



PLANNING ANALYSIS

3.1 Location

The City of Mesquite is located in the far northeast corner of Clark County, Nevada on U.S. Interstate Highway 15, as it parallels the Virgin River, near the Arizona State line. Other, smaller nearby communities along the river also served by the Interstate are Beaver Dam and Littlefield, Arizona, as well as Bunkerville Nevada.

More distant neighbors to the southeast include the unincorporated Clark County communities of Moapa, Glendale, Logandale and Overton.

The nearest larger incorporated areas are Las Vegas, approximately 75 miles to the southeast, in Clark County, Nevada and St. George, approximately 35 miles northeast, in Washington County, Utah. The Las Vegas Valley has an approximate population of 850,000 while St. George and Washington County have a population of approximately 55,000.

Geographically, the City of Mesquite lies in ranges 70 and 71 east and in township 13 south, just south of the Lincoln County, Nevada line.

3.2 Topography, Hydrography and Vegetation

Topography throughout the area slopes and drains to the Virgin River as it flows downstream to Lake Mead. The river, in turn, drops in elevation 1580 to 1530 as it moves from the northeast to southwest forming the southern boundary to the city along its route. Land south of the river rises back to the Virgin Mountains forming alluvial fans.

All along the river, the flood plain expands and contracts creating the undulating riparian area which easily identifies the river's boundary.

Area north of the river slopes uniformly from Interstate 15 and has been developed primarily for agricultural purposes. Surface irrigation is provided from a canal, which runs parallel with the south edge of the Interstate. Segments of the agricultural land have been converted over the years for use for commercial activities and housing along or adjacent to Mesquite Boulevard, the city's major arterial.

At the northeast end of the city, at the 4th high school, the elevation is 1768; at the southwest end of the city, at the Oasis Hotel and Casino, the elevation is 1600.



The majority of the older area of the city has been constructed at or near the 1600 elevation.

Area to the north of Interstate 15 rises more rapidly and the terrain has evolved from general erosion created by a number of converging arroyos leading to the Virgin River. Above the Interstate, the arroyos connect to create three larger washes, which are channeled beneath the highway and through the older section of the city to the river. These channels provide the primary flood control and flood protection for the City of Mesquite.

Most of the soils in the area, both north and south of Interstate 15 are acceptable for construction. More vertical sandy slopes, however, have a tendency, under loading to shift and slide and require extensive soils analysis and civil-site design.

Areas near the river have reduced soils strengths and limited bearing capacity. Development in these areas will require friction pilings or other sophisticated foundation systems. Although the U.S.G.S. has identified seismic faults in the Mesquite area, none of the faults have signaled any seismic activity.

Native plants include annuals, biennials and perennials. Seeds from annual forbs and grasses, however, may lie dormant in the soil for a number of years until the proper amounts of moisture combine with the temperature needed for germination.

Winter precipitation created by Pacific frontal storms will generate a large production of spring and summer annuals and strengthen the growth of biennials and perennials for a particular year. Summer precipitation has little impact on the germination of native annuals but does reinforce and strengthen existing growth.

Salt desert shrub include four-wing salt bush, shad scale, green ephedra, seep weed and budsage. Common forbs and grasses include halogeton, Russian thistle, big galleta, desert needlegrass, fiaree and Indian rice grass. Creosote bush and white bursage grow commingled with yucca throughout the area.

The riparian zone along the Virgin River supports rushes, cattails and inland salt grass. Salt cedar has invaded much of the river basin and banks of the washes displacing native plants. Stands of mesquite and greasewood are also found in great abundance along the river edge and flood basin.

South of the City of Mesquite, are the Virgin Mountains. The Bureau of Land Management describes the range as having "particular scientific interest because it encompasses features representative of three North American desert life zones. Within the boundaries of the Natural Area is an interface zone where the southern Great Basin, eastern Mojave and northern Sonoran deserts meet. The



Virgin Mountains are a widely recognized natural laboratory for researchers seeking to better understand this complex geographic zone.”

3.3 Climatic Factors

While rain is not a major climatic factor for the river valley, the effects of (predominately) summer thunderstorms have a major impact on community planning. Flash flooding is a reality of the desert and adequate flood channels are required to carry the results of localized thunderstorms away to the river. In central areas, the ground floors of buildings need to be elevated to be protected from flash flooding. Adequate sites should be developed to collect and manage rainfall that cannot be directed to the washes. It is especially important when relating to large expanses of parking areas.

Predominant year round winds and breezes are from the south, southwest. Some winter winds occur from the north and northwest. Breezes from 5 to 15 mph are relatively common. Winds accompanying storms frequently reach 45 to 50 mph with higher gusts to 75 mph. Most high wind conditions are from the south, southwest and are short lived. Where possible, building entrances should be located and designed to respond to windy conditions of the river valley.

While winter temperatures are mostly moderate, thin layers of ice can often form during the predawn hours from dew or from landscape irrigation water collecting on paving, curbs, gutters and sidewalks. If shaded, these areas remain slippery and dangerous into midmorning hours. Therefore, it is important that major pedestrian ways have exposure to early morning winter sun. Solar gain, to the other extreme however, is the major climatic influence on site development in Mesquite. South glazing should be protected from the winter sun while almost everything else needs shielding from the effects of summer sun.

Buildings, wherever possible, should be oriented with their minimum dimension exposed to the west. Protective north glazing is an effective means for daylighting and allowing heat loss from the buildings during the winter months.

3.4 Utilities

Existing utility systems, with the exception of natural gas, are designed to be expanded and extended to accommodate long range future growth. Las Vegas based Southwest Gas Company and Utah based Mountain Fuel have considered extending gas service to the city. The new utility can be routed within existing right-of-ways and easements. Access under Mesquite Boulevard and other existing arterials will have to be bored.

Community based resources, which provide electrical power service, telephone and other communications systems, including cable television, are committed to



meeting Mesquite's demands for growth and expansion. With the exception of cable television, which is still in its infancy, all of the local utilities have proven track records of quality and state-of-the-art services.

Sanitary sewer service for the city has a capacity to accommodate approximately 10-12,000 residents. Under the Master Plan, the southern segment of the city will ultimately grow to reach a population of 10,000. With anticipated growth north of Interstate 15, expansion of the existing facility – when the population exceeds 20 to 25,000 residents – or a second (remote) sewer treatment plant will be required. A remote plant can treat water so that it can be used for irrigation purposes. The existing sewer treatment system will also need expansion to add chlorinating treatment so that reclaimed water can be used for irrigation purposes.

A solid waste facility study is currently underway to develop a new future solid waste disposal site for the city in Lincoln County, Nevada. A new water service and distribution Master Plan is also being prepared for the recently formed Virgin Valley Water District. The object of the water service Master Plan is to provide ample future water to serve the Mesquite population well into the 21st century. Both master plans can be integrated and incorporated as part of this document if desired.

3.5 Aesthetic Factors and Vistas

Residents of the City of Mesquite have wonderful vistas to the surrounding mountains, and these vistas should be utilized as a major urban design factor. Vistas change from mesas to the north, to the Virgin Mountain to the south. Vistas extend back into Nevada. As well as into Arizona and Utah. Numerous thematic planning and design relationships can be derived from the community and nearby mountains.

Vistas to the river are also remarkable and can serve as valuable planning and design factors. The washes draining to the river provide added opportunities for vistas if they are landscaped and developed for community use.

As the sun moves across the solstice throughout the year, colors across the valley are in constant change. These colors range from the bright earth tones just after sunrise, to deep purples at dusk; this range of color is only seen in the desert. As an aesthetic factor the desert chroma can be utilized as a strong community design feature to align the community with its natural surroundings.

3.6 Wildlife

Rangeland along the river basin and wetlands provides food and cover for a wide variety of wildlife including coyote, rabbit, squirrel, hawks, doves, quail and



pheasant. Shallow water areas can be developed to attract duck, geese and other wetland wildlife to the region and as an enhancement to the quality of life in the community. Reinforcement of the wetlands along the riparian zone will also benefit education and scientific inquiry.

3.7 Farming

Historically, truck farming has served an important role along the river. But over the years, fruits and vegetables have been replaced by alfalfa, which can be mowed as many as six times each season and provide up to 8 tons of yield per acre. Valuable farmlands, however, are being sold off for development. Where possible, these lands should be preserved and protected for future agriculture purposes, and perhaps a return to truck farming. The U.S. Department of Agriculture has identified much of the land along the river suitable for fruit and vegetable farming. Potential crops include onions, asparagus, tomato plants, radishes, lettuce, sugar beets, pomegranates, figs and melons. Nut crops include pecans, pistachios and macadamias.

A lesson from Los Angeles is that once farmlands are sold off and developed, they can never be returned and used for crops again. It is far more wise to build on the "non-productive" land and save the "enriched" for the community's future.

3.8 Public Safety

Police service for Mesquite is excellent. The existing low crime rate is a result of the city's small town rural population, community ethic, religious and cultural heritage, and good police work. As long as the current balance remains and department support expands proportionately with growth on the city, it can be expected that police service will remain excellent.

Fire service and Emergency Medical service are currently evolving to provide more state-of-the-art contributions to the community. As Mesquite continues to grow, fire services will need to convert to more of a staffed personnel department and add more trained personnel to strengthen the mix between full time staff and volunteers. With increased population, the medical service will also be required to expand. A population of 20,000 is necessary to support a full service community hospital with emergency facilities. Until Mesquite grows to that population, emergency patients will need to continue to be transported. Helicopter service can be considered as a future interim emergency transportation means until the community can support local medical facilities.

3.9 Existing Zoning

Most of the city's zoning is developed as horizontal "ribbon" strips. The central commercial strip is along the full length of Mesquite Boulevard. Strip linear zoning has been used extensively throughout the west and southwest to



maximize and exploit land values along heavily trafficked corridors. Results, however, lead to decreased property values for adjacent and nearby parcels and landowners. Other consequences yield to heavy traffic congestion along the strip

collectors including much higher levels of air pollution and increased numbers of pedestrian and vehicular accidents.

More recently accepted planning principles utilize redistributed commercial, professional, multi-family and single family housing zones to areas which are in close proximity to schools, parks and churches to facilitate pedestrian usage. Many successful new projects are multifunctional planned unit developments (P.U.D.'s) which incorporate a variety of zoning elements within the project to serve residents' shopping, business and related household needs. With some new projects, commercial ground floor establishments are beneath second, and sometimes third floor, multi family housing units; much like many established 1700's, 1800's and early 1900's communities across the United States.

Downsizing existing zoning elements for the south sector of the city will be important for controlling balanced growth and future development. Too much land area is reserved for commercial enterprises along Mesquite Boulevard and multi-family housing districts need to be downscaled to reduce density.

3.10 Housing

With the exception of newer housing which has been constructed in conformance with the Uniform Building Code, citizens who live in older developments reside in a broad range of facilities, which may or may not be completely safe. Some of the existing older housing is in such a state of disrepair that it cannot be upgraded or restored for continued use.

However, there exists older housing that is of historic and cultural significance to the community-at-large and these structures should be restored for posterity. Most of these historic homes are on or near Mesquite Boulevard. Other older homes, which can be renovated, should continue to be utilized as they help establish context and scale for other development throughout the city.

A significant segment of existing older housing is either mobile or modular homes. Within areas developed for single family residences or rural estates, permanently sited mobile homes should be prohibited. In those areas where they currently exist, landowners should provide the city with an approved plan to remove the units within a stipulated time frame. Existing modular homes should be required to be placed on permanent foundations and brought into conformance with the Uniform Building Code.



All older houses should be inspected by the city for life-safety compliance. Non-conforming structures should be required to be brought into conformance if it is to be utilized for rental or for any purpose where the public may enter. Any variance should be issued with an approved time frame for compliance.

3.11 Streets and Highways

The Nevada Department of Transportation manages U.S. Interstate 15 and Mesquite Boulevard. Both of these roadways are in excellent condition and have been recently upgraded. Clark County, Regional Highways manages Riverside Road, and it too is in excellent condition. Other recent road improvements have been underway to upgrade local arterials and collectors. Most of the newer local streets are constructed by developers in compliance with Clark County Standards, and include curbs, gutters, sidewalks and street lighting. However, many of the older local streets are missing street improvements other than pavement.

The city recently offered the public an opportunity to establish a special assessment district in those areas lacking segments of the roadway infrastructure to bond construction of the missing elements. The public turned down the bonding opportunity. While the city cannot force current owners to fund the needed infrastructure, they can prohibit the sale or rental of any or all of the units until the property owners agree to be obligated to a future improvement district.

Right-of-ways are also minimal for most of the local streets, collectors and arterials, and increases are needed to accommodate traffic, which will grow proportionately with the future increase in population. None of the existing rights-of-ways incorporates any provisions for medians, landscaping or a street-tree-planting program.

Storm sewage, for the most part, is accommodated through surface drainage along roadways. There is an underground system along Mesquite Boulevard that drains into the flood drainage channel network. As the local roadway system expands, more catchments and outlets to the channels or catchments drained directly to the Virgin River will be needed.

There is an apparent lack of pedestrian routes and bikeways throughout the city. Few of the pathways, across the older sections of the town, comply with recent federally mandated requirements for the disabled. Areas of the community without curbs, gutters and sidewalks are in peril, as are the property owners, of federal civil rights action – which is a criminal offense. The city should make at-risk property owner's aware of ramification's relative to this issue.



Until some form of public transportation exists within the city, the community should take advantage of the E.O.B. bus service between Las Vegas and Mesquite. A similar service to provide local transportation should be initiated to assist the elderly, the infirmed and those citizens without other means of being transported. With a well-organized transportation network, Mesquite can also become home for residents who work in St. George, Utah, the emerging Moapa area and Las Vegas.