

UPPER LAS VEGAS WASH VISION PLAN



PREPARED FOR THE CITY OF LAS VEGAS
SEPTEMBER 2017



R-43-2017
Adopted 09/06/2017



ACKNOWLEDGEMENTS

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CONTENTS

INTRODUCTION	1-3
EXISTING CONDITIONS	5-11
PLANNING CONCEPT	13-37
NEXT STEPS	39-41
APPENDIX	01-011





INTRODUCTION

INTRODUCTION

ABOUT THE PROJECT

This plan will provide a conceptual plan document for an undeveloped parcel adjacent to the Upper Las Vegas Wash in Northwestern Las Vegas. The site is shaped by the water flows into the Las Vegas Wash and defined by views to the adjacent mountain ranges and cultural resources. The planning effort outlined in this document explores opportunities for development that will harmoniously incorporate residential, commercial and civic uses while preserving the landscape of the site. The plan is a high level concept to provide for a thriving mixed use village and identify land use that will guide the City to a great project.

PURPOSE AND NEED

Northwest Las Vegas is seeing growth in manufacturing and private sector industry. The City recently annexed 1,800 acres north of the Las Vegas Paiute Indian Reservation and 2,200 acres west of CC 215. Job growth has created a demand for housing in the area that is growing at a stable rate. Northwestern Las Vegas is an ideal location for regional growth due to the scenic natural setting, availability of developable land, and connectivity to transportation and trails.

The project site is currently open space adjacent to the Tule Springs Fossil Beds National Monument, Las Vegas Wash and Paiute Tribal Lands with an existing general plan designation of traditional neighborhood development. Due to the special setting of the site, the City identified a need to approach future development beyond the typical patterns of fringe communities in the West. This document proposes a vision for future development patterns which embraces the adjacent natural edge and will set a precedent for regional planning in Northwestern Las Vegas.



Context Map



PROJECT VISION

DILEMMA

How will future development in this area create a community in a landscape that is both culturally special and environmentally sensitive? The site is at the City's northern edge, a 20 minute drive from the heart of Las Vegas. Previous planning suggests a highly dense plan more appropriate for a central urban area. How can this planning process balance the needs of creating a walkable, mixed use community while protecting the cultural and environmental resources of The Las Vegas Wash, The Paiute Tribe and Tule Springs Fossil Beds National Monument?

THESIS

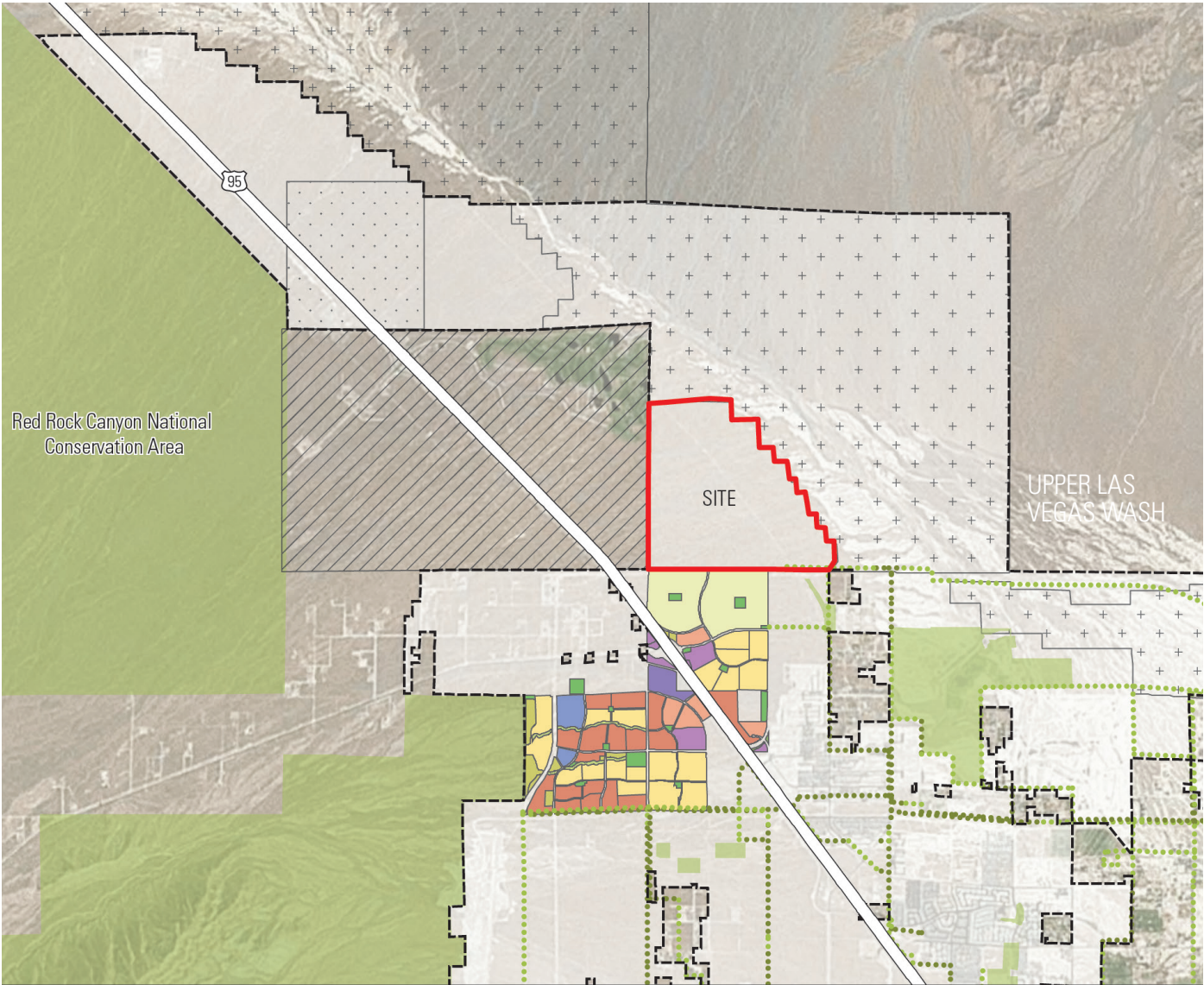
The existing setting will inform the design. The site is characterized by stunning views to the mountains over the Las Vegas Wash and drainage corridors with native landscape, valleys and channels crafted by water flows. The edge of the Wash should be a public amenity to all, connected to development by large open space trail corridors to respect and restore the Las Vegas Wash. Between these corridors are villages of denser, mixed use and walkable development. Development will be organized through a transect; with more dense development along the southern and eastern property lines where there is proposed future development and transitioning to lower density along eastern and northern property lines that border The Las Vegas Wash and Tule Springs Fossil Beds National Monument.

PROJECT OBJECTIVES

The following objectives will help to guide the planning process;

- Develop planning recommendations for the highest and best uses of the site.
- Develop planning recommendations that fit into the broader context of Northwestern Las Vegas.
- Develop planning recommendations that highlights the natural setting through thoughtful planning.
- Develop planning recommendations that support a vibrant, mixed use community to live, work and play.
- Develop a master plan that accommodates a logical phasing for development to occur.

REGIONAL CONTEXT MAP



LEGEND

- | | | | |
|--|--|-------------------------------|-----------------------------------|
| Site boundary | TRANSPORTATION/RECREATION | SKY CANYON LANDUSE | Residential "Low" |
| The City of Las Vegas | Highways | Flood control public facility | Residential "Medium-Low Attached" |
| Tule Springs Fossil Beds National Monument | Trails (approved/under construction) | Arroyo | Residential "Medium-Low" |
| Las Vegas Paiute Property | Trails (existing) | Open space | Residential "Adult-Active" |
| Job Creation Zone | Tule Springs Fossil Beds National Monument | Park and Trail | General Commercial |
| | Parks & Open Space | School | Gaming |



Regional Context Map





EXISTING CONDITIONS

EXISTING CONDITIONS

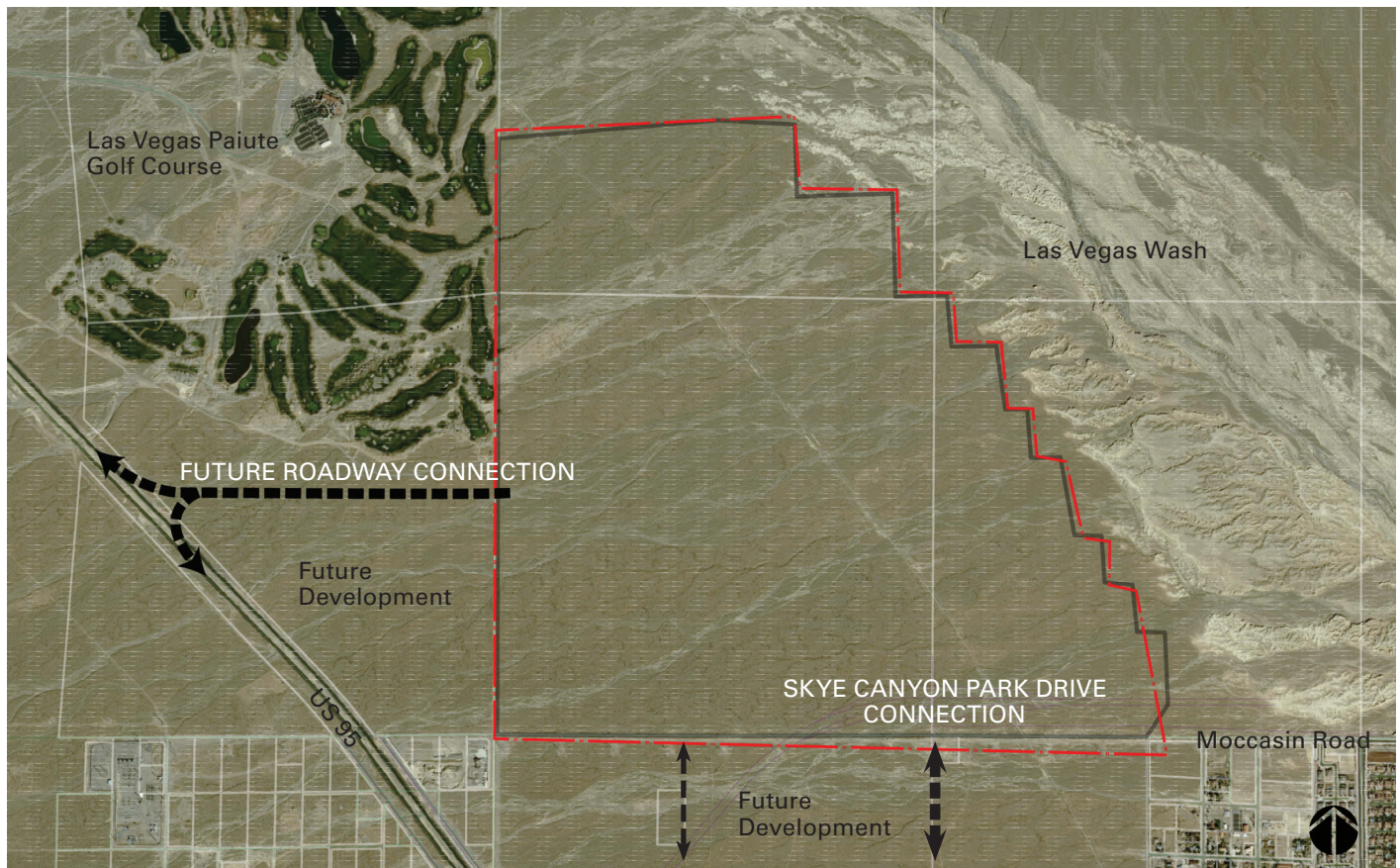
REGIONAL CONTEXT

GROWTH OF NORTHWEST LAS VEGAS

The City of Las Vegas is the largest metropolitan area in the state and is a center for international commerce, urban development and entertainment. It is visited by millions of tourists each year producing a gross metropolitan product of more than \$100 billion. Nevada's jobless rate is lower than it has been in eight years. Las Vegas is seeing sustained growth in residential, office, commercial and retail development.

The Las Vegas Valley has seen significant growth in the last 20 years, more than doubling its population from 1990 to more than 2 million. The City continues sustained growth in population at about 2% per year. These trends, in addition to national trends of people migrating towards cities, suggest a need for continued growth for housing and business in the City.

The project site carries a General Plan Land Use Designation of Traditional Neighborhood Development, with potential land uses to include employment centers and an industrial park. The Las Vegas Paiute Tribe owns the property to the west and is planning to develop this area with access to US-95 that will extend into the property. Current planning for the project site to the south, Skye Canyon, includes an active adult community, traditional residential and commercial. Roadway locations need to be coordinated for access to US-95. Three future school sites are included in the northwest valley including a high school. A future substation or school could be located to the southeast of the project site.



Project Site



SITE IMAGERY



SITE DESCRIPTION

The site is located adjacent to the Paiute Golf Course, Tule Springs Fossil Beds National Monument and The Upper Las Vegas Wash.

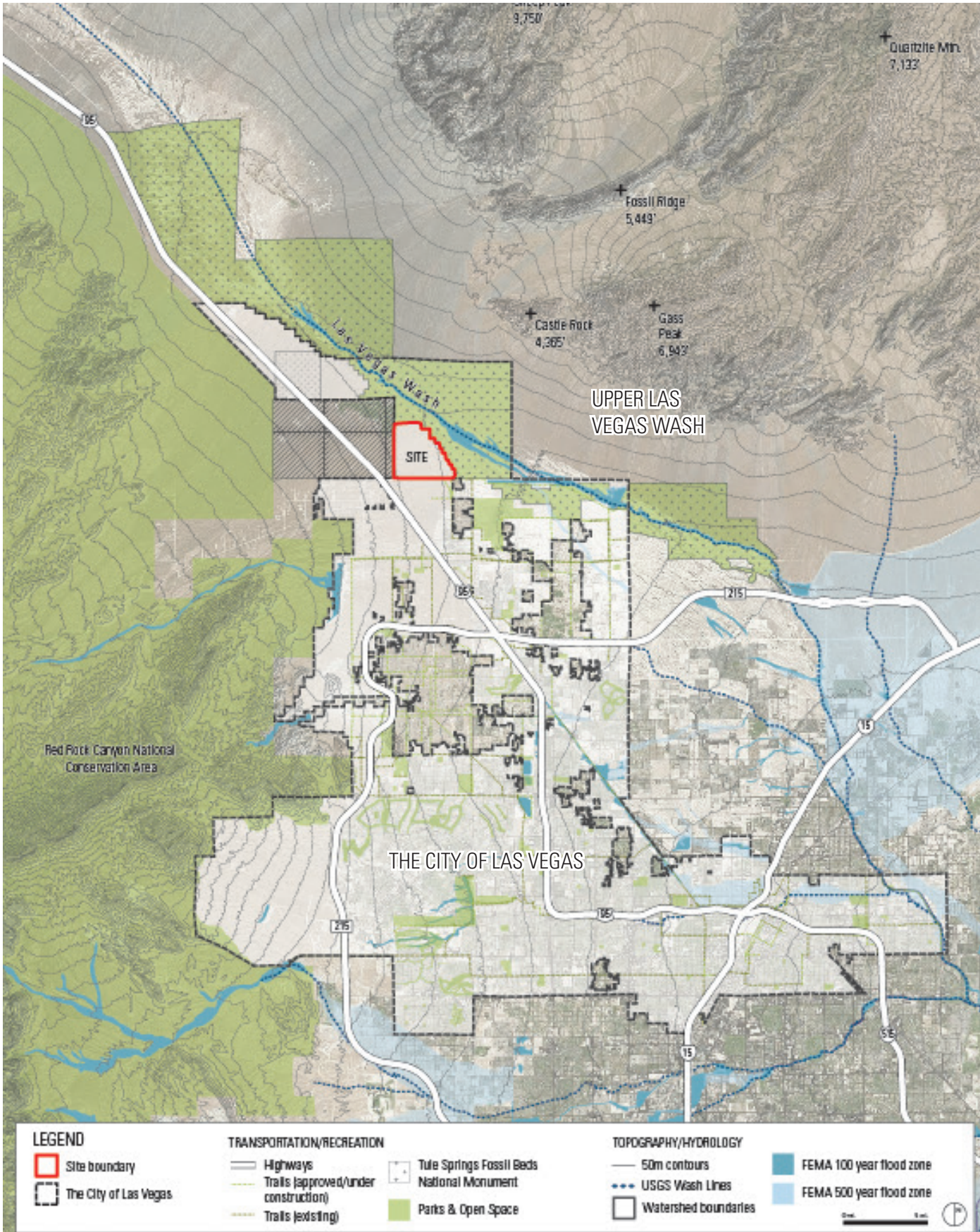
The site is characterized by native desert scrub including creosote, Joshua trees, sagebrush, native desert flora and grasses.

The drainage patterns from the surrounding areas have sculpted the landscape into channels that drain towards the Wash.

Overhead power lines run along the southern edge of the site along Moccasin Road and through the center of the site along the former Tonopah Railway bed.

ATV (all terrain vehicles) tracks can be found throughout the site.

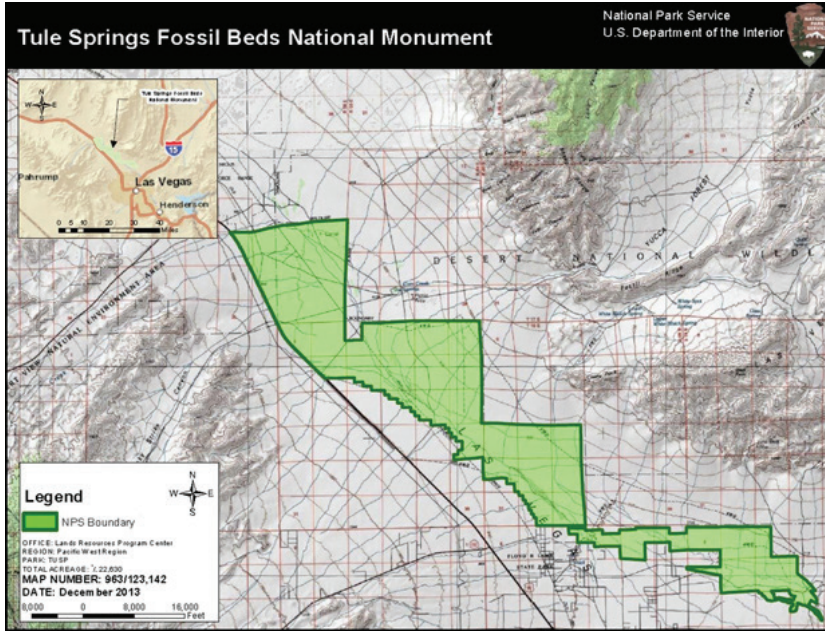
NATURAL FEATURES MAP



Regional Natural Features



REGIONAL INFLUENCES



REGIONAL INFLUENCES

TULE SPRINGS FOSSIL BEDS NATIONAL MONUMENT

Tule Springs Fossil Beds was listed on the National Register of Historic Places in April, 1979 for its importance in understanding paleoenvironments and advances in archeological methods. In 1933, quarry workers discovered a mammoth which led to decades of research for evidence of early humans and ice age animals that has yielded an abundance of large animal fossils such as mammoths, camels, bison, ground sloth and the giant north american lion. Tule Springs Fossil Beds was dedicated as a National Monument in 2014 and stretches 43 miles along the northern edge of the valley. The national monument designation protects the paleontological resources. The land has historically been administered by the BLM, but national designation has shifted the land to the National Parks Service. The Protectors of Tule Springs is an engaged citizen advocacy group that manages efforts to care and protect the area.



THE LAS VEGAS WASH AND WATER QUALITY

The Las Vegas Wash is the primary channel through which the excess water in the valley returns to Lake Mead. The water flowing through the Wash consists of urban runoff, shallow groundwater, stormwater and releases from the valley's three water reclamation facilities. Decades ago, the flows of the Wash created more than 2,000 acres of wetlands, but by the 1990s, only about 200 acres of wetlands remained. The dramatic loss of vegetation reduced both the Wash's ability to support wildlife and serve as a natural water filter. The Las Vegas Wash Coordination Committee and its member agencies have taken significant strides toward improving the Las Vegas Wash. Early efforts focused on reducing the channelization of the Wash, reducing erosion and increasing the number of wetlands.



REGIONAL INFLUENCES

FLOYD LAMB PARK AT TULE SPRINGS

Floyd Lamb Park is a 2040-acre park northwest of Las Vegas set into the natural desert with areas of grassy tree covered lawns surrounding four small lakes, picnic areas and scenic paths. Native desert wildlife and vegetation can be found throughout the park as well as geese, ducks, chickens, horses and peacocks. The park contains the historic Tule Springs Ranch and the Nevada Division of Forestry Nursery.

DESERT NATIONAL WILDLIFE REFUGE (DNWR)

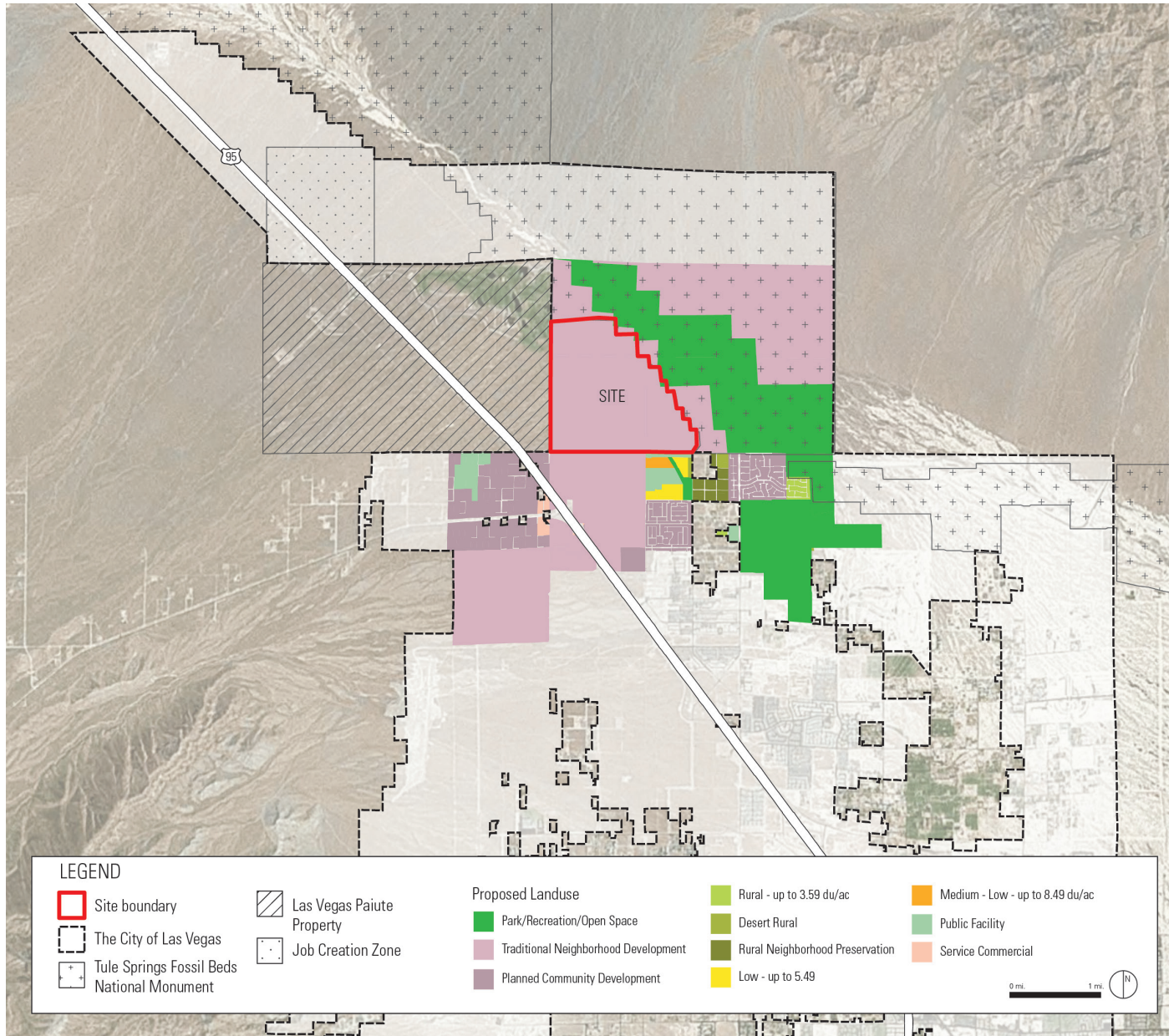
The Desert National Wildlife Refuge is managed by the Department of Fish and Wildlife and is the largest refuge in the continental US, containing over 1.2 million acres. It is home to bighorn sheep, mountain lions and a range of desert plants. In the 1940's the military was granted joint administration of the western half of the refuge.

LAS VEGAS PAIUTE TRIBE

The ancestors of the Paiute occupied the territory encompassing most of southeastern Nevada, parts of California and Utah. The Paiutes developed a culture suited to the arid desert lands. In 1826 as trappers and traders moved westward the US government assumed control of the area. In 1911, the Las Vegas Paiute Colony was deeded 10 acres of ranchland. In 1983 an additional 4,000 acres were deeded to the colony that would be the site of economic development for the tribe northwest of Las Vegas.

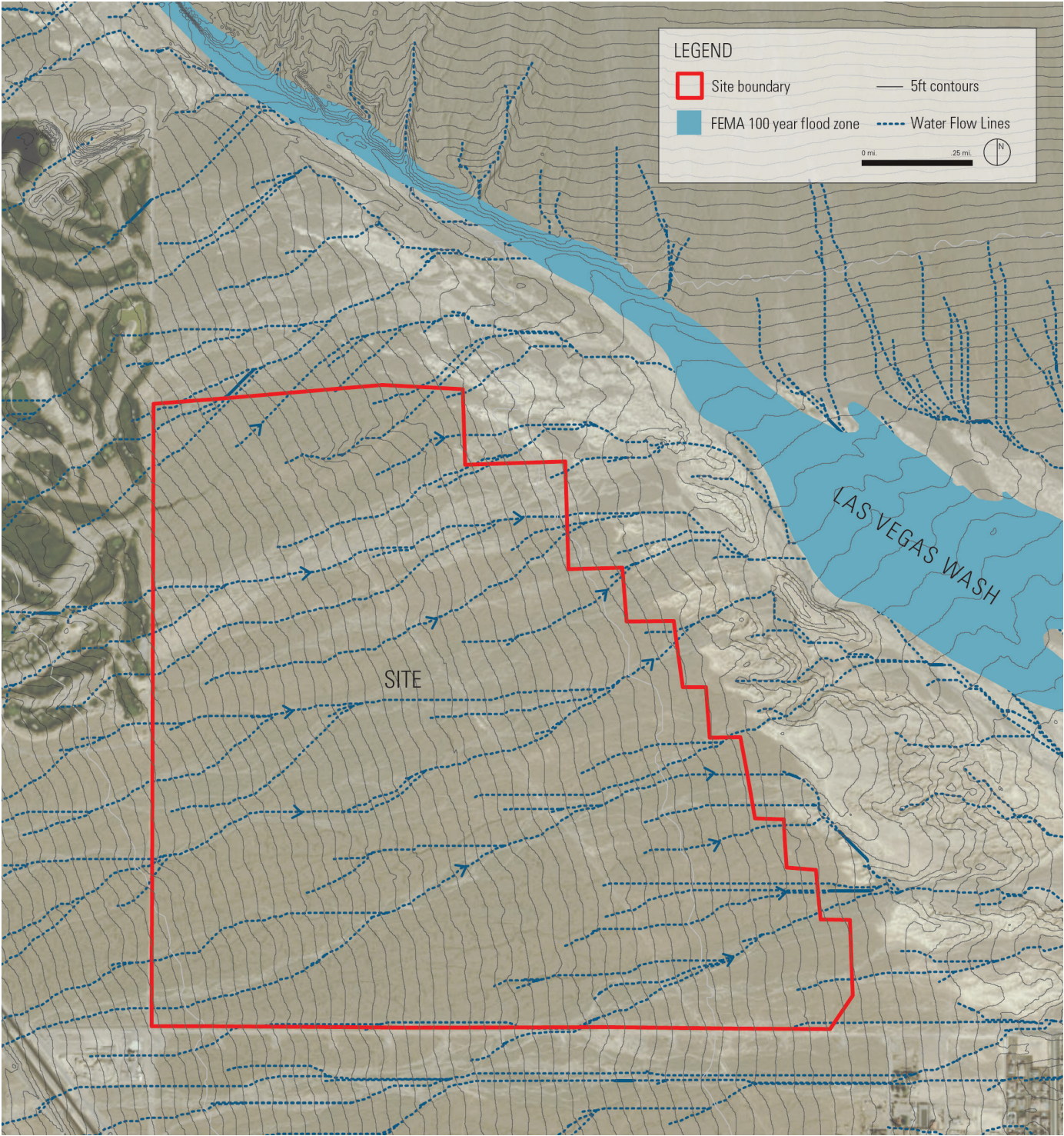


LAND USE



Land Use

SITE TOPOGRAPHY



Site Topography and Drainage Patterns



PLANNING CONCEPT

PLANNING PROCESS



PLANNING PROCESS

This project was organized into five phases, beginning with a project kick off phase where the existing site was explored through inventory and analysis, information gathering from stakeholders and a review of existing documents (Refer to Appendix A). Based on this information, three concepts were developed that were reviewed and commented on from stakeholders (Refer to Appendix B). From these comments a final concept was developed in future detail and shared with the stakeholders for feedback.

PUBLIC PROCESS

The plan will affect a diverse group of government, institutional, private and citizen-based stakeholders. The process engaged members from the Las Vegas Paiute Tribe, Bureau of Land Management (BLM), National Parks Service (NPS), City Government, Protectors of Tule Springs and others as stakeholders in the planning process.

The team met with the stakeholders for a one day worksession that identified strengths and weaknesses of the site, and opportunities and threats of future planning. The team then shared three concepts for land use and circulation on the site. Stakeholders provided comments to the conceptual plans and shared with the group. The comments were incorporated to develop a final plan concept that is further explored in the following pages. A detailed explanation of the concept plans and stakeholder comments can be found in Appendix B.



VISION AND GOALS



The Las Vegas Wash
https://www.lvwash.org/html/important_index.html



Example of Sustainable Desert Architecture
<http://inhabitat.com/tag/desert-architecture/>



Natural Arroyo - Wash
http://www.trekearth.com/gallery/North_America/United_States/West/photo1050477.htm



Colorful Native Desert Landscape
<https://www.discoverdesign.org/projects/tbostic/urban-farming-pocket-park>

GOALS AND OBJECTIVES

SUSTAINABILITY

SENSITIVITY TO HABITATS; TULE SPRINGS AND THE WASH:

The project site is set into a contextually unique location that should be protected or restored as an amenity to the future community. The Las Vegas Wash is an important part of the City of Las Vegas water supply, transporting the valley's excess water and drainage to Lake Mead. Traditionally, The Wash is home to many species of birds, animals and plants that should be protected or rehabilitated with future development in this area. Adjacent to the site is Tule Springs Fossil Beds National monument, exposing layers of archeological history that should be protected. Future collaboration with the NPS could identify trail connections or trailheads to the monument that could link to trails within the community. The proposed future planning allocates over 30% to open space for trails, recreation, drainage and buffering to minimize impacts to sensitive lands and create connections to special places. Between swaths of open spaces area pockets of denser development.

ARCHITECTURAL DESIGN:

The Architectural design should be appropriate for the desert climate by being energy efficient and respectful of the sense of place. Homes should be oriented with the long axis east-west. Shade should be encouraged, including roofs with highly reflective materials, wide overhangs and a wide porch to protect windows. Windows should face north or south since east- and west-facing windows contribute overheating. Heat loss/gain can be reduced with high albedo materials and high R-value windows, doors, walls and floors. On-site renewable energy including geothermal and solar should be incorporated into design of structures and set into a smart grid or as a self-sustaining eco-district. Thermal massing or the appearance through thick walls is encouraged.

WATER MANAGEMENT:

The wetlands along the Wash serve to clean and filter water from urban runoff, groundwater and storm water. As development increases in the north valley, water quality and management will be critical to the livelihood of the Wash ecosystem. Every effort should be made in planning to accommodate water through best management practices, including minimizing runoff though increased groundwater infiltration and directing runoff towards the Wash, slowing the speed of water through vegetated swales rather than directing towards pipes. Landscape should mimic that of the natural setting, using native or adapted plant materials and reduce the demand for high levels of irrigation. The edge of the wash fronting future development should be dedicated to trails and open space to create a public amenity and buffer. Future planning should focus eyes-on- The Wash, with a roadway along the edge and homes facing toward the open space. Drainage areas should be integrated into the plan and designed to serve as open spaces and public amenities.

VISION AND GOALS

ECONOMIC VIABILITY

WALKABILITY; SIDEWALKS, STREETS AND TRAILS:

A key element to the success of an active and vibrant community is to create multimodal and mixed-use villages within the pockets of development that are defined by the open space. Walking and biking are essential to reducing the ecological impact of development through reduced vehicular miles travelled (VMT) as well as increasing public health and the sense of community. Streets should include sidewalks and bikes lanes that are safe, convenient and efficient. Walks and trails should provide connections to retail centers with shops and entertainment options as well as access to small pocket parks and open spaces through a connected greenspace network. To make this successful, retail centers should be within walking distance from homes, with more densely spaced homes and multi-family located closer to the center and less dense residential along the open space corridors. The central and southern village will have a retail component to provide local amenities that minimizes the need to get in the car and drive to a store. Key to the success of walkable communities includes orienting buildings toward the street, including architecture with front porches and recessed garages, retail uses along the street to support public activity, locating parking behind buildings or in garages at village centers and designing complete streets with continuous, clear and comfortable pedestrian access. An extensive open space trail network should pick up where the street stops to provide access to parks and drainage corridor amenities and the Las Vegas Wash open space. The trail system will encourage bicycle mobility for trips outside a ¼ mile walk.

JOB CREATION:

Creating jobs within the community is essential to reducing VMT, increasing walkability and a vibrant and sustainable community. The western portion of the site is planned as a job center business district. Essential to the success of a future business district/job creation center north of the central core of the City is an understanding of market trends and supply to find the right balance of business, supply of an educated workforce, availability space without an over-supply and affordable rents. Development will need to understand competing businesses districts along the US-95 corridor, the range of goods and services provided and the potential market/trade area for business. Planning of the business district should encourage integrating mixed use and residential development, minimizing super blocks of offices and encouraging connectivity of employees to a variety of uses and services such as restaurants and retail through street connectivity, trails and open space and increased public spaces. Transportation options should be considered to connect locally within the community as well as regionally to bring potential employees from outside the community.



Example of a Walkable Main Street
<https://www.planetizen.com/node/63248>



Example of Trails through Greenspace



Example of a Mixed Use District
Ten Principles for Reinventing America's Suburban Business Districts



Example of Office connected to uses and services
Ten Principles for Reinventing America's Suburban Business Districts



ILLUSTRATIVE PLAN

ILLUSTRATIVE PLAN

The vision of the future planning for the project area is based on creating three villages separated by large drainage and open space corridors based on the existing water flows on site. Development transitions in density from east to west and north to south across the site with the highest density uses on the south and western edges in proximity to planned future development and the least dense areas to the east and north adjacent to natural open spaces.

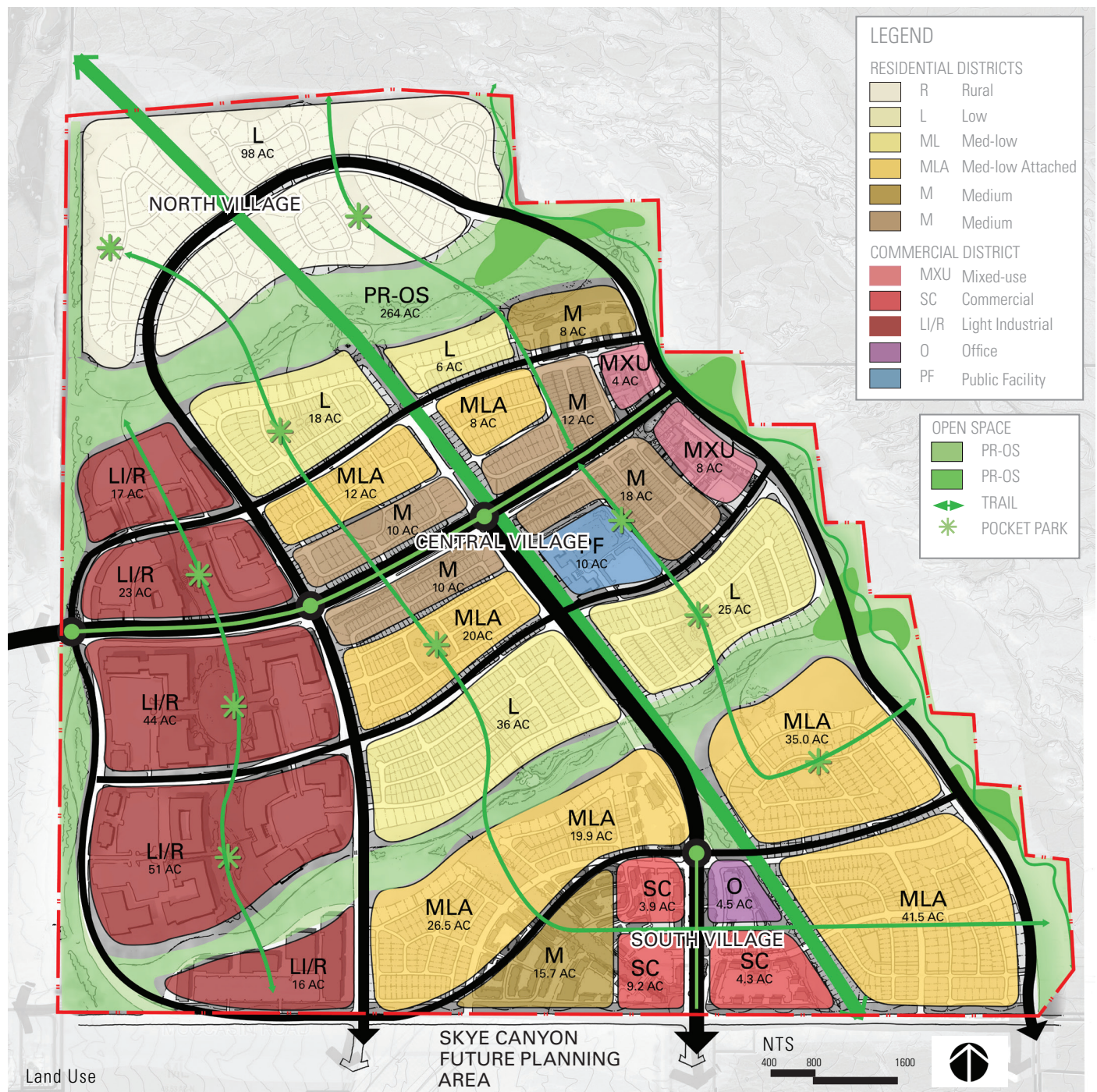


LAND USE PLAN

LAND USE

Development is organized into three villages. The north village includes large equestrian estate lots adjacent to The Las Vegas Paiute Golf Resort and natural open spaces. The central and south villages incorporate a mix of residential types and densities centered around a retail center with business park uses to the west providing jobs for residents.

The south and central villages will each have a retail component and business district. The village adjacent to Moccasin Road will focus on a larger community commercial retail and the central village will focus on neighborhood commercial retail and office. The village to the north will consist mainly of large lot residential and will not have a commercial or employment base.



URBAN DESIGN



Green Space between buildings



Business District with connective open space



Commercial Center walkable streetscape



Walkable and bikeable neighborhood streets

URBAN DESIGN

The design of the community should not follow the typical suburban model, but look to think beyond to develop a community where buildings, streets and open space work together to create a walkable, livable and vibrant place to live. Design should follow that of a 20-minute neighborhood, where a variety of housing types are within a 15-20 minute walk or bike ride to services such as stores, restaurants, grocery, doctors, parks, community centers, day cares, libraries and public transit.

BUSINESS PARK:

Future business park planning should encourage buildings that interact with one another and to the street. The spaces between buildings should prioritize green space rather than parking. Planning should encourage regional transit connections and parking should be centralized in garages or utilize shared parking scenarios. The following are strategies to create successful business districts:

- Buildings should be designed with a sense of scale to the streetscape and pedestrian spaces. Larger buildings should be broken up to minimize mass. Building materials should relate to scale and texture appropriate to the Las Vegas climate.
- Entrances and street level floors should be distinct should be visible from the street and pedestrian friendly.
- Public space should be integrated to the building to allow rest space and outdoor access for employees. Spaces should be connected through a network of sidewalks and paths within the district and community wide.
- The entire district should look at systems at different scales to identify opportunities to optimize energy, water and water at the building scale. Alternative energies such as solar, green walls, geothermal, low impact development infrastructure concepts should be looked at on a district-wide basis, not at the individual building level.

COMMERCIAL:

Commercial areas should provide a mix of uses and buildings should relate to one another with a walkable streetscape. A range of commercial uses should be provided from a grocery store, restaurants and shops, small office and local amenities such as yoga, laundry, day care and other neighborhood uses. The following are strategies to create successful commercial districts:

- Public spaces should be places for people including streets and plazas. Spaces should be connected to easily navigate.
- Buildings should interface with the public realm, not oriented to allow for the maximum number of proximity of parking. Parking should be encouraged at the back of buildings. Park once strategies should be developed to encourage people to walk from store to store.
- Entrances should face and be visible from the street, with architecture that is human scaled and setback from the

URBAN DESIGN

sidewalk. Windows should be at street level, no blank walls.

- A mix of uses is encouraged along the street to encourage activity, with ground floor retail and second story office or residential.

RESIDENTIAL:

Residential neighborhoods should encourage buildings that front onto the street, front porches and recessed garages to encourage neighbors that meet and engage with one another. The following are strategies to create successful residential neighborhoods:

- Design streets to create a sense of community. Detached sidewalks create sense of safety for the pedestrian. Narrower streets encourage slower traffic, as well as traffic calming devices.
- Homes with doors that face the street and recessed garages encourages neighbors to meet and greet one another.
- Smaller lots, alley loaded lots, townhomes and other residential typologies provide a range of housing alternatives for a diverse community and should be integrated into the urban fabric.
- Architectural styles should be varied along the street, not a single home style replicated and flipped. The master developer could sell a mix of lots within a neighborhood rather than a superpad to provide a diversity of housing styles.
- Design guidelines, an architectural review committee and homeowners association could provide oversight and management to ensure cohesiveness within the villages.



Business Building Sustainable Architecture Example



Commercial Center Mixed Use Architecture Example

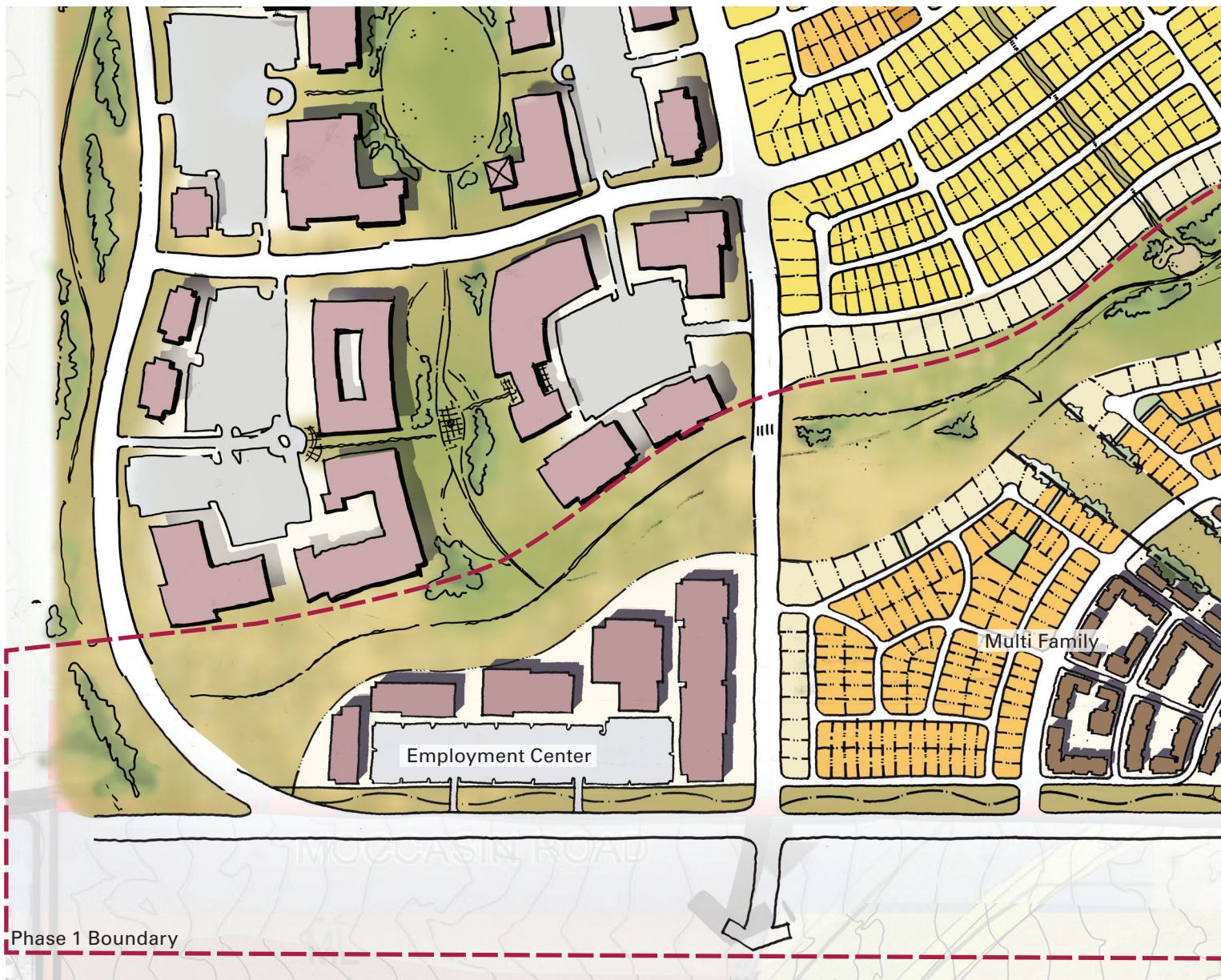


Residential Sustainable Architecture Example

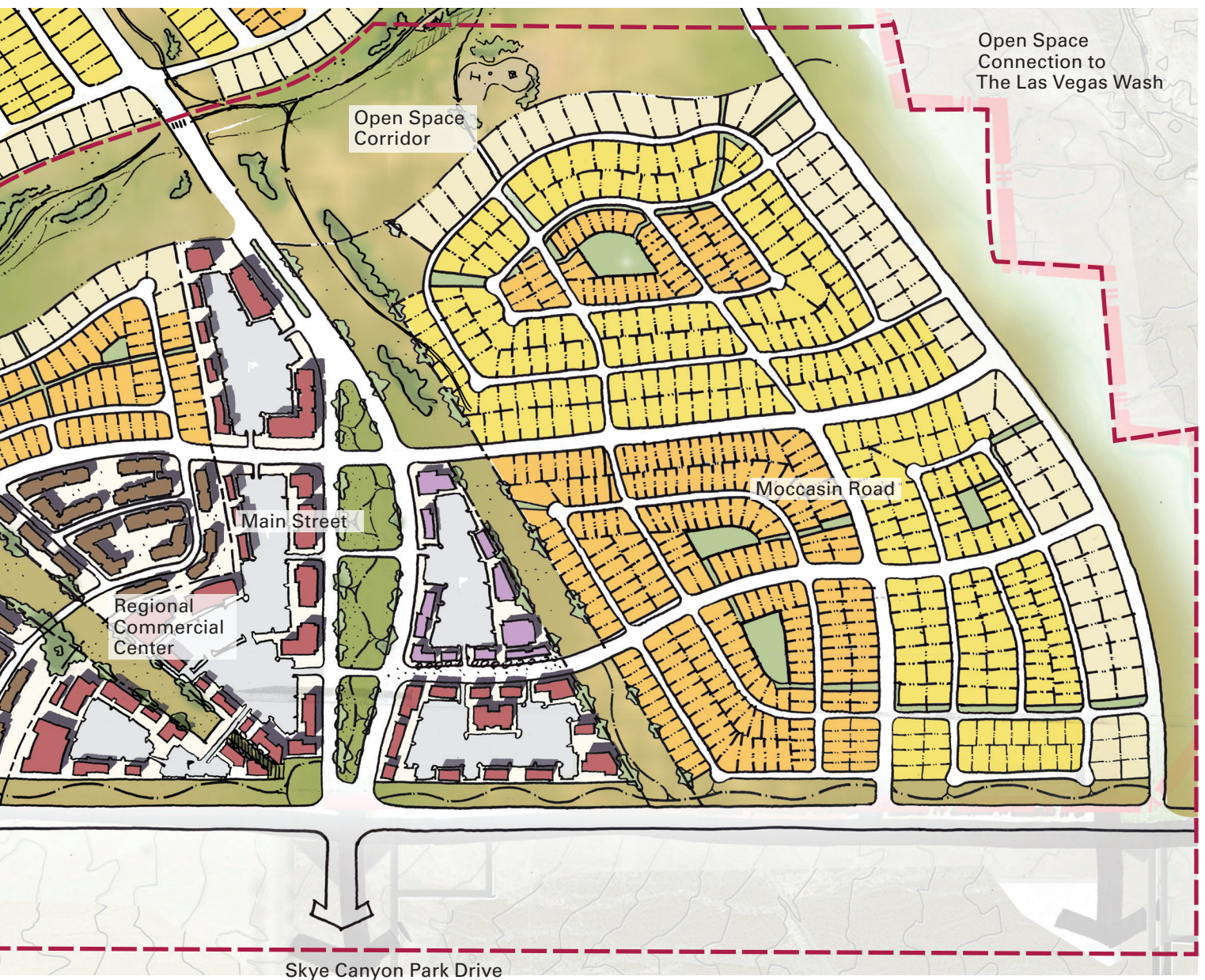


PHASE 1 - SOUTH VILLAGE ENLARGEMENT

Based on market trends the first phase of development for the site would be the South Village. Future development at Skye Canyon would provide access from the existing road along Skye Canyon Park Drive. The following illustrative enlargement tests the land use principles outlined by the vision and goals.



PHASE 1- SOUTH VILLAGE FUTURE PLANNING EXHIBIT



CHARACTER IMAGERY



Regional Commercial



Pedestrian Oriented Design



Active Street Frontages



Regional Commercial Center



Regional Center



Business Center



Office

CHARACTER IMAGERY



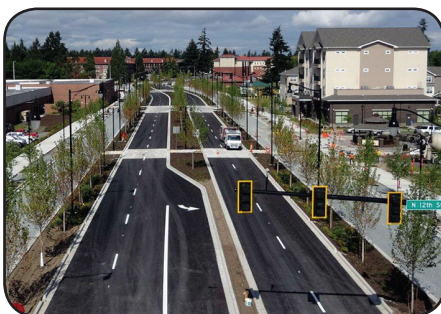
Row Townhomes along Boulevard



Town Center



Linear Trail Connections



Central Boulevard



Spaces to Gather



Greenway Connections to Retail



CIRCULATION

CIRCULATION

Spanning between the villages at the center of the site, the primary arterial parkway will access the site from a future road to the west and Skye Canyon Park Drive to the south, converging at the center of the site with a central roundabout. This parkway will be characterized by a central median and large ROW with divided walks and trails.

A secondary collector loop will access the business district. This road accesses the future business park and will have a higher roadway capacity for business related transit such as deliveries and public transit lines.

The local collector road will connect neighborhoods and internal local streets to the primary arteria and will run adjacent to The Wash. This road will prioritize complete streets, with separated bike lanes, wide sidewalks separated from the street with a landscape buffer and traffic calming elements such as bump outs and high visibility crosswalks.

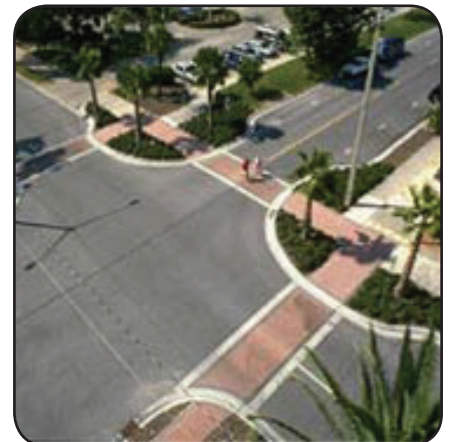
Future planning should identify a traffic consultant to preform a traffic analysis to determine roadway capacity, intersection levels of service (LOS) and potential vehicular miles travelled (VMT) based on potential future retail and business elements.



Town Center



Bike Lane



Bulb outs/Bump outs



Parkway



Parkway

CIRCULATION

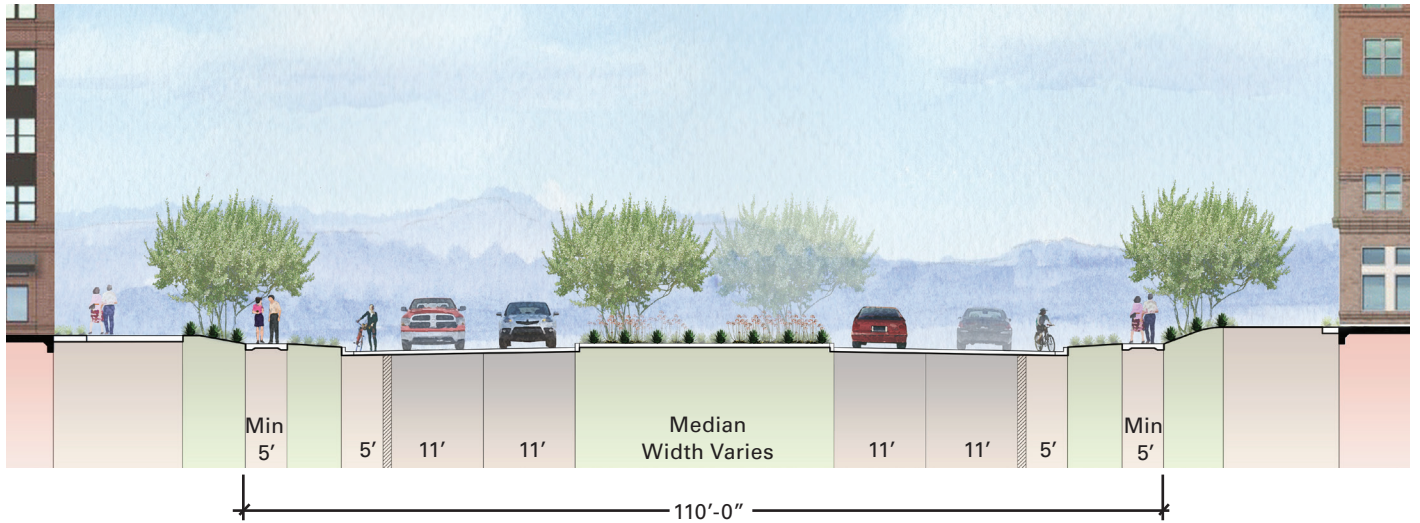


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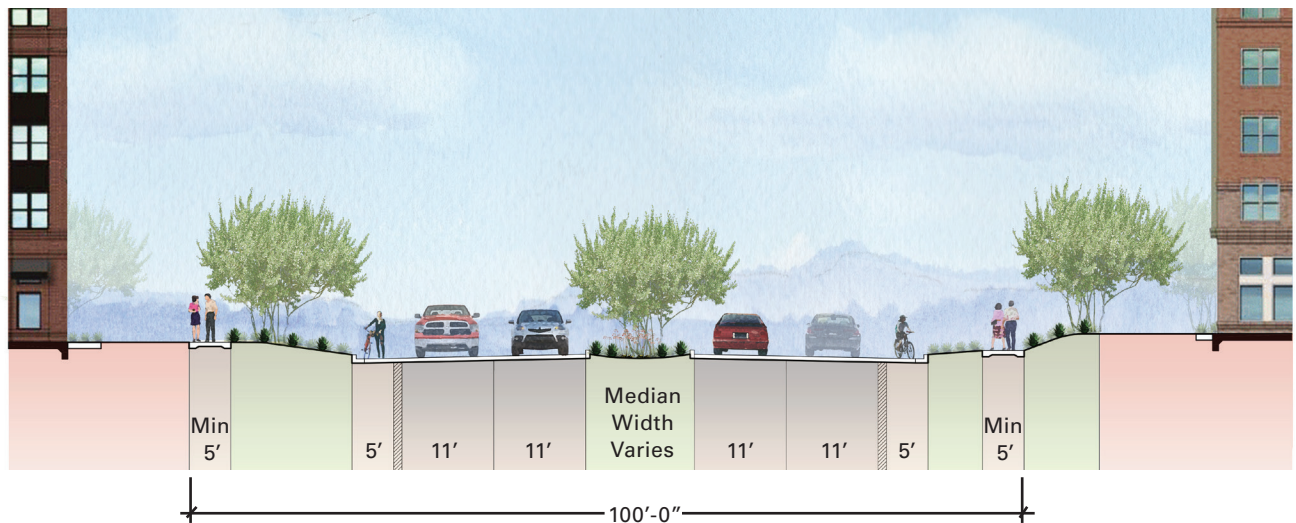


CIRCULATION



COMMERCIAL PARKWAY

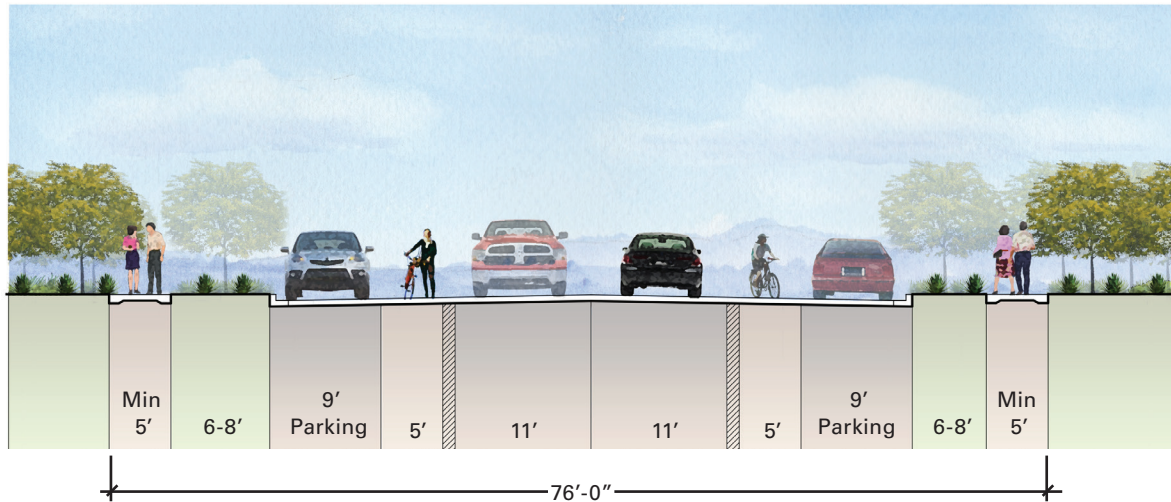
- 110' ROW
- 4 Lanes- divided with central median
- 5' On Street Bike Lane
- Detached meandering trail, berming and grading, native landscape
- Homes will not face onto the roadway, provide buffer to rear of homes
- No on street parking



COMMERCIAL COLLECTOR

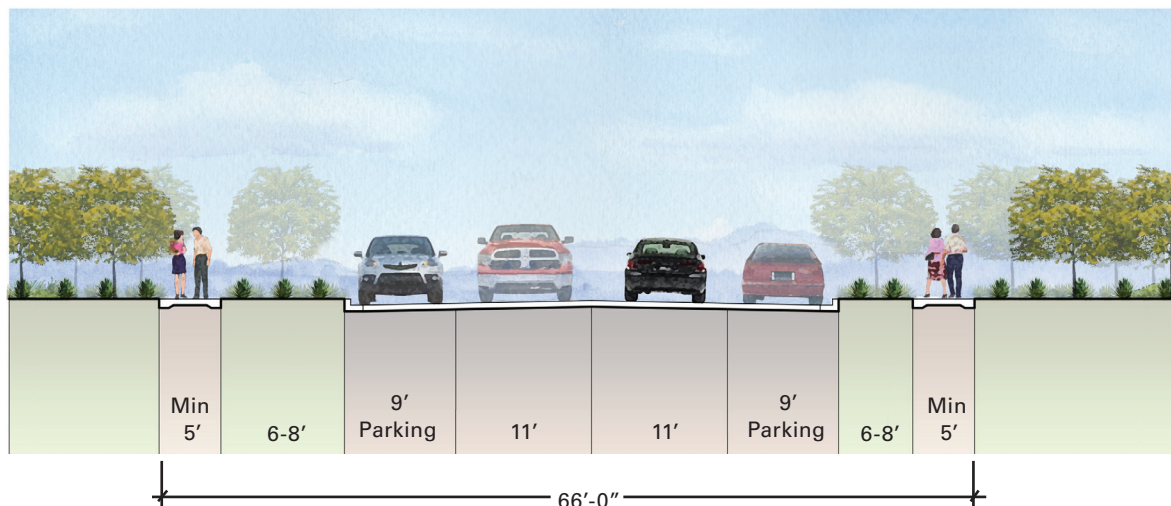
- 100' ROW
- 4 Lanes with one central left turn lane
- 5' On Street Bike Lane
- Detached meandering trail, berming and grading, native landscape
- Homes will not face onto the roadway, commercial buildings are encouraged to face the roadway
- No on street parking

CIRCULATION



LOCAL COLLECTOR STREET

- 76' ROW
- 2 Lanes
- 5' Protected Bike Lane
- Detached sidewalk with 6-8' landscape planting buffer
- Homes facing the roadway is encouraged
- On street parking permitted
- Traffic calming element such as bump outs are required



INTERNAL LOCAL STREET

- 66' ROW
- 2 Lanes
- Sharrow Bike Lane
- Detached sidewalk with planting buffer
- Homes facing the roadway is encouraged
- On street parking permitted

CIRCULATION



TRAILS, WALKS AND BIKE LANES

Streets are vital to livable, attractive communities and should be designed to provide safe and easy access for everyone; vehicles, bikes and pedestrians of all ages and mobility. To promote walkability, future planning should incorporate multimodal design strategies for complete streets. The following are strategies to create successful multimodal streets and trails:

- **Traffic Calming-** A well designed street balances the need for vehicular flow with businesses, pedestrians and bicyclists. Traffic calming features will improve driver awareness to the roadside environment, improve business visibility/access and improve safety for all modes of travel.
 - » **Street and Pavement Narrowing-** There is a relationship between street width and driving speeds. Types of street narrowing include; Chicanes, Pinch Points, and Bulb outs.
 - » **Bulb outs/Curb extensions-** Narrow the overall width of roadway and provide a visual marker to vehicles to slow down.
 - » **Corner Enhancements-** Enhancements at corners increase the visibility of pedestrians as well as lessening the distance to cross a roadway. Tighter turning radii correlates to slower turning movement.
- **Intersection-** Intersections should be compact and well-timed. Intersections are shared spaces. Clear views should be maintained. Corner radii should be narrow, with an ideal radius of 15' in urban settings, however, delivery and fire access for large truck movements should also be considered.
- **Crosswalks-** Crosswalks should be at all crossings of arterial and collector roads to promote pedestrian connectivity. All four sides of each intersection should incorporate crosswalks with high-visibility, reflective materials and should be at grade with ADA compliant ramps.
- **Signage and Signals-** Signal timing should be appropriate and visible. Signage creates legibility and understanding of the pedestrian, bike and vehicular space. Pedestrian Signal timing should create a legible crossing environment and should include countdowns. In addition, vehicular signal timing can have a significant impact on both vehicular and pedestrian experience.
- **Bike Trails, Protected Bike Lanes, Bike Lanes and Sharrows-** Bikes should be provided a safe space that is visible to vehicles and pedestrians to minimize conflicts in the roadway. Higher traffic roads should provide a trail or protected bike lane. Collector roads should have a on-street dedicated bike lane and local streets should be noted with markings for sharrows. Intersections at arterials and collectors should have green painted bike boxes and other methods to increase bike visibility.
- **Sidewalks-** Sidewalks should be detached to buffer pedestrians from vehicular traffic. Intersections should be designed to increase pedestrian visibility and safety.

CIRCULATION

LOW IMPACT DEVELOPMENT

Low impact development is a set of strategies used to manage stormwater runoff by emphasizing conservation and natural features to protect water quality. The following are strategies to create successful water management:

- **Permeable Paving** – An alternative to standard paving that reduces stormwater runoff by increasing infiltration into the ground. Water is temporarily stored in a rock base before being absorbed into the soil or discarded through subdrains.
- **Bio Retention**- Combines stormwater runoff with landscaping area to collect, filter and infiltrate runoff from roofs, streets and sidewalks to reduce pollutants and mirror the infiltration techniques of natural systems. Soil traps pollutants and plants uptake pollutants as water percolates through the system.
- **Bio- Swales**- Swales are narrow depressions that collect and convey stormwater to improve water quality through removal of sediments and reducing runoff volumes. Typically, bio-swales include a subsurface infiltration trench below amended soil.
- **Vegetated Gutters**- Vegetated, or green gutters are typically narrower than 3' wide and capture, slow and filter stormwater along the street edge with little or no water retention.
- **Channels and Runnels**- Concrete or stone lined paths to convey water to that reduce the need for buried storm drains or allow water to reach a desired location for additional treatments.
- **Infiltration and Soakage Trench**- Infiltration trenches are 2-5' deep subsurface facilities with sand or coarse drain rock that allows on-site stormwater detention by collecting and recharging stormwater to the ground.
- **Infiltration Boardwalks**- Segments of the sidewalks can be constructed with boardwalks to provide pedestrian thoroughways over planted drainage rock or amended soils in a trench that allow stormwater to pass beneath the walking surface.



Rain Garden



Bio-swales



Pervious Paving



Flow Through Planters

OPEN SPACE

OPEN SPACE AND TRAILS

Connecting to nature and restoration of habitat along Las Vegas Wash and through large open space corridors is one of the driving organizational elements of the plan. Two main swaths of open space running east to west and dividing the villages will offer drainage arroyos collecting all the stormwater to the Wash as well as a trails system with pocket parks, seating areas, interpretive areas and restored native areas. These corridors will be a unique visual element of the community as well as a recreational amenity to provide multi-use equestrian trails. Within these corridors will be internal hard surface and soft surface trails for biking and hiking, shaded rest areas as an oasis, natural play areas and programmed playgrounds, interpretive areas and other unique elements to bring the community together and connect to the outdoors. From north to south runs the Rail Trail Linear Park adjacent to the Central Parkway and parallels the Las Vegas Wash Linear Park and multi use equestrian trail running adjacent to the eastern open space. These linear parks will provide more formal recreational facilities as well as connection the drainage corridors, neighborhoods and retail centers.

Within the villages, each neighborhood should have small pocket parks which connect with greenway trails to the open space corridors so that there is a network of connected open spaces from each home to the Las Vegas Wash. This system will also connect to the walkable streets and roadways to provide access to other community amenities such as retail centers, schools and office/business space to promote alternative modes of transit.

Future planning should coordinate with BLM and NPS to create trailheads along the Las Vegas Wash and at the north property to Tule Springs National Monument to allow the community to connect to these natural resources directly from the community trails as well as attract regional residents to these public amenities.



Trails



Open Space Park



Open Space Corridor



Section A: Open Space Corridor

OPEN SPACE



NTS

400 800 1600



OPEN SPACE



OPEN SPACE CORRIDOR AND PARKS

The open space corridors will serve as an amenity to the community as well as provide a location for water quality improvements and habitat restoration. The following are strategies to create successful open spaces:

- **Recreation-** The open space corridors provide a recreational amenity for the entire community. Within the corridors, trails and active spaces create places for community gathering and interaction. A variety of trails, from asphalt multi use paths to equestrian and informal soft surface hiking paths should be incorporated. Parks, gardens and shaded picnic areas should be designed into the network of trails.
- **Interpretive-** The unique history of the site and surrounding environment should be extracted and designed into the open spaces. Interpretive nodes along trails could direct to mountain views, tell the story of the Las Vegas Wash and the role of water in the area and exhibit replicas of fossils from Tule Springs as ways to connect to the unique sense of place.
- **Habitat Restoration-** The existing drainage corridors from water runoff to the Wash have a unique character that will be changed as development realigns existing waterways. The opportunity exists to create wetlands, ponding and other natural features of the Wash along the drainages that restore vegetation and attract birds and animals. Every effort should be made to design these corridors based on natural processes to bring the natural environment into the community and create a connection to nature.



Recreational Opportunities along Trail Corridors



Interpretive Opportunities along Trail Corridors



Habitat Restoration along Trail Corridors

OPEN SPACE

RETAIL CENTER AND PUBLIC SPACES

Retail centers should have high levels of pedestrian activities and yield priority to pedestrians and bicyclists, not the automobile, where sidewalks as plazas are part of the public realm. Public Spaces and a quality street will attract quality retail. The following are strategies to create successful retail public space:

- **Plazas-** Plazas are a permanent square, market or open space within an urban center for flexible uses ranging from large event gatherings to passive seating.
- **Great places** contribute to health and happiness of the community. Key to the success of vibrant and active streetscape is the opportunity to incorporate cafe seating and restaurant seating outside the building along the street edge. For restaurant and bars, this requires a barrier between the restaurant zone and public realm. Collaboration between business owners and the City is crucial for proper regulation, permitting and clearances. Consideration should be given to the seating location, orientation and exposure, density of seating and method of separation.
- **Flexible Use Spaces-** Loosely defined, these spaces can accommodate a variety of intended uses. Flexible use spaces can also occur by activating under-utilized spaces such as along building edges, in alleys and along corners by providing the opportunity for programming including seating, art and other street elements.
- **Sculptural Seating/Interactive Art-** Art along the streetscape can also be an opportunity to incorporate seating or play along the street by providing visual interest and engagement. Artistic elements will create an identity and character for the area.
- **Overhead Lighting-** Overhead lighting, located appropriately can provide visual scale, increased safety and ambiance at key locations along the streetscape. Considerations should be given to the impact to the building facade.



Urban Spaces: Parklets



Urban Spaces: Cafe Seating



Human Comfort: Shade



Overhead Lighting, Larimer Square, Denver, CO

OPEN SPACE

Drainage Arroyo Activities



Interpretive Area



Picnic shelter



Trellis shaded area



Smaller space to gather



Bird watching



Inviting wildlife boxes and native vegetation



Interactive sculpture



Sculpture to discover

Trail Corridor Activities



Playing on rocks



Hammock stations



Interactive Natural Elements



Equestrian Trails



Mile markers



Fitness Elements



Active Play Features



Multi Use Trails

OPEN SPACE

PARKS AND RECREATIONAL AMENITIES

The parks and recreational elements are essential to creating a healthy and active community. Parks and open spaces are the places where neighbors meet, gather, play and rest. Amenities should respond to the natural environment, be context sensitive as well as provide formal and informal activities for the residents. The following are suggestions for recreational activities:

- Drainage/Arroyo Corridors- The drainage corridors that divide the villages and run along the Wash to the east should be natural/native in character. A system of trails including multi-use paths and soft surface trails should interweave and connect to the neighborhoods. Amenities along the corridor should provide spaces to rest, observe and learn about the native Las Vegas landscape.
- Trail Corridors- The trail corridors will connect neighborhoods and retail centers to larger open spaces and parks. These should incorporate multi-use equestrian trails which include walking and biking, with designated bike and pedestrian lanes. These corridors will be the connective tissue, linking amenities and destinations to residential areas. Amenities along the trails should include places to rest, explore and smaller pockets of recreational activities.
- Parks- Parks will be central to the neighborhoods, easily accessed from homes and businesses and located along trail corridors. Amenities in parks could range from passive to active and should provide for a multitude of activity, engagement and interaction.

Parks Activities



Outdoor space for concerts and movies



Lawn areas for sports



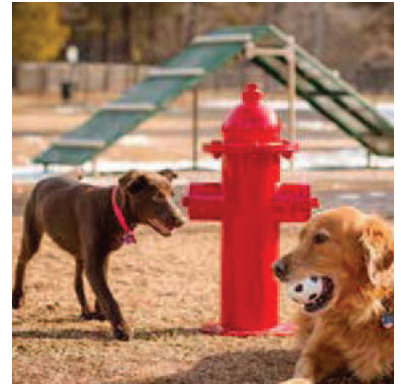
Play stations



Interactive play



Bike course



Dog parks



Rock Climbing



Informal play



LANDSCAPE

NATIVE PLANTING

DESERT SCRUB HABITAT:

This is the predominant landscape on the existing site and is common in areas of less than 4 inches of rain per year. Plants and animals need to be very resilient. Common planting includes:

- Creosote Bush
- White Bursage
- Desert Sienna
- Desert Globemallow

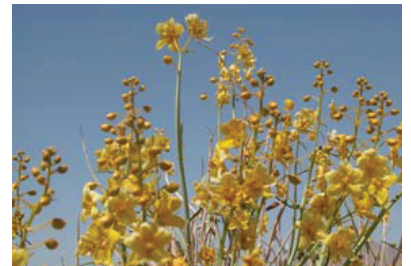
DESERT WASH HABITAT:

The desert landscape is bisected by drainages that provide unique habitats. The runoff provides moisture to sustain a variety of plants. Common planting includes;

- Desert Willow
- Catclaw Acacia
- Mesquite
- Willows
- Saltgrass
- Salt Bush
- Salt Heliotrope



Desert Scrub



Desert Wash



LANDSCAPE



Colorful Desert Perennials



ADAPTIVE PLANTING

Planting in areas with little irrigation or no irrigation (xeric) will be used throughout the community. Common planting includes:

PERENNIAL

- Globe Mallow
- Desert Marigold
- Lantana
- Daminita Daisy
- Mexican Blue Sage
- Silver Ranger

GRASSES

- Deer Grass
- Bear Grass

SHRUBS

- Creosote Bush
- Desert carpet Acacia
- Prostate Indigo Bush
- Brittle Brush
- Baja Fairy Duster
- Texas Ranger Hybrids
- Apache Plume
- Woolly Butterfly Bush
- Cassia

TREES

- Palo Verde
- Acacia
- Texas Olive
- Texas Redbud
- Desert Willow
- Coolibah Eucalyptua
- Arizona Ash
- Pistache
- Honey Mesquite
- Allee Elm
- Chaste Tree

SUCCULENTS

- Yucca hybrids
- Agave hybrids
- Barrel Cactus (Red Barrel)
- Thornless Sotol
- Desert Spoon



NEXT STEPS

RECOMMENDATIONS

Current planning from the Economic and Urban Development department encourages business park and industrial uses within the project area. Based on this study and the planning within this document, a vision has been presented for increasing the value of the land and providing a special community adjacent to the areas cultural and natural resources.

Benefits to approaching this project as non-traditional development include;

- Reduction of infrastructure costs.
- Protection of cultural, natural and paleontological resources.
- A catalyst project that can represent the future of edge development in Las Vegas.

MARKET STUDY

The concepts in this document should be assessed for market feasibility to develop an understanding of how much business park, multi-family, retail and residential growth could be expected in north Las Vegas.

STAKEHOLDERS

As concepts progress stakeholders should continue to be engaged. Specifically the Paiute Tribes, Clark County School District and The Las Vegas Wash Coordination Committee should continue to offer support for the plan area.



PHASING

PHASING

Phasing will be market dependent. Phasing will begin at the current roadway connection to the site at Moccasin Road and Skye Canyon Park Drive and continue to develop to the north. Phase 1 will incorporate all elements of the market including business park, retail, office, multifamily and single family homes to provide a precedent for phase 2. Phase 3 will be developed based on roadway access and market factors for larger lot estate homes.

Portions of this plan are dependent on phasing, market factors and future development including;

Skye Canyon

- Future planning for Skye Canyon will provide a housing base for the proposed retail, office and business park. Roadway connections are also dependent upon final planning and construction. It is assumed that development at Skye Canyon will begin to develop prior to future development of Phase 1 of the proposed project.

Paiute Tribal Lands (West)

- The tribal lands to the west are projected to be developed as regional commercial/ regional business park. This development will provide access to the project from the west and access onto US-95. Development of the business park is dependent on future development and roadway access on the adjacent land.

Future School Site

- A potential school site could be developed on the parcel to the southeast of the site. The future development of a school here may eliminate the need for a school site in Phase 2 or reduce the size of school site needed to serve the development.

NEXT STEPS

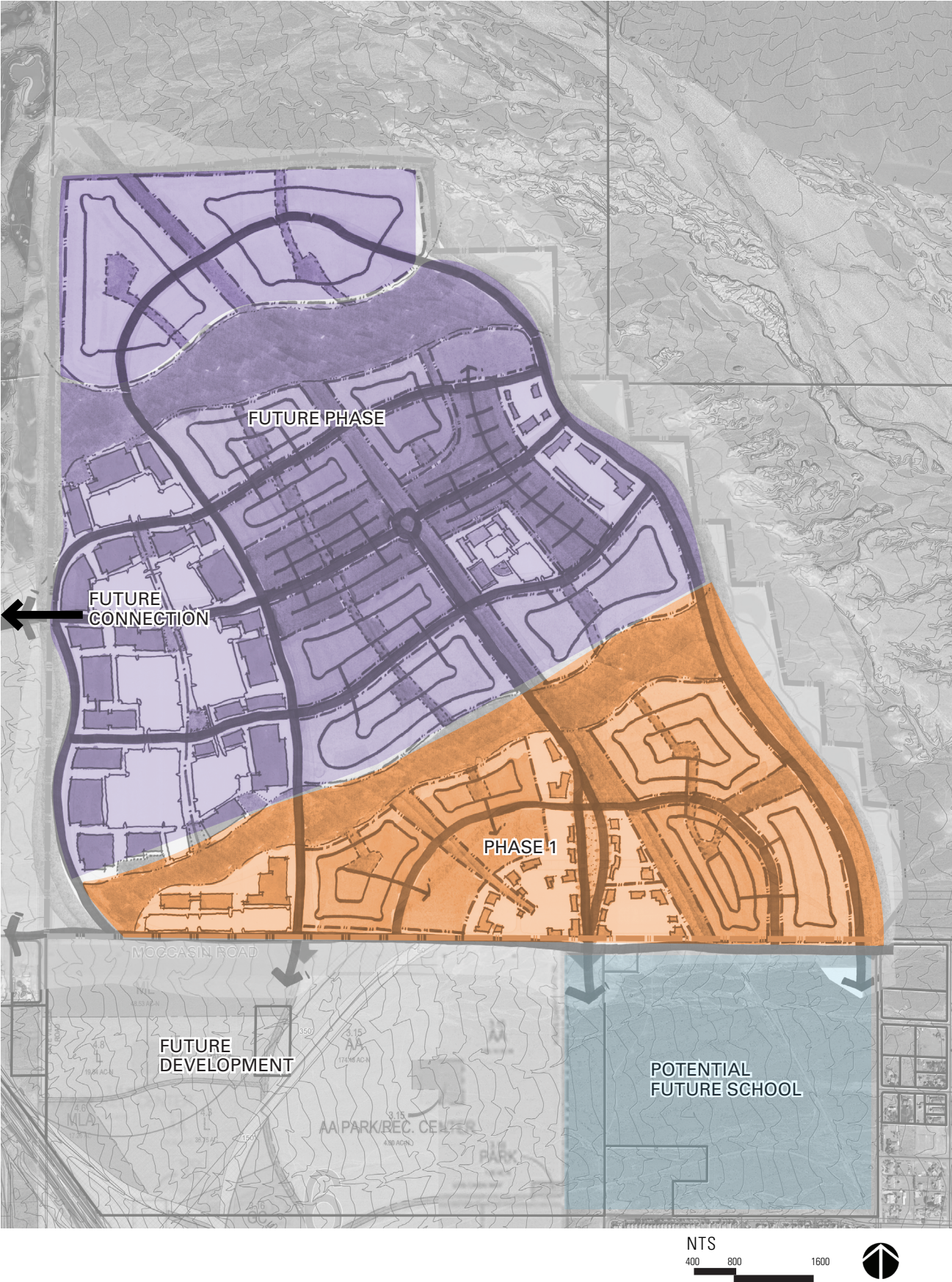
A range of opportunities exist to progress the vision presented in this document including;

- Refine the plans and develop a development handbook for review and approval by City Council.
- Attract a master developer to coordinate the vision through a public/private partnership.
- The City acts as Master Developer to coordinate sub-developers towards a common vision.

RECOMMENDATIONS

- Develop a market assessment to identify trends and demands for north Las Vegas to support the plan vision.
- Establish and overlay district with design guidelines to guide new development.
- Coordinate with school district and other municipal facilities to provide for offices, library, open spaces/parks, trailheads at the town center.
- Identify district wide financing to provide public realm improvements. (TIF financing, District Financing, Assessments)
- Extend regional trails and trailheads to connect to the Wash.
- City Planning and economic development staff to oversee new standards, coordinating land use, development strategies and funding opportunities. Streamline permitting process to achieve goals.
- Attract/Develop the right team of people who support the vision to form a public/private partnership.

PHASING

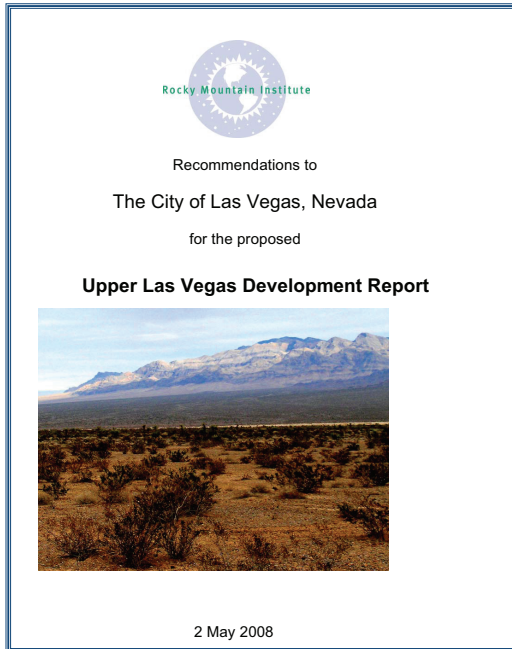


APPENDIX A

EXISTING DOCUMENTS



EXISTING DOCUMENTS



UPPER LAS VEGAS WASH DEVELOPMENT REPORT, MAY 2008

PURPOSE:

To document a two day charrette conducted by RMI for 7,600 Acres of land, including the project study area. The group had 3 focus areas: Urban Planning and Transportation, Energy and Architecture and Water and Landscape.

GOALS:

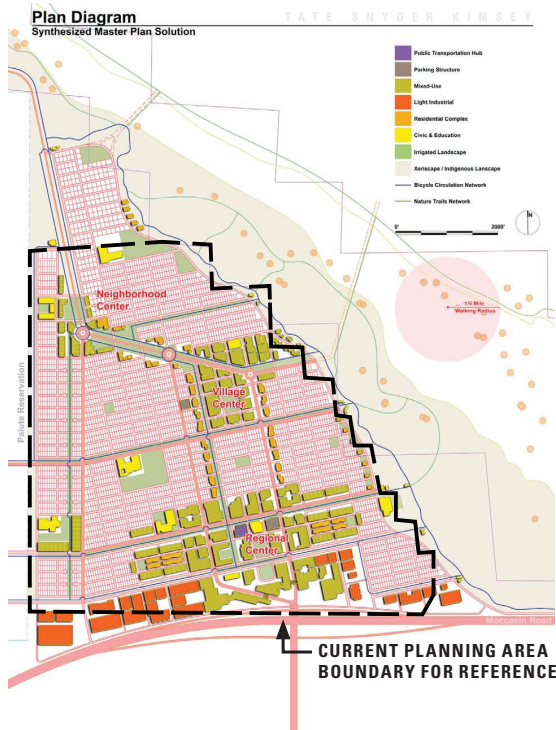
- Be Sensitive to the Paiute Lands
- Preserve the Wash
- Protect Paleontological Resources
- Emphasize Mixed Uses
- Emphasize Energy Efficiency
- Provide an interface between built and Desert National Wildlife Refuge

VISION:

- Pedestrian-oriented with walkable village centers. Designed for diversity and sense of place.
- Multi-modal transportation and transit hub.
- Energy efficiency (generate on-site energy,
- Water efficiency, flood protection
- Connect to and preserve nature and cultural resources.

PLAN RECOMMENDATIONS:

- Buildings:
 - » Walkable, mixed-use business districts at varied scales - cities within a city.
- Bikes and Trails
 - » Trails for bikes and pedestrians connecting to district centers.
- Open Spaces and Parks
 - » Connections to neighborhoods and wildlife
 - » Greenbelts control stormwater toward The Wash.
- Circulation
 - » Principal Roadway (Ft. Apache) runs N/S connecting districts.
 - » Minimizing roadway size when possible.
- Boundaries and Paleontological Buffers
 - » Limit development to the southern-most parcel north of Moccasin Road.
 - » Las Vegas Wash is a natural border to development.

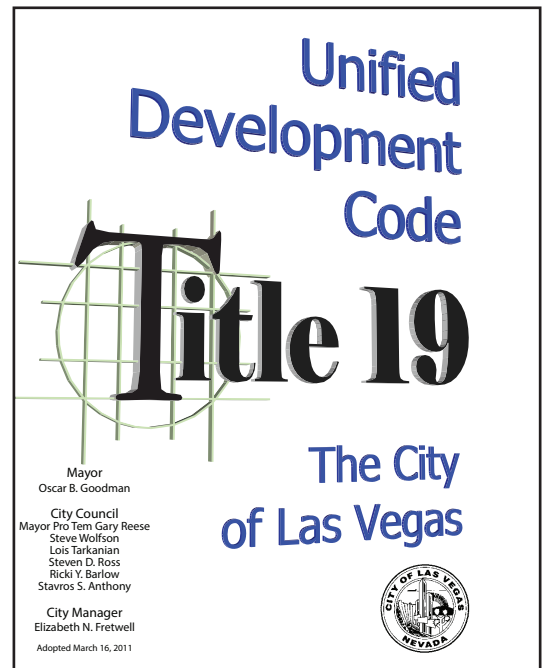


EXISTING DOCUMENTS

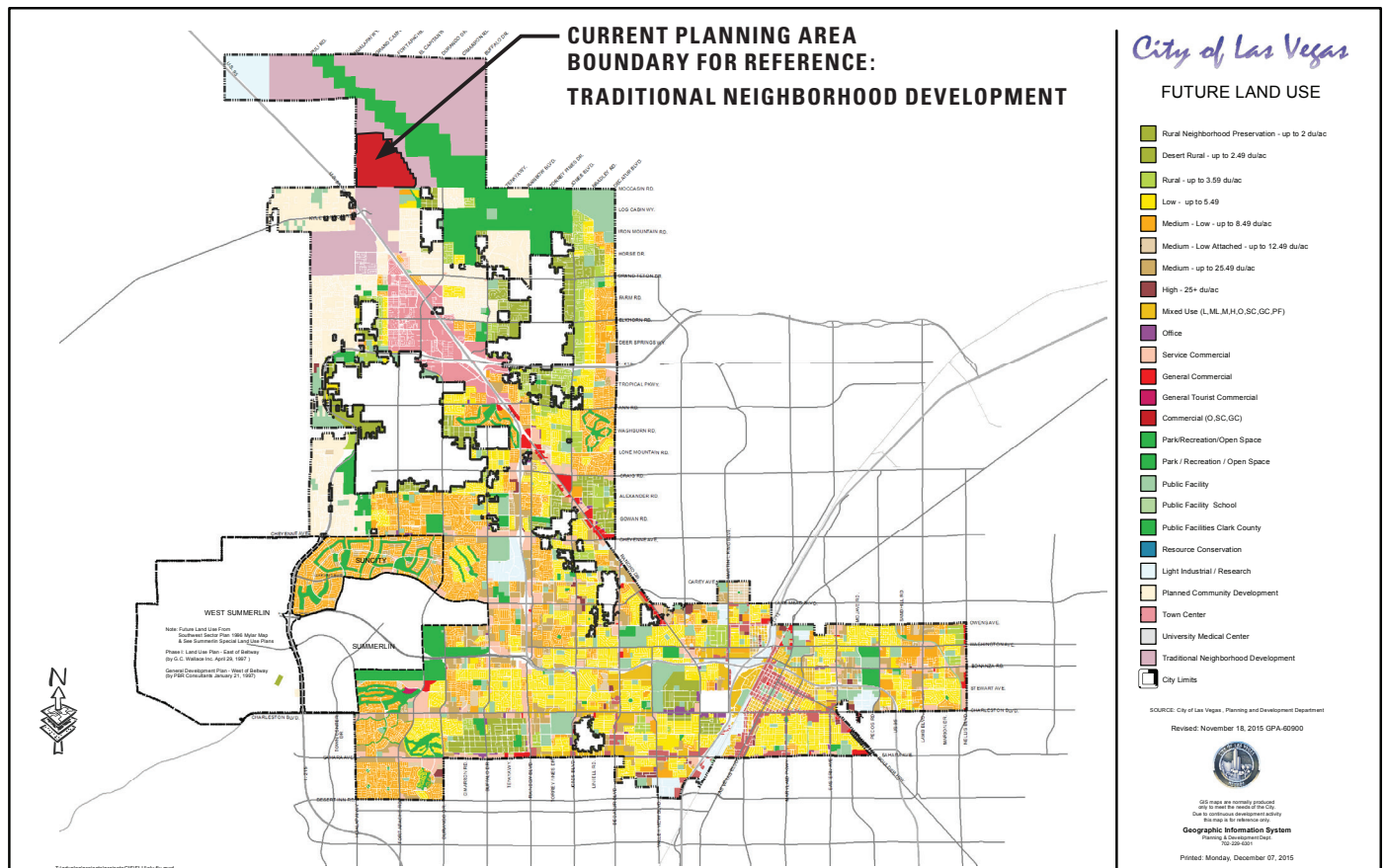
CITY OF LAS VEGAS UNIFIED DEVELOPMENT CODE (UDC)

PURPOSE:

To coordinate and ensure the execution of the City's General Plan through effective implementation of development review requirements, adequate facility and services review and other goals, policies or programs contained in the General Plan.



CITY OF LAS VEGAS GENERAL PLAN



EXISTING DOCUMENTS



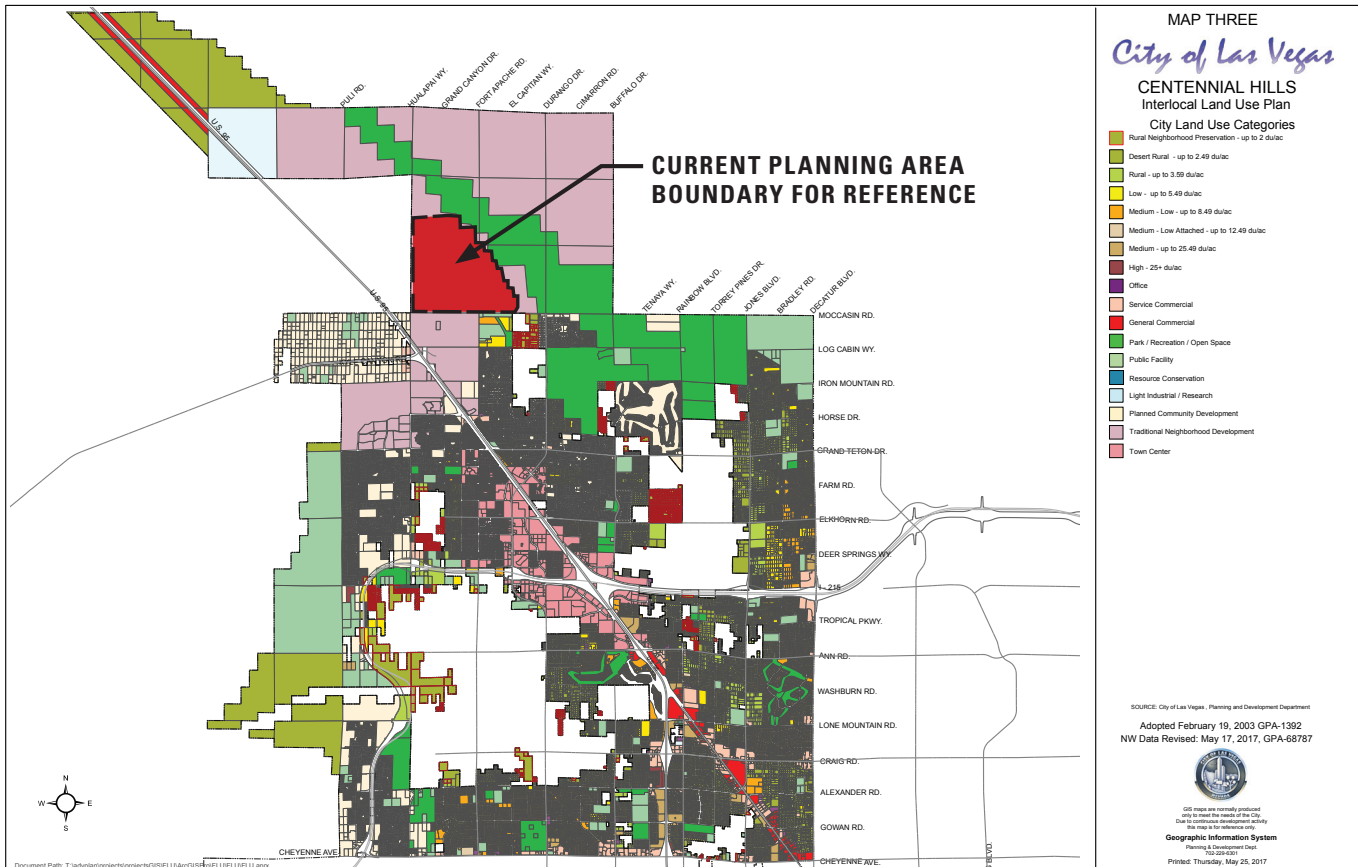
CENTENNIAL HILLS SECTOR PLAN

PURPOSE:

Consensus based planning process for 56 Square Miles of Centennial Hills bounded by the Moccasin Road alignment to the north, Cheyenne Avenue on the south, Decatur Boulevard to the east, and the Red Rock Preservation Area to the west. (Just south of project study area)

GOALS:

- The sector plan is the principal document for future land use.
- The plan is a balance of land uses and are compatible.
- Incorporate natural and man-made features to planning.
- Coordinate land use with infrastructure in adjacent areas.
- Protect the health, safety and welfare of Northwest residents.



EXISTING DOCUMENTS

NORTHWEST OPEN SPACE PLAN

PURPOSE:

A 10 month planning effort to plan for growth management and resource protection for 50 square miles in north Las Vegas.

GOALS:

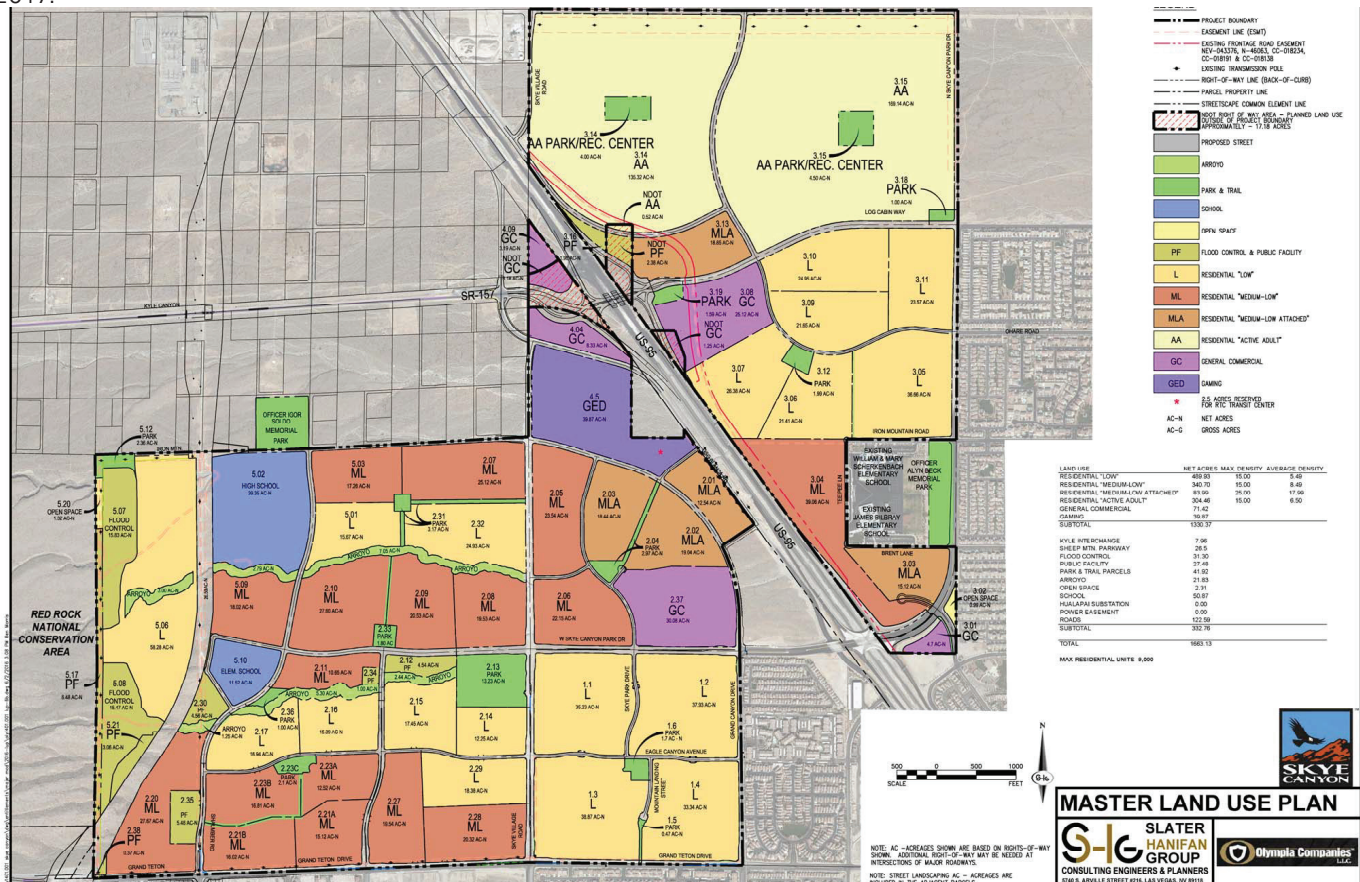
- Protect and enhance outdoor resources and infrastructure including parks, trails, views and cultural sites.
- Balance protection efforts and development in a way that is equitable, effective and understandable.
- Maximize the number and variety of outdoor opportunities while respecting existing conditions, water scarcity and the need to minimize long-term management.
- Improve the quality of life and character of Las Vegas with a well-planned and interconnected network of natural and designed open spaces.



SKYE CANYON DEVELOPMENT

PURPOSE:

Future Planning for the Skye Canyon Development will impact the use of the roadways, success of the commercial and impacts to the residential market for the Northwestern Las Vegas Valley. The plan is currently in the initial design phases and final maps are subject to change. The map below represents current planning from February 2017.



APPENDIX B

STAKEHOLDER OUTREACH



STAKEHOLDER OUTREACH



STAKEHOLDER EXERCISE

On July 14th, 2016, stakeholders from the City of Las Vegas, Bureau of Land Management, Tule Springs National Park Service, ULI Nevada, Southern Nevada Water Authority gathered to learn and discuss the project.

A short presentation about the site was followed by discussing the strengths, opportunities, challenges and weaknesses of the potential project. The following outlines key takeaways from the discussion;

STRENGTHS AND OPPORTUNITIES

- Cool Neighbors
- Natural Beauty
- Special Area = Value
- Location next to Campuses & Future Access
- Clean Slate
- Sustainable Planning: Transit, Regional, Local, Technology
- Model for other locations
- Recreational Opportunities/Connection to Trails System
- Live, Work and Play – Walkable Integration
- Recreation on Site and Next Door
- Connection to the Outdoors
- Attract 'The Other Millennial'
- Working Class City
- Educated Workforce
- Multimodal connections
- Political Support
- Deep Ecology Concepts
- Enhanced Arroyos, Use as Natural Features
- Views
- No Opposition
- Collaboration – Having Discussions
- New Standard for how the BLM disposes land



STAKEHOLDER OUTREACH

- Standards for development next to National Monument
- Modify existing codes
- Set the Expectation – Play by the Rules
- Find artifacts to tie back to History – Simplify process for moving artifacts.
- Project has been through NEPA
- Protect the Value of the Natural Environment

WEAKNESSES AND THREATS

- Political Change
- Lack of Consistency with what is submitted/planned vs. approved
- Potential for fossils/historic resources in development area
- Human Environment
- Existing Development Codes/UDC
- Cul de sacs
- Light Pollution
- Edge uses along National Monument
- Invasive species migrating to Wash
- Infrastructure disruption (Utilities, NV Energy)
- Multi-modal transportation (Existing)
- Maintain natural beauty with new development
- Economics driving development by profitability
- Political and Federal partnerships
- Climate Change



STAKEHOLDER OUTREACH

DESIGN ALTERNATIVES

Following the SWOT exercise, stakeholders reviewed three preliminary concept alternatives for future planning in the project area. These concepts were developed based on feedback from the City with the goal of creating an active and mixed use community to set the stage for stakeholder engagement and is not based on a market assessment. Additional economic studies should be done to refine the plan concepts.

The following is a summary of the concepts presented;

ALTERNATIVE 1 CONCEPT: COMPACT MIXED USE

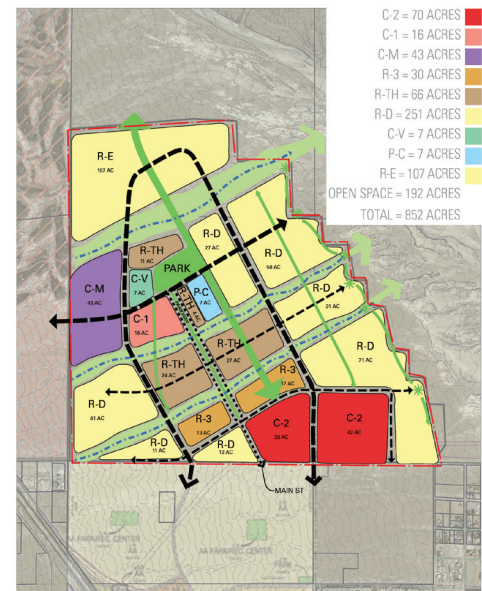
- Density transitions from South to North (Most to Least)
- Parkway, green spine and arterial loop road connect from South to North.
- Regional Commercial at North Skye Park Drive and Village Center at project core.
- Three open wash corridors from east to west, greenways from north to south and a trail along the wash for a total of 22% open space.

ALTERNATIVE 2 CONCEPT: CENTRAL E-W SPINE CONNECTION TO OPEN SPACE

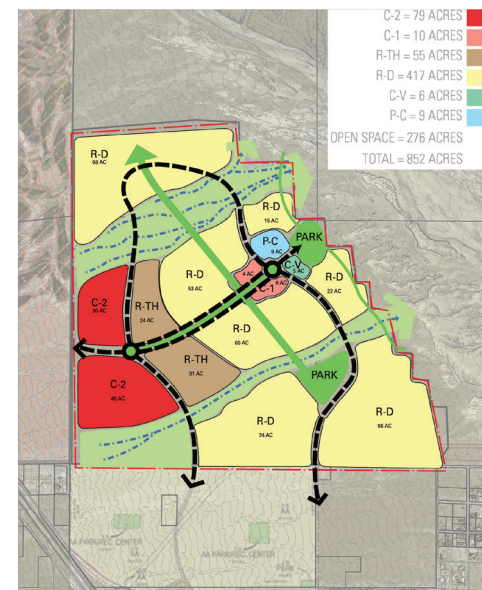
- Density transitions from West to East (Most to Least)
- Arterial loop road connects from South to North with a central East to West Parkway Connection.
- Regional Commercial future roadway and Village Center at the project core with connection to open space.
- Two primary open wash corridors from east to west, connected by a greenway under the existing transmission lines from north to south with a central park at the wash for a total of 32% open space.

ALTERNATIVE 3 CONCEPT: CENTRAL CORE WITH OPEN SPACE TO THE WEST

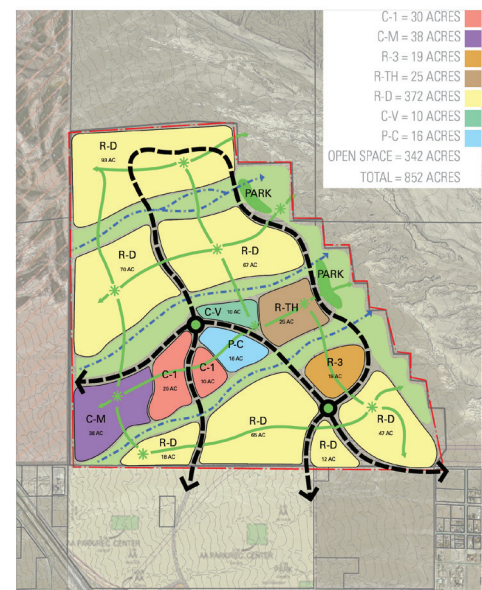
- Density focused at project center.
- Primary east-west arterial connections to north-south loop road running along the open space providing universal access to The Wash.
- Village Center at the project core.
- Three open wash corridors from east to west and open linear park along wash edge. Internal parks and trails system connects the planning areas for a total of 40% open space.



Alternative 1



Alternative 3



Alternative 3

STAKEHOLDER OUTREACH

STAKEHOLDER MAPPING EXERCISE

Following a presentation of the alternatives, stakeholders were allowed time to float between alternatives and encouraged to write or draw suggestions. Participants could choose to spend the whole time at the preferred/least preferred. Following the review, each team selected a representative for the alternative to present to the whole group. This exercise encourages ownership in shaping the community and puts stakeholders in the shoes of planners and designers.

The following is a summary of the feedback;

ALTERNATIVE 1 CONCEPT: COMPACT MIXED USE

- Main street style commercial
- Parks and Trails along open space
- Dual Use Facility to south
- Incorporate a traditional park
- Historic trail along rail corridor

ALTERNATIVE 2 CONCEPT: CENTRAL E-W SPINE CONNECTION TO OPEN SPACE

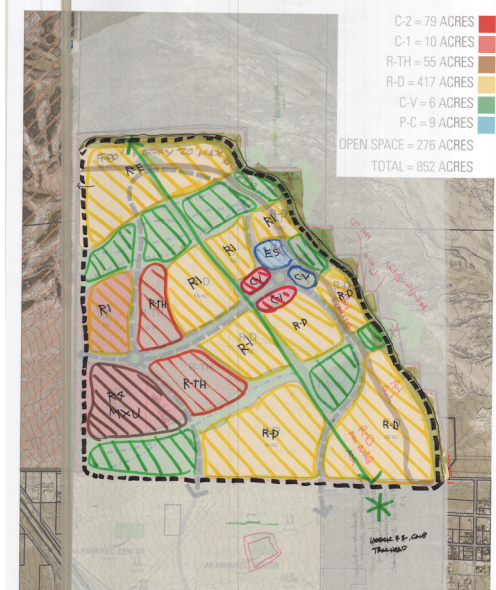
- Vegetation standards
- Scenic look with building standards
- Change C-2 to R-4 and R-1

ALTERNATIVE 3 CONCEPT: CENTRAL CORE WITH OPEN SPACE TO THE WEST

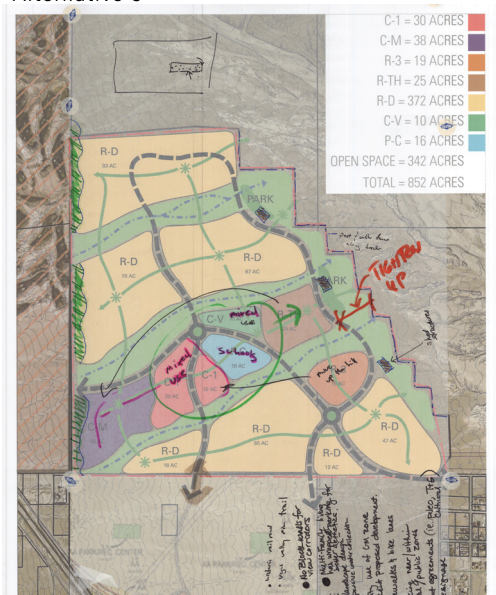
- Commercial landscape design, incorporate passive water collection
- Compatibility with C-M zone with adjacent development
- Wide sidewalks and bike lanes
- Bike Parking near/within commercial, public zones
- Interpretive signage



Alternative 1



Alternative 3



Alternative 3

