The Mesa Gateway

STRATEGIC DEVELOPMENT PLAN
DISTRICTS’ VISION AND EXPECTATIONS

Adapted by Resolution No. 9425 on December 8, 2008
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Introduction

With the intensive consideration given to both the vision and goals for this area, it is critical to set forth design standards that will guide the development of the Mesa Gateway area. The purpose of this manual is to outline the design criteria that will contribute to the way in which the area functions, looks, operates, and how financial and environmental sustainability can be enhanced.

In contrast to traditional Euclidian zoning, the plan incorporates the use of a form-based approach, or form-based code. A form-based code is a method of regulating development to achieve a specific urban form by controlling physical form, with a lesser focus on land use. Form-based codes created through city regulations address the relationship between building facades and the public realm, the form and mass of buildings in relation to one another, and the scale and types of streets and blocks.

Development within the Mesa Gateway area needs to be balanced, with a jobs to housing balance and mix of uses that provides residents the opportunity to live, work, shop, and play in the area, while reducing infrastructure costs and vehicular trip generation. Design and development shall respect the desert environment through the incorporation of sustainable design, appropriate development form, and suitable landscape design. It is the goal of this manual to support the development of this area through high-quality architecture and urban design, resulting in a community with a strong identity and sense of place. This manual is organized into three sections: the first being a discussion of sustainability and its place within this plan, the second a description of each of the framework districts and the application of sustainability within, and finally, a section illustrating building types.

The framework districts were created in order to organize the appropriate form and focus of the development within such a vast area. Four districts are identified that describe the focus, form, goals, and character to be developed. The Mixed-Use Community District, the Inner Loop District, the Airport/Campus District, and the Logistics and Commerce District are described in more detail later in this document. These districts offer greater flexibility in development because of stricter controls of form and design, allowing for the build-out of the planning area to occur with respect to market forces and time. Because this plan is taking a form-based approach and departing from the standard Euclidian zoning code, it is not land use that will determine the development of specific parcels within the area. Rather, development will be reviewed based on the focus, form, character, and standards typical to the district in which development is being considered.

The focus and form of the district refers to the way in which the development is oriented, shaped, and integrated with the surrounding uses. In order to attract the types of employers and workers envisioned, development will need to be intense, high quality, pedestrian-oriented, and provide unique and attractive public spaces. In transitional areas, whether bordering a freeway or another district, attention must be given to meeting the specific form guidelines for these areas. Transitional zones located along the existent or planned freeways are to be of greater intensity with, visual accessibility toward the freeway. Appropriate urban design elements include building design that presents attractive facades to passers-by (including pedestrians as well as motorists) and contains high-quality design elements, such as inviting entryways, window exposure, and complementary building material color and style.

The design character and standards have been developed for each district to help the area develop in a cohesive manner. The character illustrates the mix of building types and how they will interrelate within the individual district. The standards have been established to serve as building guidelines, but also to establish how circulation, landscape, lighting and signage will be incorporated.
Overview: Principles of Sustainability

Sustainability is a critical component of creating a successful, marketable, and lasting future for the Mesa Gateway area. In order to create both a fiscally and physically healthy and lasting place to live, learn, work, and play, sustainability will need to be integrated into all levels of implementation, from development forms and transportation opportunities to the materials used in construction. This section identifies these integrated sustainability goals and strategies in order to achieve the goals and objectives of the plan.

A truly sustainable community is more than just the sum of its parts. It is more than a collection of green buildings or a checklist of new technologies. A truly sustainable community incorporates not only environmental, but social and economic well-being for all of its citizens. It looks to the past to honor and utilize the strategies of simpler times. It looks to the future to anticipate and plan for potential stresses—be they changing resource supplies, changing climate or changing economic conditions. And it looks to the natural setting in which it exists, protecting and emulating the natural processes occurring on the site. A thriving sustainable community brings people out of their homes and cars, encouraging them to be active, healthy and connected to their environment and each other. A sustainable community also creates economic opportunities. Technologies such as on-site energy production incorporated within area development reduces infrastructure costs, energy transmission costs, and energy generation costs.

Many of the broader design principles on which this plan is based do much to integrate sustainability into all aspects of the community. The compact, diverse, pedestrian-oriented form reduces infrastructure demands, uses land efficiently, protects open space, and reduces the need for single occupant vehicle trips. Beyond the basic development form, there are many other opportunities within the Mesa Gateway area to rethink every component of contemporary development—such as water use and stormwater management, energy use and generation, roadway design, park and open space design, school locations, building design standards, etc. In the Mesa Gateway area, the design of every system moves towards regenerative systems—systems that replenish rather than deplete.

The three key principles of sustainability around which this approach is organized are:

- Economic viability
- Response to context and location
- Resource efficiency

The Mesa Gateway area will be developed over many years. Therefore, it is critical that the design standards developed in the early stages set high expectations, but do not tie the hands of future development and limit its potential. It is also important that those developing in the area understand the greater impact that will be seen should projects incorporate a number of the sustainability measures detailed in the following sections.

ECONOMIC VIABILITY

Marketability

In order to establish a community that is unique and appealing to forward-thinking employers and residents deciding where to establish themselves, the Mesa Gateway area must excel in all areas of sustainability—environmental, social, and economic. The goal of the City of Mesa in developing the area is to create an area that both attracts new companies and residents and encourages them to continually invest in the community for the long term. Mesa will encourage developers to seek the most cost-effective sustainability strategies and technologies to ensure that they do not burden homebuilders, employers, and future residents with excessive costs or decrease the affordability of dwelling units. Developers will be encouraged to review each design strategy for its environmental benefits, capital cost, return on investment and cash flow, as well as marketability. Programs such as LEED or Build It Green will be encouraged as these have proven to provide for these measures.
New buildings and development built within the Mesa Gateway area are expected to meet a minimum green building performance standard. To encourage a percentage of buildings to include more ambitious measures, such as photovoltaics or alternative structural systems, the City of Mesa allows density bonuses for green building that will reward exceptional measures. This strategy will result in higher standards for all development, while encouraging developers and builders to strive for innovative and outstanding new measures through valuable rewards.

Strategies:

- Establish green building performance standards that set achievable targets with measurable results for new building in the Mesa Gateway area. Mesa may choose to rely on existing sustainability rating systems, such as USGBC’s LEED system or Build It Green for residential properties, or develop more locally-tailored criteria that reflect the priorities of Mesa’s environment and pressing local challenges. Many of the standards to be considered are detailed in this document.
- Tailor standards to specific building types and tier targets based on building size.
- Create density bonuses for green building performance standards that reward projects that exceed the standards in priority areas (e.g., water conservation).
- Ensure that standards and targets are amended over time as new challenges, strategies, and technologies arise.
- Ensure that areas incorporate techniques that increase the aesthetic value of neighborhoods such as below ground utilities.

Local and Regional Economy
Beyond becoming economically successful itself, the Mesa Gateway area will enhance the economic vitality of the local area and the region. A key goal for the project is creating an appropriate jobs-housing balance. Attracting a breadth of employment opportunities from industrial facilities to high-salary industries will provide jobs for local residents and increase the local tax base. Locating these industries in close proximity to residences will decrease the need for car-based transportation, saving residents money on fuel expenses and reducing public infrastructure costs, and will provide businesses with an added incentive for prospective employees: short commute times and convenient public transit. The area’s mix of uses will encourage people to live, learn, work, and play in the City of Mesa, leading to a vibrant, diverse, and resilient local economy, while simultaneously addressing many regional needs.

Stability through Diversity
A vibrant community must accommodate a wide range of services, and therefore a wide range of wage-earners, within its own boundaries. Far too often, communities are segregated by income level, resulting in a poor distribution of public resources and an inequitable quality of life. Instead, the residual districts of the Mesa Gateway area could have a diverse mix of housing types within each neighborhood, enabling people from a broad spectrum of occupations and financial conditions to live in the same neighborhoods. This plan integrates live-work units, accessory units and other rental units to provide home owners with additional sources of revenue to make their homes more affordable or provide independent living quarters for family members. In addition to the diversity of housing types, the community will strive to include a diversity of employment opportunities, from heavy industry and transportation services to new economy jobs, at a range of incomes to promote a diverse, robust, and self-sufficient economy.

Strategies:

- Encourage mixed-income housing and neighborhoods and mixed-use projects as a primary means to create neighborhoods where people can live, work, study, and shop all in the same area.
- Create housing to meet the needs of varying populations: large families, retired couples, young professionals, etc.
- Coordinate projects with infill areas and public spaces.
- Explore strategies to attract a mix of employers and employment types into the same areas rather than segregating by industry, in order to foster more economically balanced employment districts that can continue to thrive through fluctuating market cycles. (see Economic Scorecard)
RESPONSE TO CONTEXT AND LOCATION

Noise
The mix of diverse employment and residential districts within the Mesa Gateway area is a source of both significant opportunity and challenge. The desire to minimize commute times and auto emissions by living near work will be a great amenity of the community. Careful attention has been paid to the location of the different districts and discussion regarding the appropriate mix of uses within them to ensure that noisier uses, such as heavy industry and the flight paths into and out of the Phoenix-Mesa Gateway Airport, are buffered from lower-density residential neighborhoods. Similarly, industrial uses and types of industry with high space-demand will be placed within the flight path noise contours, as defined by both the FAA’s 65 DNL standard and the stricter 60 DNL standard used by the City of Mesa in its General Plan, to ensure that the coming and going of people and cargo and the associated jobs do not negatively impact quality of life in the area’s residential neighborhoods. The FAA guidelines for giving aid to residences in areas where noise exposure reaches 65 DNL should result in a noise level reduction of at least 20 dB. Mesa’s current zoning ordinance sets noise level reduction (NLR) amounts for residential uses at 30 dB, 25 dB, and 20 dB depending on the zone noise level and type of land use. The desired goal of NLR for residential land uses is to reduce the outside sound transmission to a level not exceeding 45 dB. Accordingly, the NLR to be required for residential uses depends on the expected outdoor decibel level. In areas with an expected outdoor level of 65 dB, therefore, the required NLR will be 20 dB, etc.

Open Space
Development of the Mesa Gateway area will take full advantage of the sense of identity created by the site’s rich context of natural and historic features. Open space corridors have been oriented in alignment with historic canals, waterways, and mountain vistas in order to preserve the connection to the natural setting. Designers, developers, and builders will be encouraged to use a plant palette that is carefully selected to emphasize native and xeric non-native plants in order to provide habitat, use minimal water and reflect the natural community of the area. The park areas within the community will be structured in corridors to increase connectivity of both habitat and people, and to allow the natural ecosystems to penetrate into the built environment. The open space in the plan can serve multiple functions: it serves as an integral part of the stormwater management system to accommodate natural flows; it provides habitat for local species; and it provides people with active and passive recreational opportunities, as well as, a connection to the specific natural context in which they live.

Strategies:
- Design open space such that individual open space elements of projects link to those of adjacent projects, creating open space corridors in a continuous network.
- Ensure adequate provision of active open space, such as continuous trails for jogging and cycling and playing fields and playgrounds for active recreation.
- Encourage compact development to allow for the conservation of greenway linkages throughout the area.
- Emphasize the multiple uses served by open space—stormwater management and treatment, habitat linkages, recreation, and bike/pedestrian trails by locating projects accordingly.
- Carefully select the landscape palette to meet the needs and goals of the particular uses within the open space corridor.

Air Quality
One of the most significant sources of air pollutants in the districts will be from vehicle emissions. Emissions are influenced by both the number of times vehicles are started and the distance of travel. Therefore, the development form and building design standards based on a “park once” concept in areas with shared parking are designed to minimize the number and length of auto trips. Industrial uses should be organized around the airport and in the FAA flight paths, where both air and noise pollution will be concentrated away from residential activity. Similarly, the design and layout of buildings and uses near freeways will create a buffer to help isolate emissions and high speed traffic and protect the quality of life and health in future neighborhoods. For example, warehousing and parking can be
oriented to freeways, unlike parks or retail strips. Similarly, higher density housing, which typically includes more interior air quality control, is better located near freeways than are detached single-family homes. Parking areas will be designed to provide adequate but not excessive parking, as excessively large parking facilities create a less attractive and uncomfortable environment for pedestrians and thereby encourage auto use.

**Strategies:**

- Allow shared parking facilities when adjacent uses with complementary peak utilization periods can be served.
- Allow on-street parking to be credited toward the parking requirement for abutting development.
- Allow reduced parking requirements for projects that participate in transit subsidy programs.
- Encourage businesses to replace fleet vehicles with clean vehicles.
- Reduce greenhouse gas emissions resulting from energy use in buildings through renewable energy and passive design.
- Encourage the use of plants that are proven to be more effective at carbon sequestration, based on water demand.

**Solar Intensity and Temperature**

The high solar intensity of the Mesa Gateway area presents a challenge for sustainable design, but also a primary opportunity. The Heat Island Effect refers to the phenomena of elevated day and nighttime temperatures in an urban, built environment as compared to surrounding, undeveloped terrain. With the intense solar gain and high summer temperatures of Arizona, the heat island effect is of particular concern. In the Phoenix region, the heat island effect is attributed to over a 10 degree Fahrenheit increase in summer daytime temperatures in urbanized areas. High temperatures not only stress and potentially shorten the lifetime of building materials, but also discourage walking and generate higher peak energy demands to run fans, air conditioning, and industrial cooling and refrigeration.

The heat island effect can be minimized through a number of strategies, including:

- The use of materials that minimize heat gain in both the visible and invisible spectra, such as reductions in paved surface area, the use of lighter colored paving, and the use of light colored or reflective roofs on commercial buildings wherever practical.
- Intelligent landscape design to shade paved surfaces, especially the use of large shading trees where possible for additional aesthetic value.
- Evaporation as a primary strategy for auxiliary cooling, including both evaporative cooling devices and the use of evapo-transpiration landscaping in pedestrian areas to create cooler and more lush pedestrian environments.
- Locate projects with solar orientation of buildings as a consideration. Orienting the majority of a project within 15 degrees of geographical east/west will enhance energy efficiency.

The ability to abate the heat island effect will be dependent upon cooperation from staff, developers, and builders in the development of standards or incentives to encourage heat island reduction. This effort can be supported by the orientation and design of buildings to encourage passive cooling, which will reduce energy loads and help indoor spaces to serve as oases in the hot summer months.

The climate of the Arizona desert can also be an amenity to the sustainability goals of the project. Specifically, the following strategies will be considered:

- The use of vegetation for cooling and cleansing the air, as the year-round sun can support broad-leaf shading trees and other heat-reducing vegetation that is aesthetically pleasing.
- Require developers and business owners to integrate photovoltaics as part of shading structures to produce electricity while creating shaded environments, especially on rooftops and over surface parking.

**Landscaping**

Strategic use of landscaping will help create an attractive place that invites people to work, live, shop, and walk. Landscaping can cool the desert
environment, both through shading and evaporative cooling, and also helps manage water, stormwater, wind, and dust. By thinking strategically about the types, location, and variety of landscaping that is used, developers and builders can create an array of inviting places that also help sustainably manage the local environment. For example, xeriscaping practices will be incorporated in most contexts, but not all. In some heavily pedestrian environments—such as around transit stops—more lush plants may be a better choice because of their ability to help cool the environment low to the ground, both through better shading and air-cooling via evapotranspiration. Though these plants have a higher water demand, their ability to make waiting for transit and walking between destinations more bearable has a greater net positive effect on the environment. Similarly, while turf is restricted in private yards, common open spaces such as neighborhood parks can be designed as green oases that use turf and harvest rainwater. Finally, a high degree of landscaping throughout the area and projects of all types will contribute to the reduction of atmospheric CO₂ through carbon sequestration that results from the growth of new plant material. This strategic approach, one that balances multiple facets of sustainability in order to seek the greatest good, will be applied to all landscaping decisions.

**Strategies:**

- Develop a set of landscaping guidelines that balances aesthetic and place-making qualities of plants and trees with an emphasis on the environmental contribution of plants. The guidelines will encourage projects to carefully consider how specific areas will be landscaped. For example, while arid-climate xeriscaping techniques will be stipulated for residential neighborhoods, larger-leafed species that provide cooling through shading and evapotranspiration may be encouraged for heavily pedestrian areas, where their cooling and air cleansing characteristics would merit the higher water input.

- Encourage creative use of plant material to help reduce CO₂ as well as heat. Examples include rooftop gardens and planters.

- Encourage the use of trees that provide shade or significant evapotranspiration in high-intensity pedestrian areas.

- Incorporate the use of irrigation systems in areas of high pedestrian activity in order to accommodate the care that plants and trees providing evapotranspirative cooling require.

**RESOURCE EFFICIENCY**

**Land Use**

The best way to achieve resource efficiency is to eliminate or reduce the demand for the resource. Through form-based, mixed-use development with emphasis on transit and pedestrian comfort, there is a built-in reduction to resource demand for energy associated with transportation. The plan and building design standards are designed to coordinate the location and density of development into a compact and integrated community design that promotes walkability and multi-modal transportation opportunities.

This clustering of uses reduces travel distance and time and mitigates against air quality deterioration. The pedestrian mode of travel is facilitated through a human scale of architecture, attractive signage and facades, and shaded sidewalks. Passive solar orientation, reduction of radiant surfaces, and the use of a variety of cooling strategies are integrated into planning and design at all levels to reduce energy demand and encourage walkable places. The use of transit is encouraged through street design that includes regular transit and bicycle routes, convenient stops, and pedestrian connections to stops.

For example, location of one of the urban centers near the proposed airport passenger terminal will provide the opportunity for airport employees, as well as, employees of future urban center businesses to live near work.

- Encourage compact development types that provide residents and employees with the ability to walk to and between destinations.

- Provide a mix of housing types, sizes, and prices to accommodate the variety of workers in the area.

- Encourage infill development of vacant and underutilized parcels to avoid sprawl.

- Encourage mixed-use projects that include high density residential.
Transportation

The transportation systems planned for the Mesa Gateway area consist of facilities for vehicles, mass transit, pedestrians, and bicycles. All of these modes of travel are considered to be integral to the truly multi-modal transportation system proposed within the plan area and for the greater City of Mesa and the East Valley as a whole. A comprehensive network of pedestrian and bicycle trails for both transportation and recreation is planned.

Significant effort has been dedicated to the careful planning of the transportation network to minimize traffic volumes on both major and minor roadways, including the boulevards, avenues, and connector streets that make up the street network. This effort has included the addition of a number of major roadways that connect the Mesa Gateway area transportation network with the existing City of Mesa and East Valley transportation networks. Additionally, many planned elements of the roadway system, such as roundabouts and couplets, are included to create roads that serve the anticipated traffic volumes and create a better walking environment, supporting the character of the neighborhoods and vitality of the commercial districts through which they pass.

Many of the districts of the Mesa Gateway area are anticipated as transit-oriented development, as sufficient right of way exists on major regional routes to include either high-quality rapid bus service or dedicated transitways. Long-term potential to extend the Valley Metro Light Rail system from downtown Mesa and Tempe to the airport and through the higher-density urban centers of the Gateway area would provide connection to the regional mass transit system. Local bus service throughout the Mesa Gateway area will likely support local trips to area destinations and provide feeder service to the Valley Metro Light Rail.

Strategies:

- Design all streets to take into consideration the needs of pedestrians and bicyclists, as well as, motor vehicles. The plan’s roadway network is supportive of Complete Streets characteristics that provide half of the physical space to the pedestrian realm.
- Include bike and pedestrian paths and/or connectors to existing paths for accessibility.

Water

The Mesa Gateway area should continue to employ the systems approach to responsible and intelligent use and re-use of water resources that Mesa currently uses. All water, including wastewater, is a valuable resource. Water use is not inherently bad. Rather, use of water provides the fuel for economy, industry, recreation, and a high quality of life. The use of water should continue to be carefully considered for the value it brings to a healthy environment and a desirable quality of life. Mesa’s award-winning conservation program, Water—Use it Wisely, teaches all consumers that water is precious and should be used wisely. These concepts should continue to be incorporated into all levels of planning and development within the Mesa Gateway area.

Strategies:

- Run washing machines and dishwashers only when they are full in order to save a 1000 gallons of water a month.
- Use a broom instead of a hose to clean driveways or sidewalks and save 80 gallons of water every time.
- Install low-volume toilets and use appliances offering cycle and load size adjustments. They are more water and energy-efficient.
- Choose a water-efficient drip irrigation system for trees, shrubs and flowers. Watering at the roots is very effective.

The City of Mesa and the Towns of Gilbert and Queen Creek jointly own the Greenfield Water Reclamation Plant. Wastewater from the Mesa Gateway area will be treated at this plant to exceptional standards and then delivered via pipeline to the Gila River Indian Irrigation and Drainage District for use in irrigation. In exchange, Mesa will receive Central Arizona Project water that will be used for potable purposes throughout the City’s water service.
area. This exchange arrangement, which is part of a negotiated settlement that benefitted all water users on the Salt and Gila River system, provides an innovative and sustainable means for Mesa to make use of its reclaimed water. The exchange also benefits both Mesa and the Gila River Indian Community.

Mesa recognizes the linkages between water and energy. The production of electricity uses significant amounts of water, primarily for cooling the generating equipment. Similarly, water treatment and pumping plants use significant amounts of energy. Projects should continue to look to save water by saving energy and to save energy by saving water. Strategies listed in the section related to energy can be considered indirect water saving strategies and vice versa.

**Stormwater**

Developers and builders should take a best-practices-based approach to stormwater management based on the principles of Low-Impact Development (LID). LID aims to mimic natural systems, with a goal of treating stormwater as a resource, maintaining it on site, reusing it where possible, infiltrating it into the ground water where appropriate, and ensuring that any runoff that does occur has been treated to remove pollutants.

Unlike traditional urban stormwater management systems—which are based on fast, concentrated evacuation of stormwater—systems in the Mesa Gateway area should instead strive to reuse stormwater wherever possible. Because water is a precious and increasingly scarce resource in the developing desert Southwest, development in the Mesa Gateway area should strive to reuse water as many times as possible before it is evaporated or sent “downstream” for treatment. Stormwater runoff from impervious surfaces—such as rooftops, roadways, and parking lots—should be collected and directed to filtration and collection facilities. From rain barrels for homes to cisterns of all scales, there are multiple means to store water for reuse. Untreated stormwater can be reused for irrigation and evaporative or industrial cooling. By using a filtration system, treated water can be used in home for clothes washing, toilet flushing, or to even higher standards for dishwashing, bathing, and drinking.

This approach of reuse reduces flow volumes, minimizes conventional piping systems, and eliminates pollutant discharge to natural watercourses. In this way, a balance can be achieved between collection of stormwater in conventional systems and the location and frequency of retention and infiltration ponds. This balance ensures, that water is retained and treated and that sufficient flood control measures are in place to handle large storm events. Additionally, there is a potential for significant savings in energy, materials, and public and private investment related to minimized stormwater infrastructure such as pumps, pipes, and treatment facilities, as described in the previous section.

The capture and re-use of stormwater through both passive and active water harvesting can be a central element of the Mesa Gateway area’s sustainability strategy and helps contribute to a strong stormwater management program. Rainwater can be captured and stored in cisterns to provide water for both residential and non-residential landscape irrigation, where it is practical and economically feasible. Rainwater cisterns can be used in a range of building types and locations, from rain barrels for single family homes to large scale cisterns under fields and parking lots for institutional and industrial use. Rainwater harvesting also helps reduce the impact of peak flows on local infrastructure, minimizing localized flooding and pollutants in the stormwater system and local water bodies. In addition, much can be done to ensure that water leaving the site contains minimal pollutant loads through the use of passive on-site treatment.

**Strategies:**

- Encourage the use of permeable pavements and green roofs.
- Develop rainwater harvesting systems.
- Promote the conservation of significant green infrastructure to serve in the natural treatment of stormwater.
- Encourage the thoughtful integration of green stormwater infrastructure into project and right-of-way landscaping.
- Promote educational opportunities about sustainability and local hydrology through stormwater management installations.
Encourage the implementation of a network of small, localized, landscaped stormwater detention facilities as a means to decrease and pre-treat peak stormwater flows and distribute stormwater loads over time. “First flush” and peak flows typically carry the most pollutants and are most likely to overwhelm traditional stormwater infrastructure. Properly designed landscaped detention facilities have the added benefit of pre-treatment, allowing particulates and pollutants to settle out or be neutralized.

Energy
Planning for energy sustainability in the Mesa Gateway area is a multifaceted endeavor that includes strategies of conservation, advanced planning, and considerations for both passive design and active solar energy production. Energy conservation within the prominent residential and commercial development sectors provides a key boost to local industrial sectors by making energy available to those industrial employers that have greater energy demands. Benefits to industries such as aerospace, research and development, and high-tech manufacturing have the opportunity to support new high wage jobs and may, due to the overall emphasis on energy sustainability in the area, initiate the creation of new sustainable industries that focus on energy efficient materials or energy-producing technologies.

In our arid climate, passive design is constructing a building or space that avoids undue heat gains in overheated months (May through September). It relies not only on sun exposure and shade, but also wind, water (evapotranspiration), building material, and structural orientation. Passive design can greatly reduce energy demands for buildings. Many coordinated aspects of passive design make pedestrian use of exterior spaces viable as well. Limiting or eliminating summer sun struck glass, use of shade trees, utilizing reflective materials, building orientation, and water features are just a few techniques of passive design. The use of passive solar design incorporated within the design of large developments in the Mesa Gateway area (such as the campus district and urban center) can result in reduced energy-consuming buildings and more walkable outdoor environments.

Because active solar energy production technology is not yet cost effective for widespread implementation, Mesa has the time for advanced planning to become “Solar-Ready” when improved technology is financially viable. To ensure that the Mesa Gateway area is ready for the future, readiness for solar technologies should be incorporated into city energy planning, zoning regulations, and municipal facilities. Furthermore, city development regulations and practices that affect solar adoption, including permitting, inspections, and local codes should be streamlined. Correcting potential solar related conflicts within the zoning code and taking advantage of solar access opportunities is necessary, if the Mesa Gateway area is to be a center of sustainability. Developing a code that ensures future solar access will help prevent future conflicts with new construction that shades existing solar systems. Another development suggestion is to permit solar projects as by-right accessory uses. This allows excess land, building, or roof space to be positively used toward the sustainability of the area. Despite significant capital costs, Denver International Airport has incorporated active solar technology. They installed 9,200 solar panels that generate more than 3 million kilowatt hours of solar electricity per year, or about half of the power needed to operate the airport’s people-mover trains. Located on 7.5 acres of land, the airport is expected to reduce carbon emissions by more than 6.3 million pounds each year.

To be “Solar-Ready”, Mesa should adapt zoning and development regulations to allow photovoltaic installations on residential and commercial buildings and evaluate incentives that help defray the cost of installing photovoltaic panels on homes and businesses. The Salt River Project, which provides electricity in the Mesa Gateway area, provides energy efficiency rebates on appliances. To balance homeowner and City income, Portland, OR created a special system for solar permit fees, based upon the cost of construction, but not including the cost of panels or inverters, which are very expensive and increase the cost of the permit.

Because of the high number of sunny days and high solar intensity in the area, photovoltaic systems will be an important part of the Mesa Gateway area’s alternative energy options. The industry continues to improve the efficiency, aesthetics, installation techniques, and cost of the systems, making them attractive alternatives for on-site electric generation. Where significant savings can be recognized over time for the home buyer or building operator,
these savings will be incorporated into marketing materials to help people understand and maximize the value of these features. In addition, developers could investigate the feasibility of offering “green mortgages,” which provide incentives for green building and energy-efficient building techniques.

Developers and builders must consider the technological, economic, and environmental feasibility of alternative energy technologies to meet their project’s goals and objectives. The technologies evaluated may include on-site renewable power production, on-site generation and cogeneration (fuel cells, micro turbines, and gas turbines), and on-site energy storage. On-site energy production provides numerous benefits to the Mesa Gateway area. It not only decreases the cost of energy, but it eliminates the cost of energy transmission to the site, which is significant, especially when on-site energy applications target peak loads on the power grid.

Based on site conditions and the global energy demand, the Mesa Gateway area should develop an energy strategy that combines both passive design and active energy policies at the building, neighborhood, and community scales. The climate and pro-development emphasis in Mesa make the use of passive strategies for meeting energy needs the best place to start. To the extent possible, landscaping will be used to shade buildings to reduce cooling loads, exposed glazing will be reduced, and orientation will limit morning and afternoon exposure. Landscaping for passive cooling will be prominent in key activity centers with high pedestrian activity. Buildings will be oriented and designed to minimize the need for energy-intensive cooling during the warm summer months.

Efficient technologies, such as the use of high performance HVAC systems, glazing and hot water systems, must be encouraged, and appliances should be required to meet Energy Star Standards. Commercial buildings should be required to have high efficiency systems, to use “cool roofs,” and to perform significantly better than the applicable energy code, ASHRAE 90.1. In some areas, homes could be required to be Energy Star Certified, while in others developers might create additional standards geared specifically at Mesa’s climatic conditions. Energy saving homes could be developed to the point where they produce as much energy through photovoltaic panels and solar hot water systems as they consume.

In addition to the recommendations and steps identified, Mesa will need to make an investment in training the planning and development staff in passive design strategies and energy efficiency development strategies and techniques. This knowledge and expertise is growing, evolving, and changing rapidly and will require a new and advanced skill set to be implemented sufficiently in this large area of the city.

**Environmentally Preferable Materials**

The field of environmentally preferable materials has grown dramatically in recent years, with both environmentalists and manufacturers making a wide array of claims about either the dangers or benefits of materials. This field is complicated by the vast number of materials, the environmental tradeoffs that sometimes occur, and the lack of region-specific data. However, there are many well-proven materials and strategies for their use that can have real environmental benefit and protect the health of building occupants.

Mesa will take steps to encourage environmentally preferable materials in this particular region. Some green building materials will need special consideration from the City, as they may not be addressed in local codes. Mesa Gateway area developers will work closely with building officials to determine whether any alternative design standards are required in order to facilitate alternative strategies.

**Strategies:**

- Develop a list of preferable materials that the City encourages developers to use, especially materials that are made from recycled content, do not contain harmful chemicals, and have low heat-gain.
- Develop informational materials to educate the community regarding the benefits associated with the use of environmentally preferable materials.
- Develop a program to advertise projects that incorporate preferable materials in their construction.
While sustainability has already been woven into the core of the Mesa Gateway area at the most fundamental level, there are still many decisions to be made as the plan is implemented. A systematic approach is needed to navigate through the various strategies, their associated costs, potential developer benefits for meeting or exceeding City standards, and the marketability and performance of these systems over time. The City could adopt a climate-change centered framework for assessing environmental sustainability. A three-part process could be used to incorporate sustainability into the community in a way that is highly innovative, measurable, and adaptable. The process could include a quantitative analysis of the area to compare sustainability strategies, the selective use of established rating systems to ensure high levels of sustainability at the project level, and a strategy for incentivizing developers and builders to go beyond the minimum standards.

**Climate Change**

As a fundamental framework for assessing the goals and impact of the sustainability strategy in the Mesa Gateway area, the City must approach questions of environmental impact from the perspective of minimizing climate change. Because the scale of this framework is not fixed, potential impacts to the environment must be assessed at the local, regional, and global levels. The City will encourage developers to constantly ask the question of how their practices, materials, and assumptions might impact climate change, and what alternatives can minimize that impact. For example, where pavement reflectivity would warm the local air resulting in increased need for air conditioning and driving (as opposed to walking), then alternative materials or increased shading might be considered as a means to temper the climate at the local level. On the global scale, where land use patterns would result in increased driving, alternatives that decrease commute distances or increase the ability to walk or take transit will be considered to avoid the significant long-term cumulative generation of heat-trapping greenhouse gasses.

This criterion will be considered as a foundation for good decision-making, even in the case that data limitations prevent its use as a measurable standard for individual developments. Vehicle Miles Traveled estimates from development’s traffic impact analyses can provide a useful reflection of a project’s likely contribution to greenhouse gas output from transportation; of course, such analyses will be sensitive to the on-site trip capture, vehicle travel reduction, and higher nonmotorized mode share characteristics of walkable, mixed-use environments. Ambitious but realizable climate change goals can be set, such as: meeting the standards of “Architecture 2030” by decreasing greenhouse gas emissions by 50% of the county standard in buildings by 2010 and achieving carbon neutrality by 2030 through design standards, generating on-site renewable energy, or purchasing renewable energy. Mesa should adhere to the goals of “Architecture 2030” in the Mesa Gateway area. The following sections detail a three part process for measuring and comparing options and developer benefits for pursuing the most environmentally advantageous option.

**Quantitative Analysis**

While most people agree that sustainability is an important goal, there is still controversy over the best way to meet it. While there are many emerging technologies, there is still a dearth of clear comparative data on the effectiveness, cost, or environmental performance of such strategies. Mesa will take an analytical approach to sustainable design in order to parse out the most promising strategies as they apply specifically in this context. This will enable a better quantification of the alternative strategies being employed in terms of transportation, stormwater management strategies, energy efficiency measures, on-site and renewable energy generation, landscaping palette, irrigation technologies, road design, etc.

Comparative statistics on household energy and water use, vehicular miles traveled, car ownership, transit ridership, stormwater runoff volumes, and other metrics will be maintained by the City to establish achievable goals and recognize high achievement.
Rating Systems
Rather than letting the design of the community be dictated by an outside checklist approach, Mesa Gateway area development will incorporate a broad suite of sustainability strategies that have the most environmental benefit within the local context. In order to help identify, measure, and validate sustainable design practices, Mesa will examine the different green building, energy, and development certification programs that are currently on the market or are emerging within the near future to determine which system, if any, will make the most sense for the Mesa Gateway area. Potential rating systems to be considered will include Energy Star, LEED for Neighborhood Development, LEED for Homes, and LEED for New Construction, as well as others. The goal is to encourage the incorporation and verification of sustainable design strategies that have the most environmental, social, and economic value for the community. This being said, developers are encouraged to incorporate sustainable design practices within their proposed projects with the objective being to demonstrate how their project will contribute to the goals of the Mesa Gateway area.

Developer/Development Benefits
There is an inherent reward in knowing that one has not compromised the ability of other species to live, future generations to enjoy the same quality of life, and the health of the earth and its species to thrive. However, the best practices that would realize such a high goal are often financially untenable. Local government has the ability to help projects and future inhabitants to reach nearer this goal by providing developer benefits for exceeding the status quo. Local governments benefit from the financial rewards that will result over time through decreased infrastructure and lower energy costs. Benefits can include:

- Recognition and publicity: Many people readily accept and embrace the importance of environmental sustainability to their health and happiness. Knowing that a community has those values at its core and is likely to be a greener, cleaner, and more efficient place to raise a family, or where less time will be spent in a car to get to work or school, will appeal to future residents and employees alike. It can also be a valuable amenity to a business that wants to make a name for itself in the new energy economy.

-Financial gain for companies: There are myriad ways in which environmental sustainability pays off financially. At a minimum, reduced waste (be it wasted energy, time, or raw material) is money saved. But also, government can support investment in clean technologies and encourage developers, builders, and employers to adopt environmentally responsible and even exceptional practices. For example, the State of Arizona offers a tax credit of up to $50,000 in one year for corporations that install solar or wind energy generation infrastructure.

- Financial gain for residents: Recent innovations in mortgage lending are encouraging sustainable building and habits with rewards for home buyers who buy homes that may cost more due to their sustainable features, but have long-term payback. In many cities, banks have begun to offer “Location Efficient Mortgages,” which allow residents to take on a higher burden of debt if they live in transit-rich and walkable communities. Banks recognize that residents of these communities will pay far less for transportation in a given year, and therefore, have more to pay toward their mortgage because they pay less for gas, insurance, and car ownership.

- Performance and quality: Many communities offer incentives for high-performing appliances, insulation, glazing, and HVAC and water heating systems. Though these appliances may be more expensive at the time of purchase because they are the newest technologies, rebate programs and long-term savings make them a very sound investment in the long-term.

The final point highlights the most valuable benefit, which is the long-term savings inherent in many environmentally sustainable practices. Diversity of employment and housing types hedges a community’s future against economic and demographic changes that might potentially leave a community struggling with a weakened tax base. Investment in passive cooling and LID stormwater management both have slightly higher near-term costs, but the long-term benefit of little to no infrastructure maintenance costs.

The State of Arizona offers a variety of incentive programs to encourage renewable energy. A listing is available at http://www.dsireusa.org/.
Vision and Goals

The new vision for this area embraces a more integrated development pattern with more flexibility in locating land uses. This plan recognizes that a mix of uses in close proximity to each other is vital to creating livable and sustainable places that will grow well over time and retain their value.

Based on the stakeholder input and the evaluation of the area, the following goals, objectives, and development design guidelines have been identified to implement the vision and guide the overall development of this area. Given the flexibility provided for a creative and sustainable mix of uses that will meet the City’s goals over the long term, it will be up to the individual developers to demonstrate that their specific project aligns with and implements these goals and objectives.

Goal 1: Capitalize on the expansion of the Phoenix-Mesa Gateway Airport.

1.1 Objectives:

1.1.1 Develop commercial passenger service as the primary use of the airport.

1.1.2 Develop cargo service as a secondary use of the airport.

1.1.3 Protect areas of intense flight activity by only approving developments under the primary flight paths that will not limit flight patterns, growth, and development of the airport.

1.1.4 Integrate the airport with surrounding uses to provide a seamless transition from on-airport to off-airport activities, particularly on the northeast side.

1.2 General Development Guidelines

1.2.1 Developments around the airport must be designed in a manner, regardless of use, so as not to negatively affect smooth, safe, and convenient aircraft operations into and out of the airport.

1.2.2 The entitlement process for development in this area will include submission of avigation easements, notification requirements, as well as the use of noise attenuation methods appropriate for each location.

1.2.3 Development within the various districts must follow the specific requirements established in those areas with regard to addressing the impact to aircraft operations, appropriate uses, and design considerations.

Goal 2: Create a regional employment center with a mix of jobs emphasizing the attraction of at least 100,000 high-wage, high value jobs.

2.1 Objectives:

2.1.1 Foster the continued development of local higher educational, technological and applied research institutions.

2.1.2 Create an overall balance in the types of jobs in the area to serve the needs of businesses and residents.

2.1.3 Pursue economic development initiatives that will attract Top Tier companies with emphasis on the businesses identified in the Economic Development Scorecard, understanding that change will occur over time.

2.1.4 Plan for mixed-use development, including employment, residential, hospitality, entertainment, aviation, education and recreational uses, to address the jobs to housing balance needed for a sustainable area.

2.1.5 Develop diverse urban centers and employment nodes.

2.1.6 Evolve into a self-sustaining community that attracts residents and jobs with innovation and quality design.

2.1.7 Promote a unique design style that fits the local context.
2.1.8 Promote the development of design guidelines addressing streetscapes, landscaping, signage, and street lighting.

2.1.9 Incorporate an open space system that provides for the active uses of residents while complementing concurrent development.

2.2 General Development Guidelines

2.2.1 Development of property will be a greater intensification than typical suburban development; some districts will be designated for very urban design form.

2.2.2 A variety of housing types and styles will be needed to meet the varying needs of the residents of this area. Of primary interest will be high-density residential units in mixed-use, pedestrian settings.

2.2.3 Single-residence detached land uses may be considered in any area if the developer can demonstrate that the product to be developed is compatible with all the City’s goals and objectives for the area.

2.2.4 Freeway frontage will be devoted to employment and retail uses. Other uses may also be allowed when done in a manner that meets all of the City’s goals and objectives for this area.

2.2.5 High quality design of buildings and site plans will be required in order to set the standard for high-quality, high-wage jobs.

2.2.6 Project design will be evaluated for the impact on the street frontage with the goal of utilizing the street system to provide for a high quality, pedestrian-oriented public realm.

2.2.7 Developments must provide for the infrastructure and public facilities that will be necessary for ultimate development of the area.

2.2.8 Development within the various districts must follow the specific requirements established in those areas with regards to density, mixing of uses, urban design, pedestrian requirements, etc.

Goal 3: Establish an intra- and inter-connected, multi-modal transportation system.

3.1 Objectives:

3.1.1 Coordinate future land uses with planned transportation improvements.

3.1.2 Develop a multi-modal transportation system that includes transit to improve overall connectivity in the area, particularly with the Airport and with the larger region.

3.1.3 Explore economic benefits of transportation improvements in the area.

3.1.4 Provide multiple alternatives to automobiles including an integrated bicycle/trail system that supports both alternative modes of transportation and recreational uses.

3.1.5 Coordinate transportation infrastructure improvements with ADOT, MCDOT, Gilbert, Queen Creek, Apache Junction, and the State of Arizona.

3.1.6 Minimize traffic impacts to the surrounding area through internalized trip making realized by an improved jobs-to-housing balance.

3.2 General Development Guidelines:

3.2.1 Developments shall be laid out with a high degree of connectivity, particularly in urban core and village core areas.
3.2.2 Development plans shall include consideration of potential bus routes, high-capacity transit, and local circulator systems.

3.2.3 Development patterns need to be at densities and intensities that will support transit development.

3.2.4 Complete streets concepts will be used in designing streets (see transportation document for more detail regarding complete streets concepts).

3.2.5 Development within the various districts must follow the specific area requirements related to transportation needs to implement the goals of this plan.

**Goal 4:** Become a model of sustainable development practices.

4.1 Objectives:

4.1.1 Incorporate sustainable development practices that might serve as future best practices to other communities.

4.1.2 Achieve a financially sustainable area.

4.1.3 Ensure development is planned and timed in coordination with infrastructure delivery.

4.1.4 Development must consider both the short-term and long-term impacts on the natural physical environment.

4.1.5 The type and mix of uses developed in the area need to be balanced to provide the opportunity for area residents to live, work, shop, and play in the area, thus reducing infrastructure needs and vehicular trip generation.

4.1.6 Promote the recruitment and development of businesses and industries to this area that are involved in sustainability.

4.1.7 Allow interim land uses that will foster growth in the area while not being an impediment to realizing the vision.

4.1.8 Establish sustainable development criteria and guidelines related to energy, construction, and fiscal means that all new area development will follow.

4.2 **General Development Guidelines:**

4.2.1 New development throughout the area will be evaluated for its impact on the installation, operation, and maintenance of the City’s infrastructure. New development is expected to pay for its infrastructure requirements, as well as, the timing, aesthetics, and installation of infrastructure provided by private companies, such as SRP.

4.2.2 Design and locate buildings to respond to the desert climate and promote energy and water conservation. Designs will provide for human safety and comfort through shade and cooling strategies, solar orientation, passive solar strategies, and the deliberate use of materials to reduce solar radiation and the heat island effect.

4.2.3 Design landscape improvements to respond to the desert environment, reduce heat islands, and reduce water consumption.

4.2.4 Consider the integration and location of uses when designing a site in order to minimize vehicle trips.

4.2.5 Development within the various districts must follow the specific requirements established in those areas with regard to the sustainability goals of this plan.

4.2.6 Emphasis on the form of development will ensure that the transition of uses over time is consistent with the vision.
Goal 5: Plan for Implementation.

5.1 Objectives:

5.1.1 Pair infrastructure recommendations with funding strategies to ensure sufficient infrastructure during initial development.

5.1.2 Continue to work with key stakeholders toward a shared vision for local economic development.

5.1.3 Develop a Specific Area Transportation study to address airport circulation and access to the region.

5.1.4 Develop a phased transit plan with funding mechanisms for the area.

5.1.5 Partner with the private sector to promote development consistent with this plan including coordination of public sector utility infrastructure improvements with the needs of the private sector and the surrounding communities.

5.1.6 Coordinate land use planning with Gilbert, Queen Creek, Apache Junction, and the State of Arizona and ensure that transitions in building form complement those areas bordering the planning area.

5.1.7 Encourage regional partnerships to accomplish the goals of this plan. With the airport being a regional asset, the success of this plan will be an asset for the region as a whole.

5.1.8 Explore and develop aggressive funding mechanisms, including working with state leaders for changes in state law, which will help provide the funding needed for fiscal sustainability.

5.1.9 Pursue legislative initiatives and work with elected leaders to adopt innovative financing strategies and aggressive Community Facilities Districts so that the needed funding for this area and the region can be realized.

5.1.10 Develop a form-based approach to zoning for this area that will emphasize appropriate building forms and allow more flexibility and mixing of uses.

5.1.11 Evaluate a means by which the City is able to adopt a form-based approach to zoning within this area.
**Framework Districts**

**MIXED USE COMMUNITY DISTRICT**

**Focus**
This district is envisioned to be the area that solidifies the goal to balance land uses and provide sustainability through the creation of a live/work/play community. It will contain the widest variety of land uses within the planning area, with ultimate development including low- to high-density residential, commercial, employment, civic, and recreational uses to provide a complete community experience. While the other districts allow for residential uses, this district will be the primary area for residential development. Providing for residential use is critical to attaining the balance that is sought within the Mesa Gateway area amidst the employment, education, commercial and industrial uses found primarily within the other districts. This district will also include walkable mixed-use “urban core” areas to provide focus and identity.

The boundaries of this district are existent or planned freeways that serve as a transition zone to the other districts. Development in this transitional area can take advantage of freeway frontage and access. Business park, light industrial, and other higher-intensity employment uses, as well as regional community commercial uses, are compatible with this designation. High-density residential will be integrated with commercial and employment uses in urban cores and other mixed-use development areas.

**Form**
Development will include a wide range of building forms that provide for activities ranging from light industrial to single-family residential, with an emphasis on walkable streetscapes and environments. The most intense development patterns are expected in urban cores at Ellsworth and Elliot Roads and Ellsworth and Ray Roads. Structures in these cores will generally be built to the right-of-way line and are expected, over time, to be as tall as allowable with respect to the flight activity generated from the airport. While development throughout the Mesa Gateway area will be cognizant of the pedestrian, this area in particular will be designed to be especially pedestrian-friendly, with building entries, windows, and doors facing the street. Also within the western portion of this district, development adjacent to the freeways will be designed to be attractive when seen from the freeway as well as from the adjacent surface streets. This will create interest from the freeway on the part of those driving through. As development moves east, a transition to less intense development activity will be seen through increasingly less intense residential buildout to the planning area’s eastern boundary.
Goals

Goal 1: Maximize the Value of Phoenix-Mesa Gateway Airport
This district is to be developed with the mix of uses needed to attract the “knowledge workers” associated with the aerotropolis concept. While contributing to the area’s labor force, the northern portion of this district will be more greatly impacted by aircraft operations. Development will be designed to address these potential impacts to ensure the protection of airport operations.

Goal 2: Job Creation
Significant job centers are envisioned for the areas at the Southeast corner of Ellsworth and Elliot Roads and at the intersection of Ray and Ellsworth Roads. In order to attract the types of employers and workers envisioned, development will need to be intense, of high quality, and provide for pedestrian orientation, with unique and attractive public spaces, and building and site design that supports a pedestrian orientation.

Goal 3: Connectivity - Transportation/Transit
Given the urban nature of this district and its inclusion of residential areas, provision needs to be made in the development of this area for a highly developed transit system. With so many of the area’s residents living within this district, connection to the other areas by transit will be a critical means to achieving reduced vehicular trips. The Complete Streets concepts will provide for multiple modes of travel.

Goal 4: Sustainable Development
Sustainability will be achieved through the integration of multiple land uses and tailored building designs, reducing the need for vehicle travel. Particularly within this district, the residential uses allow for greater sustainability in that the employees of the area are able to live close by. This promotes both financial, environmental, and social sustainability. Green building and landscaping technologies will be encouraged within the area’s projects and open space areas.

Character – Mixed Use Community District

[Image of transition between building types and plan view]
Standards

- Typical Floor Area Ratio: 0.35 in lower density residential areas to 7.0 in higher density activity areas, such as those within the urban center
- Typical Uses: Residential, Commercial, Business park, and Urban Center
- Circulation Character: Roadways are generally either connectors or local. Ellsworth is classified as a boulevard. All roadways consist of 11-foot travel lanes. Through traffic will be directed to Ellsworth to allow for internal trips on connector and local roadways. A couplet intersection design could be used to increase the pedestrian character at the intersection of Ellsworth and Ray Roads.
- Service Areas: Must be screened from public view with landscape or structures.
- Landscape Character: Low water use plants must be used, except in high pedestrian activity areas. Irrigation systems will be designed to use the least amount of water necessary. Trees will provide shade, pedestrian scale, and heat absorption. Native plants will provide drought resistance as well as a consistent desert character.
- Lighting Character: Lighting will vary, with lower illumination in residential areas. Streets with greater nighttime traffic activity shall be illuminated to meet City standards. LED lighting shall be encouraged.
- Signage Character: Size, scale, and style of signage will be determined by the scale of the buildings that they relate to as well as the scale and speed of the intended viewer.

Block Character

The block character within this district will reflect the needs of the pedestrian-oriented areas that distinguish this area. In areas where residential and urban centers exist, it is important to provide shorter blocks where pedestrians feel comfortable walking or biking. When blocks are shorter in length, pedestrians are more likely to feel that they are able to travel outside of their vehicles. Shorter blocks also discourage vehicles from traveling at greater speeds due to curb breaks and the increased pedestrian presence. A target block length in this district is 300 feet.

Design

The intent of this section is to illustrate the variety of building styles that are envisioned within the district. Because multiple land uses are allowed within all of the districts, it is the form of the development within the districts that will distinguish them from each other. Uses within one district may take on a different style, character or massing dependent on their location. The following images demonstrate the type of development that is envisioned within the district.
MIXED USE COMMUNITY DISTRICT
INNER LOOP DISTRICT

Focus
The Inner Loop District will contain a wide variety of uses. The District should provide a high-quality, mixed use environment that is compatible with increasing over-flight activities associated with Phoenix-Mesa Gateway Airport operations. Since this area will be subject to the most revisions to the airport noise contours, land uses in this area may need to be generally nonresidential and the City should weigh new developments carefully. Over time, flexibility will be important as development should begin to transition to mixed uses, with concentrations of light industrial, office, and retail, with a possibility of higher-density residential uses in the future.

The Elliot Road corridor is envisioned as a transit corridor linking Elliott Road with the urban center at Ellsworth Road. A transit system will limit the need for use of personal automobiles for residents within this area. The high intensity of development in this area will be balanced with a significant area of community open space and connections to the regional path system. Close to the area’s boundary, the Loop 202, higher intensity uses will help to transition the district to meet the adjacent land uses. While the uses will be similar to those found throughout the district, building orientation that presents attractive facades to the freeway and contains high-quality design elements will be of importance.

Form
The major factors affecting form and character in this area are the freeway system and the increasing overflights of aircraft. Development in this area must be sensitive to the fact that aircraft activity will continue to increase. Development in this area must provide for significant sound attenuation and provide limited or unique ways to provide outdoor activities that would be sensitive to noise. Compared to the logistics and commerce district, this area will provide for higher density uses with emphasis on business park development. While business park development will contribute to the urban feel of the district as their densities increase, so too will the presence of the village centers. Village centers will provide areas that attract pedestrians and are to be built at a scale comfortable for those traveling by foot or bike. They will include uses such as retail, offices, services, high-density mixed-use residential, and open spaces. They are to be urban areas designed for pedestrian circulation and transit networks. If future residential is approved in this District, such uses must demonstrate their ability to address the impacts of aircraft operations and not limit the development and expansion of Phoenix-Mesa Gateway Airport. Appropriate residential projects are envisioned as mixed-use buildings of 40 dwelling units per net acre density or more, as identified in Building Types section of this document. The districts are based on the City’s existing General Plan land use designations, but with a greater mix of uses and an emphasis on the future growth and protection of the Phoenix-Mesa Gateway airport.
Goals

Goal 1: Maximize Potential of Phoenix-Mesa Gateway Airport
This area is directly under the primary flight path for aircraft leaving the airport. In order to ensure that growth and development of the Airport is not inhibited by development in this area, each project will need to demonstrate that it will not impede future growth and development of the Airport.

Goal 2: Job Creation
This area will contribute to the overall goal of establishing a major job center by providing a location for a wide variety of employment options. This district of high-intensity employment uses will be a primary area in which the City’s goal of creating at least 100,000 high-wage, high value jobs at Mesa Gateway is achieved. A mix of jobs is envisioned with supporting uses.

Goal 3: Connectivity - Transportation/Transit
This area will promote and take advantage of freeway and transit accessibility. The complete streets concepts will provide for multiple modes of travel. Elliot Road is envisioned as becoming a multi-modal transit corridor, in addition to acting as an element of the basic street network. Development along this roadway will be done in a way to facilitate the implementation of this transit corridor.

Goal 4: Sustainable Development
Sustainability will be achieved through the integration of a variety of land uses that create a self-sustaining community. The focus of this district is to provide a balance of jobs providing employment opportunities and services for those residing in the area. Beyond this, higher density and mixed use projects provide compact development, reducing sprawl and vehicular miles traveled. Projects in this area can also contribute to sustainable development through incorporating passive solar orientation, reduction of radiant surfaces, and the use of various cooling strategies to reduce energy consumption.

Character – Inner Loop District

Transition Between Building Types

Plan View
Standards

- **Typical Building Height:** Commercial: 1-2 stories; Mixed-Use: 2-8 stories; Business Park: 3-6 stories; Light Industrial: 1-2 stories
- **Typical Floor Area Ratio:** 0.35 in lower density areas to 7.0 in higher density activity areas.
- **Typical Uses:** Commercial, Business Park, and Light Industrial.
- **Circulation Character:** New roadways are generally connectors. All roadways consist of 11-foot travel lanes.
- **Service Areas:** Must be screened from public view with landscape or structures.
- **Landscape Character:** Low water use plants must be used, except in high pedestrian activity areas. Irrigation systems will be designed to use the least amount of water necessary. Trees will provide shade, pedestrian scale, and heat absorption. Native plants will provide drought resistance as well as a consistent desert character to the area.
- **Lighting Character:** Streets shall be illuminated to meet City standards. LED lighting shall be encouraged.
- **Signage Character:** Size, scale, and style of signage will be determined by the scale of the buildings that they relate to, as well as, the scale and speed of the intended viewer.

Block Character

The block character within this district will vary between areas with a greater intensity of vehicles and those with more pedestrian influence. For example, the development adjacent to the freeway is likely to see heavier motor vehicle traffic, while village centers and mixed use centers planned for this district will encourage alternate modes of travel. In those areas where pedestrian influence is encouraged, the target block length is 300 feet. However, in areas with greater vehicular use, block lengths greater than this are appropriate.

Design

The intent of this section is to illustrate the variety of building styles that are envisioned within the district. Because multiple land uses are allowed within all of the districts, it is the form of the development within the districts that will distinguish them from each other. Uses within one district may take on a different style, character, or massing dependent on their location. The following images demonstrate the type of development that is envisioned within this district.
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**AIRPORT/CAMPUS DISTRICT**

**Focus**
This district refers to the area encompassing the ASU Polytechnic/Chandler-Gilbert Community College Campus, the Phoenix-Mesa Gateway Airport, and the area immediately outside the airport’s future main terminal. It is envisioned as a mixed use district centered around educational opportunities, research and development functions, and airport-related uses that support the traveling public. Uses on the airport will relate to the uses across the airport boundary. Development in this area will be high-intensity and pedestrian-oriented. Its pedestrian friendliness will distinguish this district from more typical airport-adjacent developments.

The transitional area or boundary of this quadrant will predominantly be high intensity employment uses that integrate well with the on-airport uses. Uses in this area will also address the needs of travelers and visitors and provide a smooth transition from the airport into the rest of the community. High density residential uses can be integrated within a mixed-use development, when appropriate. This area will be a hub of visitor activity and create the first and last impression visitors have of the community. It must therefore provide a very high-quality image.

**Form**
The primary elements of character and form in this area are aerospace, technology, and people. Development in this area will consider and respond to these characteristics. The primary emphasis for development on the west side of the airport will be the college campuses with their associated research and development activities. This area will be mixed-use with high density residential and intense commercial uses augmenting the primary uses. Pedestrian-oriented development and transit options will be critical to the success of the on-going foot traffic generated by the uses in this area. The eastern side of the Airport will be focused on Airport users and implementation of the aerotropolis concept. This concept emphasizes the integration of the airport with surrounding uses such that there is seamless transition from on-airport to off-airport activities. The area immediately east of the airport along Williams Field Road is envisioned as an intense office area with associated commercial uses. Building and site design will emphasize a pedestrian orientation and encourage seamless connectivity between the pedestrian street network and the local and regional transportation systems.

**Goals**

**Goal 1: Maximize Potential of Phoenix-Mesa Gateway Airport**
Projects in this area must consider height, location, and construction so that they best meet compliance with flight activity from the airport. As the area develops, the airport will provide a unique asset to many companies seeking locations with this amenity nearby.

**Goal 2: Job Creation**
Significant job centers are envisioned for the area of Williams Field east
of Ellsworth and to the south of the campus area. While the main focus will be on office and research and development type jobs, there will be a need for many supporting business and jobs. This area also contributes to the knowledge-based labor market through the programs offered by these educational facilities.

**Goal 3: Connectivity - Transportation/Transit**

Development on the west side of the Airport will utilize the Complete Streets concepts to provide for multiple modes of travel. The east side will focus on moving people into and out of the airport with a circulation system developed around the Airport. A local circulator will provide connectivity between both sides of the Airport and east of the Gateway Freeway. A trail system integrated with open space will link the campus area to the urban cores and the rest of the planning area, to provide high connectivity for pedestrian and bicycle users.

**Goal 4: Sustainable Development**

Sustainability through green building has already begun on the ASU Polytechnic campus with its recent incorporation of LEED certified structures. The City will encourage future development to consider innovative structures and alternative energy measures on the airport and university campuses. This area also contributes to sustainability through the incorporation of pedestrian walkways through the university campus, connectivity to the airport, and its complimentary cluster development. For these pedestrian

**Character – Airport/Campus District**
links to be successful, the use of the suggested landscaping, paving, and cooling strategies should be implemented.

**Standards**

- Typical Building Height: Mixed use: 3-8 stories; Business park: 3-6 stories; Light Industrial: 1-3 stories.
- Floor Area Ratio: 0.35 in lower density industrial use areas to 10.0 in higher density activity areas (As allowed by FAA height restrictions).
- Typical Uses: Mixed use, Business park, Educational and research uses, and Light Industrial.
- Circulation Character: Roadways are generally classified as connectors and local. All roadways consist of 11-foot travel lanes. This area is will be serviced by 3 forms of public transportation: local transit, circulators, and high-capacity transit.
- Service Areas: Must be screened from public view with landscape or structures.
- Landscape Character: Low water use plants must be used, except in high pedestrian activity areas. Irrigation systems will be designed to use the least amount of water necessary. Trees will provide shade, pedestrian scale, and heat absorption. Native plants will provide drought resistance as well as a consistent desert character to the area.
- Lighting Character: Streets shall be illuminated to meet City standards. LED lighting shall be encouraged.
- Signage Character: Size, scale, and style of signage will be determined by the scale of the buildings that they relate to, as well as, the scale and speed of the intended viewer.

**Block Character**

The block character within this district will reflect the needs of the pedestrian-oriented areas that distinguish this area. With the inclusion of the campus area and mixed use area adjacent to the airport, it is critical that this area take into consideration the number of pedestrians accessing the area. Shorter blocks where pedestrians feel comfortable walking or biking will be provided.

When blocks are shorter in length, pedestrians are more likely to feel that they can travel outside of their vehicles. Encouraging methods of travel outside single occupancy vehicle trips will also reduce congestion within and around the airport. A target block length in this district is 300 feet.

**Design**

The intent of this section is to illustrate the variety of building styles that are envisioned within the district. Because multiple land uses are allowed within all of the districts, it is the form of the development within the districts that will distinguish them from each other. Uses within one district may take on a different style, character, or massing dependent on their location. The following images demonstrate the type of development that is envisioned within this district.
LOGISTICS AND COMMERCE DISTRICT

Focus
This designation applies to areas south of the Airport/Campus District and the Williams Gateway Freeway. Heavy industrial, light industrial, business park, and commercial uses will be predominant within this district. Desired uses include manufacturing facilities, large warehouses, distribution facilities, planned employment parks, and similar uses. This district should provide a high-quality employment environment that is compatible with increasing over-flight activities associated with Phoenix-Mesa Gateway Airport. Greater intensity and higher density uses will be encouraged for development approaching the northern boundary of this area as it transitions to the planned freeway.

Form
While the objective of high-quality development and architecture needs to be maintained within this area, the focus will be on larger building masses and sites. Concern for pedestrian-oriented design will be focused more selectively on retail and office areas and areas around transit stops. Warehouse and distribution-type buildings will be prevalent in the area. Storage areas need to be screened, and views along primary arterials need to be of high quality. Transitions in building form and scale need to occur on the western side of this area to be compatible with the Airport/Campus area as well as along the freeway frontage and the bordering communities to the South and East.

Goals
Goal 1: Maximize Potential of Phoenix-Mesa Gateway Airport
The center portion of this area is directly under the primary landing approach zone. Development in this area must respect and preserve this flight corridor. This area is seen as an excellent location for airport-related uses, particularly those that will support cargo activities.

Goal 2: Job Creation
This area will be focused on job creation. The majority of these jobs will be in heavy and light manufacturing, warehousing, and business park activities. Regional and community commercial activities are also envisioned, primarily along the future Williams Gateway Freeway. While the goal is to attract 100,000 high-wage, high value jobs, it will be noted that retail and service jobs that provide a supportive role, as well as balance, are of equal importance. This district will provide for the range and diversity of employment opportunities that will contribute to a balanced community.
Goal 3: Connectivity - Transportation/Transit
The primary focus of the circulation system in this area is to facilitate the movement of truck traffic. Attention will also be given to efficiently moving traffic via the arterial street network. The Complete Streets concepts will provide for multiple modes of travel.

Goal 4: Sustainable Development
The primary means for sustainability in this district will be through site planning and building design that meet or exceed the City’s goals for energy efficiency and reduced carbon emissions. Efforts will also be made to attract industries and businesses that are developing and implementing green technologies and products. Building methods that help reduce greenhouse gas emissions as detailed earlier will be encouraged, from pre-design through construction.

Character – Logistics and Commerce District
Standards

- Typical Building Height: 1-2 stories.
- Floor Area Ratio: 0.20 in lower density industrial use areas to 0.75 in higher density activity areas.
- Typical Uses: Intensive manufacturing, assembly, and storage operations, including limited manufacturing and processing, wholesaling, warehousing, and distribution.
- Circulation Character: New roadways are generally connectors. All roadways consist of 11-foot travel lanes.
- Service Areas: Service streets provide access to service and parking areas, which must be screened from arterial and primary streets.
- Landscape Character: Low water use plants must be used, except in high pedestrian activity areas. Irrigation systems will be designed to use the least amount of water necessary. Trees will provide shade, pedestrian scale, and heat absorption. Native plants will provide drought resistance as well as a consistent desert character to the area.
- Lighting Character: Streets shall be illuminated to meet City standards. LED lighting shall be encouraged.
- Signage Character: Size, scale, and style of signage will be determined by the scale of the buildings that they relate to, as well as, the scale and speed of the intended viewer.

Block Character

In areas where this district transitions into either the Mixed Use Community or Campus/Airport district, it will be necessary to consider the pedestrian use within these areas. Where pedestrian use is high, it is important to provide shorter length blocks as detailed in earlier sections. However, because this district is likely to see a build out with greater intensity of manufacturing, warehouse, and distribution-type facilities, longer blocks are more appropriate. Access to this type of development requires provision for large vehicles, meaning, larger parking lots, wide curb cuts, and sufficient roadways. Average block lengths in this district will likely be 800 feet.

Design

The intent of this section is to illustrate the variety of building styles that are envisioned within the district. Because multiple land uses are allowed within all of the districts, it is the form of the development within the districts that will distinguish them from each other. Uses within one district may take on a different style, character, or massing dependent on their location. The following images demonstrate the type of development that is envisioned within this district.
The following building design standards illustrate typical building typologies for the Mesa Gateway area. Building models, photos, and annotations showing best practices for designing buildings and sites to contribute to the vision are included. With the desire to create a pedestrian-oriented and transit-friendly urban environment, the form of the buildings and sites will be of significant importance. Building types have been included for residential, employment, retail, and mixed use. The residential building types show a wide variety of building construction types and parking strategies to accommodate the various types of residents in the area. It is envisioned that this area will be home to students, young professionals, executives, and families requiring rental housing and homeownership opportunities.

With the emphasis on form as opposed to use, these graphics will also serve to demonstrate how building types might be mixed among each other to create the character desired within particular areas of the plan. Height, density, and other building characteristics of similar nature within an area will allow for mixed uses to occur while the form remains consistent and complementary. This section also includes models and photos of buildings with mixed uses. These buildings not only help to meet the needs of a live/work/play environment, but can also provide transition both in form and use.

These illustrations will be helpful in determining the site design for the building types. With the emphasis on pedestrian-friendly environments, street frontage and parking have been illustrated to demonstrate best practices for these elements. Parking in the rear of buildings or in the center eliminates conflict between vehicular and pedestrian traffic, thus encouraging pedestrians in the area.
**Standard Single Family**
6 dwelling units per net acre density

- Minimal setback from roadway
- Mix of garage access from rear alley and from driveways off street

**Small-Lot Single Family**
8 dwelling units per net acre density

- Garages accessed from rear alley
- Sidewalks are within short distance to dwelling unit entrance

New Mexico

Tucson, Arizona
**Courtyard Single Family**
10 dwelling units per net acre density

- Houses front onto shared open space
- Garages accessed from rear alley

**Townhouse**
20 dwelling units per net acre density

- Street frontage
- Garages accessed from rear alley

Mix of detached garages with yard and tuck-under garages

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Irvine, California

Phoenix, Arizona
Mansion Condominium
20 dwelling units per net acre density

Garages accessed from rear alley
Each “mansion” divided into multiple condominiums

Low-Rise Multifamily
40 dwelling units per net acre density

Parking accessed from rear alley
Pedestrian orientation by placing units close to street

Denver, Colorado
Phoenix, Arizona
**Embedded Garage Multifamily**

40 dwelling units per net acre density

Structured parking “embedded” in ring of units

**Courtyard open space**

**Highrise Multifamily**

90 dwelling units per net acre density

Flats “wrap” structured parking

**Structured parking in center of building**

**Flats in towers**

**Internal parking alleviates pedestrian conflicts with vehicles**

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By embedding parking, units are brought close to the sidewalk providing for a pedestrian environment. This encourages biking and walking.

**Tampa, Florida**

**Vancouver, British Columbia**

Compact development conserves land and promotes transportation efficiency and walkability.
COMMERCIAL BUILDING DESIGN STANDARDS

Midrise Office
1.0 - 5.0 Typical
Floor-Area Ratio

Campus Office
0.3 - 0.7 Typical
Floor-Area Ratio
**Highrise Office**
5.0 - 20.0 Typical Floor-Area Ratio

- Street frontage
- Structured parking in center of building

*San Francisco, California*

**Light Industrial**
0.4-0.6 Typical Floor-Area Ratio

- Entry
- Street frontage
- Parking in Rear and at Sides
- Loading

*Phoenix, Arizona*
**General Industrial**
0.5 Typical Floor-Area Ratio

- Parking at Sides
- Street frontage
- Loading

**RETAIL BUILDING DESIGN STANDARDS**

**Big Box/Power Center**
0.25 - 0.75 Typical Floor-Area Ratio
May incorporate inline shops, professional office, and limited residential

- Anchor Retail
- Shops
- Parking in center of block
- Retail/Office Mixed Use

Oakville, Ontario

El Cerrito, California
**Grocery-Anchored Center**
0.3 - 0.75 Typical Floor-Area Ratio
Incorporates inline shops, professional office, and limited townhouse or multifamily residential.

- Grocery Anchor
- Retail/Office Mixed Use
- Residential/Retail Mixed Use
- Parking in center of block
- Liner buildings front onto sidewalks

**Small Retail Center**
0.3 - 0.75 Typical Floor-Area Ratio

- Parking in back of retail buildings
- Paseo linking surface parking to street

Embedding parking encourages pedestrian street access, walkability and transit use.

Parking in rear encourages access by pedestrians and transit.

San Diego, California

Danville, California

Phoenix, Arizona
Urban Entertainment/Lifestyle Center
1.0 - 3.0 Typical Floor-Area Ratio
Incorporates inline shops, professional office, and limited multifamily residential

Mixed Use Building Design Standards
Lowrise Multifamily-over-Retail Mixed Use

Mixed use contributes to a balance between jobs and housing.
Retail on Ground Floor fronting street

Structured parking “embedded” in ring of units

Courtyard open space

Retail on Ground Floor fronting street

On-street parking

Highrise Multifamily-over-Retail Mixed Use

Embedded parking allows for minimal setback from street to retain pedestrian environment

On-street parking

Retail on Ground Floor fronting street

Mixed use allows for decreased travel distances and encourages transportation efficiency.

Redmond, Washington

East Palo Alto, California
Highrise Office-over-Retail Mixed Use

Phoenix, Arizona

On-street parking
Retail on Ground Floor fronting street
Building Lobby

Phoenix, Arizona

Phoenix, Arizona
Midrise Office-over-Retail Mixed Use

- Parking in Rear
- Retail on Ground Floor fronting street
- On-street parking

Scottsdale, Arizona
Integrated Open Space

On-Street Parking

Street Easy to Cross

Pedestrian circulation continues in open space and might include shared-use path to accommodate bicycles

Residential building frontage across street from open space

Celebration, Florida

Denver, Colorado

Celebration, Florida

Addison, Texas