of new housing could be considered multi family, far less than the demand for multi-family housing. The market would probably compensate for this discrepancy by converting existing owner occupied homes to rentals. Scenario B is similar in mix to Scenario A, with slightly more standard-lot homes and a lower percentage of acre estates. Scenario C consists of about 32% multi-family housing, a typical figure for many American cities; there would probably be a balance of demand and supply for rental housing. Scenario D consists of 45% multi-family housing, which is probably greater than the demand for rental housing. The market would compensate by building high-density ownership housing, such as ownership townhouses and condominiums.

Housing Type Distribution



DENSITY

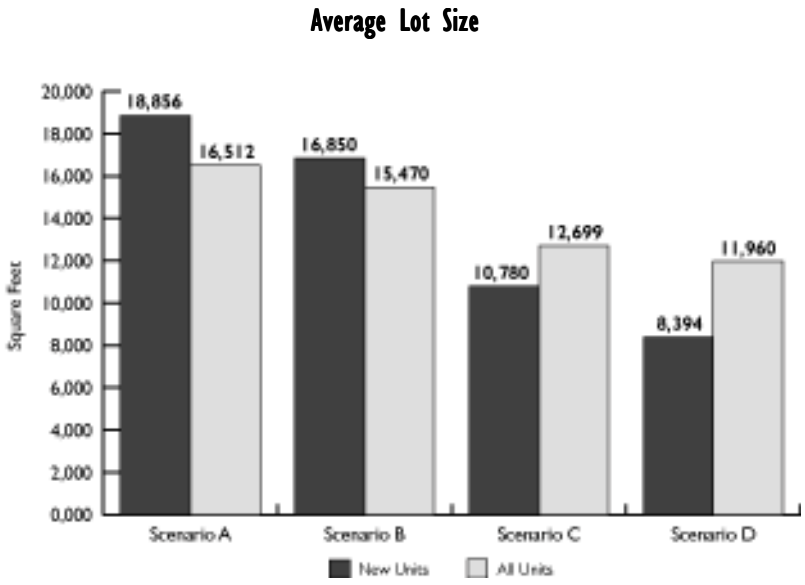
These density numbers are calculated on residential acres only. The current average density of the residentially developed lands in the region is estimated at about 8 persons per acre. The incremental density of Scenario A was one half the current average density, resulting in a substantial drop in overall density. This is plausible, as the newly developed areas are substantially less dense than the traditional cities developed along the lines of the "Plat of Zion". Scenario C resulted in only marginal increases in overall density, while Scenario D results in a substantial increase. Regardless of the scenario, the final overall density does not vary by more than one third from the present day, as a large part of the urban area that will exist in 2020 exists today.

Incremental and Overall Population Density (persons per acre)

	Scenario A	Scenario B	Scenario C	Scenario D
Incremental Density	3.99	4.95	9.02	11.18
Density on Infill & Redeveloped Land	-	-	*13.01*	*13.95*
Density on Vacant Land	-	-	*9.02*	*11.18*
Overall Density	5.02	5.58	7.56	8.16

LOT SIZE

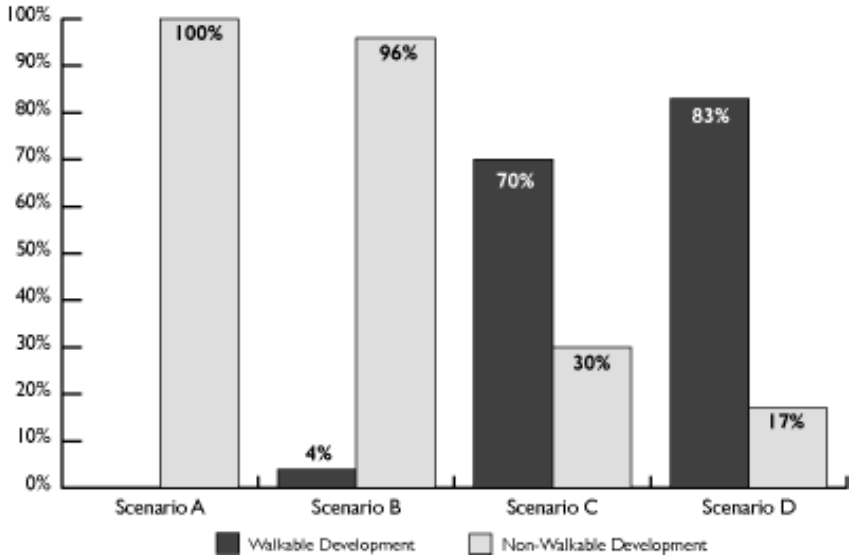
Average lot size increases as the percentage of single-family detached dwelling units increases, and decreases as density increases. Average lot size in 1990 (the most recent year for which data was available) was about 14,000 square feet. Scenario A, with 89% single-family units, has an average lot size of about 19,000 square feet for new units added, and a total average for all units in 2020 of about 17,000 square feet. Scenario B, with 84% single-family units, has an average new unit lot size of about 17,000 square feet, and a total average lot size of about 15,000. As can be seen in the chart below, Scenario C has lower average lot sizes than those of B, and Scenario D has an average new lot size of about 8,000 square feet, and total average of about 12,000 square feet in 2020.



WALKABILITY

Walkability is another very important measure. As discussed in "The Workshop Process" section, the four scenarios are made up of a series of development types, ranging from walkable mixed-use downtowns, towns, and villages, to non-walkable office parks, activity centers, and residential subdivisions. Walkable types are more amenable to transit use and pedestrian activity, and are thus more abundant in Scenarios C and D, which are based on transit lines and focus most growth around existing developed areas. Non-walkable types are more auto-oriented, and represent the dominant form of development in Scenarios A and B. Scenario A is fully comprised of non-walkable development types, while Scenario B is 96% non-walkable. The more transit-oriented Scenario C, on the other hand, is comprised of 70% walkable types, while Scenario D is 80% walkable.

Percent Walkable versus Non-Walkable Development



PROXIMITY MEASURES

These measures are some of the most significant. While it is a seeming paradox, the more compact a development form, the closer most people are to open space. This has long been known in Europe where open space near and in dense cities is common. The amount of use of the open space also rises proportionally, so the more dense a region, the greater the need for open space acquisition and preservation.

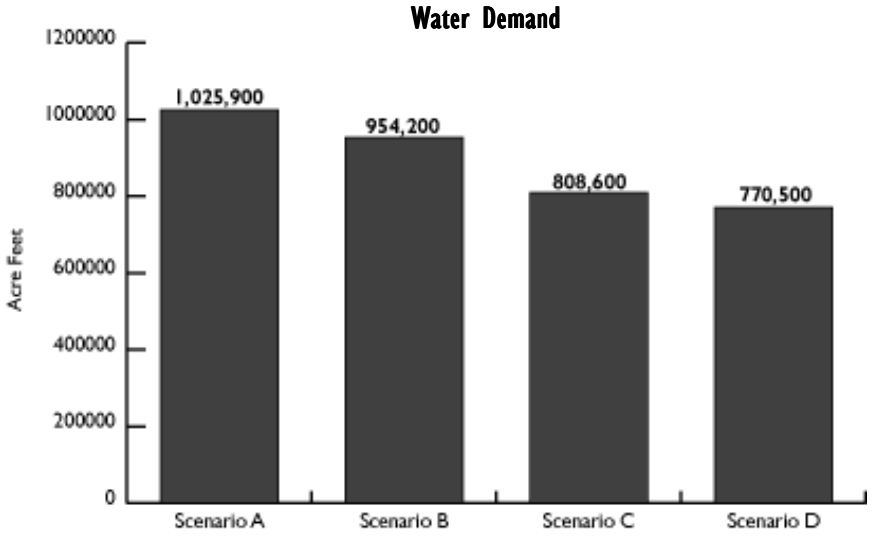
The effect of the light rail infrastructure and the transit oriented development in C and D present perhaps the most dramatic effect on the scenario designs. While in Scenario A only about 39,000 people live within walking distance of the light rail line, in the other two scenarios urban uses were developed around the light rail infrastructure. The number of people living near rail transit represents about 25% of the population in Scenario C, and 35% in Scenario D. It should be noted that the light rail line was modified in Scenario D to leave the existing rail right of way and pass through concentrations of population, such as downtown Provo and close to the BYU campus. While this is much more expensive, it will yield higher ridership. The contrasting infrastructure investments will give us an important evaluation tool.

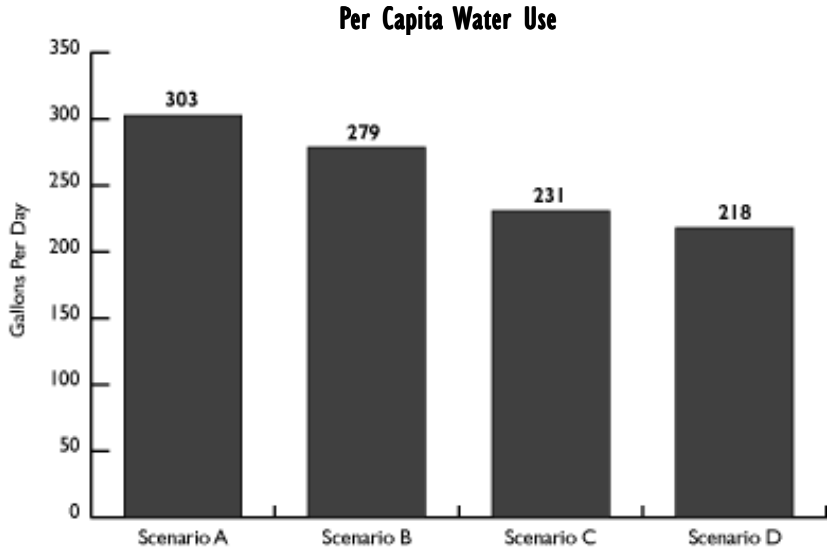
Proximity Measures

	Scenario A	Scenario B	Scenario C	Scenario D
Population within 1/2 mile of open space	871,531	N/A	913,981	938,220
Population within 1/2 mile of light rail	38,755	45,557	664,991	866,765

WATER USE AND DEMAND

As indicated in the following charts, water use and demand measures vary significantly across the four scenarios. Scenario A, with the most dispersed development pattern, has the highest water demand and per capita water use. With a demand of over 1 million acre feet, Scenario A exceeds that of the more compact Scenario D by more than 250,000 acre feet. Per capita water use in the more compact Scenarios C and D is also significantly lower than in the more dispersed Scenarios A and B. The variation in water demand and use is due for the most part to variations in the amount of outdoor watering in the different scenarios; more dispersed housing, with more private outdoor space, requires increased water levels. In addition, it should be noted that higher levels of demand and use would likely require the damming of water bodies in the region, with potential environmental and fiscal consequences.

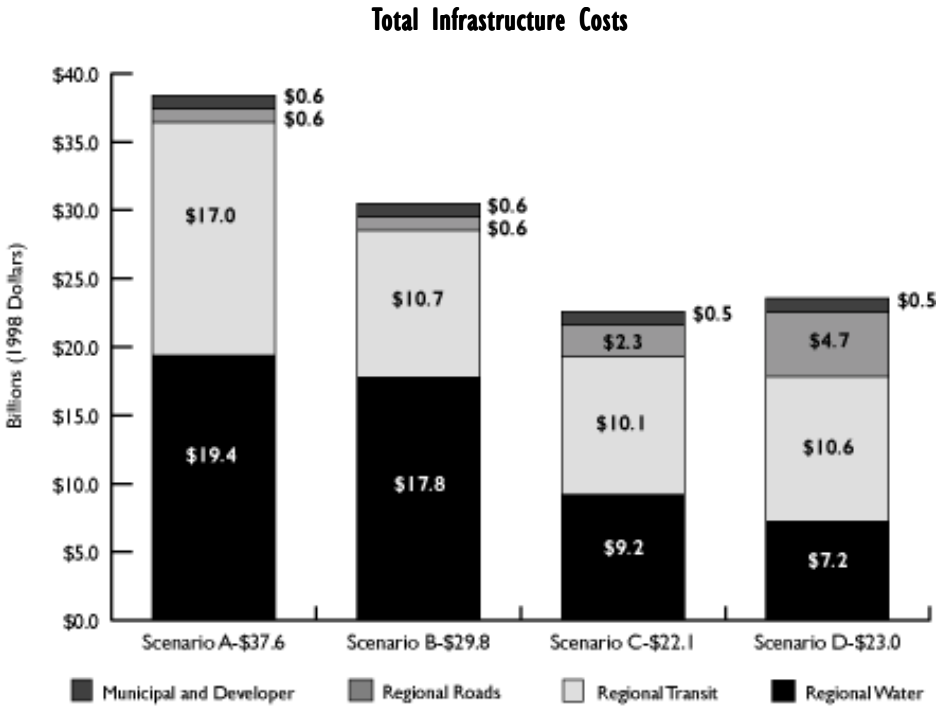




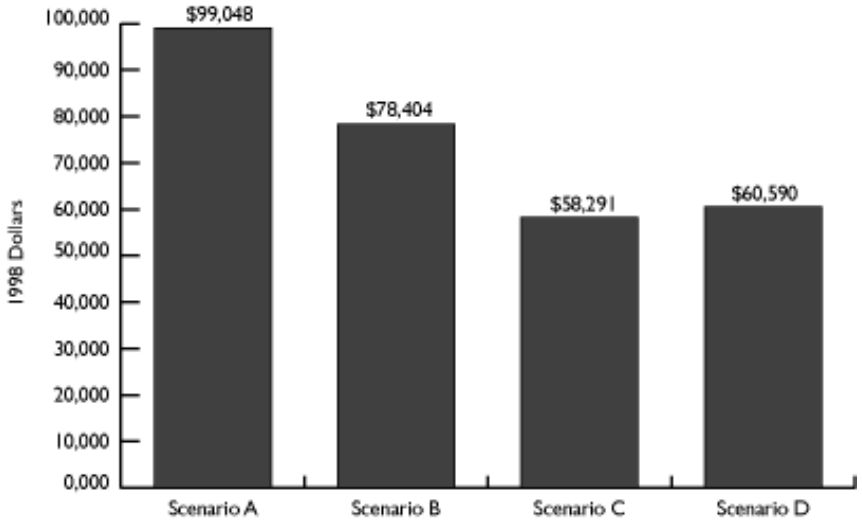
INFRASTRUCTURE COSTS

Infrastructure costs vary significantly across the four scenarios. Costs include both state and regional costs, as well as costs covered by developers and municipalities. State and regional infrastructure costs include roads, transit, and water system improvements. Municipal and developer costs include local streets, curb and gutter, local water distribution and treatment, and utilities.

Total costs and costs per new dwelling unit are highest in Scenario A, which has the most single-family detached housing types, and is the most dispersed of the scenarios. Scenario B, which is slightly less dispersed and contains a majority of single-family types, has the second highest infrastructure costs. Among the more compact and transit-oriented scenarios (C and D), Scenario D, with the most transit investment and the highest share of multi-family housing has a higher overall and per dwelling unit infrastructure cost.



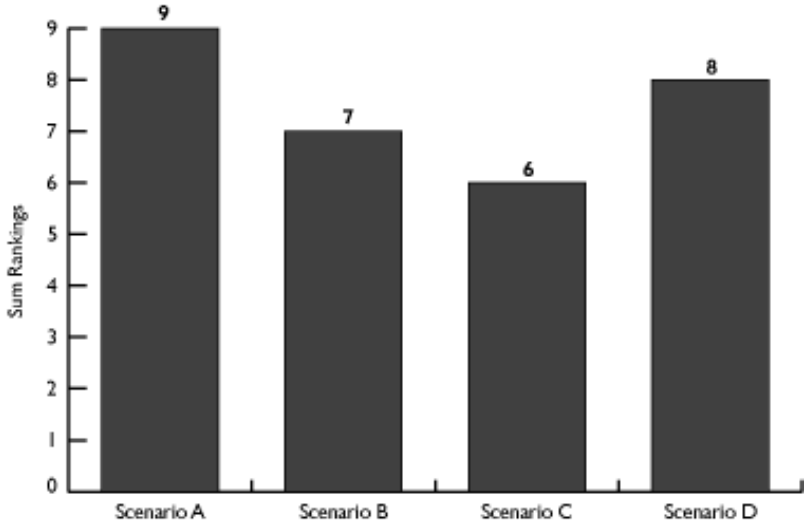
Infrastructure Costs Per New Dwelling Unit

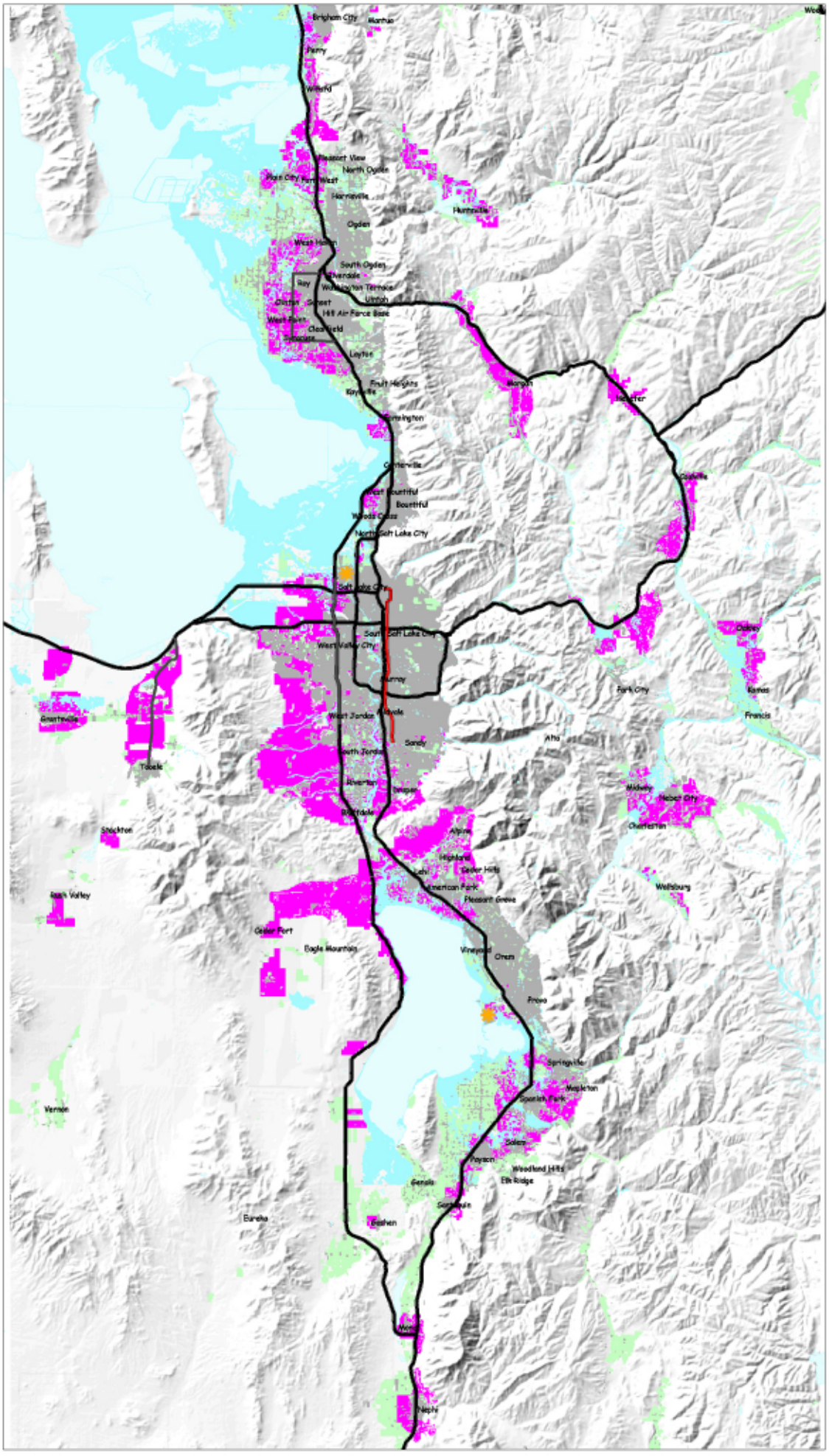


AIR QUALITY RANKINGS

Air quality analysts considered the total emissions, distribution of emissions, and proximity of emissions to population to derive an overall, generic air quality assessment for the scenarios. The assessment was done by averaging the score for each criteria (total emissions, distribution, and proximity to population) across pollutants, and summing the ranked values. The final score assumes the health effects of each pollutant as and assigns equal relative importance to each criteria. As indicated in the chart below, Scenario C exhibited the best overall air quality performance, followed by Scenario B, Scenario D, and then Scenario A.

Overall Air Quality Score





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SCENARIO A

LEGEND

Transportation Infrastructure

- Rail Transit
- Freeway
- Arterial
- Airport

Land Use

- Existing Development
- New Development
- Open Space & Irrigated Farmland

Water Features

- Body of Water
- Floodplain & Wetland

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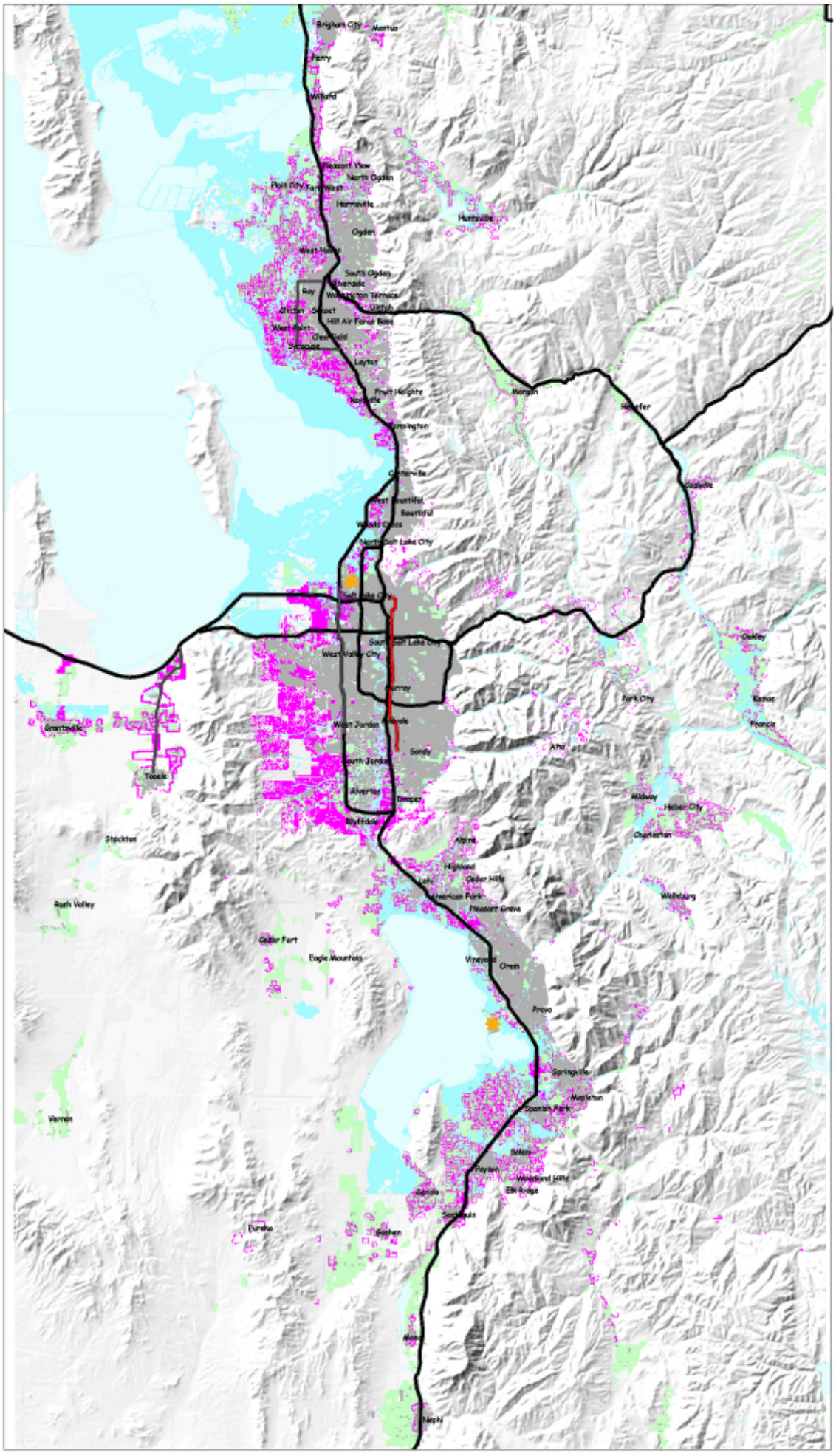

ENVISION UTAH
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SCENARIO B

LEGEND

Transportation Infrastructure

- Rail Transit
- Freeway
- Arterial
- Airport

Land Use

- Existing Development
- New Development
- Open Space & Irrigated Farmland

Water Features

- Body of Water
- Floodplain & Wetland

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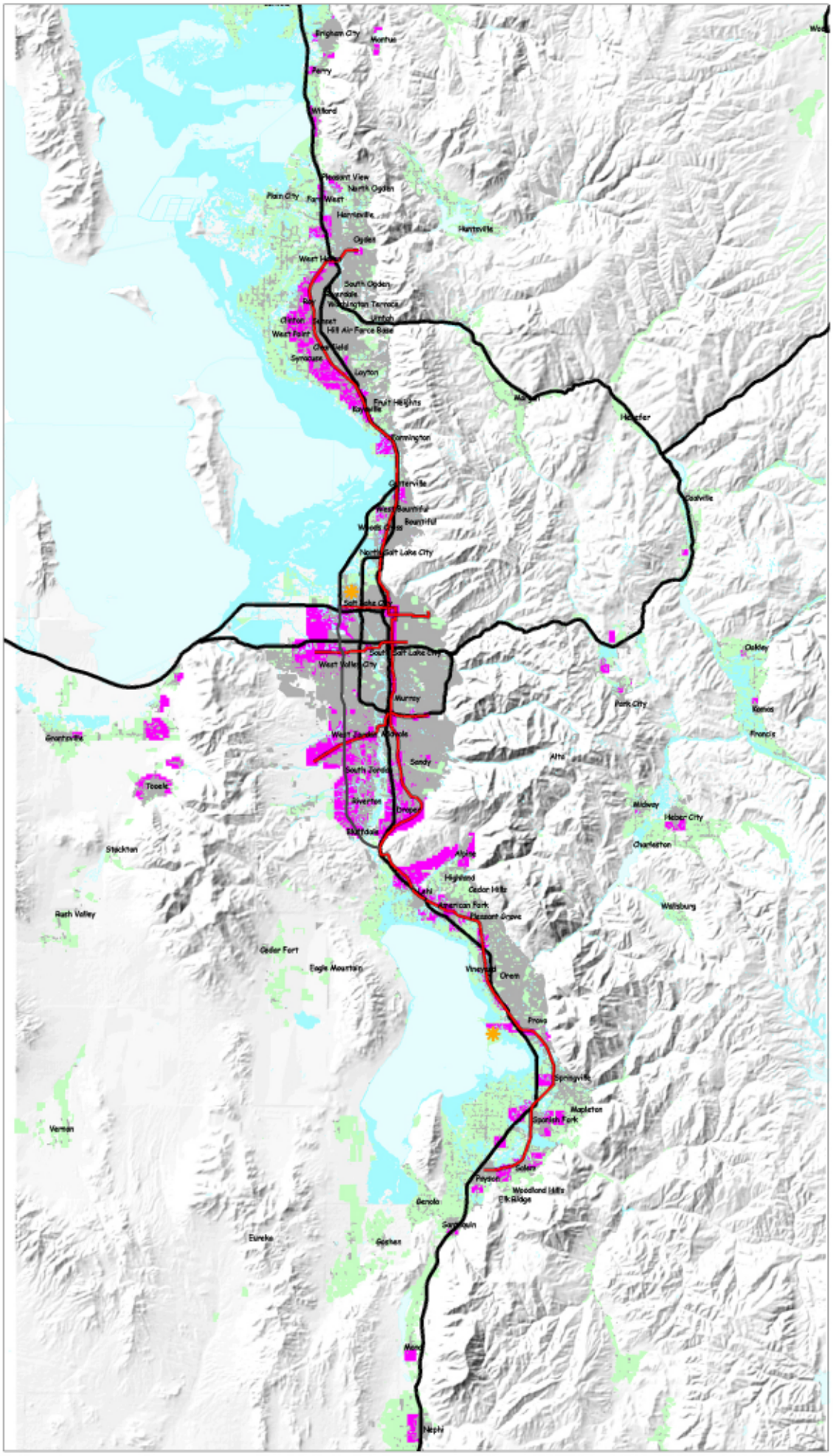

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SCENARIO C

LEGEND

Transportation Infrastructure

- Rail Transit
- Freeway
- Arterial
- Airport

Land Use

- Existing Development
- New Development
- Open Space & Irrigated Farmland

Water Features

- Body of Water
- Floodplain & Wetland

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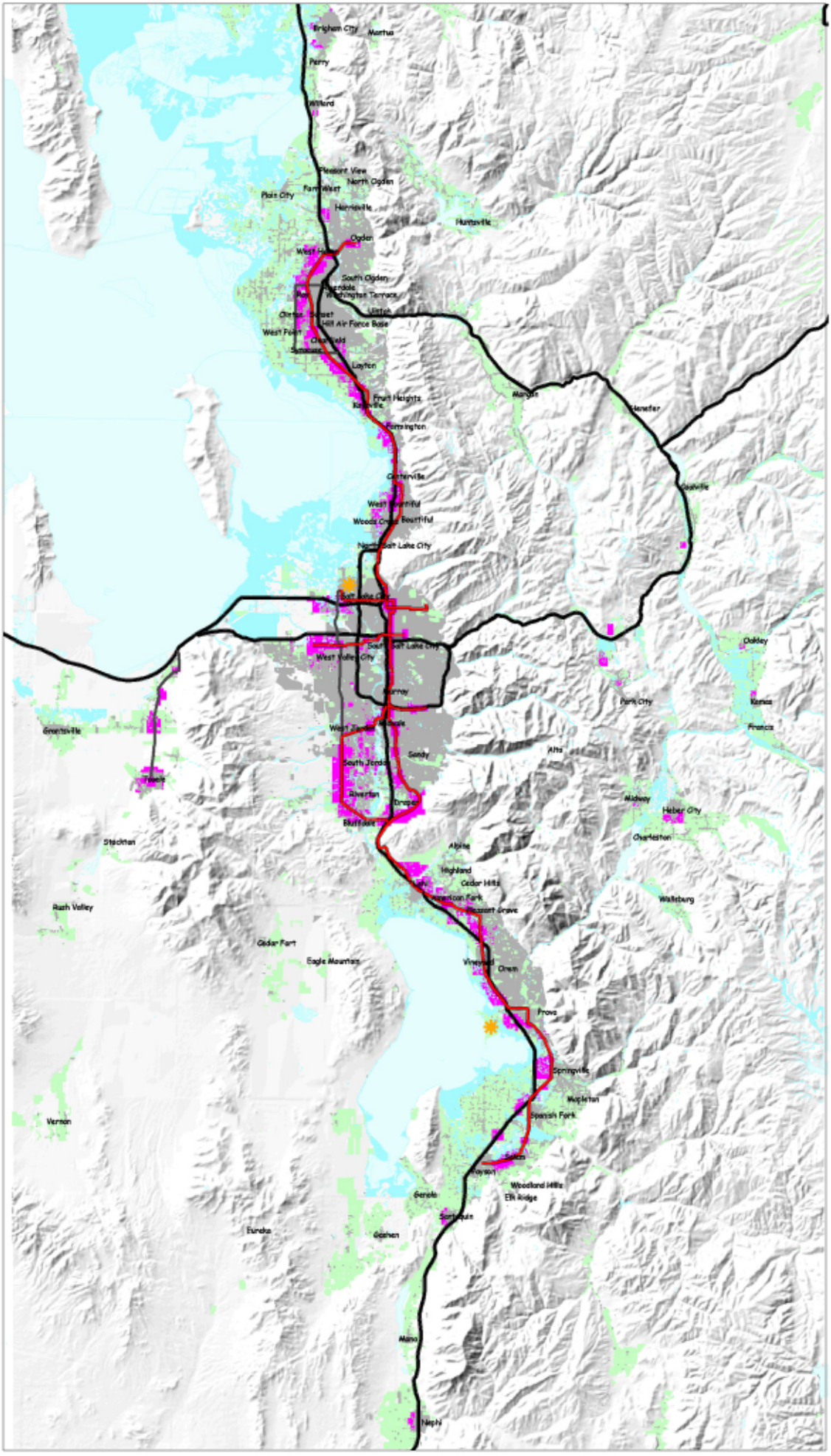

ENVISION UTAH
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SCENARIO D

LEGEND

Transportation Infrastructure

- Rail Transit
- Freeway
- Arterial
- Airport

Land Use

- Existing Development
- New Development
- Open Space & Irrigated Farmland

Water Features

- Body of Water
- Floodplain & Wetland

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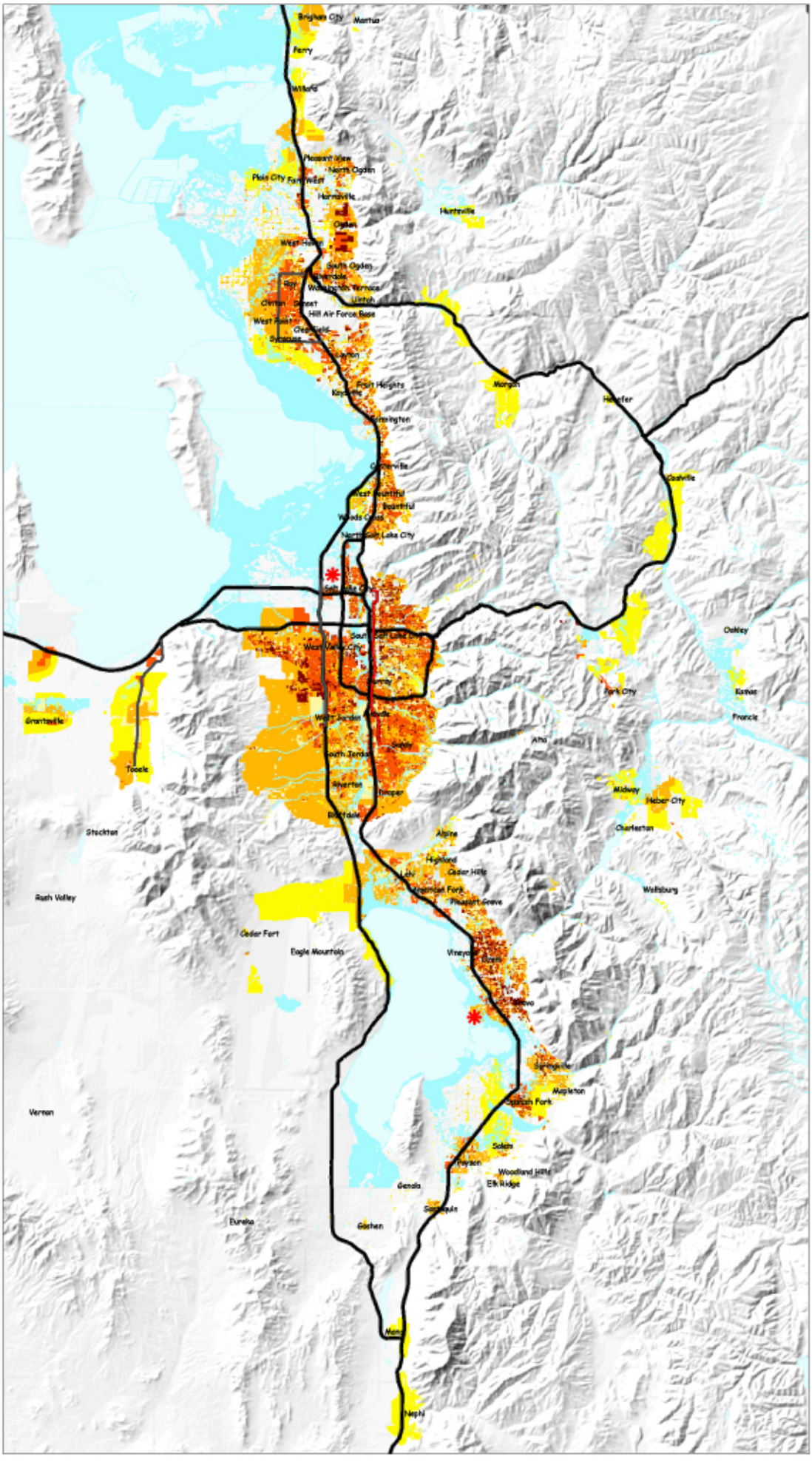

ENVISION UTAH
A Partnership for Quality Growth

SCENARIO A
Population Density

LEGEND

Transportation Infrastructure

- Light Rail
- Freeway
- Arterial
- Airport

Population Density (persons/acre)

- <1
- 1-2
- 2-5
- 6-10
- 10+

Water Features

- Body of Water
- Floodplain & Wetland

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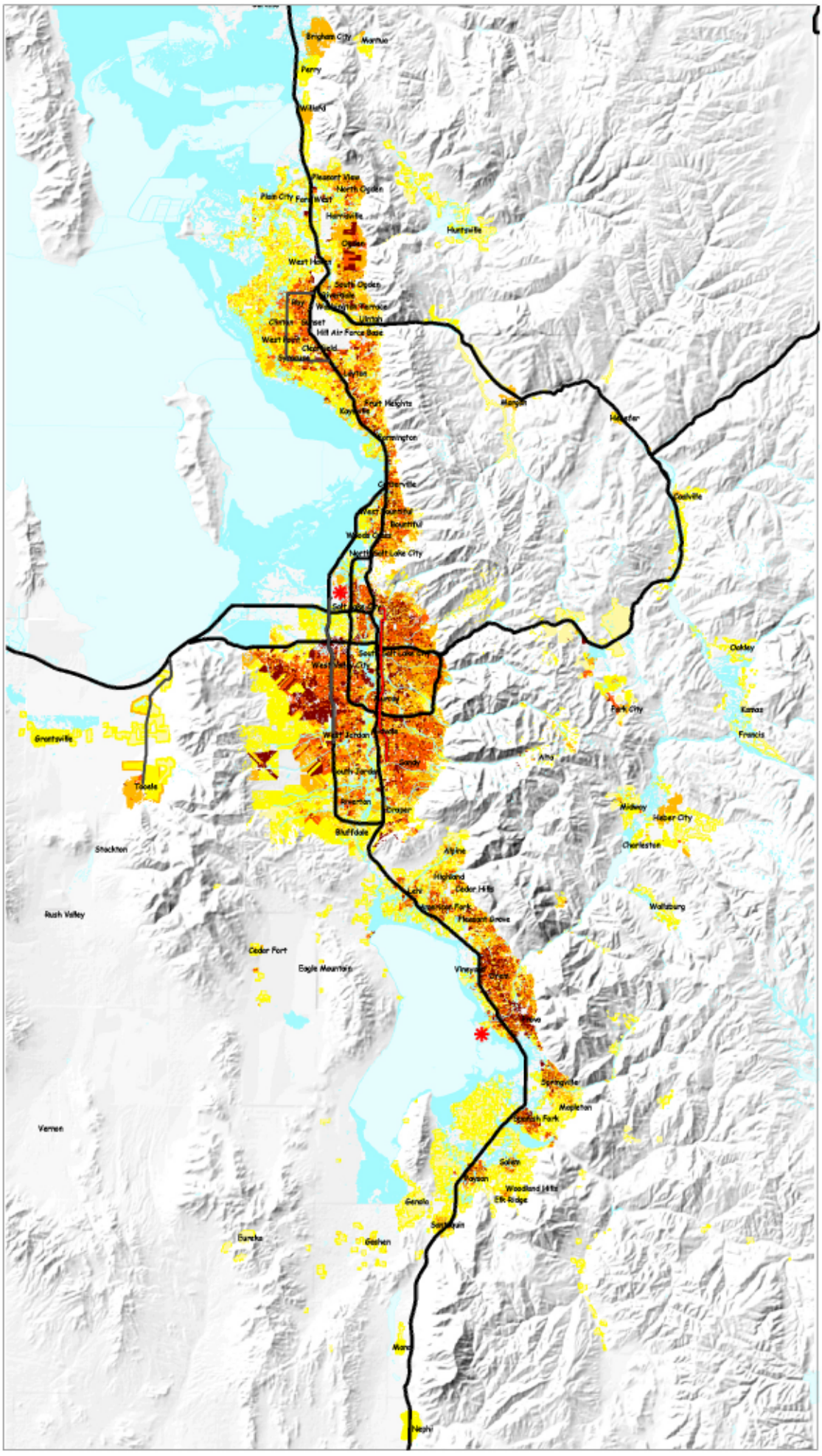

ENVISION UTAH
Partnership for Quality Growth

SCENARIO B
Population Density

LEGEND

Transportation Infrastructure

- Light Rail
- Freeway
- Arterial
- Airport

Population Density (persons/acre)

- <1
- 1-2
- 2-5
- 6-10
- 10+

Water Features

- Body of Water
- Floodplain & Wetland

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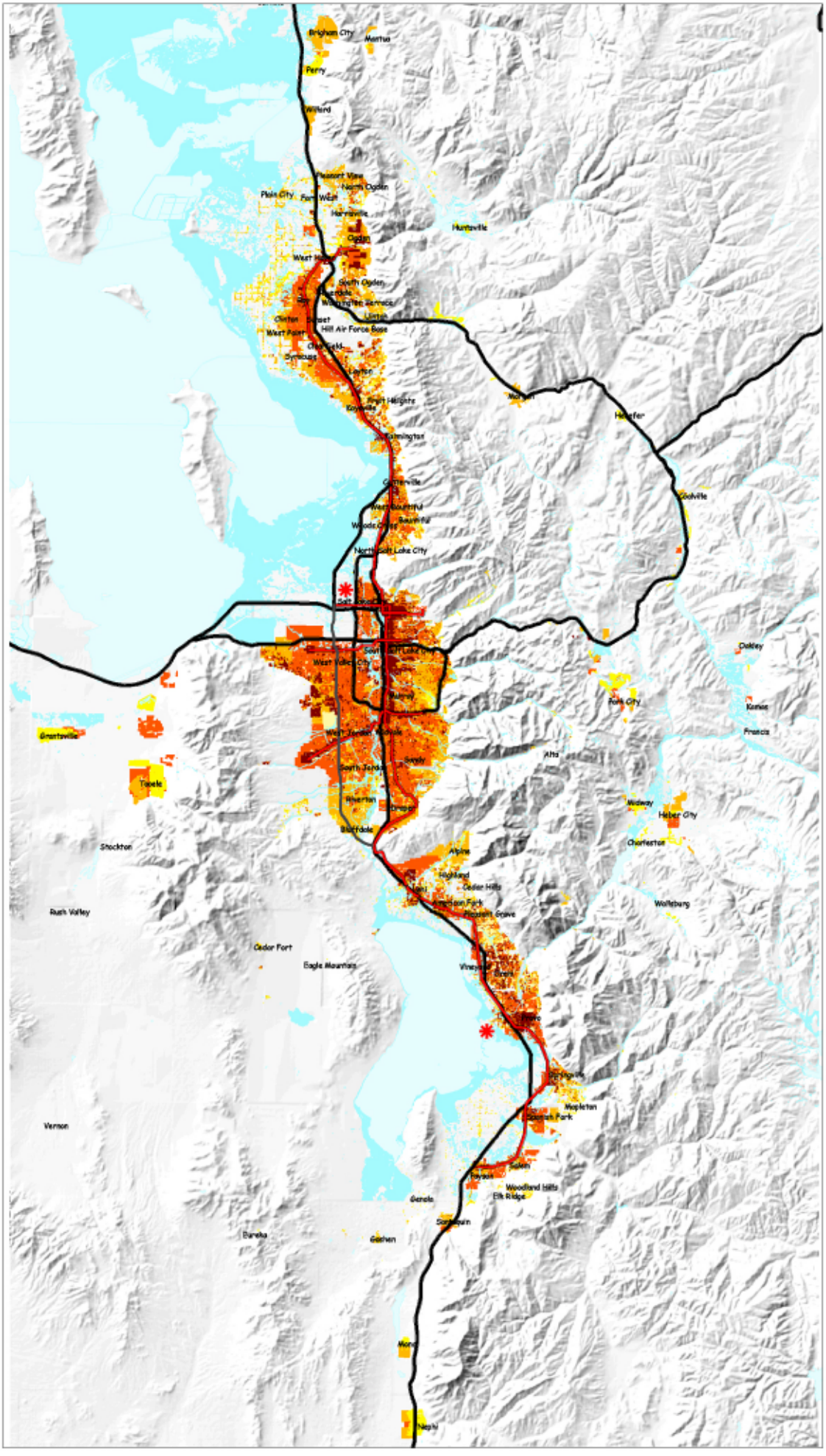

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SCENARIO C
Population Density

LEGEND

Transportation Infrastructure

- Light Rail
- Freeway
- Arterial
- Airport

Population Density (persons/acre)

- <1
- 1-2
- 2-5
- 6-10
- 10+

Water Features

- Body of Water
- Floodplain & Wetland

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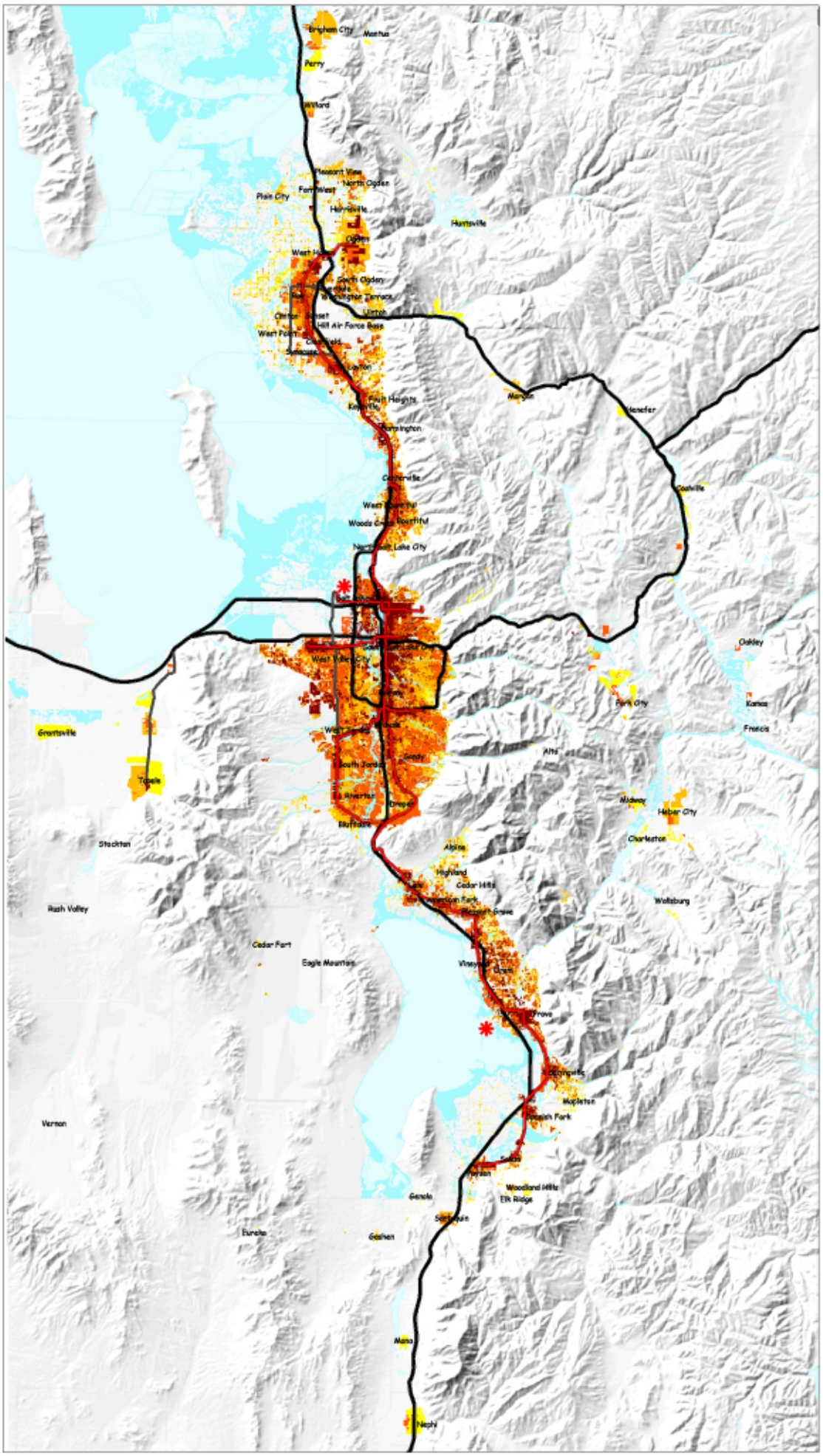

ENVISION UTAH
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SCENARIO D
Population Density

LEGEND

Transportation Infrastructure

- Light Rail
- Freeway
- Arterial
- Airport

Population Density (persons/acre)

- <1
- 1-2
- 2-5
- 6-10
- 10+

Water Features

- Body of Water
- Floodplain & Wetland

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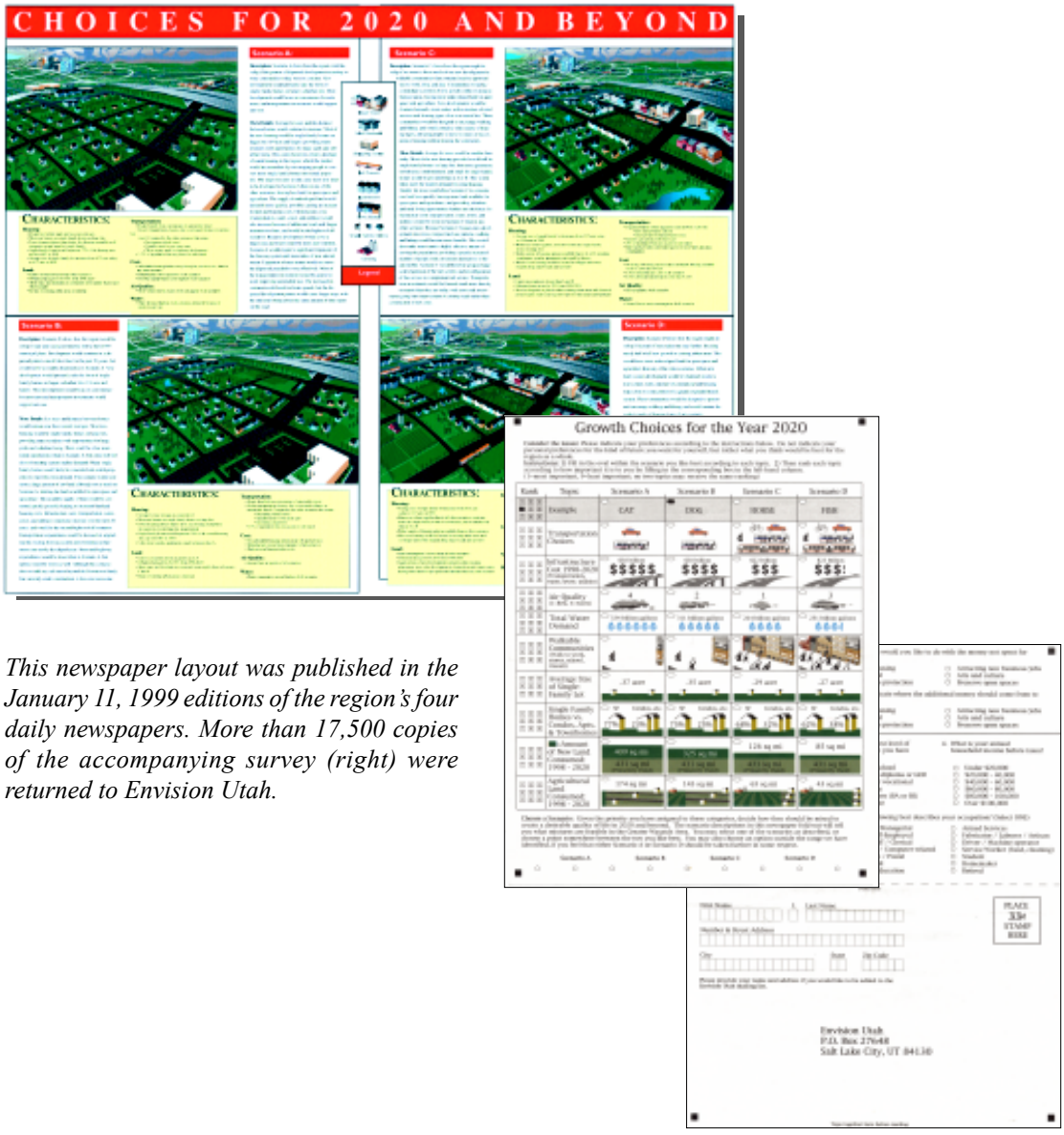
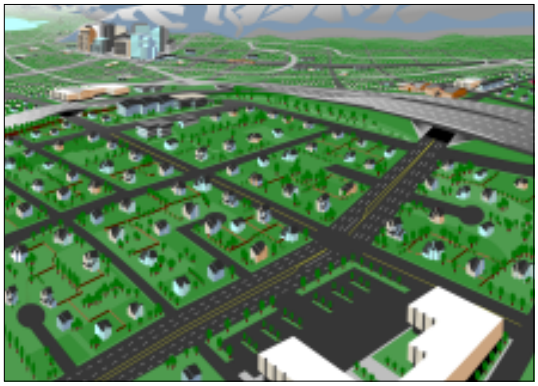
Selecting A Preferred Scenario

Following the completion of the modeling of the four regional development scenarios, Envision Utah solicited input from the public on a preferred development scenario and the preferred qualities of a comprehensive growth strategy. More than one-half million surveys were distributed, and 47 town meetings were held in communities throughout the Greater Wasatch Area. The results of the survey and workshops formed the basis of Envision Utah's second year's work (Phase II), which concentrated on the creation of a Quality Growth Strategy for the region. This section presents the survey and its results, including a discussion of major growth issues identified by the public through the survey.



This newspaper layout was published in the January 11, 1999 editions of the region's four daily newspapers. More than 17,500 copies of the accompanying survey (right) were returned to Envision Utah.



The newspaper survey (see graphic on previous page) included these computer-generated representations of the four development scenarios. The images show how the same area might be developed given the different mix of development types, street layout, and transportation options in each of the scenarios. Each graphic was accompanied by a description of the scenario and a list of the major housing, land use, transportation, infrastructure cost, air quality, and water supply issues associated with the scenario.

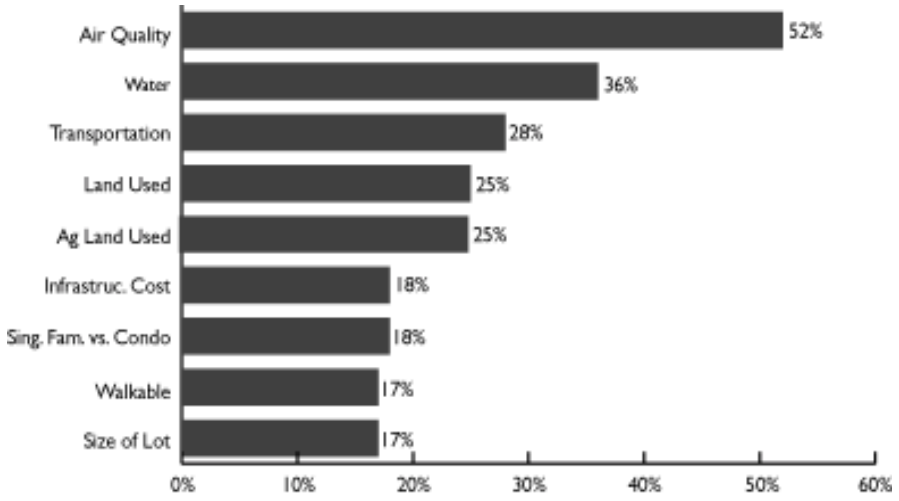
SURVEY RESULTS

The survey instrument had two primary objectives. First, it was designed to determine how residents of the Greater Wasatch area evaluated the four growth scenarios developed by Envision Utah. The survey also sought to measure residents' responses to a series of growth topics and develop an initial understanding of residents' preferred funding sources for meeting regional development goals. A total of 570,000 surveys were distributed through an insert in the region's major daily newspaper, *The Star Tribune,* and 17,500 responses were returned, including more than 6,000 responses via Envision Utah's website. Survey questionnaires were returned over a two-month period from January to February 1999.

Rating of growth related issues

Greater Wasatch Area residents were asked to rank a series of growth related issues on a scale of 1 to 9, 1 being most important and 9 least important. The issues included transportation choices, infrastructure cost, air quality, total water demand, walkable communities, average size of single-family lots, amount of new land consumed, amount of agricultural land consumed, and preference for single family homes versus condominiums, apartments, and townhomes. As illustrated in the chart below, air quality was ranked as the most important growth related topic in the region, followed by total water demand, transportation choices, and the amount of new agricultural land consumed. Average lot size, walkable communities, and the number of single-family homes versus multi-family units received the lowest ratings.

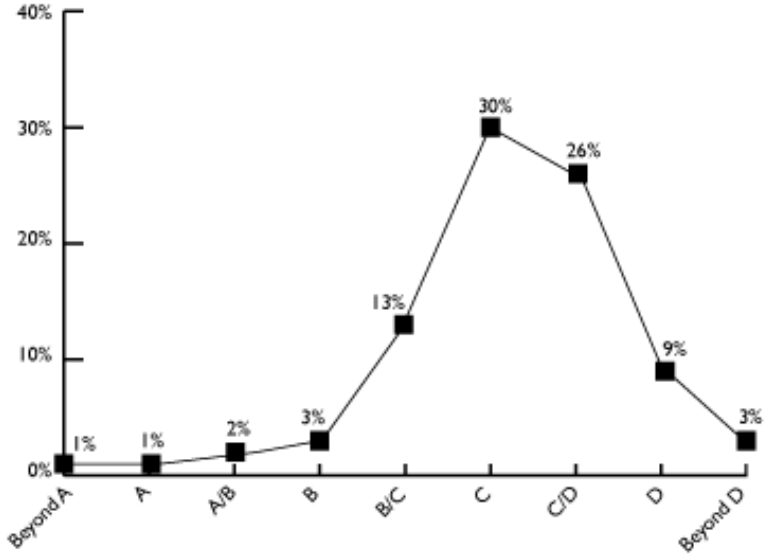
Percent of Respondents That Mention Issue and First or Second in Importance



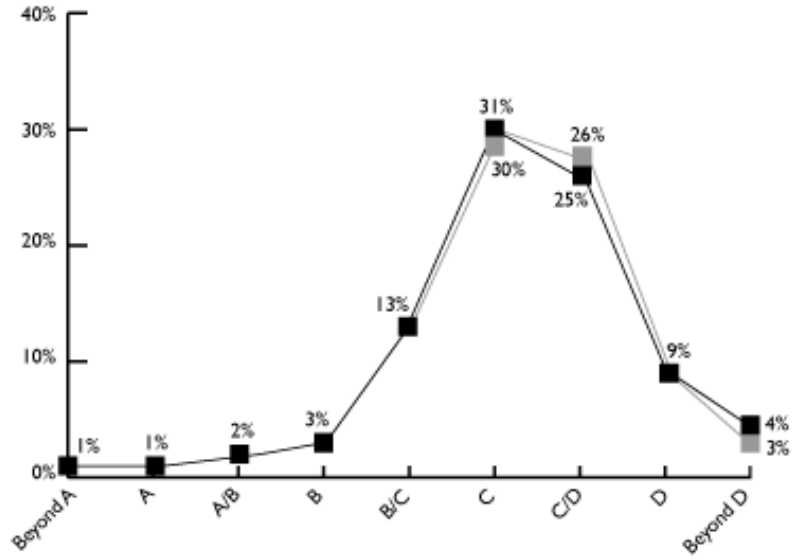
THE PREFERRED SCENARIO

Results of the survey indicated an overwhelming preference for Scenarios C and D, with nearly two-thirds of respondents choosing one of the two scenarios or a scenario in between C and D (delineated as C/D in the graph below). Less than four percent of survey respondents favored the more auto-oriented Scenarios A or B. A weighting of survey results to more accurately reflect the social and demographic makeup of the region resulted in nearly identical results.

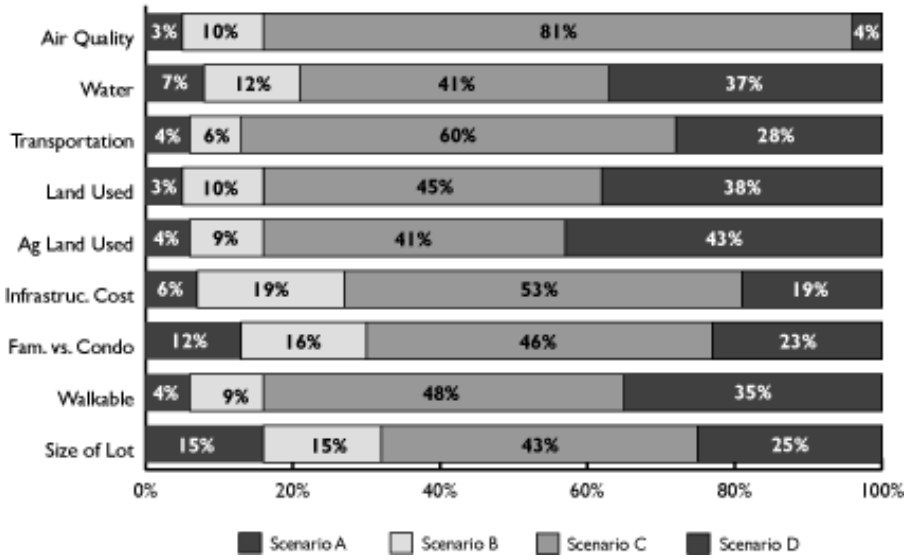
Respondents' Preferred Scenario (Unweighted)



Respondents' Preferred Scenario (Weighted for Regional Demographics)



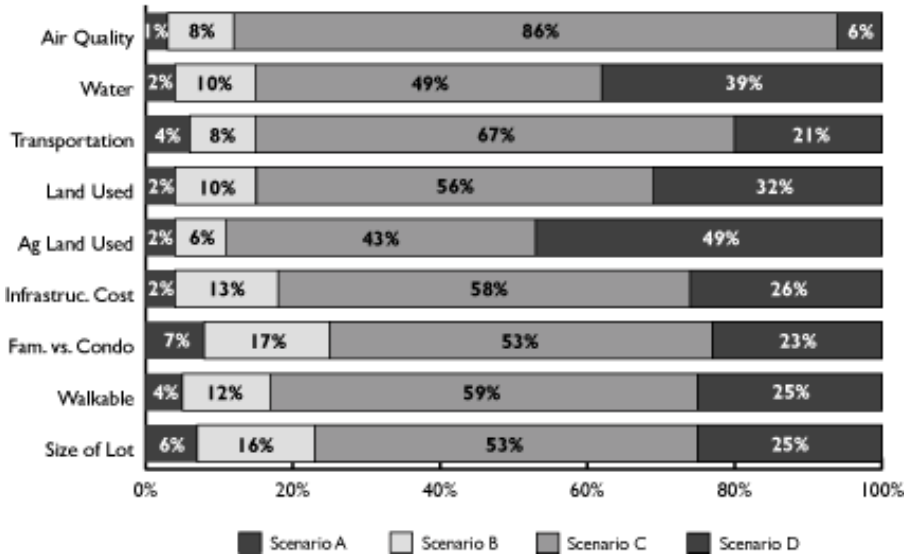
Preferred Scenario by Growth Issue (Survey Results)



PREFERRED SCENARIO BY GROWTH ISSUES

To further explore the motives behind respondents' preferred scenario choice, the ratings of growth related issues were compared to the preferred scenario choice of each survey respondent. The results show that Scenario C was perceived as the best scenario on 8 of the 9 growth issues, with Scenario D coming out as the best on 1 issue and the second best on 6 growth related issues. There were few differences in the responses from the survey and those at the Town Meetings held by Envision Utah.

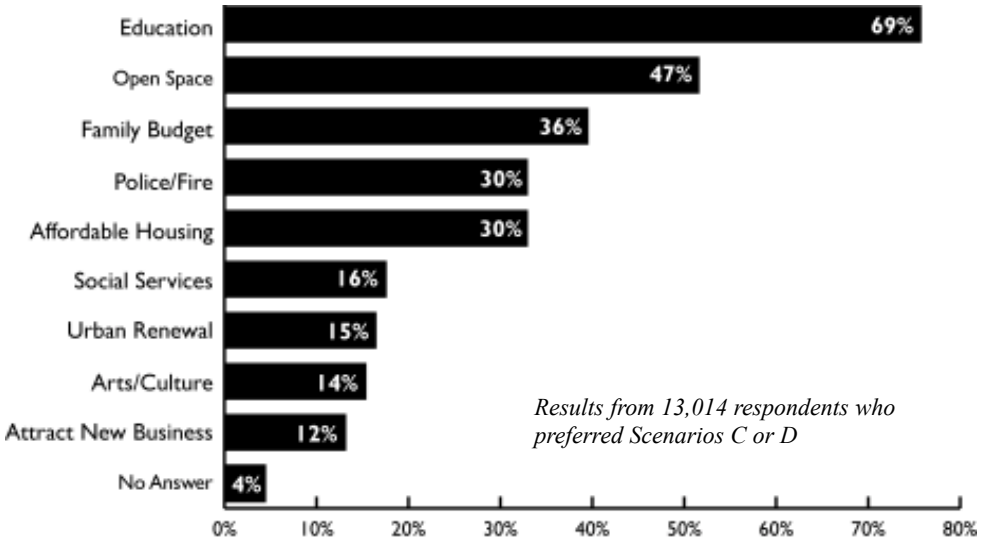
Preferred Scenario by Growth Issue (Town Meeting Results)



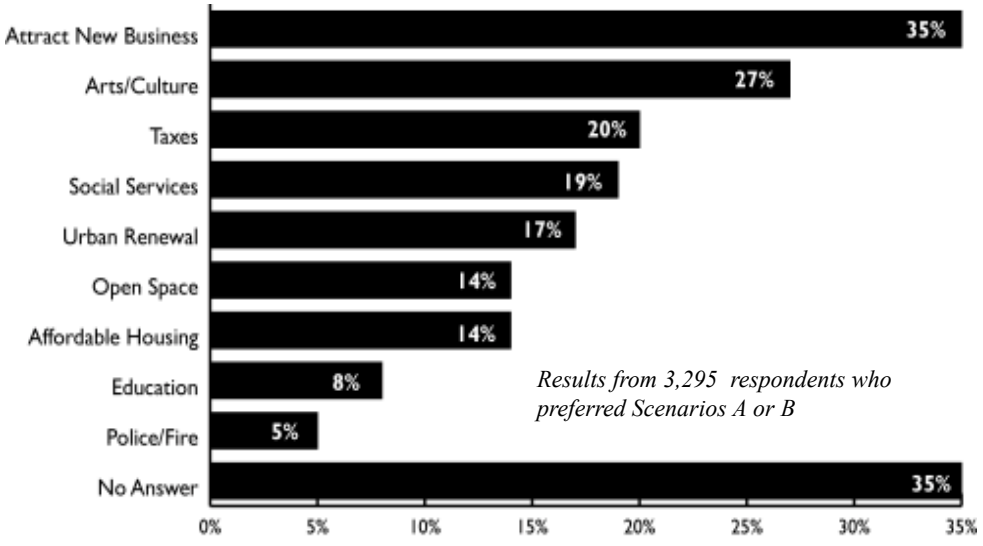
FUNDING AND RESPONSIBILITY FOR GROWTH ISSUES AND INITIATIVES

Based on whether survey respondents preferred Scenarios A or B, which have higher overall fiscal impacts, or Scenarios C or D, which have lower costs, they were asked to indicate where they wanted additional funding to come from or excess funds to be distributed. Of the more than two-thirds of respondents that chose Scenarios C or D (13,014 respondents), 69 percent felt excess funds should be distributed to education, while another 47 percent felt funds should go to preserving open space. Of the 4 percent that chose Scenarios A or B (3,295 respondents), the majority favored attracting new businesses to raise funds, followed by transferring funds from arts and cultural activities, and taxes.

How Would You Like To Spend the Money NOT Spent on Growth?



How Would You Like To Spend the Money NOT Spent on Growth?



The Quality Growth Strategy

Building upon the scenario development, values study, and public outreach activities completed in the first year of the Envision Utah process, the second phase of the process concentrated on the development of a preferred regional vision for the Greater Wasatch Area. This vision, called the Quality Growth Strategy (QGS), sought to engage the public in developing a more detailed vision for regional development, including regional concept maps and a toolbox of strategies for realizing regional goals and growth objectives. This section presents these products, as well as the results of model analysis of the QGS concept.

Goals and Strategies to Maintain Quality of Life

One of the first tasks involved in developing the Quality Growth Strategy was to engage the public in a discussion of the specific goals and objectives of a strategy for quality growth as well as possible tools and strategies to help reach such objectives. To begin this discussion, a group of more than 200 regional stakeholders, including elected officials, planning commissioners, and city council members, were brought together in a workshop to brainstorm goals and objectives and suggest strategies that work within the social and political realities of the Greater Wasatch Area. In addition, local workshops were held in communities throughout the region to solicit input on goal and strategy development from a representative spectrum of the region's residents. Six primary goals were identified as needing to be addressed in order to protect the quality of life, environmental health, and economic vitality of the region in the wake of anticipated growth. These goals are:

- Enhance air quality
- Increase mobility and transportation choices
- Preserve critical lands, including agricultural, sensitive, and strategic open lands and address the interaction between these lands and developed areas
- Conserve and maintain availability of water resources
- Provide housing opportunities for a range of family and income types; and maximize efficiency in public and infrastructure investments to promote the other goals

Specific strategies were developed to support each of these goals, including strategies that utilize market-based approaches such as state and local incentives. The strategies emphasize ways to effect change through education and promotion, rather than regulatory means. The strategies include:

- Promoting walkable development (encouraging new and existing developments to include a mix of uses with a pedestrian-friendly design)
- Promoting the development of a region-wide transit system (which could utilize buses, bus ways, light rail, lower-cost self-powered rail technology, commuter rail, and small private buses) to make transit more effective and convenient
- Promoting the development of a network of bikeways and trails for recreation and commuting
- Fostering transit-oriented development (housing and commercial developments that incorporate and encourage various forms of public transportation)

- Preserving open lands by encouraging developments that include open areas and by creating incentives for reusing currently developed lands
- Restructuring water bills to encourage water conservation
- Fostering mixed-use, mixed-income, walkable neighborhoods to provide a greater array of housing choices.

There are other goals, equally important, that do not lend themselves as easily to a list of discrete strategies. For example, enhancing economic development and adjusting the means by which cities generate revenues are among the challenges. Nearly all of the goals identified help to enhance economic opportunities in the state, and they should be pursued for this reason in addition to those listed. The issue of taxation and revenue relates to municipalities' reliance on sales tax revenues as a major source of income. This spurs counterproductive competition among communities for regional retailers, often resulting in sprawl development. This issue is so complex and involves so many stakeholders that, while briefly addressed here as the seventh strategy, it will require further careful consideration and extensive longer-term stakeholder involvement.

ENVISION UTAH'S ROLE

The primary role for implementation falls on local governments, state and local incentives, and the actions of developers and consumers in the free market. Envision Utah's objective is to analyze and disseminate the costs and benefits associated with these strategies, and to work with local and state governments, citizens, developers, conservationists, civic groups, and other concerned stakeholders to pursue the strategies outlined below. Envision Utah will seek progress over time by working with the entities that hold responsibility for these Quality Growth Strategies and by developing an awards program to recognize communities that put various components into place. The action items range from consumer choices to intergovernmental cooperation to local and state decision making, depending on the issue. Most of the strategies are incremental steps that can take place over time, provided the right regulatory and market environment. Envision Utah's role will be to encourage the creation of that environment, so existing and forecasted market demands can be met, while also maintaining the quality of life residents have come to enjoy and expect. Envision Utah will do this by providing information and resources to community leaders to broaden the choices available to them and to facilitate more informed decision making.

LOCAL CONTROL, REGIONAL COORDINATION

The primary responsibility for land use decisions will remain with local governments. These strategies cannot be implemented overnight, nor will they be appropriate to every situation or community. Envision Utah's efforts will always acknowledge that every community is unique, with distinctive characteristics and needs. While open space preservation strategies may be needed in some communities, for example, affordable housing efforts may be more appropriate in others. We encourage the implementation of these strategies incrementally as appropriate in the communities of the Greater Wasatch Area, balancing local priorities with regional problem-solving.

While recognizing this need to respect community individuality and local control, there are some issues that cannot be effectively addressed at the local level, but rather require a regional or subregional solution. Indeed, from Kamas to Grantsville, from Brigham City to Nephi, we share common problems, using the same roads and transportation options as we travel to work, recreation, and shopping, sharing

common water sources and breathing the same air. In such cases of common interest, Envision Utah will seek to build consensus among groups of communities and work toward mutually agreeable solutions. The results of such consensus could take the form of new zoning options and intergovernmental or inter-local agreements. Still other issues, such as air quality and water consumption affect the region as a whole but lend themselves to local solutions. Envision Utah will provide information to local governments about the regional benefits that can come from their local actions.

More Choices for the Future

Finally, these goals and strategies are not aimed toward restrictions or additional layers of government. Rather, they help our communities and decision makers to provide a broader array of choices. This sentiment was resoundingly endorsed in all of the public workshops we conducted. Residents feel strongly that the Greater Wasatch Area should offer a wider array of housing choices, development types, and transportation options. This does not mean that we do away with the predominant options that exist today, but that we add to the mix a wider variety of choices. The Greater Wasatch Area's housing market, for example, will continue to be dominated by single-family, detached homes. Nevertheless, many residents have expressed a desire to add more choices to the market, such as condominiums, apartments, mother-in-law apartments, and town homes to accommodate different life stages. Our market research also suggests an increasing demand for single-family homes in a variety of sizes located on smaller lots. In the transportation area, the private vehicle will almost certainly remain the overwhelming means by which we travel. There are, however, significant segments of the population who cannot use a car (such as the elderly, disabled, and children), who cannot afford a car, or would prefer not to use one if other choices were available.

Providing more choices will also help us address our air quality and water supply challenges. Our unique meteorological conditions require us to be vigilant regarding air quality if we are to remain appealing to new employers as well as enjoy our beautiful vistas and maintain our health. Growth will also increase our need for water. While the supply is adequate to meet this need, it will cost billions of dollars to construct the infrastructure required to move the water where it is needed. We can reduce that need through careful use and incentives that create choices for consumers. By providing a wider array of housing and transportation choices, we can make it easier for people to contribute to air quality preservation by driving less, and to conserve water by having somewhat smaller yards and using drought-tolerant landscaping. Envision Utah feels strongly that these strategies will help to provide a greater array of choices for area residents.

One of the primary strategies is promoting walkable communities around town centers. Doing so would help to increase choice by combining services, schools, shopping, and homes in a pedestrian- and bicycle-friendly environment. Such communities would offer residents a range of transportation modes, including the private vehicle, from which to choose. These communities would also contain a wide array of housing choices, allowing residents to live in single-family homes just outside the commercial core, or in loft apartments above retail stores, or condos or town homes mixed with commercial and residential areas. This would provide not only more choices in housing configuration, but also in price.

In all of the goals listed below, community leaders and members of the public have expressed the need to address these issues if we are to maintain quality of life for our children and grandchildren as we accommodate projected growth. By carefully and deliberately pursuing the strategies below, Envision Utah hopes to help residents of the Greater Wasatch Area accommodate the growth that is coming while working to create the kind of communities and environment we want for our children and grandchildren: a Utah that is beautiful, prosperous, and neighborly for future generations.

GOAL I: ENHANCE AIR QUALITY

	Strategy	Why	Who	How
A 1	Foster and promote walkable development where feasible. 	• Provides more transportation choices • Provides greater mixture of housing type & cost • Promotes and maximizes benefits of mixed-use areas • Promotes small business • Provides pedestrian access to the services of daily living • Reduces cost of infrastructure and services • Improves air quality by reducing emmissions from cars & buses • Increases sense of community, safe lively streets, gathering places • Reduces crime due to more active community centers • Reduces water usage due to smaller yards • Reduces land consumption, eases development pressure on open lands • Defines community edges, provides better access to open space/parks	Envision Utah will work with local governments, developers, Realtors, Quality Growth Efficiency Tools Committee (QGET), Quality Growth Commission, State (Governor and Legislature)	• Envision Utah will identify and disseminate information on advantages of walkable communities • Envision Utah will communicate with Councils of Government and local governments, (Mayors, city councils, planning commissions) regarding benefits. Provide "tool box" to local governments on how to create walkable communities. • Envision Utah will communicate with developers & Realtors regarding the advantages of walkable products • QGET will help localities run infrastructure cost model for their community and plan for infrastructure needs as development patterns change. • Envision Utah will work with Quality Growth Commission and Legislature to identify possible state financial incentives for development of walkable communities
A 2	Promote the building of a region-wide transit system to make transit more convenient and	See: GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES		
A 3	Foster transit-oriented development (TOD)	See GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES		
A 4	Encourage industrial facilities to use best available technology to meet standards, and where possible, further reduce emissions.	• Improves air quality • Provides capacity for further economic growth 	Division of Air Quality, Envision Utah work with industrial corporations, point and area sources	• Work with large and small emitters to encourage compliance • Gather and disseminate information regarding regional environmental and economic benefits of compliance • Create air quality awards to acknowledge progress in reducing industrial emissions • Encourage regional market for trading emission reduction credits
A 5	Encourage energy efficiency ordinances.	• Improves air quality by reducing emissions from power plants • Increases affordability of living	local governments, Utah Office of Energy and Resource Planning, Office of Energy Services	• Work with local governments to adopt market-driven approaches to encourage energy efficiency options for new construction. Examples include: mortgage incentives, awards programs • Look for guidance to models such as the State of Utah guidelines for state buildings, State of Washington's "Super Good Cents" program. • Encourage state (Public Service Commission) to incentivize energy efficient improvements to homes and offices (e.g., utility rebates for expenditures on insulation, windows, solar panels, efficient lighting etc)
A 6	Promote creation of a network of bikeways and trails, especially commuter trails linking daytime destinations.	See GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES		
A 7	Support strategies to reduce ozone and save energy.	• Improves air quality - reduced production of ground-layer ozone, a major contributor to summer time air pollution • Reduces energy consumption in the summer • Improves general comfort & quality of life - would help to revitalize outdoor aspects of community in the summer	Utah Office of Energy and Resource Planning, Utah Office of Energy Services, Utah Division of Air Quality	• Support the NASA/Utah Office of Energy Services "Cool Communities" program. • Inform builders, architects, designers, planners, and road builders about the benefits of strategic vegetation and highly reflective building and paving materials. • Encourage state to provide tax incentives for use of "cool" building materials
A 8	Support strategies to reduce particulate emissions.	• Improves air quality, reduced wintertime pollution • Improves health, particularly for children, elderly, and chronically ill • Improves visibility and scenic values	Utah Division of Air Quality, Wasatch Front Regional Council, Mountainland Association of Governments, Utah Department of Transportation	See GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES
A 9	Promote Telework	See GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES		

GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES

	Strategy	Why	Who	How

M 1	Promote the building of a region-wide transit system to make transit more convenient and reliable. 	• Creates more transportation choices
		• Reduces cost of infrastructure and services
		• Lowers personal transportation costs
		• Other benefits include:
		  • Improvements to air quality
		  • Reductions in traffic congestion
		  • Reduced stress for commuters who choose to use transit
		• More efficient use of travel time for transit riders (can work on the bus or train)
			UTA, UDOT, railroad companies, local governments, the public	• Find ways to identify and purchase rights-of-way in the near term for future transit; work with railroad companies to preserve rights-of-way
				• Encourage localities to support transit system with TODs
				• Advocate additional funding for UTA to improve service on existing routes

M 2	Foster transit-oriented development (TOD)	• Creates more transportation choices
		• Increases transit ridership by improving access to transit
		• Reduces long-term cost of infrastructure and services
		• Lowers personal transportation costs for citizens who utilize transit
		• Other benefits include:
		  • Better affordability of living by providing housing options near transit service
		  • Improvements to air quality
		  • Reductions in traffic congestion
		  • Reduced stress for commuters who choose to use transit
		  • More efficient use of travel time for transit riders (work time or leisure time on the bus or train)
			Envision Utah work with local governments and UTA, other transit providers (e.g., Park City)	• Examine zoning barriers, work with local governments to remove
				• Provide model ordinances or overlays to communities for TODs
				• Provide information to developers and Realtors regarding the advantages of TODs
				• Work with UTA, get them to design rail & bus stops for easy interface with TODs

M 3	Foster and promote walkable development where feasible.	See GOAL I: ENHANCE AIR QUALITY		
M 4	Advocate an increase in the capacity of east-west transportation links (recognizing that some communities may have a greater need for additional north-south arterial capacity)	• Improves traffic flow and provide better access • Improves air quality 	local governments, UDOT, WFRC, MAG	• Work with UDOT and local governments to identify corridors of greatest need.
M 5	Promote creation of a network of bikeways and trails, especially commuter trails linking daytime destinations.	• Improves air quality • Provides more transportation choices • Lowers cost of infrastructure and services • Lowers personal transportation costs 	local governments, employers, WFRC, MAG, SLC Mayor's Bicycle Advisory Committee, UDOT, other bicycle groups, Quality Growth Commission, Legislature (offer incentives and funding to local governments)	• Envision Utah, bicycle groups work with local governments, UDOT to establish bike routes on streets, and where possible, to acquire independent rights-of-way. • Bring groups of commuters together to work on plan logistics and incentives. • Envision Utah work with bicycle groups, transportation officials to identify primary corridors for bicycle commuting. • Bicycle groups work with railroads, utility companies, and canal companies to identify possible dedicated bicycle paths.
M 6	Encourage job locations to include retail and services in a walkable configuration to reduce driving between daytime destinations.	• Reduces daytime congestion and air pollution • Revitalizes office areas with daytime walking traffic • Saves time for individuals	Envision Utah, local governments, developers	• Work with local governments to encourage mixed-use office and retail complexes • Inform commercial developers about benefits of mixed-use commercial (e.g. American Stores Center)
M 7	Encourage the addition of carpool lanes and promote incentives for their use.	• Improves traffic flow and provide better access • Improves air quality	Envision Utah, UTA, local governments, UDOT	• Work with local governments and UDOT to institute carpool and bus lanes on major city and state roads where feasible • Explore carpool incentives: parking fees, state tax deductions for personal cars used in carpooling • Work with UTA to improve Rideshare, Vanpool, and park-and-ride programs (for carpoolers)
M 8	Promote telework 	• Provides an alternative form of "transportation" to work • Improves air quality - fewer commuters • Allows for more time with family by reducing commute time • Restores/enhances citizen presence in residential communities during the day, helps to reduce crime • Reduces family expenses for transportation • Provides (slight) reduction in peak hour congestion • Lowers office space and utility costs for employers	Tele2000, telecommunication companies, Quality Growth Commission, Envision Utah	• Envision Utah, Tele2000, and telecommunications companies will work to establish information programs for employers, identify ways companies can save money by implementing telework programs, and identify types of work best suited for telework arrangements. • Tele2000 will work toward establishing incentives for companies that adopt telework programs. • The Quality Growth Commission should explore the possibility of securing state tax incentives for telework start-up costs. Lost revenues may be offset by reduced infrastructure costs.
M 9	Encourage reversible lanes where feasible to reduce peak hour congestion and take advantage of unused road capacity.	See GOAL VI: MAXIMIZE EFFICIENCY IN PUBLIC & INFRASTRUCTURE INVESTMENTS		

GOAL III: PRESERVE CRITICAL LANDS, INCLUDING AGRICULTURAL, SENSITIVE, AND STRATEGIC OPEN LANDS

	Strategy	Why	Who	How
C 1	Promote walkable development that encourages permanently reserved open lands through incentives.	• Slows land consumption, eases pressure on existing open lands • Provides more affordable housing options with more amenities • Provides open areas within communities that can be used for agriculture or outdoor recreation	local governments, developers, Envision Utah	• Encourage local governments to provide incentives—such as density bonuses—for open space • Actively provide information to local governments and developers on the benefits of communities that incorporate open space
C 2	Promote tax incentives for reuse of currently developed areas.	• Encourages efficient use of existing infrastructure • Helps preserve raw/undeveloped land • Encourages location of new development near existing services, thereby reducing traffic and travel times	Quality Growth Commission, Envision Utah, local governments	• Work with Quality Growth Commission to identify Quality Growth Areas, and propose incentives for development in those areas. • Help cities and towns understand options for encouraging reuse of developed areas
C 3	Support the establishment of transfer of development rights programs to promote protection of open space and maintain quality of life.	• Allows owners of sensitive lands to transfer their development rights to less sensitive areas. • Helps to preserve sensitive lands while preserving private property rights	local governments, The Nature Conservancy, Utah Open Lands	• Identify communities or areas where development rights could be traded • Establish a mechanism for assigning rights and trading them (various options)
C 4	Support the protection of sensitive lands. 	• Protects views and vistas for the larger community • Protects wetlands, watersheds, and wildlife habitat • Helps to protect lands that are particularly sensitive to the impacts of development • Development on steep slopes often causes erosion and instability, and ruins the aesthetic quality of hillsides and ridgelines • Development on steep slopes and sensitive lands often damages critical wildlife habitat and blocks access to recreation areas	cities, counties, developers, The Nature Conservancy, Utah Open Lands, Quality Growth Commission, state government	• Work with local governments to revise zoning codes and develop overlay zones • Inform builders about the damage caused by development on steep slopes and sensitive lands • Work with land trusts to purchase particularly sensitive areas to protect them from development
C 5	Promote use of conservation easements to preserve key/critical land for parks and recreation, open space, wildlife habitat, and agriculture, providing public access where appropriate, and organizing these areas into a regional network to the extent possible.	• Preserves key/critical land for parks and recreation, open space, watersheds, wildlife habitat, and agriculture 	cities, counties, developers, The Nature Conservancy, Utah Open Lands, American Farmland Trust	• Envision Utah work at the local and regional levels to develop plan for a regional network of trails and open spaces • The Nature Conservancy, Utah Open Lands, American Farmland Trust, inform land owners about conservation easements, identify obstacles • Local governments, developers, and Envision Utah work to create and adopt "rural residential cluster" zones to preserve rural or natural areas that have value as agricultural land, natural areas, or community separators.
C 6	Encourage the dialogue and ongoing public discussion of how to identify significant public and/or private funds for critical lands preservation. Push to resolve the appropriate balance of public and private funds to be used.	• Land owners may have a reasonable expectation of economic return on a sensitive piece of land, so acquisition of the land may be the only way to preserve it from development while preserving property owners rights. • Major constraint to open space preservation is funding to acquire land or easements. Some lands must be purchased to preserve private property rights. There are successful programs that rely on private funds for land acquisition, while other programs have significant public funding sources (e.g., lottery in Colorado)	The Nature Conservancy, Utah Open Lands, American Farmland Trust, Quality Growth Commission, local governments	• Encourage public and private open space acquisition programs to protect designated sensitive and natural areas on a "willing seller" basis. • Encourage private land trusts to channel available private funds into critical lands preservation • County and community option sales tax program for critical lands • State funding • Tax incentives • Pool available funds and make available to local governments for critical lands acquisition
C 7	Pursue public land trades to create more private developable land, preserve critical lands and watersheds, and protect sensitive lands from development.	• Greater Wasatch Areas (GWA) land base is limited in part by large federal land holdings surrounding the urban area. Amount of usable land could be increased by trading sensitive private lands into federal hands, in exchange for federal lands that are more appropriate for development.	USDA Forest Service, US BLM/Department of Interior, Envision Utah, The Nature Conservancy, State of Utah, Utah State and Institutional Trust Lands Administration	• Work with cities, counties, and developers to identify sensitive lands currently in private hands • Work with Forest Service, the BLM, and SITLA to identify federal lands appropriate for development, and broker exchanges • Governor's Office work with regional councils and county councils of government

GOAL IV: CONSERVE & MAINTAIN AVAILABILITY OF WATER RESOURCES

	Strategy	Why	Who	How
W 1	Foster and promote walkable development where feasible	See GOAL I: ENHANCE AIR QUALITY		
W 2	Advocate restructuring of water bills to encourage conservation, and to help water providers encourage conservation. Advocate other ways to encourage conservation.	• Allows water providers to encourage conservation without jeopardizing ability to cover costs • Delays or reduces need for costly new water infrastructure (dams, diversions, pipelines, treatment facilities, etc.)	Central Utah Project, water conservancy districts, municipal water providers, Utah Water Conservation Forum, Envision Utah	• Envision Utah team with Utah Water Conservation Forum to conduct educational programs • Promote implementation of time-of-day watering restrictions • Change water pricing to encourage conservation
W 3	Provide information regarding and encourage the use of low-irrigation landscaping, drought resistant plants (xeriscaping), and low water-use appliances. Encourage government entities to demonstrate this on their properties.	• Majority of our residential water use (at least 60%) goes to outdoor watering • Drought-resistant plants would reduce need for outdoor watering • Household appliances vary greatly in their water efficiency. Providing incentives for people to purchase more water-efficient appliances, especially in cases where those models are more expensive, would greatly increase the regional water savings that could be realized.	water conservancy districts, nurseries and home supply stores, Utah Water Conservation Forum, Envision Utah	• Work with state and local government entities to change landscaping and watering practices on their properties. • Work with local nurseries and garden supply stores to encourage sale of low-water plants and water-saving garden devices. • T.V. and radio campaign to encourage water conservation through xeriscaping • Provide tax breaks for money spent on water-saving appliances • Encourage builders and suppliers to favor water-saving appliances • Quality Growth Commission should study incentives
W 4	Promote the use of greywater and secondary water systems.	• A large percentage of our culinary water is used for outdoor watering, a use that does not require high-quality treated water. A great deal of the high-quality water could be saved if lower-quality, or "secondary" water were used for this purpose. Some communities already utilize secondary water systems for outdoor watering.	water providers, local governments, Utah Water Conservation Forum, Envision Utah	• Envision Utah provide a forum for education and consensus among water providers
W 5	Encourage the use of leading edge technologies for water conservation.	• Many new technologies are available or currently being developed to reduce water consumption. Envision Utah will attempt to identify and promote the use of these new tools. Examples include low-flow shower heads and toilets, and moisture sensors to control sprinkler systems.	water providers, private entrepreneurs, Utah Water Conservation Forum, Envision Utah	• Work with Utah Water Conservation Forum, water providers, and private businesses to identify and promote new technologies.
W 6	Encourage interjurisdictional cooperation.	• In the GWA, water is provided by dozens of different water companies and municipalities. Greater coordination and cooperation among these entities would create a much more effective basis for encouraging water conservation.	Utah Water Conservation Forum, Envision Utah, water providers, local governments	• Identify and contact all water providers in the area. Begin joint meetings and discussions. Work toward a unified set of water policies.

GOAL V: PROVIDE HOUSING OPPORTUNITIES FOR A RANGE OF FAMILY AND INCOME TYPES.

	Strategy	Why	Who	How
H 1	Foster mixed-use and walkable neighborhood zoning to encourage a mix of housing types-including multi-family-for a mix of incomes.	See GOAL I: ENHANCE AIR QUALITY 		EXAMPLES: • Accessory dwelling units (in-law apartments). • Single-family attached products, such as townhomes, row houses, condominiums • Small-lot detached condominiums (drip-line ownership), Example: Harvard Park • Apartments • Single-room occupancy residences • Congregate senior living • Garden-style apartments • Mid-rise and high-rise apartments where appropriate
H 2	Promote density bonuses to developers to promote development of affordable housing.	• Makes it economically attractive and possible for developers to provide affordable housing, even when land costs are high	developers, local governments, Envision Utah	• Work with cities and developers to develop density bonus programs. • Envision Utah will provide a tool box of model zoning codes and design standards, and facilitate access to relevant expertise
H 3	Encourage energy efficiency ordinances.	See GOAL I: ENHANCE AIR QUALITY		
H 4	Provide information regarding developer incentives and tax breaks for development of affordable and mixed-income housing.	• Mixture of incomes helps incorporate affordable housing without creating concentrations of poverty, which often increase crime • Incentives make such projects more attractive to developers, and allow them to include affordable products without sacrificing their expected return.	developers, local and state governments, Quality Growth Commission, Envision Utah	• Envision Utah work with developers, local and state government to implement incentive programs. • Envision Utah can provide a tool box of options with information on how those options have worked elsewhere • Quality Growth Commission should study options for state, local, and federal incentives
H 5	Create local housing trust funds to develop and maintain affordable housing.	• Local housing trust funds are vehicles that allow local government participation in financing of affordable housing development, and therefore local control. They have the advantage of attracting other development capital into community, and in addition to making for good social policy, they also contribute to economic development.	local governments, Utah Housing Technical Assistance Program (UHTAP), Department of Community & Economic Development (DCED)	• Pass ordinances at local level to create housing trust funds (usually configured as a restricted fund within the general fund). The ordinance should create a board to oversee the fund and serve as an advisory body to the city council. The board will make money available for housing development projects that serve people who earn less of 80% or 50% of median income. Can be set up as loan or grant program. • Self-replenish through existing revenue stream, e.g. % of transient room tax, loan payments and investment dividends go back into fund. • UHTAP can provide model ordinances and technical assistance in setting up trust funds.
H 6	Encourage cooperative region-wide fair share housing policies.	• Helps to equalize the burden of providing affordable housing throughout the region • Helps to better meet regional needs	Quality Growth Commission, DCED, local governments, Utah Issues, UHTAP, redevelopment agencies, other housing advocates	• Begin by identifying overall affordable housing needs for the region. Conduct inventory of existing affordable housing in communities and compare to need. • Work with communities, DCED; use H.B. 295 plans and inventories. • Quality Growth Commission should coordinate/oversee these efforts
H 7	Support strategies to reduce ozone and save energy.	See GOAL I: ENHANCE AIR QUALITY		
H 8	Develop a program of incentives to local governments to develop and implement plans for affordable and mixed-use, mixed-income housing.	• Would encourage communities to adopt and implement affordable housing plans, as required by H.B. 295	Quality Growth Commission, DCED, redevelopment agencies, affordable housing advocates	• Quality Growth Commission should require compliance with H.B. 295 before a municipality would be able to qualify for QGC funds.

GOAL VI: MAXIMIZE EFFICIENCY IN PUBLIC & INFRASTRUCTURE INVESTMENTS TO PROMOTE GOALS I - V ABOVE.

	Strategy	Why	Who	How
E 1	Encourage local zoning ordinances that promote walkable development and preservation of open space.	See GOAL I: ENHANCE AIR QUALITY		
E 2	Encourage energy efficiency ordinances.	See GOAL I: ENHANCE AIR QUALITY		
E 3	Promote tax incentives for reuse of currently developed areas.	See GOAL III: PRESERVE CRITICAL LANDS, INCLUDING AGRICULTURAL, SENSITIVE, AND STRATEGIC OPEN LANDS		
E 4	Encourage reversible lanes where feasible to reduce peak hour congestion and take advantage of unused road capacity.	• Makes more efficient use of existing infrastructure, utilize roads in the direction of greatest need at different times of day • Easy to implement 	Metropolitan Planning Organizations (MPOs), UDOT, cities, Assist, Transportation Management Association	• Work with MPOs, cities, and UDOT to identify appropriate arterials for reversible lanes.
E 5	Establish a Transfer of Development Rights (TDR) program to encourage land owners to build in currently developed areas rather than on sensitive lands.	See GOAL III: PRESERVE CRITICAL LANDS, INCLUDING AGRICULTURAL, SENSITIVE, AND STRATEGIC OPEN LANDS		
E 6	Promote the building of a region-wide transit system to make transit more convenient and reliable.	See GOAL II: PROMOTE MOBILITY & TRANSPORTATION CHOICES		
E 7	Advocate clean-up and re-use of brownfields.	• Redevelop underutilized lands • Can often take advantage of existing services and infrastructure • In Salt Lake Valley, many sites located along N-S transportation corridor, giving them excellent access to highways and transit	cities, state and federal environmental agencies, redevelopment agencies	• Work with cities, state and federal environmental agencies, to identify brownfield sites that have potential for clean-up and redevelopment. • Cities/RDAs should identify funds and potential investors to support development on the site.

GOAL VII: REVISE TAX STRUCTURE TO PROMOTE BETTER DEVELOPMENT DECISIONS

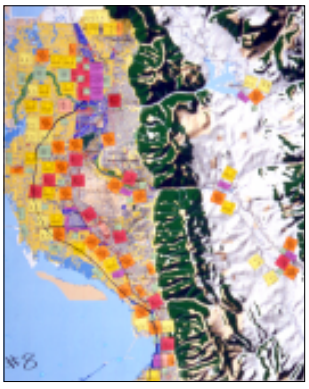
T 1	Revise tax structure to promote better development decisions	• Municipalities reliance on sales tax revenues as a major source of income spurs counterproductive competition among communities for regional retailers, often resulting in sprawl development. • Envision Utah recognizes the importance of this issue, but its significance, divisiveness, and complexity suggest the need for extensive additional research and discussion among the numerous relevant stakeholders.	Tax Review Commission, Quality Growth Commission, Envision Utah	• Promote open discussion of tax structure and how it can be used to promote better development decisions. If we do not seek to address this issue, all of the other strategies listed here could be hampered by current policy. • Encourage Tax Review Commission and Quality Growth Commission to convene relevant stakeholders to address how our existing sales tax allocation formulas—which are based on points of sale—overpower other factors in land use decisions. • At Quality Growth Commissions request, Envision Utah could be a party to a consensus process to discuss the issue.

THE QUALITY GROWTH STRATEGY CONCEPT MAPS

In order to visually represent the goals and vision of the Quality Growth Strategy, a series of maps depicting a preferred development scenario was developed and input into a Geographic Informations Systems (GIS) model for analysis. Public workshops were held to solicit input into the design of the preferred scenario, engaging residents, decision makers, and public officials in the development of a vision that reflects local values and strives to realize regional goals and objectives.

THE QUALITY GROWTH CONCEPT WORKSHOPS

In June of 1999, a group of more than 200 residents, local and state officials, and other stakeholders gathered in Provo, Utah to provide their vision of quality growth for the Salt Lake region. Much like in the workshops held over the previous year, participants worked together in groups of 8 to 10 within the subregion of the Greater Wasatch Area in which they lived or were most familiar. Each group received a base map which included such information as developed areas (residential and commercial), wetlands, public lands, flood prone areas, steep slopes, and transportation networks. The map also included a visual compilation of the future plans, or comprehensive plans, for communities throughout the region. Each workshop group was challenged with placing about 1 million additional residents in their subregion (the approximate projected growth to the year 2020) using a combination of different development types. Like in the workshop in the first year, the development types were represented by one-square mile game pieces ranging from walkable and transit-friendly downtown, village, and town types, to more traditional residential and large-lot subdivisions, industrial/office parks, and suburban activity centers. Each development icon, while occupying the same amount of space on the maps, consisted of varying levels of population and employment. Thus, a combination of walkable, higher density icons would require less land than a combination of lower density subdivision, office park, and activity center icons. Each group put together their own combination of walkable and auto-oriented game pieces to meet the population requirements for their subregion.



One difference from the previous year's workshops was the addition of a Rural Cluster game piece. Rural cluster developments present an alternative to standard large-lot development by concentrating low density housing and preserving large tracts of land around housing. While typical large-lot development eventually covers an undeveloped area with housing, rural cluster development attempts to preserve rural character and open space by placing the same number of units in a smaller designated area.

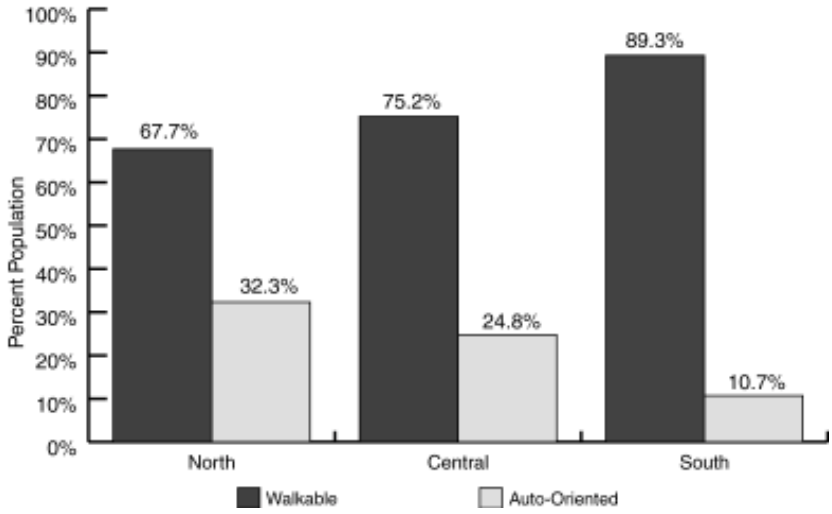
This workshop had two primary goals. The first was to solicit input from the public and regional decision makers for the development of a Quality Growth concept map. Equally important, the workshop also gave participants an opportunity to compare their own visions and ideas for regional development with future plans as designated by local planning agencies and jurisdictions. Participants were thus able to assess the degree to which current plans meet their own goals and the preferred vision for regional growth as identified by residents in the newspaper and web survey of the regional development alternatives.

Major Findings From Regional Workshop #2

By in large, participants favored the walkable development types. The development type combinations from the groups working on the central portion of the Greater Wasatch Area (including Salt Lake City and surrounding areas) consisted of more than 75 percent walkable icons. Groups working in the Northern and Southern sections used an average of 68 percent and 89 percent walkable icons, respectively.

It is notable that in nearly all cases the scenarios developed by the workshop groups deviated significantly from the compilation of comprehensive plans on the base maps. Participants noted this discrepancy and the need to address this difference at the local level.

Development Type Distribution - QGS Concept Workshop

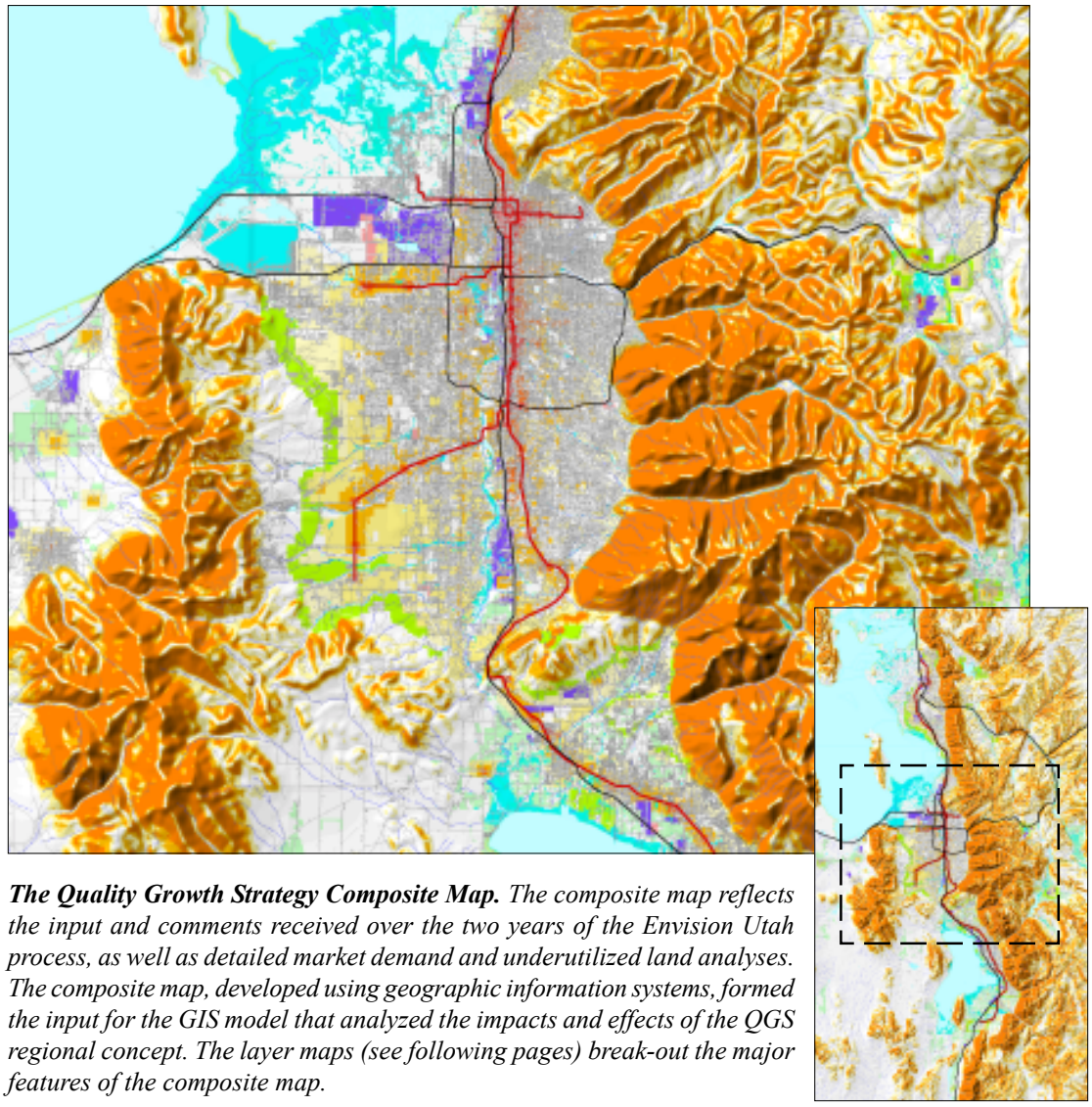


Scenarios created by the workshop participants deviated from the future plans created by local jurisdictions as part of their comprehensive plans. Workshop maps tended to have a higher proportion of walkable, transit-oriented development types.

The Quality Growth Strategy Maps

Integrating the input and information gained from the local and regional Quality Growth Strategy workshops, a draft Quality Growth Strategy map was created in a geographic information systems (GIS) base and disseminated among local, regional, and state land use planners, economic development specialists, transportation planners, decision makers, and other experts for comments and further input. A detailed study of the local housing market was completed, and the Quality Growth Strategy was refined so that land use closely matched the real demand for specific types of housing. Particular attention was also paid to balancing the location of jobs and housing throughout the region.

The final Quality Growth Strategy Concept consisted of a series of maps, or layers, each representing a major component of the strategy. These layers, when combined, form the composite concept map that was used as input in the modeling of the consequences and impacts of the Quality Growth Strategy. A close-up view of the QGS composite map is shown below; a regional scale map of the concept is located at the end of this section.

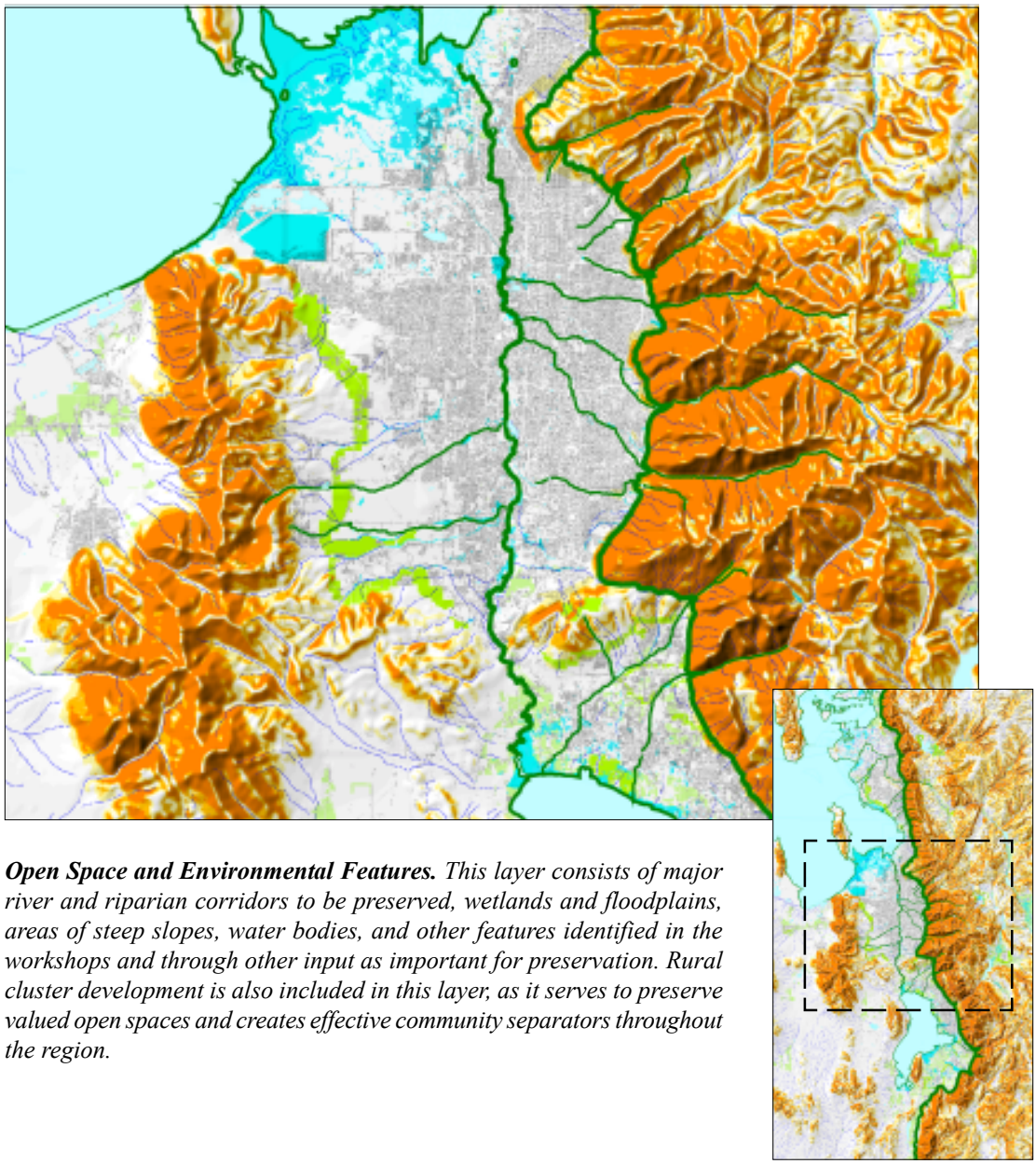


The Quality Growth Strategy Composite Map. *The composite map reflects the input and comments received over the two years of the Envision Utah process, as well as detailed market demand and underutilized land analyses. The composite map, developed using geographic information systems, formed the input for the GIS model that analyzed the impacts and effects of the QGS regional concept. The layer maps (see following pages) break-out the major features of the composite map.*

The Layer Maps

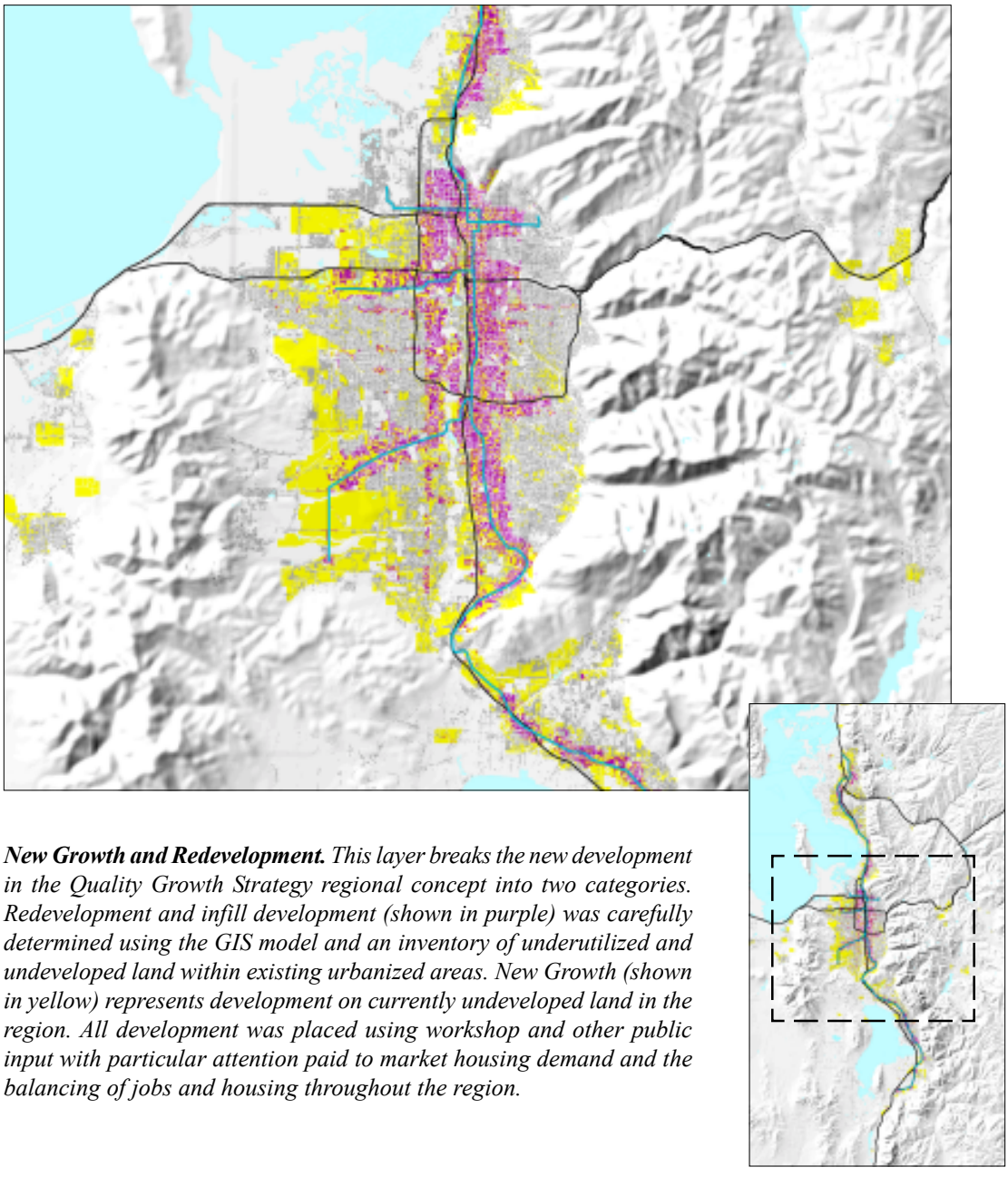
Three layer maps break out the major features of the QGS regional concept. The layers include Open Space and Environmental Features, New Growth and Redevelopment, and Centers and Corridors. Close-up views of a portion of the layers are described below; regional scale maps of each layer are located at the end of this section.

Open Space & Environmental Constraints Layer



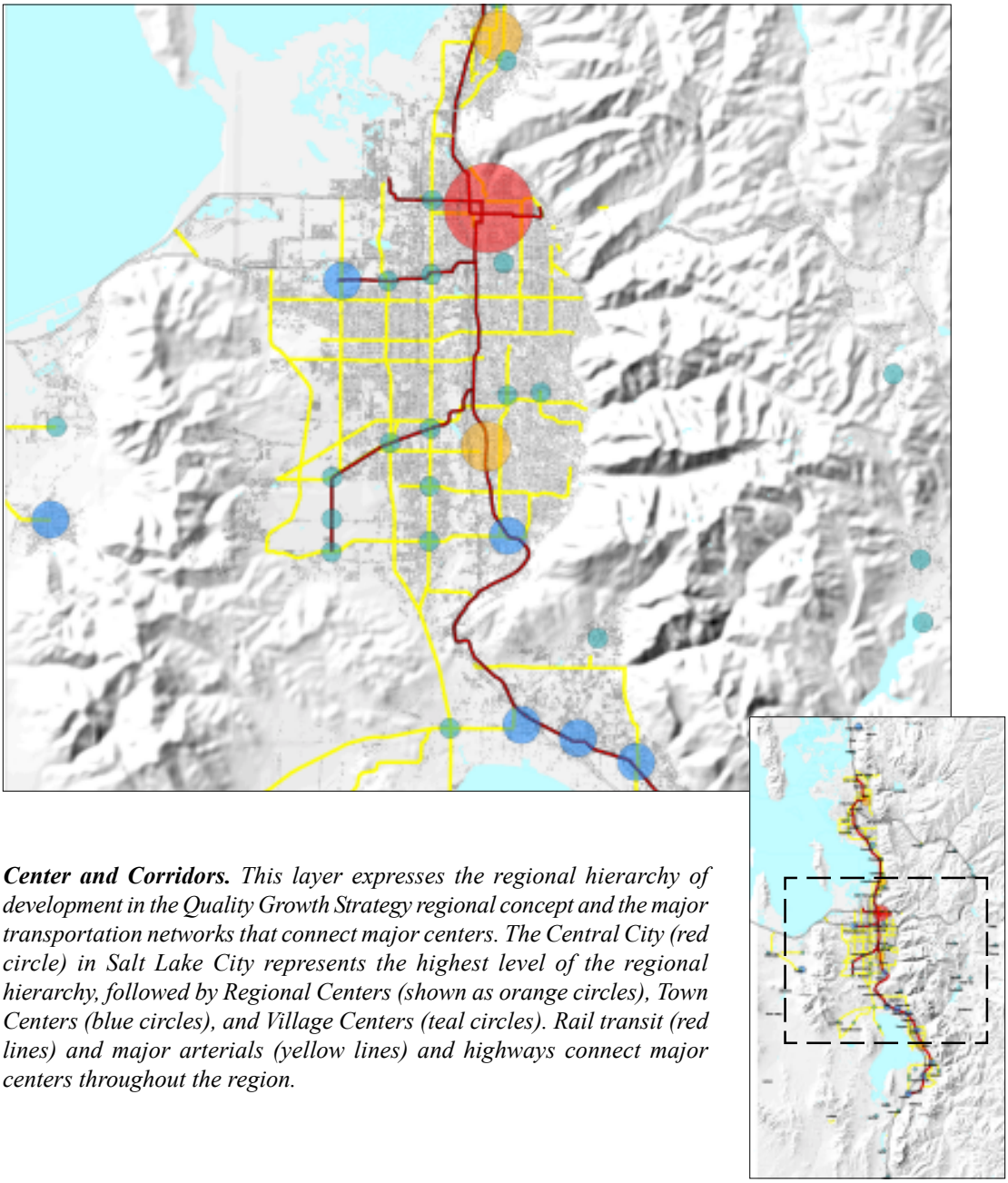
Open Space and Environmental Features. *This layer consists of major river and riparian corridors to be preserved, wetlands and floodplains, areas of steep slopes, water bodies, and other features identified in the workshops and through other input as important for preservation. Rural cluster development is also included in this layer, as it serves to preserve valued open spaces and creates effective community separators throughout the region.*

New Growth & Redevelopment Layer



New Growth and Redevelopment. *This layer breaks the new development in the Quality Growth Strategy regional concept into two categories. Redevelopment and infill development (shown in purple) was carefully determined using the GIS model and an inventory of underutilized and undeveloped land within existing urbanized areas. New Growth (shown in yellow) represents development on currently undeveloped land in the region. All development was placed using workshop and other public input with particular attention paid to market housing demand and the balancing of jobs and housing throughout the region.*

Centers & Corridors Layer



Center and Corridors. *This layer expresses the regional hierarchy of development in the Quality Growth Strategy regional concept and the major transportation networks that connect major centers. The Central City (red circle) in Salt Lake City represents the highest level of the regional hierarchy, followed by Regional Centers (shown as orange circles), Town Centers (blue circles), and Village Centers (teal circles). Rail transit (red lines) and major arterials (yellow lines) and highways connect major centers throughout the region.*

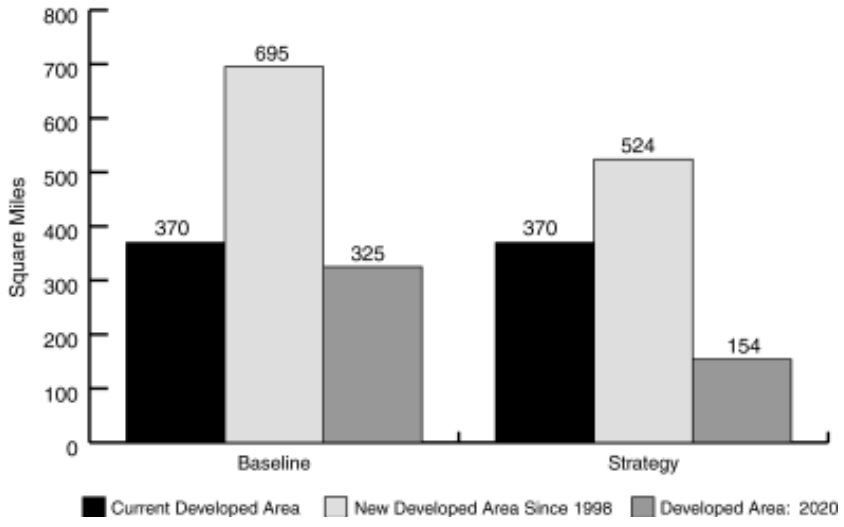
MEASURING THE IMPACTS OF THE QUALITY GROWTH STRATEGY

In order to measure the impacts of the Quality Growth Strategy regional concept, the concept was analyzed in a GIS model and compared to the impacts of a newly revised version of the Baseline Scenario created in the first year of the Envision Utah process. The Baseline is comprised of information in current regional and state long-range planning and extrapolates development trends from the last 10-20 years. It serves as an indication of how the region will develop if current plans and development trends continue. The Baseline is instrumental in comparing and contrasting the impacts of the Quality Growth Strategy. The following pages discuss the differences between the Baseline and the Quality Growth Strategy.

LAND CONSUMPTION

The QGS regional design is based on a market-driven housing demand forecast, extensive use of infill and reuse, and mixed use/walkable development patterns. Under the Quality Growth Strategy, 171 fewer square miles of land are converted to urban use than in the Baseline Scenario, making possible the conservation of 116 square miles of agricultural land. Under the Baseline a total of 325 square miles are converted to urban use, compared to a total of 154 square miles under the Quality Growth Strategy. Of the total land converted to urban use, the Baseline consumes 143 square miles of agricultural land compared to 27 square miles under the Quality Growth Strategy.

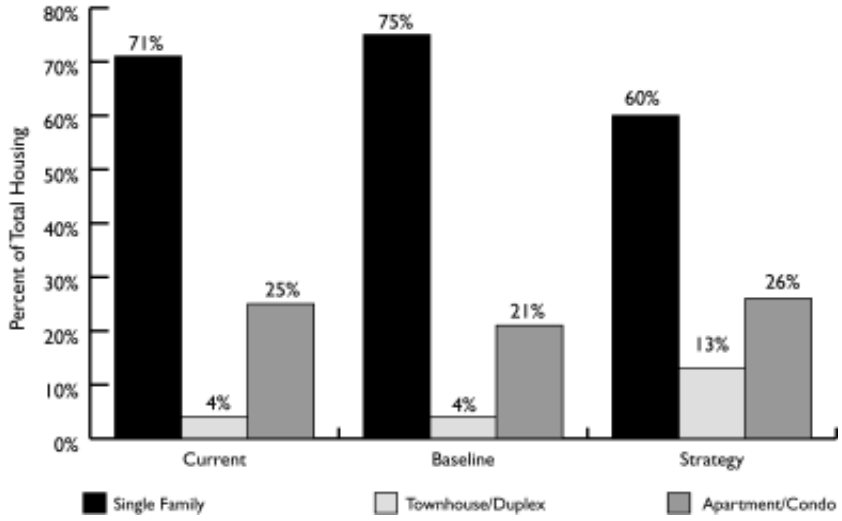
Land Consumption - Baseline vs. Quality Growth Strategy



HOUSING MIX

To ensure that the Quality Growth Strategy's housing mix is consistent with the demands of the housing market, Envision Utah commissioned a housing demand study. The study examined current development trends, constraints that presently exist in the real estate market, and how changes in consumer preferences and regional demographics will affect housing demand in 2020. The study found that the market will predominantly demand single-family units, but to a lesser extent than current zoning ordinances and recent historical trends will supply. Changing demographics will result in some demand shifting away from single-family units (6 percent less of total 2020 housing compared to the current trend) toward town home/duplexes (2 percent more) and apartment/condos (4 percent more).

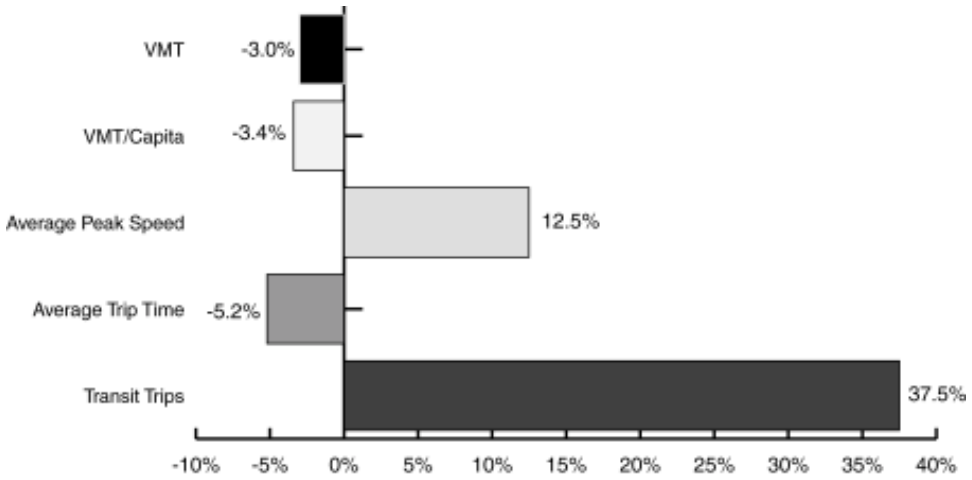
Housing Mix - Current and 2020



TRANSPORTATION

The transportation system for the Quality Growth Strategy is much like the system designed for the Baseline, except that the Quality Growth Strategy utilizes fewer roads and more rail transit. Transportation modeling for the Quality Growth Strategy resulted in a 2.4 million per day reduction in vehicle miles traveled. At the same time, average speeds increased by 12.5 percent, commute times declined by 5.2 percent, and transit trips increased by 37.5 percent. These system improvements came with a reduction in road spending of approximately $3.5 billion and an increase in transit spending of $1.5 billion - for a net savings of $2.0 billion. Transportation experts felt that additional savings could be realized if the transportation system were further refined.

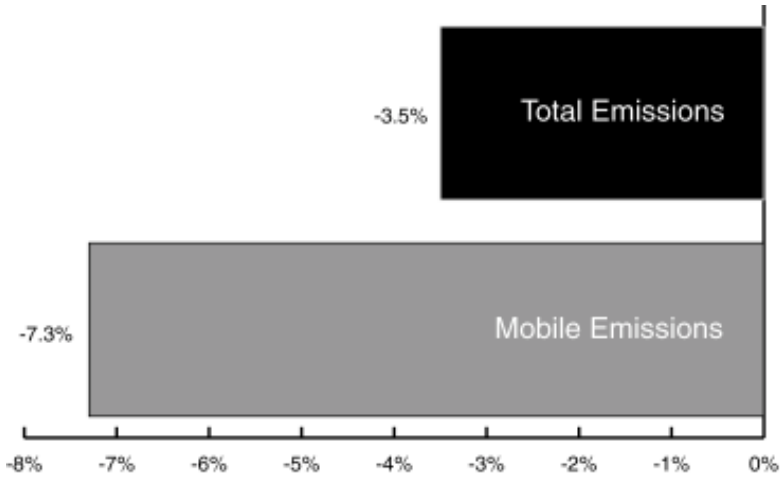
Transportation Comparison
Percent Difference Between Quality Growth Strategy & Baseline: 2020



AIR QUALITY

The Quality Growth Strategy reduces total emissions by 3.5 percent, a total of 93 tons per day, when compared to the Baseline Scenario. This is due to a 7.3 percent reduction in mobile emissions, the result of more transit trips, shorter trip times, and higher average peak speeds. It is important to note that the region has enjoyed large gains in reducing the quantity of air pollution emitted in the Greater Wasatch Area over the last two decades. For the most part, this reduction has been due to state programs regulating the quantity of air pollution emitted by industry. These programs have been very successful in reducing industrial emissions and in helping the region meet federally mandated air quality standards. However, further reductions from industry will be minimal, making increased mobile emission reductions, such as those demonstrated under the Quality Growth Strategy, necessary in order to maintain compliance with federal standards.

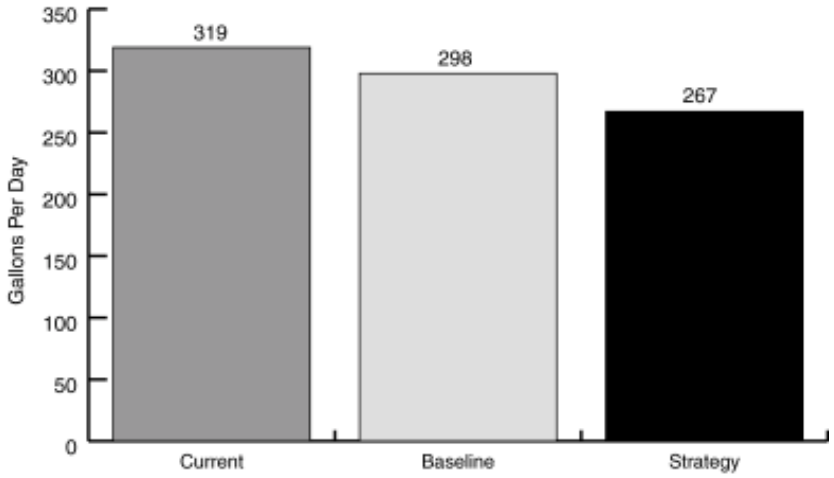
Emissions Comparison
Percent Difference Between Quality Growth Strategy & Baseline: 2020



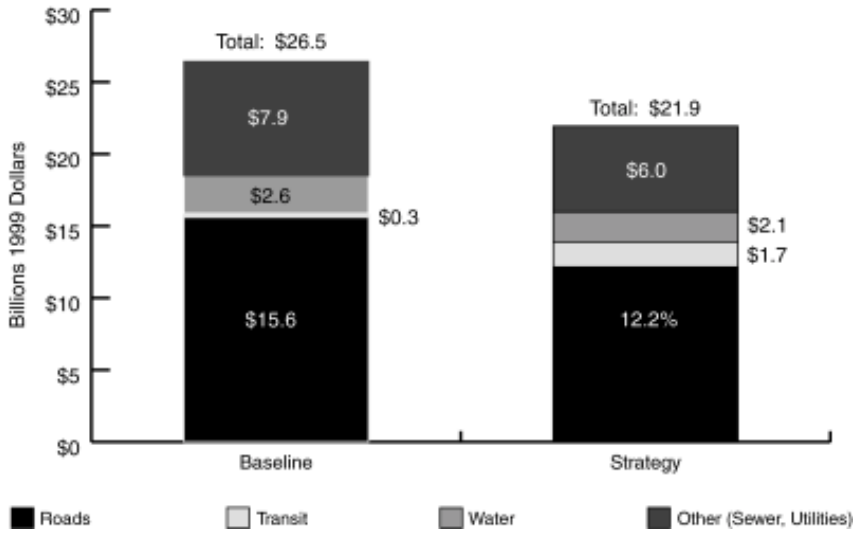
WATER

Current per capita water use in the Greater Wasatch Area is approximately 319 gallons per day, the second highest rate of consumption in the country. Under the Baseline Scenario, per capita water use in 2020 is 298 gallons per person per day. In comparison, the Quality Growth Strategy results in a per capita use of 267 gallon per day. The Quality Growth Strategy is an excellent forum for achieving a higher reduction/conservation in water consumption through education, incentives and/or regulation. Since the price of water is assumed to be the same in both the Baseline and the Quality Growth Strategy, per capita water use varies between these two scenarios because of changes in land use and in the conservation rate. Lower water usage under the Quality Growth Strategy is due to land use changes, including differences in the lot size and allocation of population and employment between the Baseline and the Quality Growth Strategy.

Per Capita Water Use
Current and 2020



Total Infrastructure Costs: 1998 - 2020



INFRASTRUCTURE

Infrastructure is computed in two categories: regional and sub-regional. Sub-regional is composed of off-site (municipal) and on-site (developer) categories of costs. Regional costs are a function of regional and state planning of activities such as major road arterials, transit networks, and large water development projects. On-site and off-site costs include infrastructure such as local roads, water and sewer mains, storm drain systems, and utilities. The Quality Growth Strategy reduced total infrastructure cost by $4.5 billion compared to the Baseline. This translates into a $3.5 billion savings in both regional and sub-regional roads, approximately $0.5 billion savings in water, and an additional investment of $1.5 billion in public transportation projects.

QUALITY GROWTH STRATEGY CONCEPT MAPS

COMPOSITE MAP
OPEN SPACE & ENVIRONMENTAL CONSTRAINTS
NEW GROWTH & REDEVELOPMENT
CENTERS & CORRIDORS

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QUALITY GROWTH STRATEGY

LEGEND

- Freeways
- Rail Transit

Quality Growth Scenario

- Downtown
- Town
- Village
- Activity Center
- Industrial / Office
- Residential Subdivision
- Large Lot Residential
- Rural Cluster
- Agriculture
- Existing Development

Environmental Features

- Rivers
- Streams
- Wetlands
- Floodplain
- Open Water
- Steep Slopes

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OPEN SPACE LAYER

LEGEND

- Rivers
- Streams
- Existing Development
- Stream & Lake Buffers
- Rural Cluster
- Irrigated Agriculture
- Wetlands
- Floodplain
- Open Water
- Steep Slopes

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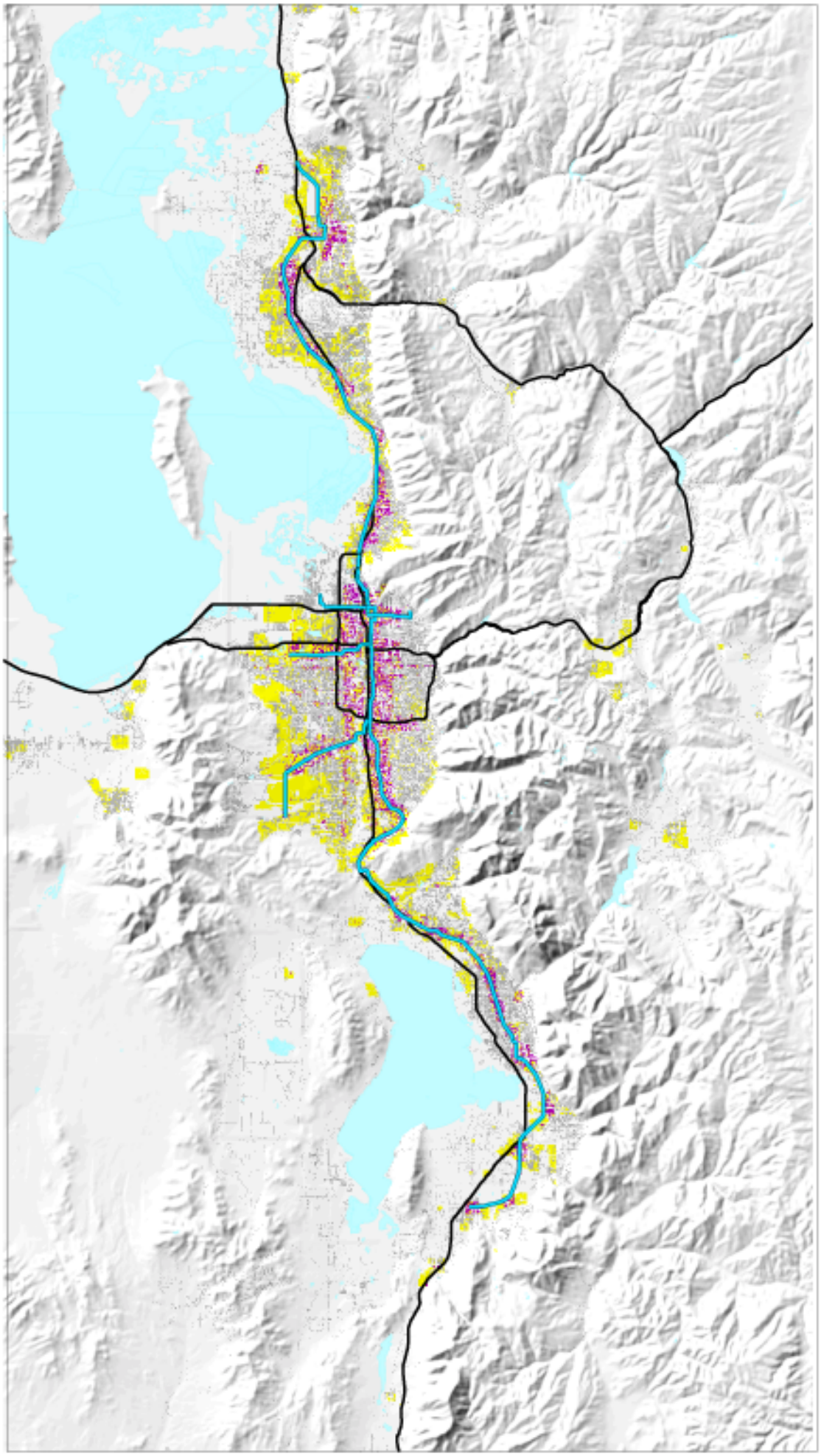

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NEW GROWTH AND INFILL LAYER

LEGEND

- Freeways
- Rail Transit
- Redevelopment
- New Growth
- Existing Development
- Water Features

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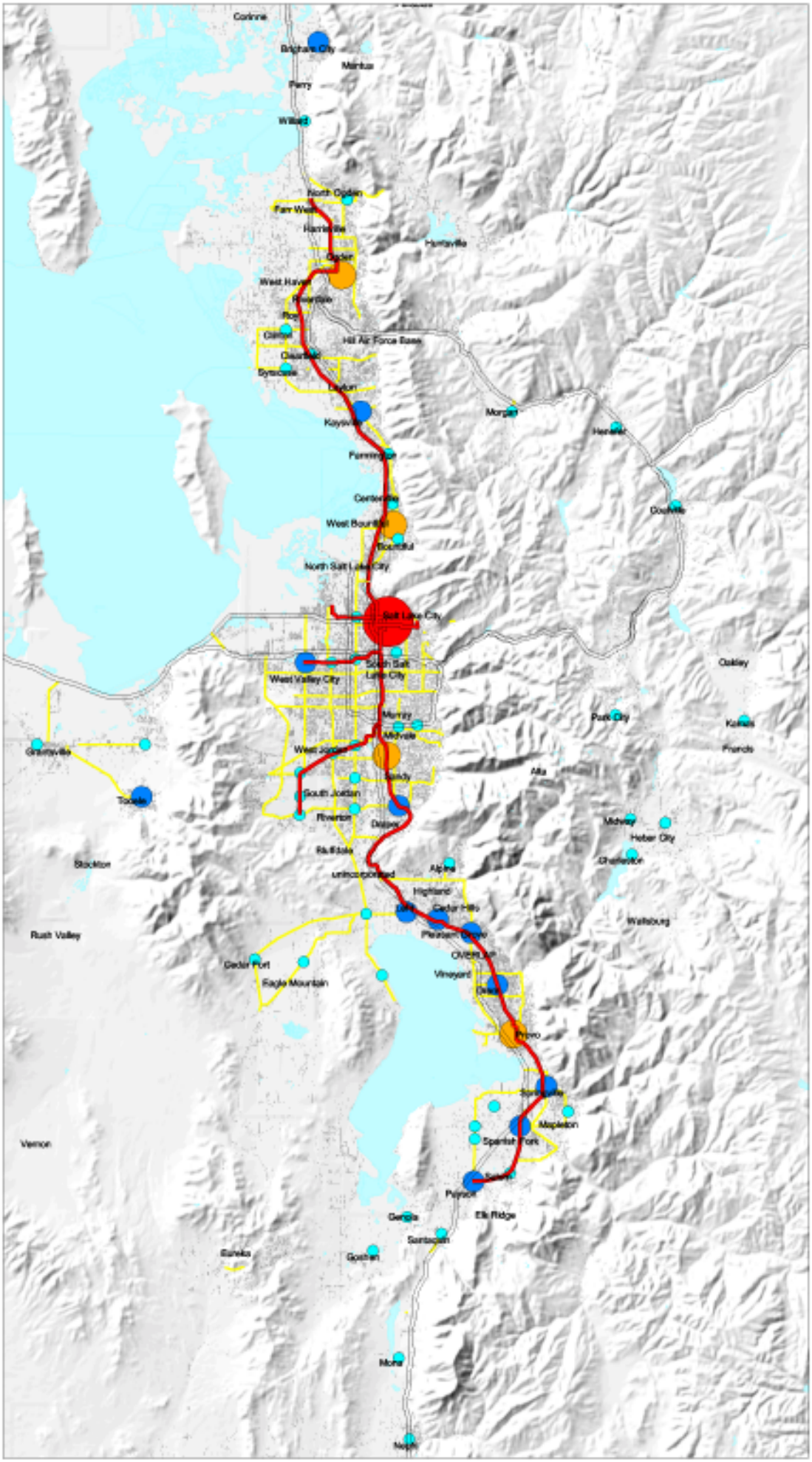

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CENTERS AND CORRIDORS LAYER

LEGEND

- Freeways
- Rail Transit
- Major Transportation Corridors
- Existing Development
- Water Features
- Central City
- Regional Center
- Town Center
- Village Center

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