



Las Vegas Medical District Facilities Master Plan Technical Report

December 2015

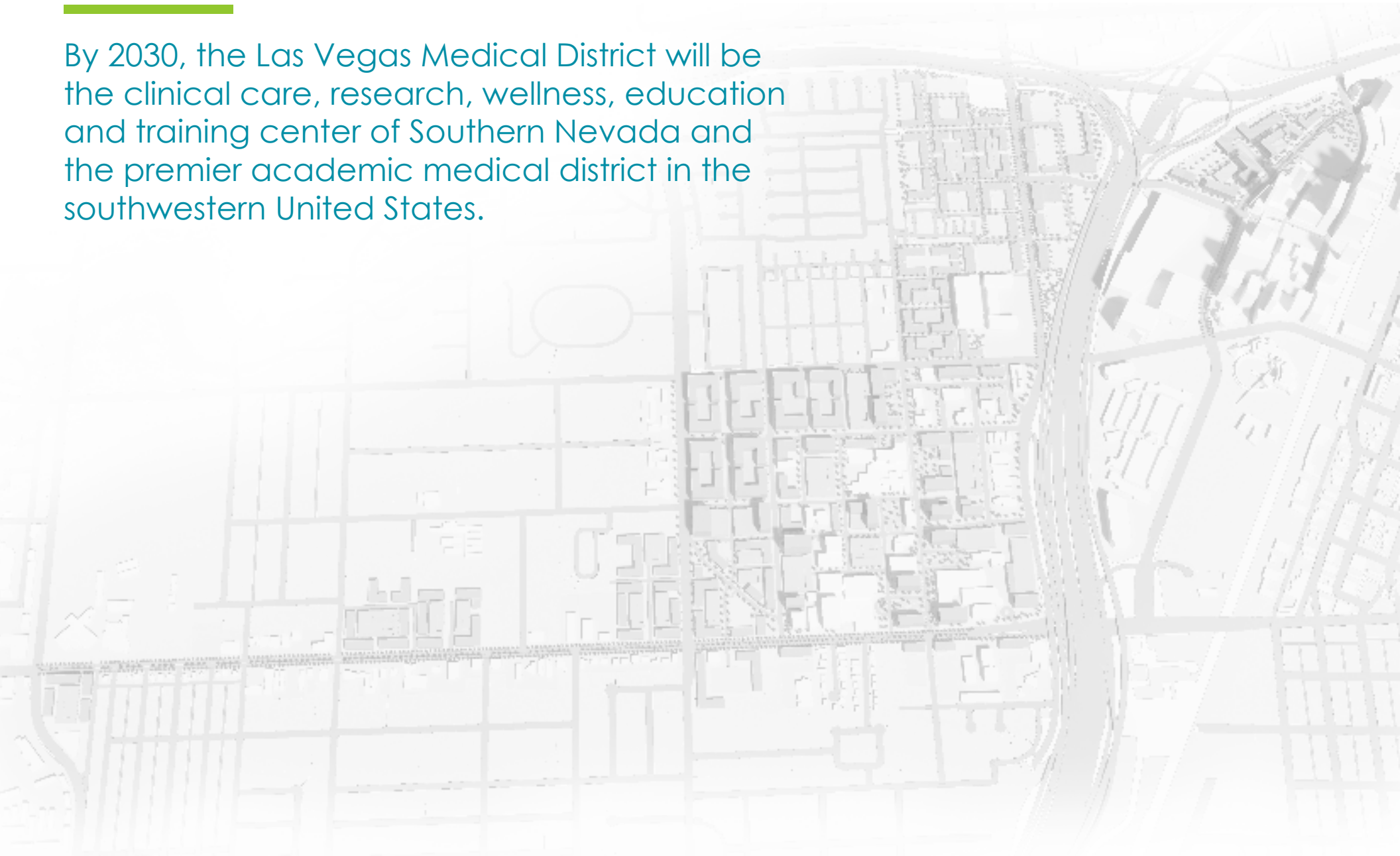
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Note: This document is the second of two (2) LVMD Facilities Master Plan Reports. An Executive Summary precedes this Technical Report.

MISSION

By 2030, the Las Vegas Medical District will be the clinical care, research, wellness, education and training center of Southern Nevada and the premier academic medical district in the southwestern United States.



Introduction

The Las Vegas Medical District (LVMD) was initially established by City Council in 2002 as a 214 acre area, bounded by Alta Drive to the north, Charleston Boulevard to the south, Martin L King Boulevard to the east and Rancho Drive to the west.

The LVMD contains a number of major medical and educational institutions, including University Medical Center (UMC), Valley Hospital Medical Center and the UNLV Shadow Lane Campus. The intent of the LVMD designation was to encourage the continued development of healthcare and medical education centers.

The original master plan was adopted in 2002, amended in 2004 and again in 2007, reflecting changes in the LVMD as residential development gave way to hospital expansion.

Due to limited development opportunities within the LVMD, the City proposed that it be expanded to a 684 acre footprint. The expanded LVMD would contain the Cleveland Clinic Lou Ruvo Center for Brain Health and the Symphony Park development, increasing the amount and type of development possibilities.

This update of the master plan expands the geographic scope of the previous documents, and updates development requirements, opportunities, possibilities and standards in light of changes and trends that have developed over the last 12 years.



LVMD Existing Conditions Boundaries

Methodology

Development Context

The area around the current UMC and Valley Hospital Medical Center was almost entirely agricultural well into the 1930s. From Martin L King Boulevard west to Shadow Lane and from Charleston Boulevard north to Bearden Drive was a dairy farm.

Directly north of there, extending to Alta Drive, was the Buol Addition which dates back to 1905. Peter Buol, who laid out the addition, became the City's first Mayor after incorporation in 1911.

In 1965, this property was occupied by the Southern Nevada Health District building. The building has been vacated and a Memorandum of Understanding (MOU) has been established between UNLV and Clark County, designating the property as the site for use by the new UNLV medical school.

The area between Shadow Lane and Rose Street, north to Alta Avenue, was the Clark County Poor Farm dating from the 1920s. A building was constructed in 1929 to house handicapped and indigent men as part of the operation of the Clark County Road Department. This facility, sometime in the late 1930s, began to be referred to as the Clark County Hospital. In 1945, a new hospital named the Clark County General Hospital was built on this site. Around 1952 the facility became the Southern Nevada Memorial Hospital.

The hospital is now known as the University Medical Center. By the early 1960s, a medical office complex was developing between the alignment of Rose Street and Tonopah Drive.

The property to the north of the Poor Farm was the site of a ranch starting in 1913, and is now occupied by Valley Hospital Medical Center, which began construction in 1971.



This historic map of the Las Vegas, dating to 1929, with current street names overlaid, illustrates the growth that has occurred in the Medical District area.

As late as the early 1950s the property west of Tonopah Drive was mostly desert and Las Vegas Valley Water District (LVVWD) property.

Since the construction of the Clark County Hospital (now UMC) in 1945, the Medical District has been transitioning from a residential neighborhood to a regional scale medical district.

Sources

The LVMD has been the subject of multiple local, regional and state level planning efforts. To avoid the duplication of effort and ensure the integration of this plan with previous work, the documents listed on this page were reviewed, and used as supplemental information for the development of this plan.

In addition to reviewing previous work, the team utilized Geographic Information Systems (GIS) to tabulate and analyze demographic and development data within and around the LVMD. Detailed two and three dimensional maps were prepared to illustrate this data, and provide comprehensive analysis of how the different variables interact. This quantitative work was augmented with interviews with key stakeholders in the LVMD, both to determine what future development needs they had already identified, and to better delineate a shared vision for the LVMD.

- The Brookings Institution/Metropolitan Policy Program, “Unify, Regionalize, Diversify; An Economic Development Agenda for Nevada”, 2001
- City of Las Vegas, “Five Year Capital Improvement Plan FY 2015-2019”, prepared by the City of Las Vegas Department of Finance
- City of Las Vegas, “Medical District, A Synthesis of Available Research” prepared by Applied Analysis, 2014
- City of Las Vegas, “Economic Development Investment Strategy”, prepared by TIP Strategies Inc., June 2013
- City of Las Vegas, “Las Vegas Medical District Plan”, prepared by the City of Las Vegas Comprehensive Planning Division, adopted 2002, revised 2004 and 2007
- City of Las Vegas “Symphony Park Design Standards”, Prepared by RNL and Design Workshop, 2006
- City of Las Vegas “Master Plan and Capital Improvement Plan Integration”, prepared by City of Las Vegas Department of Planning and Development, 2005
- City of Las Vegas, “City of Las Vegas Master Plan 2020”, adopted September 2000
- Nevada Board of Economic Development, “Moving Nevada Forward: A plan for Excellence in Economic Development”, Nevada Governor’s Office of Economic Development, February 2014
- Nevada Medical Center “Feasibility Study and Report” prepared by Walneddl & Company LLC
- Regional Transportation Commission “Regional Transportation Plan, 2013-2035” prepared by Regional Transportation Commission of Southern Nevada, 2012
- Regional Transportation Commission, “Regional Complete Streets Study” prepared by CDM Smith, 2012
- Southern Nevada Strong, “SNS Regional Plan”, prepared by Southern Nevada Strong, January 2015
- Southern Nevada Strong, “SNS Regional Plan Implementation Matrix”, prepared by Southern Nevada Strong, January 2015
- Southern Nevada Strong, “Medical District Opportunity Site Investment Strategy”, prepared by ECON Northwest for the City of Las Vegas, August 2014
- Southern Nevada Strong “Industry Sectors and Placemaking, Technical Analysis in Support of Regional Scenario Planning in Southern Nevada”, prepared by ECON Northwest, 2013

Goals & Objectives

Vision

The purpose of this planning effort is to create a planning strategy that furthers the development of the area into a premier medical district in the region. The specific elements of that strategy this project addresses are:

- Coordination of major institutional expansion plans, from Nevada System of Higher Education, Valley Hospital Medical Center, UMC, Cleveland Clinic, UNLV and others.
- Integration of a new UNLV allopathic medical school within the LVMD
- Identification of key development locations for retail, housing, medical offices, parking and additional land uses
- Improve the pedestrian environment to increase the walkability of the LVMD
- Improve vehicular ingress and egress
- Collaborate with RTC to incorporate and implement priority strategies of Southern Nevada Strong Regional Plan

The documentation required to support these strategic elements includes:

- A 15 year projection of the LVMD's expansion needs.
- A land use framework identifying development opportunities for commercial, residential and academic uses.
- Illustrative plans showing how an allopathic medical school would be integrated within the LVMD
- District-wide plans that integrate city and state public right-of-way projects
- Analysis and confirmation of the expanded LVMD boundaries
- Review and integration of existing planning initiatives, including Southern Nevada Strong

To support the mission of creating the premier medical district in the southwestern United States, the LVMD Advisory Council established a set of guiding principles in 2014:

ATTRACT NEW FACILITIES

- UNLV School of Medicine
- Centers of excellence in research, healthcare, education and training
- Specialty hospitals and practices
- Regional facilities
- International patient center
- Hotels for patients and visitors
- Quality housing for LVMD employees and students.

EXPAND AND DEVELOP EXISTING FACILITIES

- UNLV School of Medicine
- UNLV Department of Physical Therapy
- UNLV Allied Health Departments
- UNLV School of Nursing
- UNLV School of Dental Medicine
- Nevada System of Higher Education Clinical Simulation Center of Las Vegas
- University Medical Center
- Valley Hospital Medical Center
- Cleveland Clinic at Symphony Park
- Improved Parking and Transit

- University of Nevada School of Medicine

BRAND AND REPUTATION

- Academic center of excellence
- Nationally recognized health sciences center
- Medical tourism will grow

ECONOMIC IMPACT

- Total Economic Impact: \$30 Billion
- Total Employees: 20,000
- Average annual wage: \$80,000

OPERATIONS AND POLICY

- Promote an economic environment that promotes quality healthcare
- A non-profit advisory and support organization
- Central hub of health services and facilities in the region



Expectations

During the course of stakeholder and advisory group meetings, additional vision and goal statements were solicited, in the form of answers to three questions. These include:

IN TWENTY YEARS, THE LVMD WILL BE:

- ... The premier medical district in the southwest*
- ...A bustling area that rivals some of the best medical districts across the country*
- ...The location of the UNLV medical school*
- ...An urban destination for healthcare and related activities in the southwest region*
- ...Nationally recognized*
- ...The core of the medical community encompassing Las Vegas and surrounding areas*
- ... A nationally recognized medical campus highlighting academic and research while maintaining the important services currently offered*
- ... The roadmap that established significant development in the medical sector in Las Vegas*
- ... Implemented at least 90%, if not fully*
- ...The Medical District will be established and a hub for medical services in Las Vegas and the region*

THE MOST IMPORTANT ISSUE THE LVMD FACILITIES MASTER PLAN MUST ADDRESS IS:

- ... It needs to be planned in a manner that makes people really want to travel from all over to be there*
- ... Include everyone from low-income people to the wealthiest in the valley*
- ... Compatible with existing residential property along the south side of Charleston and the west side of Rancho*
- ... Connectivity between the core medical area and the expansion area east of I-15*
- ... A shared vision and commitment to a community approach to common interests like parking, open space, streetscape, etc*
- ... Continual growth and beautification with emphasis on medical school development*
- ... Support and provide the framework for becoming the location of choice for comprehensive healthcare in southern Nevada*
- ... Finding a way to bring providers and payers together to create innovative reimbursement models that are mutually beneficial to both parties*
- ... Showing this district is the perfect location for the UNLV School of Medicine*
- ... Attracting medical providers, establishing the UNLV Medical School, identifying key support services and in general redeveloping the area*



Defining Success

I WILL CONSIDER THE LVMD FACILITIES MASTER PLAN A SUCCESS WHEN:

... The first phase of the medical school starts construction

... The UNLV medical school is up and running

... The LVMD looks and feels like Summerlin's Boca Park or Town Square, or the Premium Outlet and Clark County Government Center area or Green Valley right of the 215. All those areas feel bright, clean and welcoming, and you want to be there

... Healthcare in the LVMD is sought out as the healthcare of choice and highest quality in southern Nevada

... A parking management plan is accepted by all stakeholders

... Conflicts with surrounding property owners are eliminated

... It is well connected to the rest of downtown and goals/visions are being realized through good development

... Today's visions become tomorrow's realities

... The Medical District is recognized nationally for medical care, a medical school, and diversity of medical specialties. The Medical District will be known for the latest in medical advances. The Medical District is redeveloped and is a cohesive district of medical and support services (housing, food, retail)

... When Las Vegas becomes nationally recognized as a center of excellence where individuals travel to Las Vegas to receive medical care

... The qualifier "Las Vegas" is no longer necessary to use, when we are able to ask any citizen in the Vegas Valley where the medical district is located and they can immediately answer, "Downtown Las Vegas"

Stakeholder Participation

The LVMD is already an established location for a number of major healthcare providers, offering a wide cross-section of unique medical and educational opportunities. The active participation of these stakeholders was identified as a critical measure of success for the master planning process. Extensive stakeholder interviews were conducted during the preliminary phase of the planning process. Stakeholders interviewed included:

- University of Nevada School of Medicine (UNSOM)
- University of Nevada, Las Vegas (UNLV)
- UNLV School of Dental Medicine
- UNLV School of Medicine
- Nevada System of Higher Education (NSHE)
- University Medical Center (UMC)
- Valley Hospital Medical Center
- Cleveland Clinic Lou Ruvo Center for Brain Health
- Steinberg Diagnostic Imaging
- Desert Radiologists
- Nevada Medical Center
- Clark County
- Southern Nevada Health District
- City of Las Vegas Economic and Urban Development Department
- City of Las Vegas Planning Department
- City of Las Vegas Parking Division
- Las Vegas Metropolitan Police Department (LVMPD)
- Nevada Department of Transportation, Project NEON
- Scotch 80's Residents' Group
- McNeil Estates HOA
- City of Las Vegas
 - Mayor Carolyn G. Goodman
 - Councilwoman Lois Tarkanian
 - City Manager's Office
 - Economic and Urban Development Department

- Planning Department
- Public Works Department
- Parking Division

In addition to the stakeholder interviews, the master planning process involved a LVMD Planning Committee, which met with the planning team once a month to review and direct the master facilities planning efforts. Members of this team included:

- University of Nevada School of Medicine (UNSOM)
- University of Nevada, Las Vegas (UNLV)
- UNLV School of Dental Medicine
- UNLV School of Medicine
- UNLV School of Nursing
- Nevada State College School of Nursing
- Nevada System of Higher Education (NSHE)
- University Medical Center (UMC)
- Valley Hospital Medical Center
- Cleveland Clinic Lou Ruvo Center for Brain Health
- Desert Radiologists
- Nevada Medical Center (NMC)
- Clark County
- Southern Nevada Health District (SNHS)
- Regional Transportation Commission of Southern Nevada (RTC)
- City of Las Vegas Economic and Urban Development Department
- City of Las Vegas Planning Department
- Clark County Medical Society

A series of public outreach meetings were held to solicit community input. Two events were held on February 24, 2015. The first was held during the day, at the UMC cafeteria, and was conducted as an open house to solicit feedback from employees, students and visitors to the LVMD. Later that evening, another open house targeted to residents and property owners was held at the LVVWD office.

A third event, held on March 24, 2015 was targeted to the health services professionals all over Nevada. Held at City Hall, this was a more formal event, featuring a 20 minute presentation followed by a reception. Over 300 formal invitations were issued, as well as an open web notice.

In addition to monthly planning committee meetings and public outreach events, two websites were created to allow for public comment; one as an extension of the City of Las Vegas website, and a second independent site using the "Mindmixer" community engagement platform. The "Mindmixer" website, www.lvmdmasterplan.mindmixer.com, generated over 1,155 unique visitors and 2,336 page views. The comments received were varied, and were generally supportive of ideas to improve the LVMD, helping to refine several of the planning team's recommendations.

BENCHMARKING



Benchmarking

Multiple cities throughout the nation have seen substantial success with the development of targeted healthcare districts. As part of the background research for this project, the proposed LVMD was benchmarked against other cities with medical districts that shared similar characteristics.

The purpose of this exercise was to determine if a district of the size proposed for Las Vegas could be viable, and to provide context in terms of where Las Vegas stands among potential peers.

These comparisons quickly illustrated that while the LVMD is comparable to peer districts in size, it is lacking both in population, and in the types of support development that other medical districts enjoy.

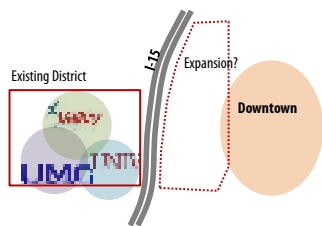
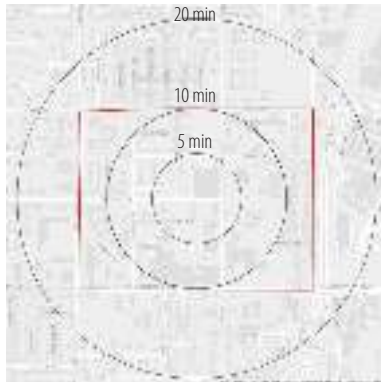


Major National Benchmarked Medical District Locations

Comparable Districts

Las Vegas

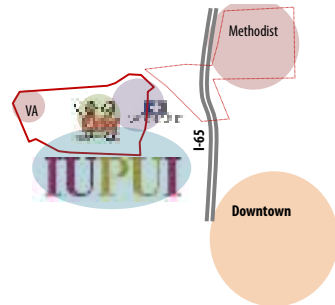
Medical District
214 Acres



The original 214-acre boundary of the LVMD includes two hospitals (Valley and UMC), and the presence of a major research institution (UNLV). The medical district is proximate, but disconnected from downtown and does not generally include a robust mix of uses.

Indianapolis

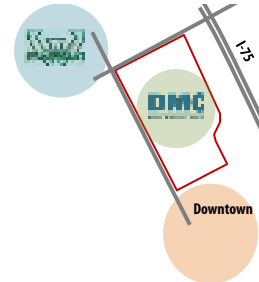
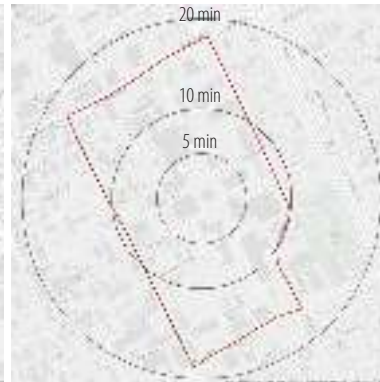
IU Health/IUPUI
160 Acres



The IU Health/IUPUI campus in downtown Indianapolis, Indiana includes the presence of several major hospitals (Wishard, Riley, Methodist, IU Health, VA), and a major research institution. The area is proximate but somewhat disconnected from downtown. Recent planning initiatives have improved connectivity.

Detroit

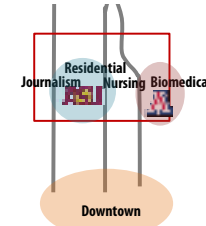
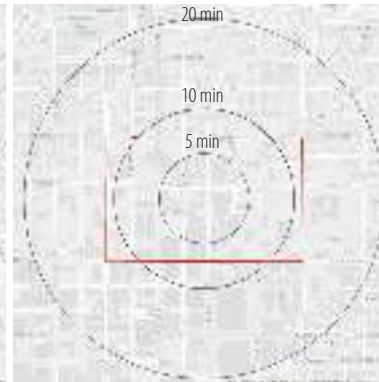
Midtown
180 Acres



The Midtown Detroit area includes the Detroit Medical Center and Wayne State University, straddling the Woodward Avenue corridor as the major growth armature in downtown Detroit. The area is currently experiencing a major renaissance and new investment preceded by non-profit lead planning and organizing.

Downtown Phoenix

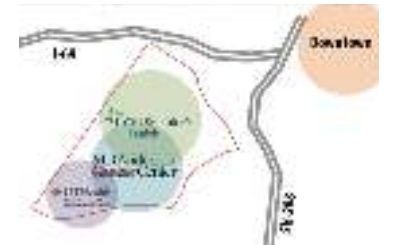
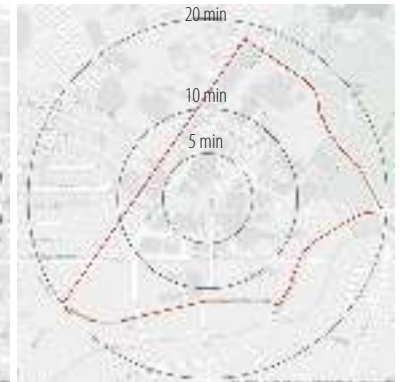
ASU+Biomedical
135 Acres



Downtown Phoenix has experienced a resurgence in recent years, thanks in part to the investments of the University of Arizona and Arizona State University to create a major urban presence in the city. While the area does not include a major hospital, the mix of uses developed in the last 10 years should be targeted by other urban health districts.

Houston

Texas Medical Center
270 Acres



The world's largest medical complex includes 21 hospitals and 8 academic/research institutions and has a long history of innovation in Houston. The Texas Medical Center is proximate to downtown Houston, but not directly connected.

Texas Medical Center



As the world's largest medical complex, the Texas Medical Center development includes 21 hospitals, 13 support organizations, 8 academic and research institutions, 6 nursing programs, 3 public health organizations, 3 medical schools, 2 universities, 2 pharmacy schools, and a dental school.

In 1925, Hermann Hospital opened. In 1942, the University of Texas created the MD Anderson Cancer Center in the same area. Sensing an opportunity, in 1943, the City of Houston established the original 134 acre district. It has since grown to a total of 1,345 acres, with 7,000 patient beds.

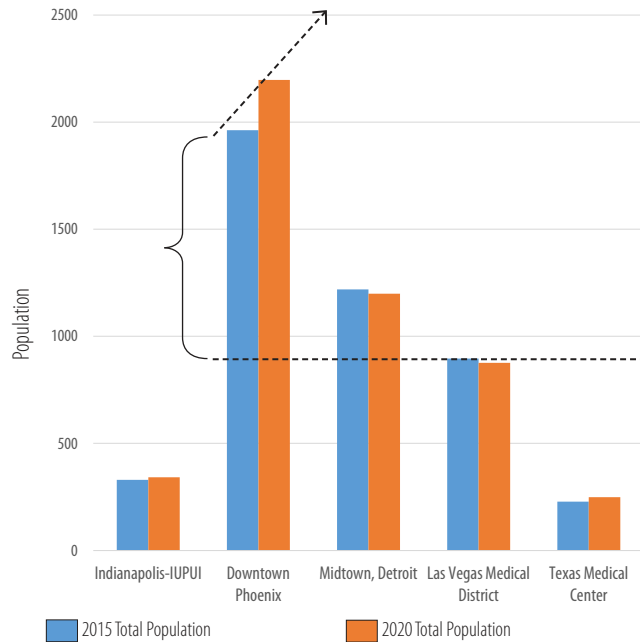
The most recent strategic plan has established a five point vision for the future of the LVMD:

- Become the global leader in life sciences innovation
- Create the most innovative genomics center for discovery and disease intervention
- Lead the world in discovering, developing and delivering curative regenerative therapies
- Be the world's leader in clinical research by transplanting discoveries into better research and cures
- Develop the most effective policy solutions to improve the health of diverse populations, locally and globally

Population Characteristics

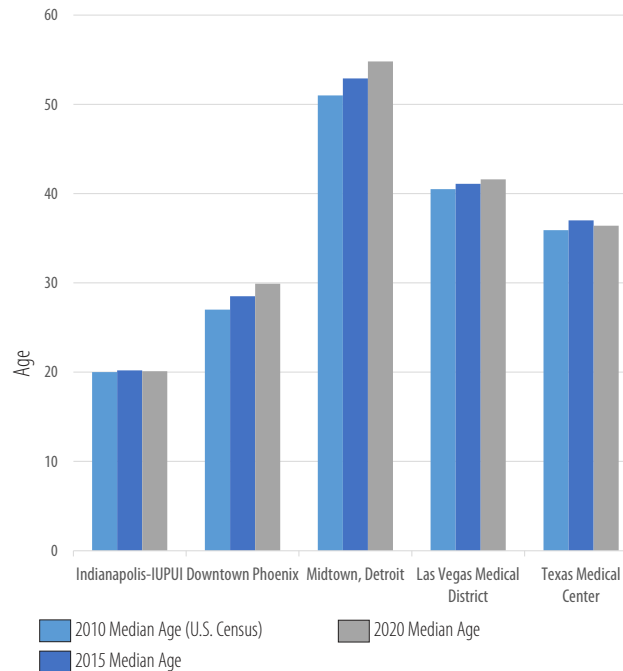
Demographics

2015-2020 POPULATION



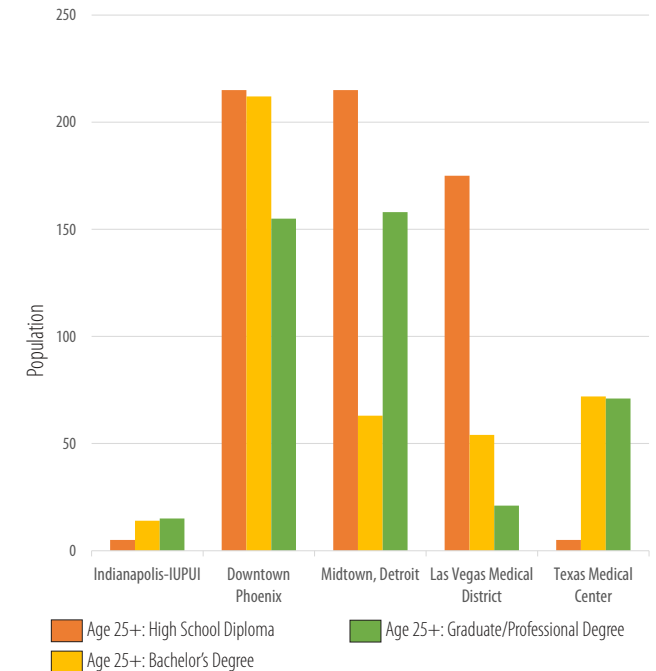
Of the areas benchmarked, only the Downtown Phoenix area is projected to see major population increases in the next five years. This area is the most urban and connected to downtown of the areas benchmarked.

2010-2020 MEDIAN AGE



All areas are projecting an increase in their median age, with the exception of the Texas Medical Center. The lower median age in the Indianapolis and Phoenix areas are significant.

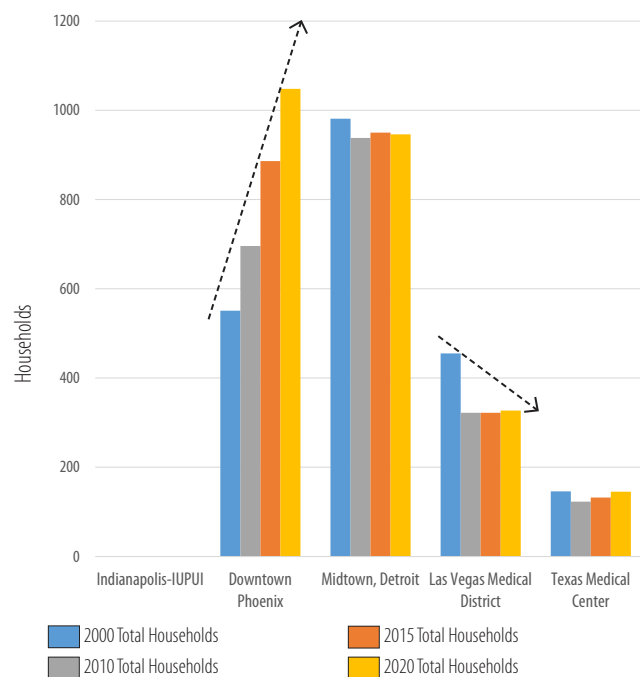
2015 EDUCATIONAL ATTAINMENT



Phoenix and Midtown Detroit are generally more educated than the other benchmarked areas. The low percentage of individuals living in the 214-acre LVMD with a graduate or professional degree is significant.

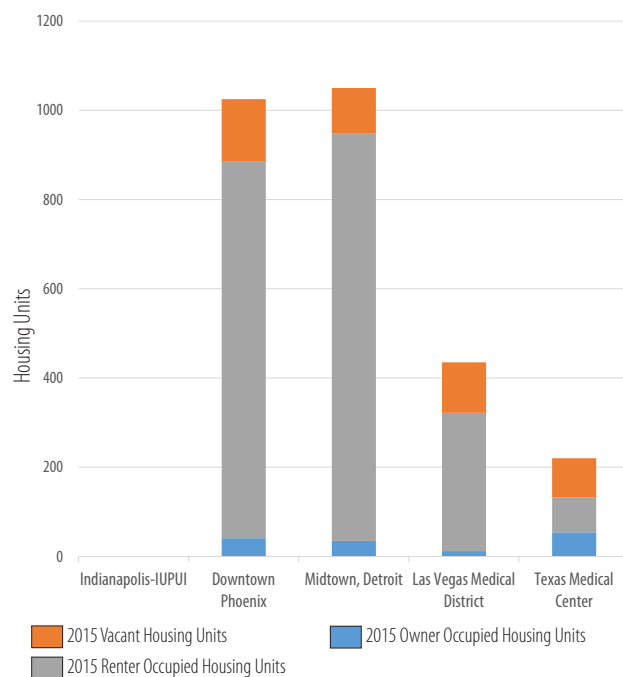
Households

2010-2020 TOTAL NUMBER HOUSEHOLDS

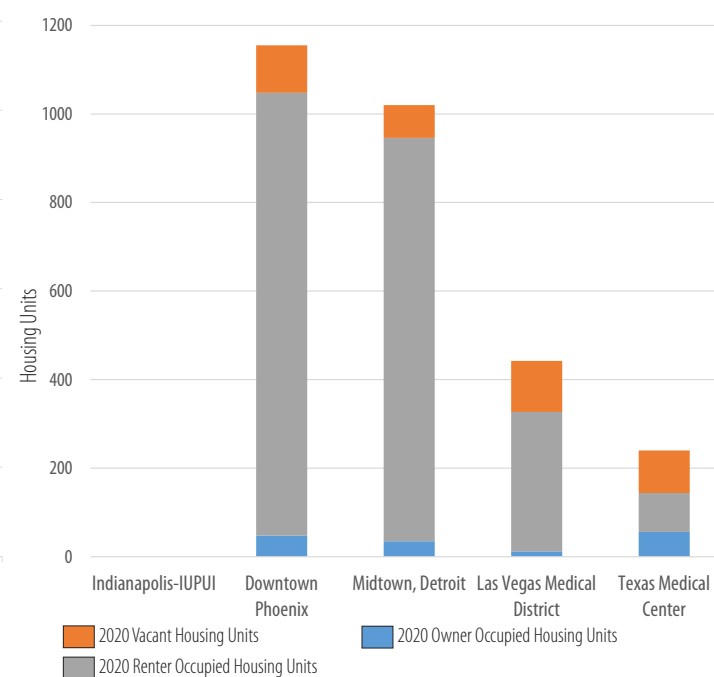


Phoenix is rapidly increasing the number of households in the area, while household quantities in the 214-acre LVMD are in a rather steep decline.

2015 HOUSING UNITS



2020 HOUSING UNITS



When comparing 2015 to 2020, Midtown Detroit and Phoenix are projecting decreases in the number of vacant housing units and slight increases in renter occupied units. Owner occupied units remain steady across all areas.

PREVIOUS PLANS



Previous Plans

Initially established as a recognized district in 1997, the LVMD has been the subject of numerous planning efforts since 2002, when the first master plan was adopted. The following section reviews previous planning documents, drawing out the recommendations and conclusions from each.

While each plan has unique features, unifying themes emerge.

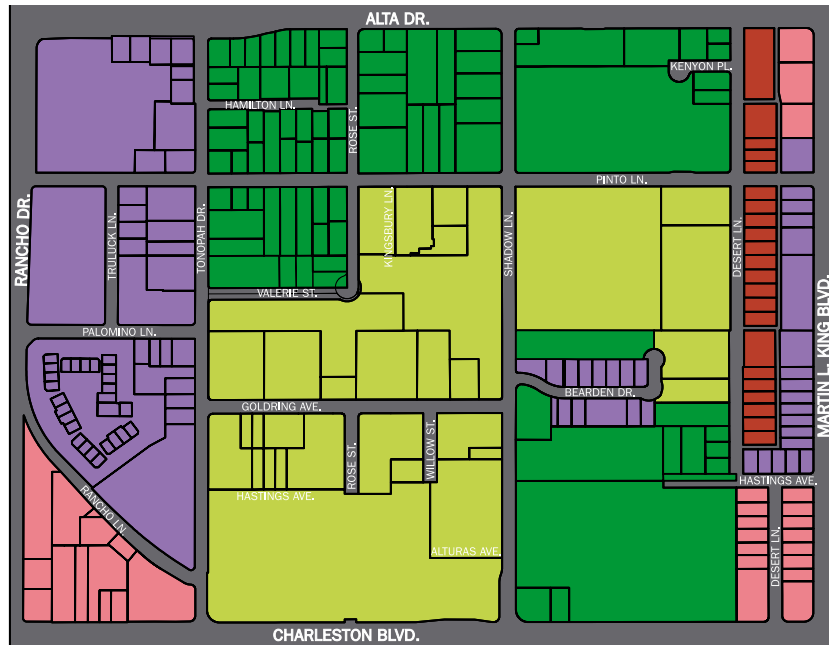
- All of the plans recognize the special opportunity inherent in the convergence of major medical and educational facilities
- The plans all support a more pedestrian friendly, walkable district, with high quality public transportation options
- All of the documents identify a need for a mechanism that would allow for coordinated planning and development of shared parking and transportation options
- All of the plans address the importance of augmenting medical and educational uses with supportive retail, housing and commercial development

This plan compliments the previous documents, adapting to new developments, providing additional information, and more specific recommendations.

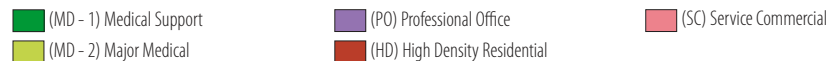
These include:

- Specific consideration of the new UNLV Medical School, and the implications of its location in the LVMD on the old Southern Nevada Health District site
- A more detailed understanding of the development plans of institutions already in the LVMD, and an understanding of how those plans will affect land use patterns
- An analysis of infrastructure capacity constraints to determine the amount of development that can be supported under current conditions

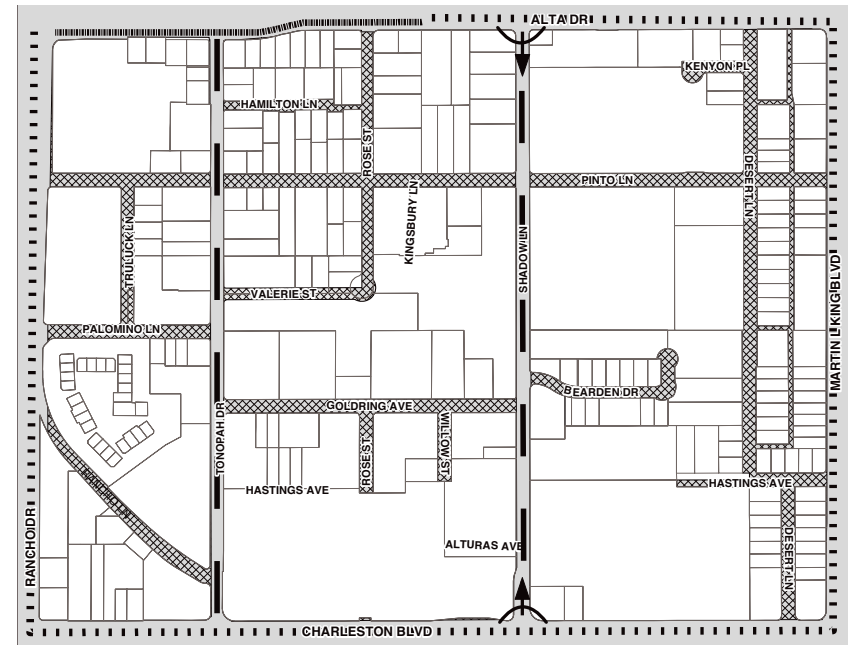
Previous Las Vegas Medical District Master Plan Framework (2002)



Las Vegas Medical District Master Plan: Land Use



- **MEDICAL SUPPORT (MD1)** The Medical Support category is intended to allow less intense development within the LVMD. It is designed to allow medical, higher education, research, medically related and office uses. The minimum allowable site shall be 1 acre to encourage larger scale development.
- **MAJOR MEDICAL (MD2)** The Major Medical category is intended to allow the most intensive development within the LVMD. It is designed to allow major medical, higher education, research and office uses. The minimum allowable site shall be 1 acre to encourage larger scale development.
- **PROFESSIONAL OFFICE (PO)** The Professional Office category is intended to allow the conversion of single-family residential structures to low intensity commercial uses and administrative and professional offices. However the assemblage of more than one lot and the demolition of existing structures to construct new structures is also encouraged.



Las Vegas Medical District Master Plan: Street Types



- **SERVICE COMMERCIAL (SC)** This category is intended to allow low to medium density retail, office or other commercial uses that serve primarily local area patrons, and that do not include more intense general commercial characteristics.
- **HIGH DENSITY RESIDENTIAL (HD)** This category is intended to allow the development of a variety of multi-family units such as multi-family plexes, townhouses, and high density apartments. This category is comparable to the R-4 zoning category.

Previous Las Vegas Medical District Master Plan Goals (2002)

GOAL 1

Facilitate the development of the plan area into the premier academic medical district in the southwestern United States.

OBJECTIVE 1.1

Encourage the expansion of existing health education programs within the LVMD, and attract new programs to the LVMD.

- **POLICY 1.1.1:** Clearly delineate an educational core within the LVMD, closely tied to major medical and research developments
- **POLICY 1.1.2:** Support the educational core with development standards that create a pedestrian friendly environment for faculty and students

OBJECTIVE 1.2

Encourage the expansion of existing healthcare facilities within the LVMD, and attract new healthcare providers to the LVMD.

OBJECTIVE 1.3

Encourage medical research facilities to locate within the LVMD.

OBJECTIVE 1.4

Encourage residential development that will provide housing choices for LVMD employees and students.

- **POLICY 1.4.1:** Permit no single-family construction or reconstruction within the plan area
- **POLICY 1.4.2:** Encourage the assembly of single-family parcels to promote larger scale development
- **POLICY 1.4.3:** To protect the existing multi-family parcels through adequate buffering of new developed non-residential uses

GOAL 2

Improve internal, regional and international connectedness of the LVMD.

OBJECTIVE 2.1

Improve mass transit connections to the LVMD, and transit circulation within the LVMD.

OBJECTIVE 2.2

Encourage development that will support the growth of the LVMD as a medical tourism hub for both national and international patients.

GOAL 3

Achieve a high quality, appropriately pedestrian-oriented environment within the LVMD.

OBJECTIVE 3.1

Provide for convenient, safe and pleasant pedestrian circulation

- **POLICY 3.1.1:** Enforce a streetscape plan

GOAL 4

Maintain the balance of land uses within the LVMD. In order to protect the existing character of the residential neighborhoods, while preserving the integrity of the commercial uses.

OBJECTIVE 4.1

Develop a land use plan to encourage further appropriate development of the LVMD as a major medical, educational and research district.

- **POLICY 4.1.1:** Upon adoption, the LVMD Land Use Plan, Map 1 will be a Special Area Plan within the City of Las Vegas Master Plan
- **POLICY 4.1.2:** The following shall be names and descriptions of each sub-district (refer to Map 1)

Southern Nevada Strong Medical District Strategy

Southern Nevada Strong developed the Medical District Opportunity Site Investment Strategy Plan in August 2014. This document is the second of a two-part analysis that provides the foundation for the Las Vegas Medical District Facilities Master Plan. The first document, the Opportunities and Barriers Report, compiles and interprets data that describe the current conditions in and around the Medical District study area, as well as information about the regional demand for medical services and other market information. The second part (this Investment Strategy) identifies the investments and policy changes that are necessary to set the stage for successful implementation through the Facilities Master Plan. It focuses on the supportive uses necessary to create a vibrant and attractive area: identifying the key opportunities upon which the Master Plan can build and the major barriers that it must overcome. It provides a set of recommendations to focus the portions of the Facilities Master Plan that deal with public space and mixed-use investment, builds from a substantial public outreach effort coordinated by Southern Nevada Strong, and elevates the following issues for further discussion and resolution through the Facilities Master Plan:

- Phased implementation; coordination of public and private investment.
- Parking.
- Placemaking.

The Southern Nevada Strong Regional Plan Implementation Matrix, which was developed by SNS in January 2015, provides specific goals, objectives and strategies to promote the implementation of Medical District Investment Strategy Plan, including:

- **GOAL 1, OBJECTIVE 1.3, STRATEGY 1.3.1** Support community stakeholders to plan for regional educational and medical assets that support economic growth and diversification, such as a UNLV medical school.
- **GOAL 1, OBJECTIVE 1.3, STRATEGY 1.3.2** Encourage quality housing and transit near existing medical facilities, schools and training programs to increase access to local medical providers and provide opportunities for residency programs in order to get doctors to stay in the region.
- **GOAL 1, OBJECTIVE 1.3, STRATEGY 1.3.3** Identify how and where medical and educational institutions can be integrated into mixed-use developments in economically disadvantaged neighborhoods to stimulate economic vitality while offering needed services.
- **GOAL 1, OBJECTIVE 1.3, STRATEGY 1.3.4** Provide housing options for healthcare workers near their place of employment that integrate parks, trails, and active transportation infrastructure.

- **GOAL 2, OBJECTIVE 2.1, IMPLEMENTATION PRIORITY 2.1.1** Implement the four Opportunity Site strategies: Maryland Parkway, Boulder Highway at Broadbent/Gibson, Downtown North Las Vegas, and the Las Vegas Medical District and create and encourage the use of an infill and revitalization action plan for areas with similar characteristics to the four Opportunity Site strategies that identifies barriers to mixed-use development and suggests tools to overcome them.
- **GOAL 5, OBJECTIVE 5.1, IMPLEMENTATION PRIORITY 5.1.1** Pursue a stronger higher education system that includes a UNLV medical school, a tier 1 research institution, and Graduate Medical Education programming, (formal medical education either hospital sponsored or hospital-based training) following completion of an M.D. or D.O. degree.



EXISTING CONDITIONS & CAPACITY CONSTRAINTS



Methodology

Approach

Recommendations embedded in the Facilities Master Plan are based on a comprehensive analysis of existing conditions for the 684-acre district and surrounding areas. The analysis of physical assets accounts for an independent third party economic impact study completed by Tripp Umbach* to assess the future economic potential of the LVMD and the UNLV School of Medicine. As outlined in the graphics below, the economic impact study indicates that by 2030 the LVMD and UNLV School of Medicine is estimated to:

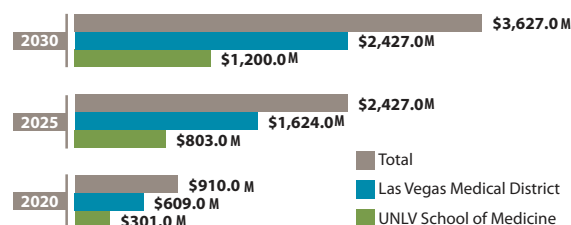
- Grow the statewide economy by \$3.6 billion
- Support and sustain 24,182 new jobs in the district
- Generate new government revenue of \$181.0 million annually



GROWING THE STATEWIDE ECONOMY

The combined economic impact of the Las Vegas Medical District and UNLV School of Medicine will be **\$3.6 billion** by 2030. As a result of the operational impacts of organizations and companies spending (direct), their suppliers (indirect), and employees' spending (induced), the annual impact of the combined development will generate a significant impact on the economy.

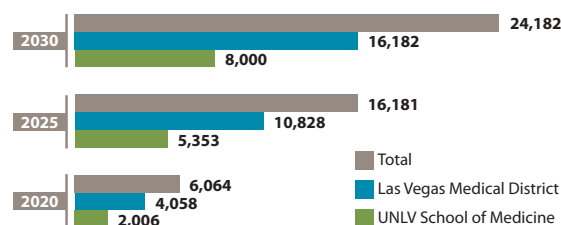
PROJECTED TOTAL ECONOMIC IMPACT 2020-2030



SUPPORTING AND SUSTAINING JOBS

The Las Vegas Medical District and UNLV School of Medicine will create **24,182 permanent jobs** by 2030. Additional jobs beyond the direct employees hired to work on either the medical school campus or in the medical district will also be created (indirect and induced). Jobs supported as a result of the combined development will be in a multitude of industry sectors including: health care, hospitality, and real estate.

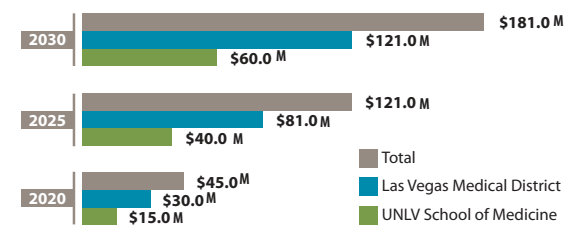
PROJECTED TOTAL EMPLOYMENT IMPACT 2020-2030



GENERATING GOVERNMENT REVENUE

Government revenue attributable to the presence of the Las Vegas Medical District and UNLV School of Medicine are projected to total **\$181.0 million** annually by 2030. Through their state and local spending, as well as direct and indirect support of jobs, the development of the Las Vegas Medical District and UNLV School of Medicine will strengthen and expand the local and statewide tax base.

PROJECTED TOTAL GOVERNMENT REVENUE IMPACT 2020-2030



Using the 24,182 new jobs as a baseline for growth potential (in addition to the approximately 15,000 existing jobs in the LVMD), the Facilities Master Plan includes an understanding of capacity of the site systems to support nearly 40,000 employees. District-wide analysis categories include:

- Land Use
- Land Ownership
- Existing & Future Zoning
- Demographics
- Existing Synergistic Developments
- Airport & Height Restrictions

District-wide capacity constraints were completed for:

- Traffic
- Transportation
- Parking
- Domestic Water
- Floodplain & Stormwater
- Sanitary Sewer
- Electric Infrastructure
- Natural Gas
- Fiber Infrastructure

*Note: All Tripp Umbach information referenced in this report was created for the LVMD Facilities Master Plan.

Previous Tripp Umbach reports for the area include:

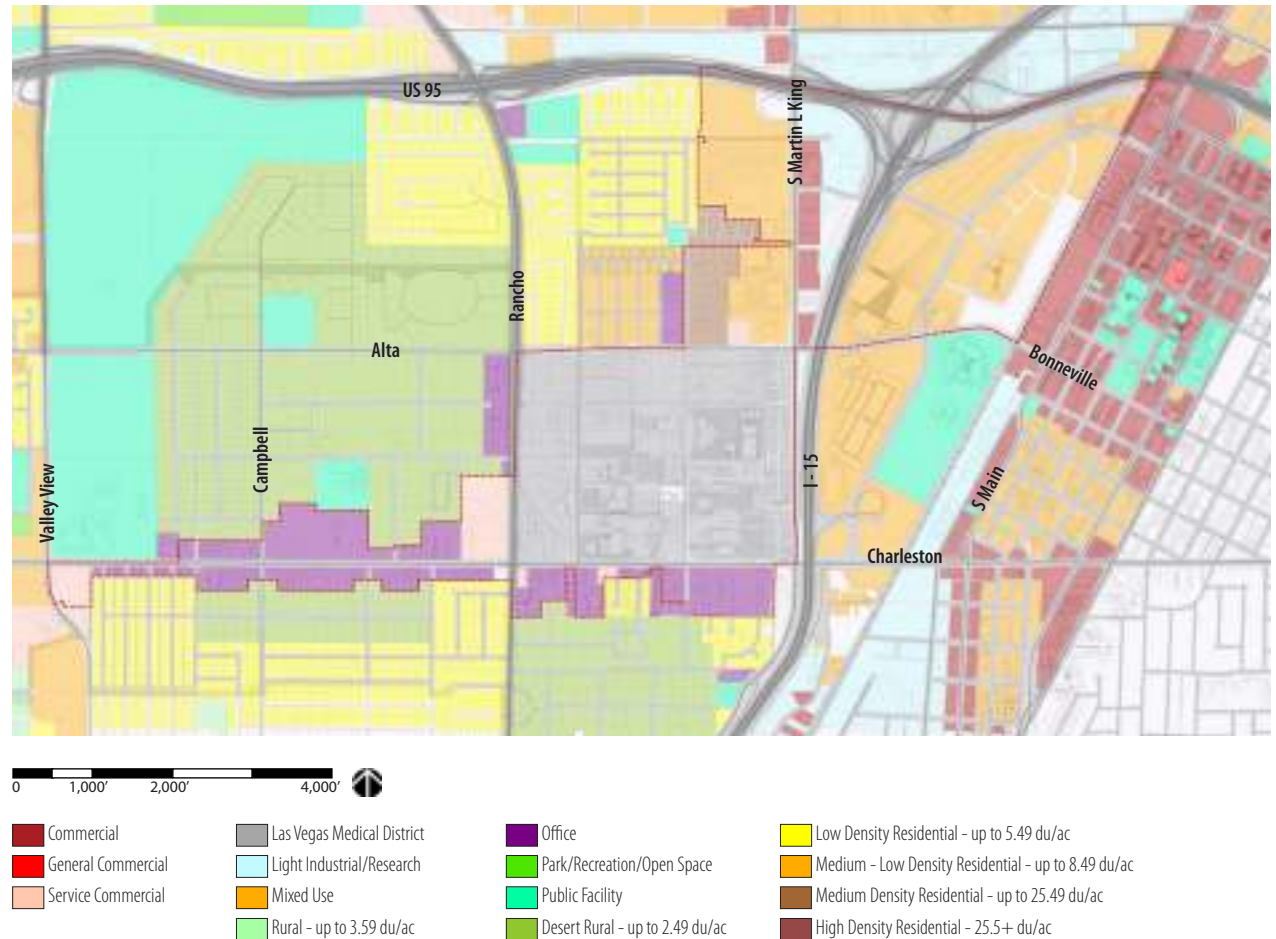
- Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada, August 9, 2014
- Economic Impact of Medical Education Expansion in Nevada, Economic Impact Assessment and Recommended Approach, December 3, 2013, Version 1.1.0

Land Use

Existing land use patterns in the LVMD indicate two strong hubs including the primary medical and educational core district, and the Symphony Park/ World Market areas. The remainder of the LVMD is generally occupied with low density mixed-commercial and some pockets of residential.

The land uses directly adjacent to the LVMD boundary are important in defining the context of the LVMD. These residential neighborhoods, particularly to the south and west, include some of the highest value housing stock in the city.

Stakeholder focus group meetings with residents suggest a general concern about any developments within the LVMD that might create adverse traffic, viewshed or noise issues.



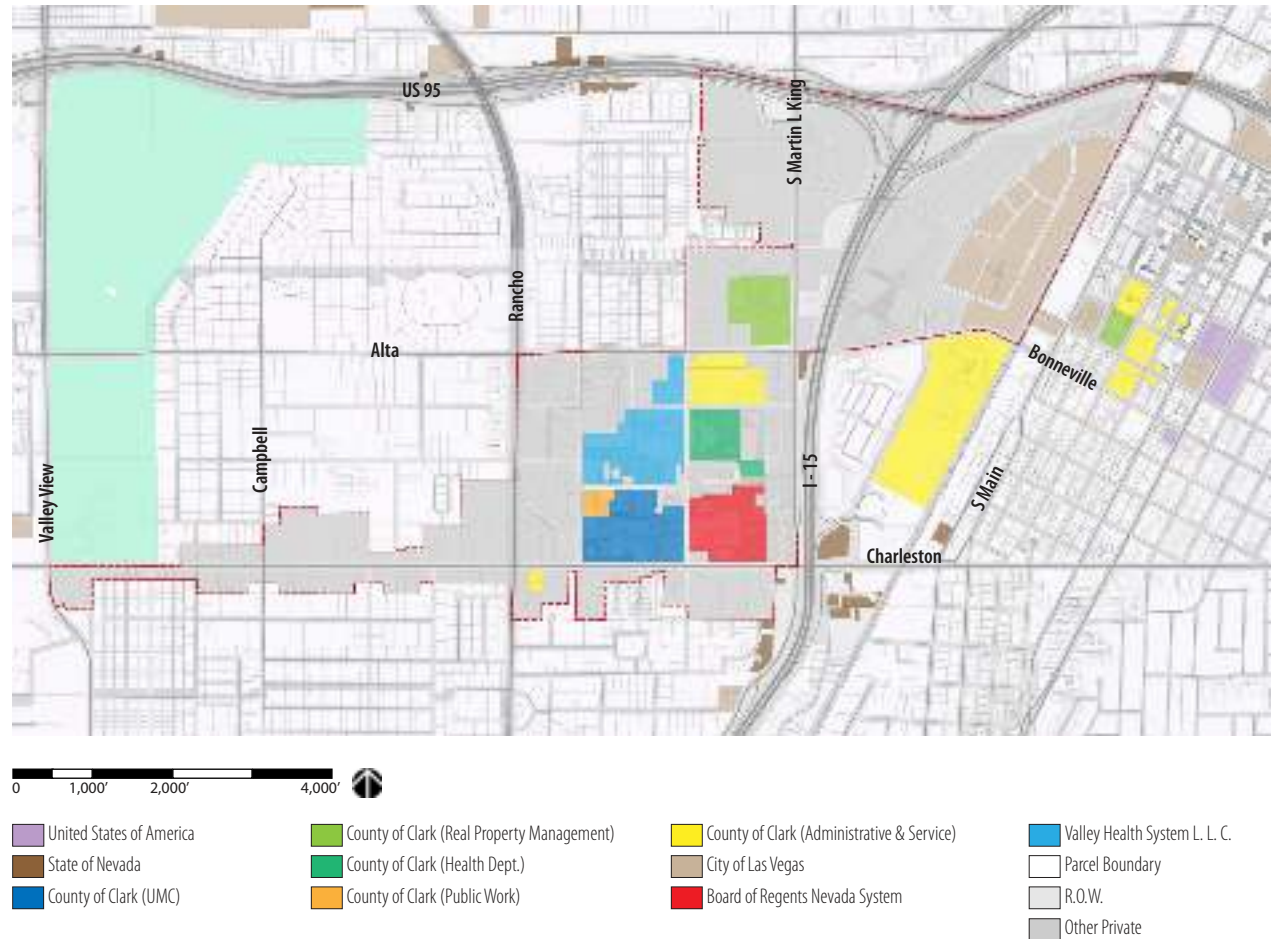
Land Ownership

Four land owners occupy 45 percent of the land within the Core LVMD. The remaining 55 percent is distributed among 219 owners.

This land ownership pattern makes it difficult to assemble parcels of the size that major medical or research development would require.

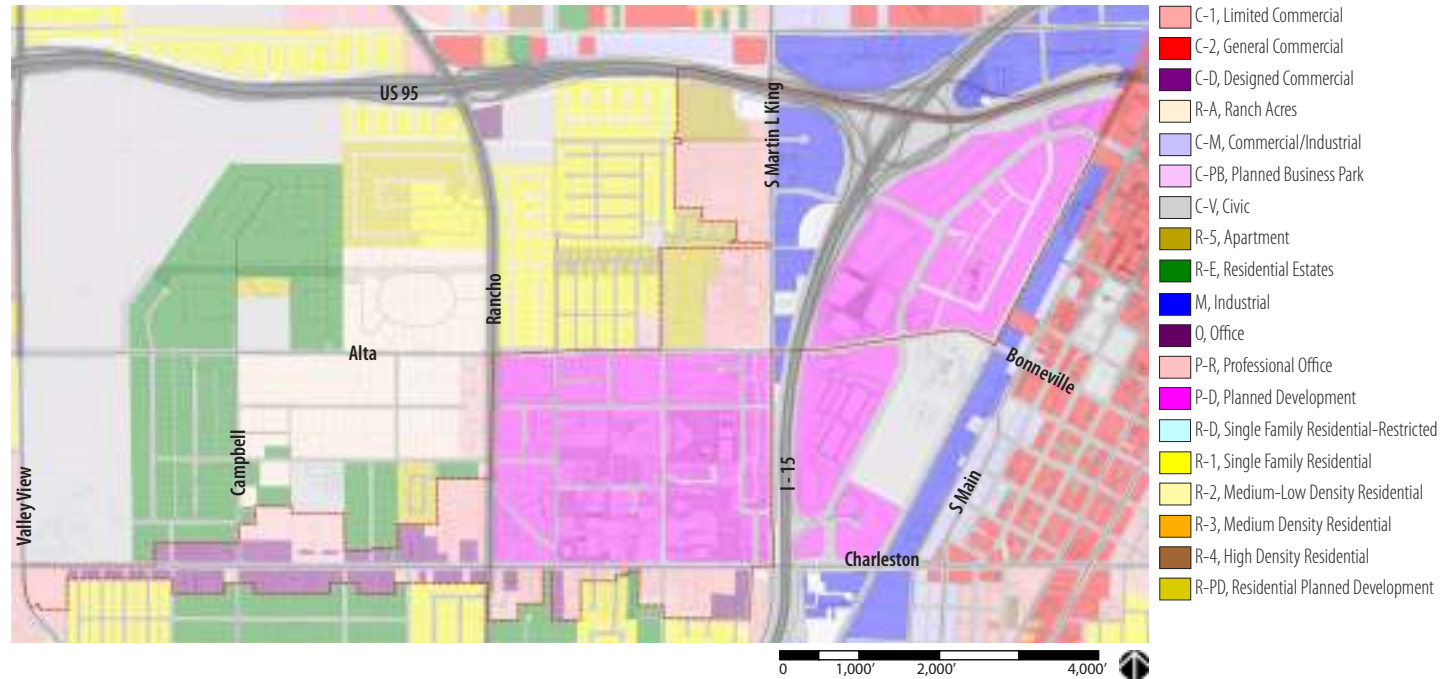
Major landowners in the LVMD include:

- Clark County: 18 parcels, total area of 58.37 acres
- City of Las Vegas: 2 parcels, total area of 5.8 acres
- NSHE Board of Regents: 1 parcel, total area of 18.2 acres
- Valley Health System LLC: 13 parcels, total area of 26.6 acres
- Other Private (262): 335 parcels, total area of 382.3 acres



Existing Zoning

Existing zoning reflects the expectation that there will be master-planned development within the Core LVMD and the Symphony Park sub-areas. There are currently no zoning-related height limitations in the Core LVMD and Symphony Park. Proximity to the North Las Vegas Air Terminal does limit development height as described on the following page. An additional Commercial District Overlay, also described on the following page, provides a more restrictive height limitation.



Future Land Use

Future land use plans reinforce the concentration of medical uses within the Core LVMD, but does not extend that concept to the expanded 684-acre boundaries. There is not a clear organizational concept for the rest of the LVMD. Symphony Park is shown as mixed use, the Charleston Boulevard corridor is a mix of office and service commercial, and the northern half of the Martin L. King Boulevard corridor is a mix of residential, commercial and light industrial.

The Facilities Master Plan makes high-level recommendations that will be incorporated into the updated downtown plan and future regulatory documents.

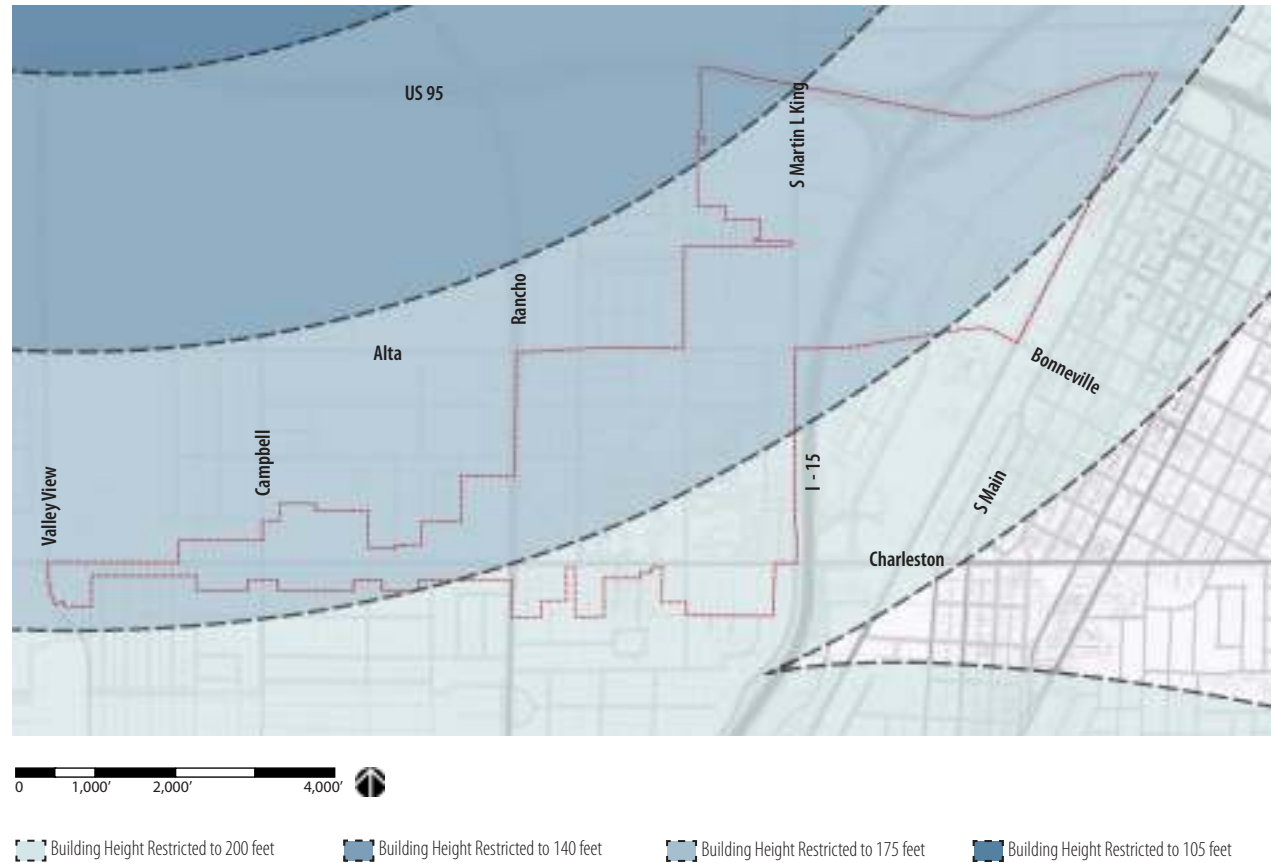


Data Source: City of Las Vegas

Airport and Height Restrictions

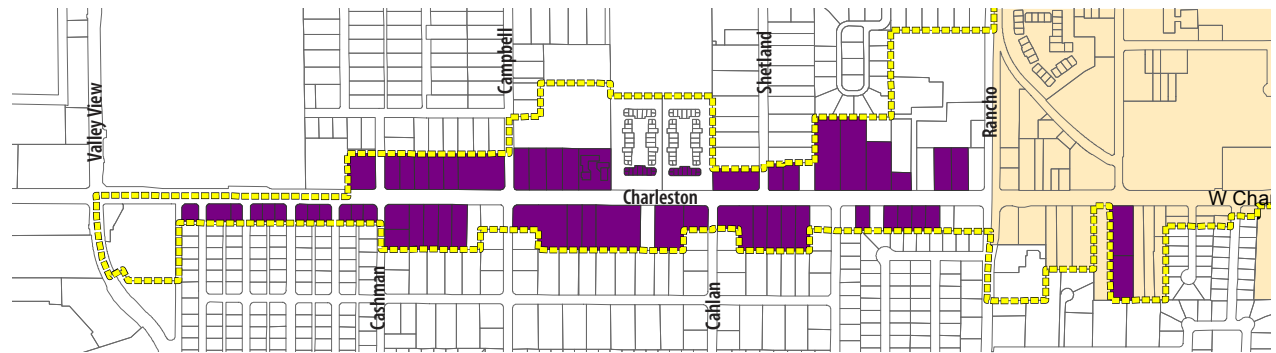
Most of the LVMD falls under airport height restrictions given its proximity to the North Las Vegas Air Terminal. The northern-most portion of the LVMD, adjacent to S. Martin L King Blvd, is in the most restrictive area, with a limit of 140 feet. Most of the LVMD that generally stretches from Valley View to Symphony Park and to Charleston Boulevard west of Rancho Drive is restricted to 175 feet. Between I-15 and Rancho Drive along Charleston Boulevard, a small portion of the LVMD is limited to 200 feet in height.

These generous height limitations should not provide much restriction to development within the LVMD. There is a potential to work with governing bodies to adjust height restrictions, as previously completed during the Symphony Park planning process.



Commercial District Zoning Overlay

The Charleston Boulevard corridor currently has a height limit on the south side of the street that effectively limits development to no more than 1-story. This limit is strongly supported by the residents of the Scotch 80's and McNeil Estates neighborhoods to the south of the LVMD, even if it does limit the types of developments that would be economically feasible in the area.



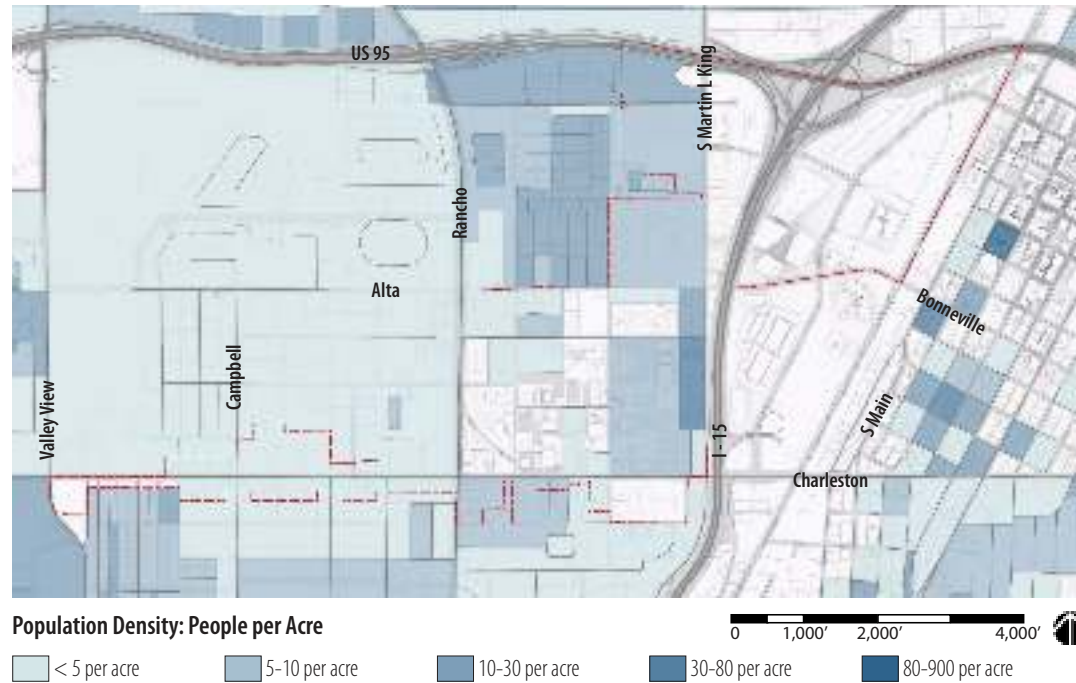
The parcels covered by the C-D zoning overlay along Charleston Boulevard

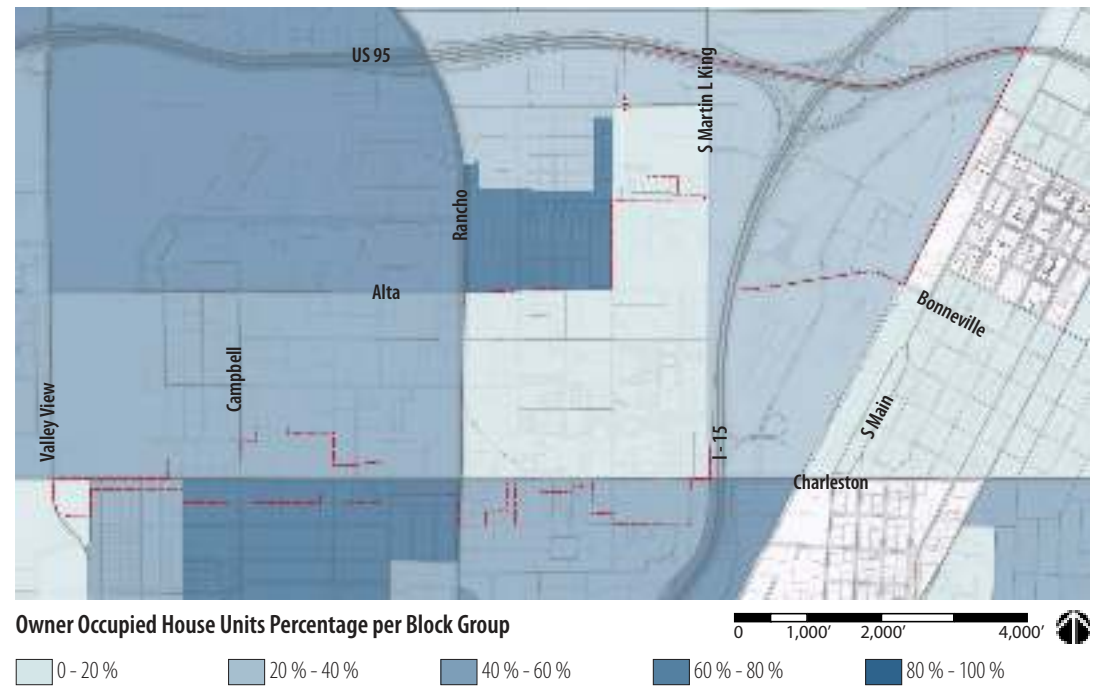
Demographics

Residential development opportunities within the LVMD are limited. Although there are substantial residential neighborhoods to the south and west of the LVMD, and despite the resurgence of downtown Las Vegas as a desirable residential area, the LVMD itself has limited residential options.

There are multi-family developments to the north, along Martin L King Boulevard. Population maps reveal a fairly low residential density within the LVMD. Additionally, the population is generally younger, and home ownership is lower within the LVMD than in the neighborhoods directly adjacent to the LVMD.

As millennials continue to enter the workforce, and baby boomers continue to retire, the LVMD should reinforce opportunities for both younger and older demographics to live in mixed-use and walkable areas with access to education, healthcare, amenities and convenient transit.





Data Source: U.S. Census Bureau

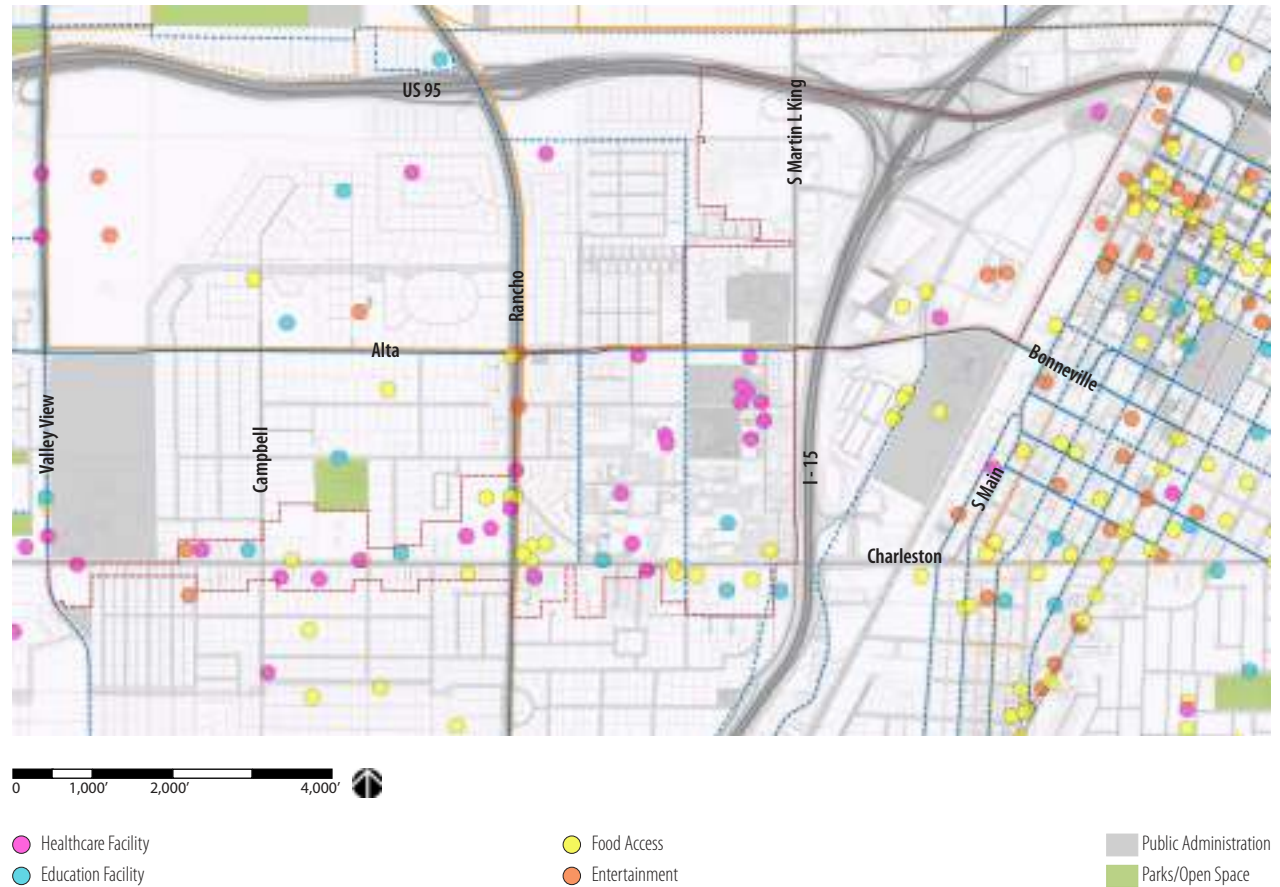
Existing Synergistic Developments

Public comments from area residents and employees consistently noted the need for more green space and better options for high quality dining experiences.

Existing amenities in the LVMD and surrounding areas were mapped using GIS Community Analyst software, reinforcing the lack of those amenities identified by residents.

There is currently no public open space shown with the LVMD. The lack of dining options is particularly acute in the core medical-educational area. The maps reveal that while that area does identify the expected concentration of healthcare facilities, it reveals only limited dining located along Charleston Boulevard and Valley View edges.

Future considerations for the LVMD should enhance core marketability as a mixed-use and vibrant place to live, work, learn, shop, dine and play.





Education

- Higher Education
- School



Healthcare

- Hospital
- Urgent Care
- Childcare
- Outpatient
- Retirement/Elder Care
- Special Care Hospital Care

Data Source: ESRI Community Analyst



Food and Drink

- Community Food Service
- Food/Beverage Store
- Food/Drinking Place



Entertainment

- Theater
- Gambling Industry
- Hotel/Casino Hotel
- Recreation/Fitness
- Museum/Cultural

Economic Impact

Projected Economic Impact

An independent third party analysis by Tripp Umbach* assessed the economic potential of the LVMD and the UNLV School of Medicine as part of a larger plan to transform the future of healthcare in the Las Vegas Valley. The plan quantified the projected economic impact, the jobs created, the tax revenue and the potential to serve as a catalyst for new development and attract new industries to Las Vegas that are currently drawn to other regions with superior healthcare.

As part of the analysis, Tripp Umbach identified the combined economic impact of the LVMD and UNLV School of Medicine will grow the statewide economy by \$3.6 billion, support and sustain 24,182 new jobs in the LVMD, and generate new government revenue of \$181.0 million annually by 2030.

Economic Impact Methodology

The methodology generally employed in this plan was originally derived from a set of research tools and techniques developed for the American Council on Education (ACE). The ACE-based methodology employs linear cash flow modeling to track the flow of institution-originated funds through a delineated spatial area. While this methodology is generally well suited to evaluate a hospital's impact on its local service area, it tends to be too limiting for a project with the complexity of medical schools with an integrated system.

Based on previous national economic impact studies of academic medical centers, Tripp Umbach modified the traditional model of economic impact for healthcare organizations and research based on the ACE model for the purposes of this plan.

The “traditional” model of economic impact provides a good measure of the impact of expenditures and their flow within an economy, but counts some of the spending of dollars that already existed in the economy. As part of the analysis, Tripp Umbach also highlights the economic impact of the institutions that are attributable to funds brought into the state from out-of-state sources. The application of this “fresh-dollar” model provides a first-line measure of the initial direct expansion in the state economy caused by the academic medical centers. The final methodology evolved into a hybrid model including a fresh-dollar approach feeding into a traditional model, which tracks hospital in-state spending. The final model used for this plan measures funds brought into the state together with the ultimate flow of these funds through the economy and the effect on economic expansion, job growth, and enterprise development. The final methodology closely matches the impact study methodology recommended for individual medical schools by the Association of American Medical Colleges (AAMC).

Multiplier/Indirect Effect

All of the direct expenditures are re-circulated in the economy when recipients of the first round of income “re-spend” a portion of their income with other businesses and individuals. This re-spending is often termed the “multiplier” or “indirect” effect. The methodology used for this plan measures the effect of both direct and indirect business volume, employment, and government revenue generated by business within the LVMD.

Definition of Economic Impact

Economic impact begins when a company spends money. Economic impact studies measure the direct

economic impact of a company's spending, plus additional indirect spending in the economy as a result of direct spending.

Direct economic impact measures the dollars that are generated within the specific geography due to the presence of the LVMD. This includes not only spending on goods and services with a variety of vendors within the area, and the spending of its staff and visitors, but also the business volume generated by businesses within the area that benefit from the LVMD's spending.

The total economic impact includes the “multiplier” of spending from companies that do business within the LVMD. Support businesses may include lodging establishments, restaurants, construction firms, vendors, temporary agencies, etc. Spending multipliers attempt to estimate the ripple effect in the area economy where the spending occurs.

Multiplier Effect

Multipliers are a numeric way of describing the secondary impacts stemming from the operations of a company. The direct effect is the known or predicted change in the local economy that is to be studied. The indirect effect is the business-to-business transactions required to satisfy the direct effect.

Total economic impacts reflect the total changes to the original economy as a result of the operations within the LVMD, i.e., direct effects + indirect effects = total economic impact.

Employment Impact

Employment impact measures the direct employment, plus additional employment created in the economy

as a result of the operations of LVMD. Indirect and induced employment impact refers to other employees throughout the region that exist because of the LVMD's economic impact.

Impact Timeframe

The results presented in the economic impact study are generated on an annual basis. The economic impact in future years can either be higher or lower based on number of employees, capital expenditures, and operating expenditures.

Data Collection

Data utilized from this plan was based upon numbers collected from Tripp Umbach's previous work with the Lincy Institute and the Nevada System of Higher Education (NSHE). The projections in this plan are based upon work with other medical districts and biomedical districts throughout the U.S., which include a new medical school and subsequent district development.

The following data were required to perform this research:

- Economic Impact of Medical Education Expansion in Nevada --- Report was completed in December 2013 by Tripp Umbach for the Lincy Institute
- Tripp Umbach Analysis --- Tripp Umbach used secondary research and its own national databases with the AAMC and the American Hospital Association (AHA) to generate business volume and employment statistics at the state level, visitor spending, employee and physician spending patterns, and government revenue

Jobs by Sector Breakout

Based on Tripp Umbach's analysis, there is an opportunity to support and sustain 24,182 new jobs in the LVMD. The expected percentage breakout of projected employment within the LVMD include:

31.5%	Private Hospitals
7.5%	Private Junior Colleges, Colleges, Universities and Professional Schools
6.4%	Real Estate Establishments
5.5%	Food Services and Drinking Places
4.9%	Scientific Research and Development Services
2.7%	Employment Services
2.1%	Offices of Physicians, Dentists and Other Health Practitioners
1.7%	Services to Buildings and Dwellings
1.7%	Wholesale Trade Businesses
1.5%	Retail Stores - General Merchandise

*Note: Tripp Umbach was hired as part of the LVMD Facilities Master Plan Consultant team to update components of earlier projections for the area. All Tripp Umbach information referenced in this report was created for the LVMD Facilities Master Plan. Previous Tripp Umbach reports for the area include:

- Economic Impact and Return on Investment to the State General Fund Related to Medical Education Expansion in Nevada, August 9, 2014
- Economic Impact of Medical Education Expansion in Nevada, Economic Impact Assessment and Recommended Approach, December 3, 2013, Version 1.1.0

Capacity Constraints

Vehicular Traffic and District-Wide Capacity

The LVMD is primarily served by US 95 and I-15, which is currently planned to be expanded via Project NEON. Major streets that serve the LVMD include Charleston Boulevard, S. Martin L King Boulevard, Rancho Drive, Valley View and Alta Drive. In recent years Regional Transportation Commission (RTC) has established studies on transportation issues of arterials surrounding the Medical District. Based on that, the plan team performed a high-level traffic analysis as part of the Facilities Master Plan. In general, theoretical AM peak capacities based on existing roadway network include 4,800 from the north, 6,700 from the south, 5,100 from the east and 2,300 from the west. The primary intersections providing access to the Las Vegas Medical District include Martin L King Boulevard and Symphony Park, Martin L King Boulevard and Bonneville Avenue, Rancho Drive and Alta Drive, Valley View and Charleston Boulevard, Rancho Drive and Charleston Boulevard, and Martin L King Boulevard and Charleston Boulevard.

This study recognizes that traffic capacity will be a critical component for operations in the LVMD and further detailed analysis is recommended. The economic analysis suggests potential growth of over 24,000 jobs, to nearly 40,000 total jobs (16,000 increase) in the area; therefore, it is recommended that further detailed traffic analysis be conducted to identify the transportation needs for access to/from the LVMD. The high-level analysis identified:

- 19,000 maximum vehicles at AM/PM peak within current road configuration
- 21,000 maximum employees (5,000 increase) within current road configuration
- Typically there is no significant correlation between office/residential uses, potentially limiting new office construction in the LVMD
- Transit ridership represents only 3 percent of the



- existing mode split (per census data). Increased employee density is achievable with Transportation Demand Management (TDM) Strategies
- New residential uses could be more defensible than office uses to balance AM and PM peaks

ANALYSIS ASSUMPTIONS

- Existing intersection/lane capacities are maintained
- Common AM/PM peaks are assumed
- Sufficient parking is available
- Project NEON is complete

- LOS "E" is minimum acceptable
- Existing mode split includes 2 percent walk, .5 percent bike, 3 percent bus, 10 percent carpool

RECOMMENDED NEXT STEPS

The planning team will collaborate with RTC in further transportation studies including:

- LVMD Traffic impact study and model study
- LVMD Multi-modal transportation study
- LVMD TDM feasibility study

District-Wide Parking

There are approximately 200 acres of surface parking lots within the 684 acres. Assuming approximately 490 acres of developable land (within the rights-of-way), this represents approximately 40 percent of the total land area within the LVMD.

As a subset of the LVMD 9,250 parking spaces exist within the Core LVMD, occupying 37 percent of the available land area. At present, all of the parking within the LVMD is free. If the LVMD is to be developed at the density that would be expected in a major medical center, structured parking will need to be implemented. Development of structured parking will not be financially attractive if free parking in the LVMD is predominant.

Stakeholder interviews identified potential opportunities for collaboration between entities to develop structured parking as part of the plan. The interviews also revealed differing opinions about the availability of parking within the Core LVMD. Due to availability of land, Valley Hospital Medical Center does not consider availability of parking as much of an issue as UMC and UNLV.

The City of Las Vegas parking department's statistics do not support the contention that parking is challenging within the Core LVMD. Some time ago, the city removed all of the parking meters it had in the Core LVMD, making on-street parking free. This decision was driven by a decrease in revenue, that made the meters more expensive to maintain than the income they generated. However, the city did express interest in participating in partnerships to develop shared parking resources as part of the greater good of the LVMD.



Public Transportation

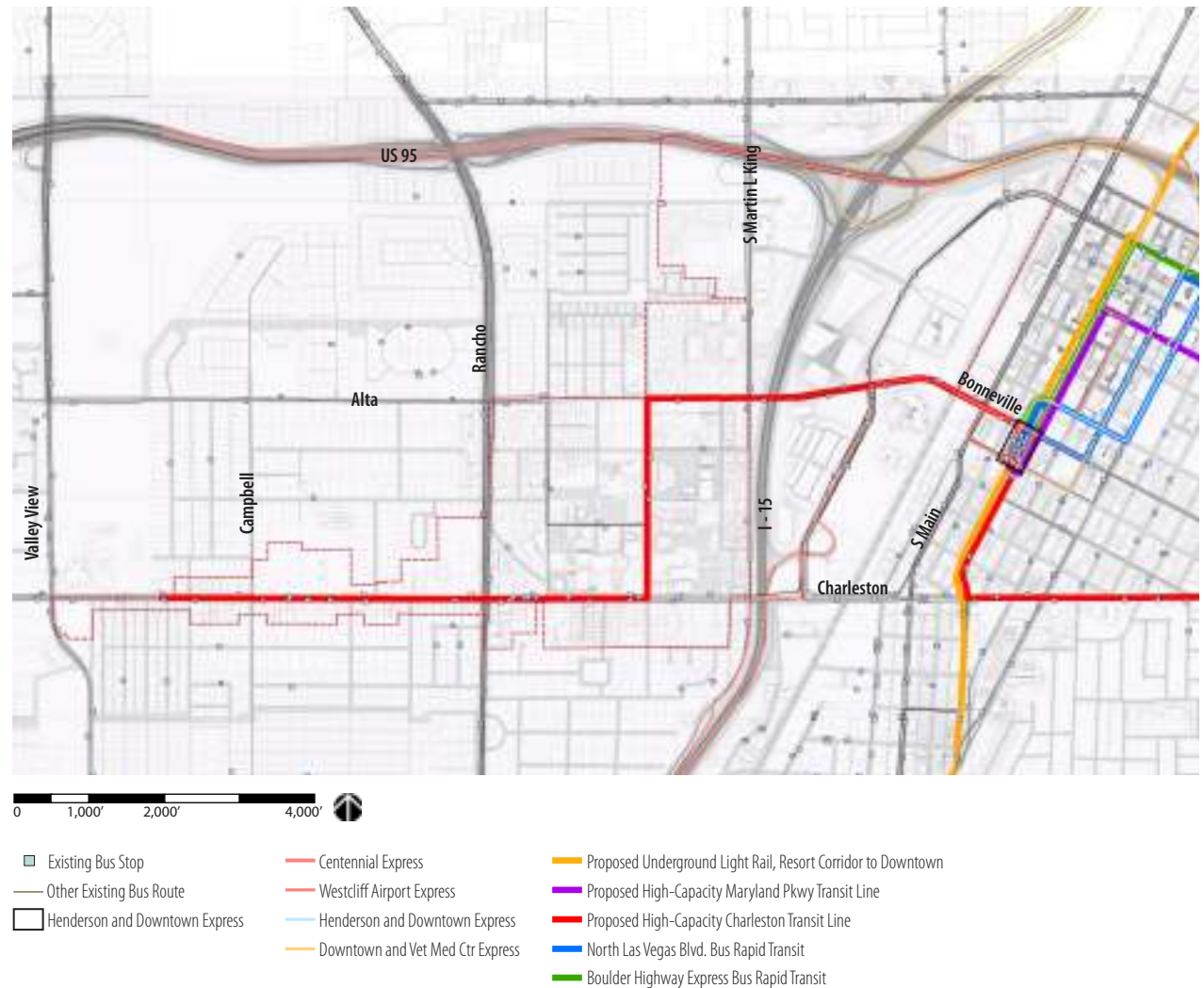
The Bonneville Transit Center is close to the eastern boundary of the LVMD, creating an opportunity to develop a strong public transit component within the LVMD.

At present, public transit routes skirt the Core LVMD. There is a need to better connect the Core LVMD with Symphony Park, downtown and other community assets.

Medical facilities within the LVMD all identified transportation as a challenge to their patients. For example, Cleveland Clinic attracts patients from across the country and the world. These patients often stay in downtown hotels, and find they must take cabs to their appointments, which is challenging and detracts from a quality patient experience.

In order to mitigate this pressure for public transportation service, discussions have been established among stakeholders and planning teams to better serve the area by proposing multiple transit lines surrounding LVMD. These new potential transit facilities will provides various means of public transportation including light rail, high-capacity transit line and bus rapid transit.

Several additional studies related to transportation issues in and around the LVMD have been completed by the RTC surrounding the Medical District in recent years. Future transportation recommendations must consider the implications of capital improvement projects already programmed, including project NEON.



Domestic Water Analysis

The City of Las Vegas receives its potable water supply from the LVVWD which is part of the Southern Nevada Water Authority (SNWA). SNWA gets nearly 90 percent of its water from the Colorado River with the remaining water coming from groundwater wells. This water is treated and then pumped to 94 reservoirs throughout the area. From these reservoirs, water is gravity fed to the water distribution piping system.

The LVVWD has established average water consumption data for various types of development as listed in “average daily flow” by land use type and LVVWD has stated that it is reasonable to assume that these flows are currently available within and around the LVMD. Since LVVWD consumption data does not separate hospital use, the average daily flow rate for this use is based on existing hospital site area of approximately 40 acres supporting approximately 1000 hospital beds and an estimate of average daily flow of 200 gallons per bed. A combination of 20 percent hospital use (20 acres) and 80 percent office use (160 acres) yields an average daily rate of 2.37 gallons per minute per acre (GPM/acre) and a peak flow of 6.46 GPM/acre for hospital land use.

Detailed water distribution piping plans were not yet available as part of the Facilities Master Plan but the current flow rates are well within the capacity of typical urban districts where water piping distribution networks are often dictated by fire-fighting water flow demand.

Domestic Water Capacity Constraints

Opportunities for expansion in the LVMD include the addition of a more urban mix of uses, detailed in this analysis as an apartment/condominium over office which is basically a combination of two different water demands from LVVWD consumption data into an average daily rate of 7.80 GPM/acre and a peak flow of 21.40 GPM/acre.

In summary, there is the opportunity for significant increases of peak daily flow rates at the local land use level if the LVMD is built to urban design capacity. However, these increases are relatively small when applied to the LVVWD service area. Only the LVVWD can determine if capacity for the increased water consumption is available to LVMD. However, current peak flow rates are well below the peak

fire suppression flow rates. In conclusion, it can be assumed that the local water distribution system will be adequate with some water main upgrades required for redevelopment.

CURRENT	Land Use	Acres	Average Daily Flow	Peak Hour Flow
	Commercial	180	2.10	4.60
	Office	100	2.10	4.60
	Hospital	200	2.37	6.46
	Sum	480	1,063 GPM	2,580 GPM

GROWTH POTENTIAL	Land Use	Acres	Average Daily Flow	Peak Hour Flow
	Commercial	105	2.10	4.60
	Office	100	2.10	4.60
	Hospital/Medical Office	165	2.37	6.46
	Apartment/Office	110	7.80	21.40
	Sum	480	1,680 GPM	4,360 GPM
	Percent Increase		58%	69%

Flood Plain

In general, flood plain boundaries do not present major constraints to development within the boundaries of the LVMD, and there are generally no issues presented by the 100-year or 500-year flood boundaries as mapped. The LVMD is located in an un-shaded Zone X, Non-Special Flood Hazard Area. Un-shaded Zone X is determined to be outside the 0.2% annual chance of flooding.



Data Source: 2008 Las Vegas Valley Flood Control Master Plan Update (Figure F-31 Flood Control Facilities)



Stormwater Analysis and Capacity Constraints

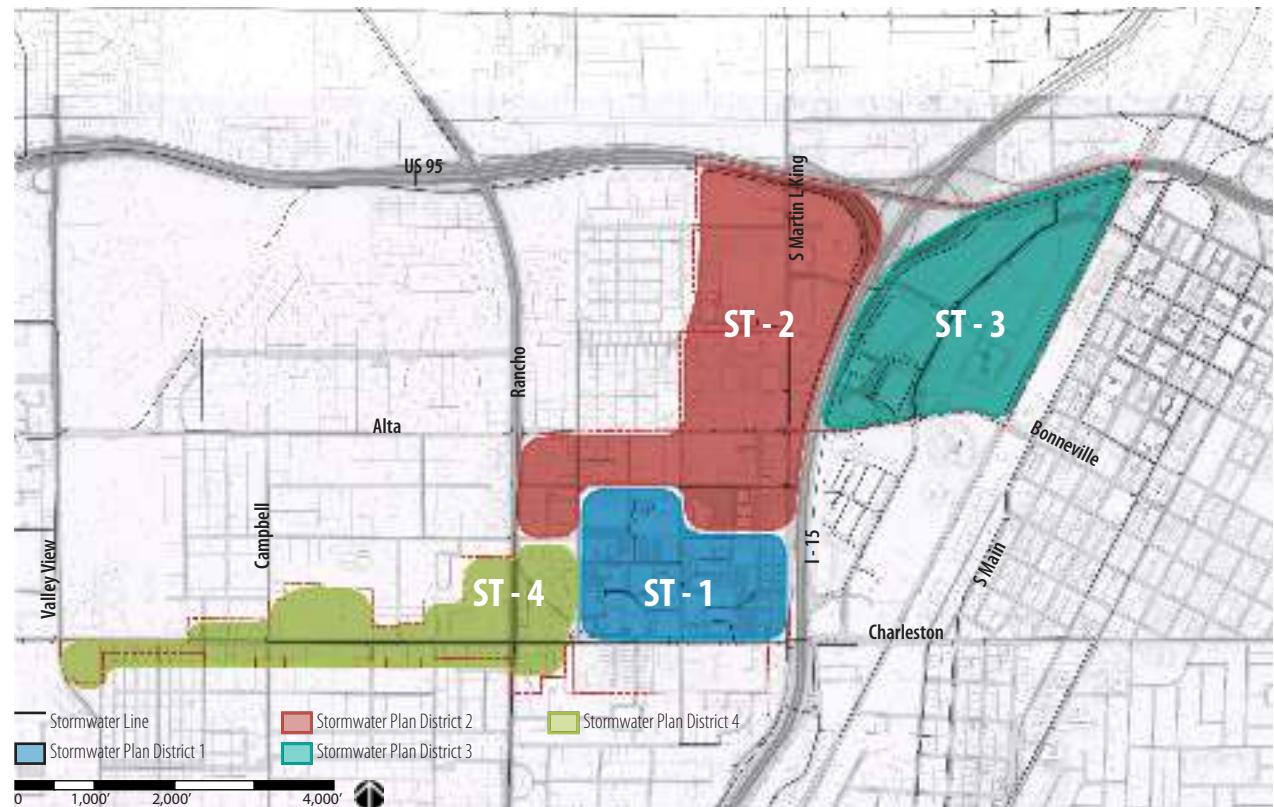
The Clark County Regional Flood Control District's (CCRFCD) Hydrologic Criteria and Drainage Design Manual governs design of flood control facilities in the Las Vegas Valley. Facilities are designed based on the criteria therein for 100-year and 10-year events. The rainfall intensity used in the Las Vegas Valley for a 100-year storm, 6 hour storm is 2.77 inches.

Prevalent soils throughout the Las Vegas Valley (caliche, expansive soils and collapsible soils) are ineffective for infiltration. The existing basin and associated CCRFCD 2013 Master Plan Update (MPU) suggests facilities are already in place and protecting the LVMD from the 100-year storm event.

The city of Las Vegas has been implementing the CCRFCD 2013 Las Vegas Valley Flood Control MPU. That document shows the major storm drain facilities throughout the valley that are paid for by the ¼-cent sales tax that is managed by the Clark County Regional Flood Control District.

The urbanized LVMD is served by pipes and box culverts within public rights-of-way extending into some private parcels. Within the LVMD, public storm drains predominantly serve the office and other business areas. These areas appear to exceed 80 percent of total surface area covered by roof or pavement. During the 100-year 6-hour storm, this density of surface coverage could be expected to create a peak runoff rate of 3 cubic feet per second (cfs) per acre, but must be determined by a Master Drainage Study.

Regarding capacity for future development, a Master Drainage Study will be required for the LVMD to identify the onsite and offsite flows, existing storm drain facility capacity, and proposed storm drain



location and size based on the onsite and offsite flow per the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual. However, the analysis performed as part of this study is a strong indication that all LVMD areas (ST-1, ST-2, ST-3 and ST-4) with the exception of west Charleston Boulevard have adequate storm drain capacity to pass the 100-year 6-hour design storm without storm drain backup. For west Charleston Boulevard (ST-4), future extension of storm drains may be needed to fully serve proposed redevelopment. It has been noted that all Regional Flood Control Facilities around the LVMD have been completed. Future development in the LVMD must identify any additional local facilities required to meet design criteria based on the Master Drainage Study.

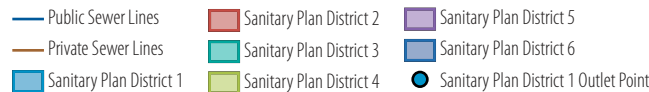
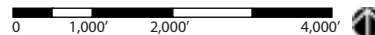
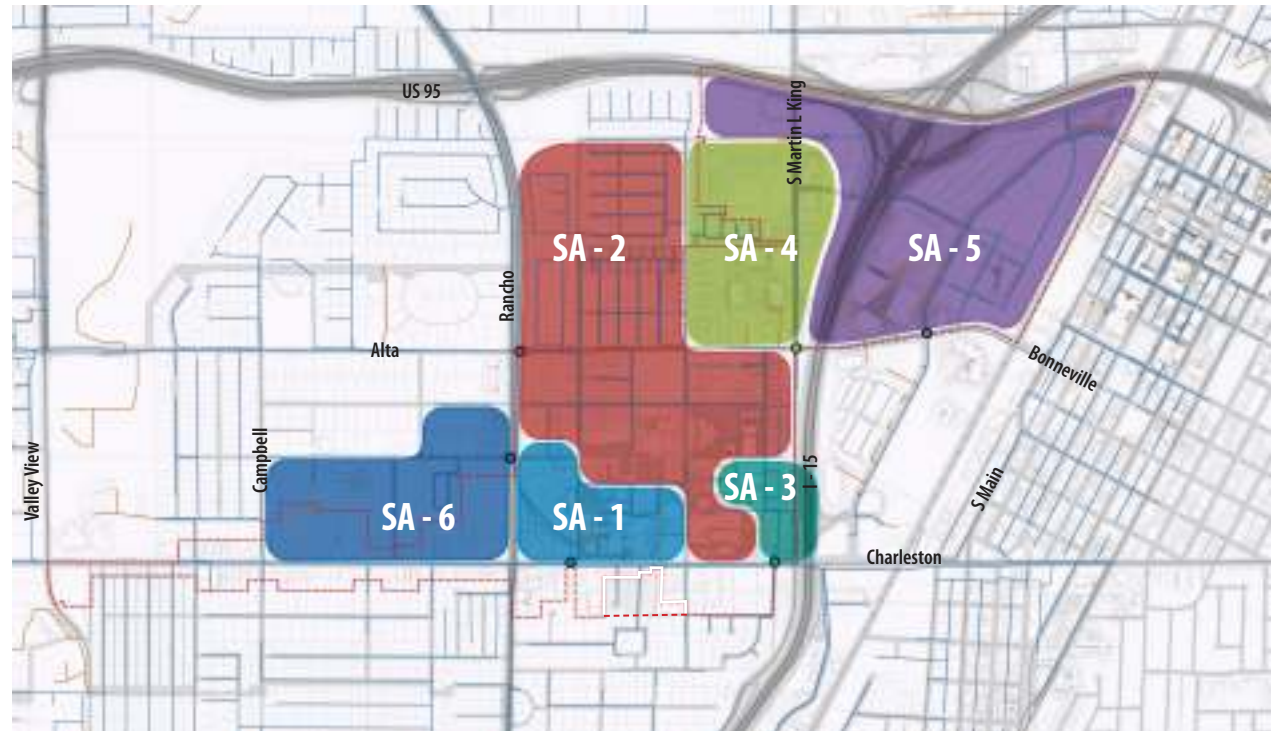
Sewer Analysis and Capacity Constraints

Due to the size and scope of the LVMD, a Master Sewer Study should be completed to properly evaluate impacts to the internal and downstream collection systems. Additional detail is required to establish study criteria. Specifically, proposed land use and discharge locations considering existing flows in system will be needed to identify specific system capacities, deficiencies and mitigation. In general, the LVMD area is served by City of Las Vegas sanitary sewers within all adjacent street rights-of-way as well as large diameter interceptor sewers in both Charleston Boulevard and Rancho Drive.

Based on sewer connections, the 490 developable acres of the LVMD can generally be divided into six local sewer sub-districts as shown on the map and served by the following sewer infrastructure:

- SA-1, 80 acres, two 8 inch connections to two separate 10 inch and 18 inch in Charleston Boulevard
- SA-2, 200 acres, one 8 inch connection to the 60 inch Rancho Drive
- SA-3, 20 acres, one 8 inch connection to the 10 inch Charleston Boulevard line
- SA-4, 70 acres, one 8 inch connection to the 21 inch Alta Drive sewer
- SA-5, 120 acres, is served directly by shared 21 inch sewer
- SA-6, 140 acres, one 8 inch connection to the 15 inch Rancho Drive sewer

For the purposes of this master plan, it has generally been determined that the LVMD has a total connected capacity of approx. 6.2 cfs or 2780 gallons per minute (GPM). In general, sanitary sewer flow is considered to be 90 percent of water consumption flow. Therefore, the peak water flow rate for capacity redevelopment



of an urban mix of uses is 4,360 GPM and would be expected to produce a 3920 GPM sewer flow rate. This planned use rate is over the capacity of existing sewer leads but a relatively small net increase to the receiving sewers. In order to achieve full urban design capacity of the site, additional sewer leads may be needed and some receiving sewers may require upgrade, but the flow is still a relatively small part of the citywide sewer

flow. Based on this, it is reasonable to assume the LVMD could maintain 32,000 employees (assuming 30 gallons per day (gpd)/person) and 3,000 residents (assuming 80 gpd/person).

Electric Infrastructure

This master plan assumes that sufficient existing electric infrastructure exists to serve the approximately 7,000,000 M gross square feet (GSF) of buildings in the 684-acre LVMD. The existing electricity infrastructure was mapped with assistance from NV Energy. As part of the planning process, the planning team developed estimated electrical use per square foot by building type for future buildings, as follows:

Building Type	Typical Watt per SF
Office	15
Higher Education	15
Residential	25
Research Lab	20
Outpatient Clinic	20
Parking Garage	3.5

These numbers can be tabulated for district-wide existing and future capacities in order to understand potential electric demand and opportunities to offset energy use through use of PV panels and other sustainability best practices.

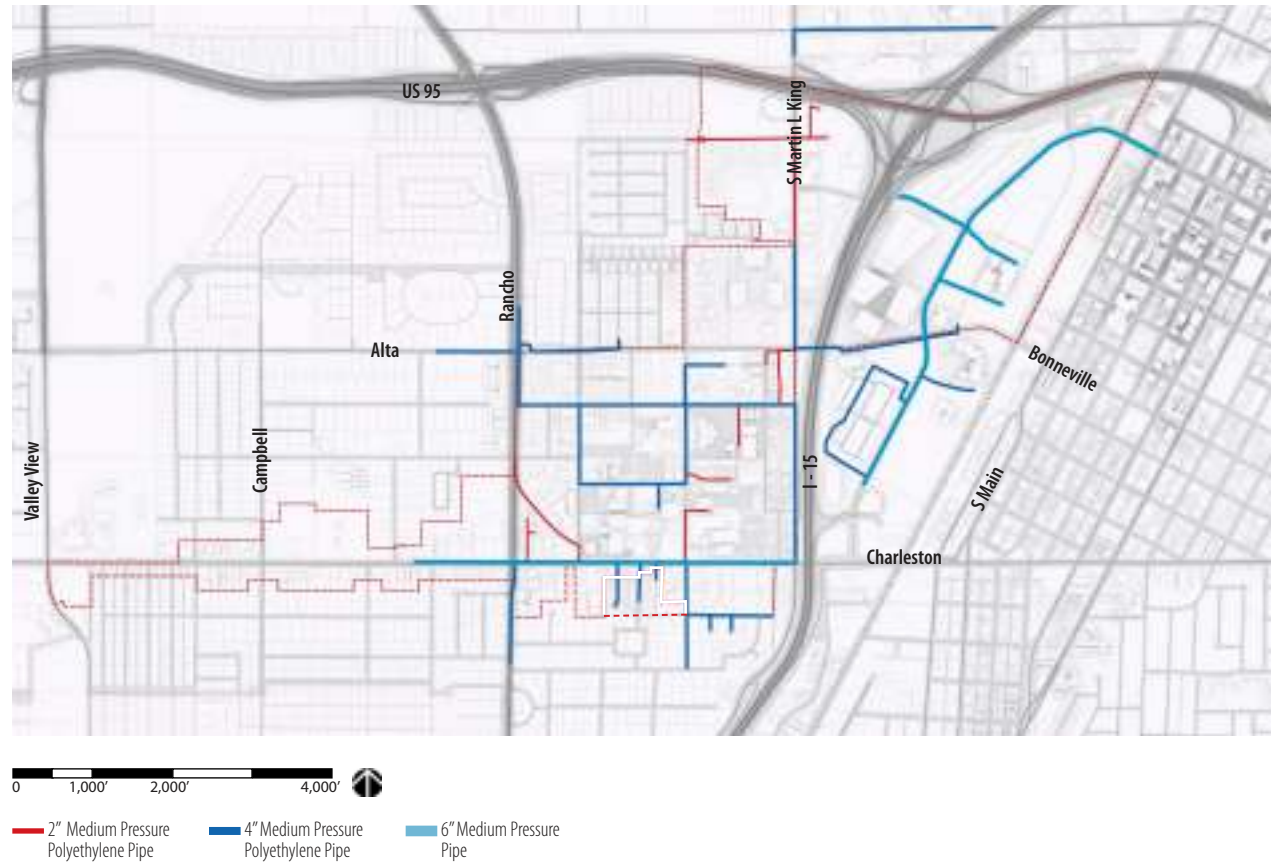
According to NV Energy, the electrical capacity of the Shadow Substation, which serves the west side of I-15 is constrained. The closest source to augment that capacity is the Commerce substation on the east side of I-15. This is one of two substations earmarked to support the Symphony Park Master Plan.

So, while the Commerce Substation capacity could be used to increase the amount of development supported west of I-15, it would be at the cost of decreased capacity available for Symphony Park. There are plans for a future substation that could increase capacity for Symphony Park, but no specific construction dates have been established.

Additional electric infrastructure considerations for the LVMD include undergrounding of existing overhead facilities where feasible, especially along key corridors identified as part of the Master Plan and in the core LVMD.

Natural Gas

As part of the planning process the planning team worked with Southwest Gas (SWG) to obtain data regarding existing natural gas infrastructure. The natural gas system in the LVMD is not particularly robust. The bulk of the natural gas piping is of relatively small diameter, and would likely require upgrading if any major loads were to be added. In addition, a regulator station would likely be required, depending upon the gas pressure required. The addition of major medical or research facilities could require system modifications, depending upon the volumes and pressures required.



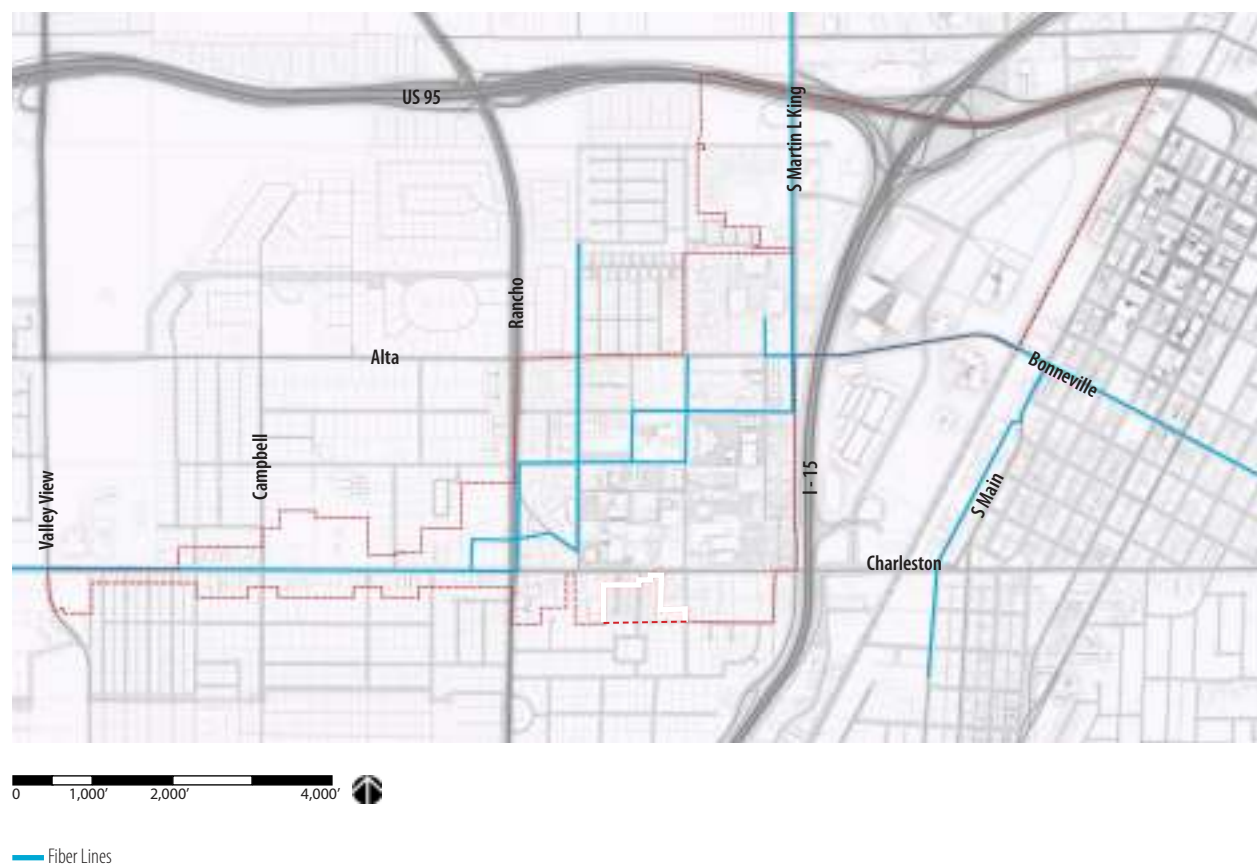
Fiber Infrastructure

The LVMD is served by at least two different fiber providers, Cox Communications and Century Link. It is possible that additional private carriers have fiber routes in the area; however none were identified at the time of this report. Multiple attempts were made to contact Century Link; however they were unsuccessful and no further information beyond the acknowledgment of their presence can be confirmed.

The map highlights major fiber routes for Cox Communications as provided by the Southwest division of Cox Communications. Major fiber routes run east-west along W. Charleston Boulevard and Alta Drive, and north-south along Martin L King Boulevard, with various branch routing from each line shown above. The multiple entrances to the area note a high level of redundancy in pathways.

Cox Communications did not share information regarding fiber capacity with the planning team, which is typical for this level of investigation given the secure nature of the fiber providers. It can be assumed that once the demand of the LVMD and its components are determined, Cox Communications will take steps to meet the requirements. It is unknown at this time if the existing fiber infrastructure has this capacity, or if upgrades will be required.

The LVMD also includes other private fiber and publicly maintained (City and County) fiber. The County IT hub is located within the district and should be protected. City fiber should also be installed where needed for communications systems, traffic signal interconnect, security cameras, public address speakers, etc.



ESTABLISHED STAKEHOLDER PLANS

Perhaps the largest impact on development within the LVMD will be the plans of the institutions and businesses already in the district. As the site of some of the largest healthcare and educational institutions in the region, the LVMD will consistently reflect the needs and aspirations of these major stakeholders.



Established Stakeholder Plans

As part of the background research for this project, the planning team interviewed major stakeholders within the LVMD to determine what their future plans for development were, and how those plans, taken together, could affect the future character of the LVMD.

Nevada System of Higher Education (NSHE), University of Nevada Las Vegas (UNLV), University of Nevada School of Medicine (UNSOM)

The development of the UNLV School of Medicine is underway. A planning dean has been hired, and the school has been approved by the Board of Regents. The Request for Proposal that will result in the choice of a design team for the new building has been released. Current plans are for the school to open in 2017, with approximately 60 students, expanding to 120 and later 180. NSHE was recently allocated \$26.7 million in state funding for the UNLV School of Medicine.

There are plans underway to provide space at 2040 Charleston. Many of the academic and administrative offices have relocated to 1701 West Charleston.

UNLV is exploring multiple options for temporary space to accommodate the new medical school during its first two years of operation.

In December of 2014, UNLV, UMC and Clark County entered into a memorandum of agreement (MOU) regarding the property currently the site of the vacant Southern Nevada Health District building. All parties agreed to work together to support the development needs of UMC and the medical school.

The Clark County site is directly north of the current UNLV Shadow Lane campus, which currently houses the UNLV School of Dental Medicine and the Cleveland Clinic, as well as the NSHE Clinical Simulation Center, which provides training to UNLV, UNSOM, and Nevada State College medical and nursing students. It is expected that UNLV medical students would use this facility as well.

The UNLV Nursing and Physical Therapy Building was designed for the Shadow Lane campus some years ago, but has not yet been funded.

The UNLV School of Dental Medicine Graduate Clinics operate in 1707 Charleston Boulevard, across the street from the main Shadow Lane campus. When UNSOM begins operations in 1701, there will be a substantial amount of foot traffic across Charleston Boulevard from these two locations.



The Tripp Umbach study estimates the economic impact of the medical school (only) for southern Nevada to be:

Total:

\$1.2 billion by 2030

Total Jobs:

8,000 by 2030

State General Fund Revenues:

\$60 million by 2030

45

Rank of Nevada
among the states in
physicians per capita

UNSOM

Recently leased by UNSOM for
academic and clinical space

Total Life Care Building
Recently leased by UN-
SOM to provide space for
Womens Health Building

2040 Charleston
Owned by UMC
Currently occupied by UNSOM
May be occupied by UNLV SOM when UNSOM relocates

1707 Charleston
Leased by UNLV School of Dental Medicine
Location of Graduate Clinics

1701 Charleston
Leased and occupied by
UNSOM

Parking Garage

Lied Clinic
Partnership between NSHE UMC
and others for use of the clinic

Southern Nevada Health
District Campus
Building to be demolished.
MOU in effect for medical
school development

Shadow Lane Campus
Building C: Facilities
To be demolished at some
future date

Shadow Lane Campus
UNLV Nursing and Physical
Therapy Building: Designed
but not funded/built

Shadow Lane Campus
Building B
NHSE Clinical Simulation, Dental School

Shadow Lane Campus
Buildings A & D
Dental School and Clinic

University Medical Center

UMC is the public hospital for Clark County. As an academic medical center, it provides services not available elsewhere in the metropolitan area, including:

- The only Level 1 Trauma Center in the State of Nevada
- Burn Unit
- Transplant Center
- Specialty Pediatric Hospital

UMC recently purchased a Da Vinci surgical robot, to expand the surgical services it can offer.

UMC has a strong residency and fellowship program in place with UNSOM. Almost two-thirds of the school's residents and fellows are placed at UMC.

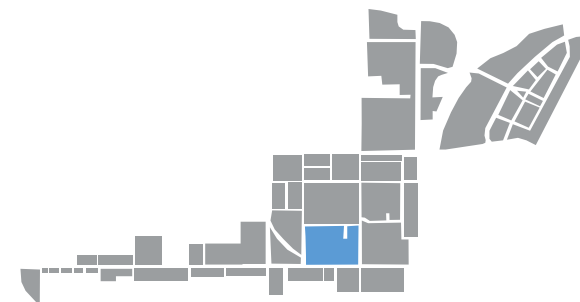
UMC has not identified a need for additional acute care beds or space at this time. Its primary space need is for more medical office, or outpatient clinic space. Providing patients with better follow-up options will improve continuity of care, and improve patient outcomes.

Parking is a very real issue on the campus. Not only is the amount of parking available inadequate, but the parking there is not conveniently located.

In addition to a lack of parking, there is also a lack of amenities within the LVMD. There is a need for a hotel that could accommodate patients' families. There are very limited food service options.

Wayfinding into and around the LVMD is challenging for patients. There should be a more substantial "gateway" presence for the LVMD at Shadow Lane and Charleston Boulevard. UMC considers this the "front door" to the campus, but there is no clear visual indication that this is so. Once in the LVMD, patients can become confused about which building they need to go to. A coordinated signage program within the LVMD would help with this.

Security is a concern, as is always the case for hospitals with a Level 1 Trauma Center. UMC's security staff are highly respected within the LVMD, and seen as critical to maintaining order.



1

Number of Level 1
Trauma Centers in
Nevada

LIED CLINIC
*UNSOM to provide pediatric
services when lease complete*

DELTA POINT
HR and IT offices

CHILDREN'S HOSPITAL
HR and IT offices

UNIVERSITY MEDICAL CENTER
Acute Care Hospital

ORTHO CLINIC
Second floor currently vacant

PARKING GARAGE

Valley Hospital Medical Center

Valley Hospital Medical Center is one of five hospitals in the Las Vegas metropolitan area that is part of the Valley Health System, owned by Universal Health Services. A sixth hospital is currently under construction in Henderson.

In addition to the hospital building, Universal Health System's holdings in the LVMD include two medical office buildings, the core lab for the entire Las Vegas area, and substantial land holdings currently used for surface parking, or simply vacant. In total, the system owns 26 acres of land within the LVMD.

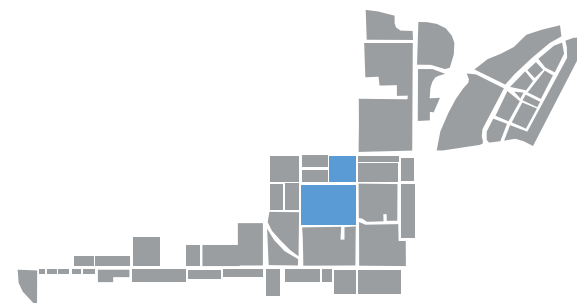
Valley Hospital Medical Center has a strong established residency program with the Touro University Nevada College of Osteopathic Medicine (Touro). There are currently 86 residents and fellows and 51 faculty positions. If Touro were agreeable, Valley Hospital Medical Center would not be adverse to providing additional residencies for UNLV.

Valley Hospital Medical Center is currently re-evaluating its service line mix. It recently closed its labor and delivery department, and opened a 48 bed behavioral health unit. At present, the strongest specialties at Valley, within the Universal Health System, are Neuroscience and Surgery.

The main hospital building is 40 years old. While Valley Hospital Medical Center is not currently planning any new construction, it is considering projects that will continue to update and improve the existing facility.

Unlike many other stakeholders in the LVMD, Valley Hospital Medical Center has not identified parking as a major issue. The surrounding surface lots seem to provide adequate parking right now, and there is vacant land available should more parking be required.

The primary issues Valley Hospital Medical Center has identified with respect to the LVMD are security and perception. There is a concern about crime, particularly among staff that work nights. The image presented by the LVMD makes it difficult to recruit practitioners and staff. The limited housing options within and around the LVMD require that most of the workforce commute from elsewhere, and the LVMD does not offer an attractive environment compared to other employment opportunities available elsewhere in the area.



320

Valley Hospital Bed
Capacity

VACANT LAND OWNED BY VALLEY HOSPITAL

There are currently no plans in place to either develop or sell this land

MAIN HOSPITAL BUILDING

320 bed capacity, 40 year old facility

SURFACE PARKING OWNED BY VALLEY HOSPITAL

Employee and visitor parking

S. valley view

S. Rancho

Alta

Bonneville

Charleston

UNIVERSAL HEALTH SERVICES SYSTEM LAB

MEDICAL OFFICE BUILDINGS

*Owned by Universal Health Systems REIT,
30 -40 % vacant*

MEDICAL OFFICE BUILDING

*Owned by Universal Health Systems REIT,
30 -40 % vacant*

Symphony Park

The master plan for Symphony Park creates four districts, organized in a series of small, pedestrian friendly urban blocks. The districts are:

- **The Civic District, which includes the Smith Center for Performing Arts and the park**
- **The Specialty District**, with plans for a wide range of hospitality, specialty retail and a hotel/casino
- **The Residential District**, to include a mix of high-rise, town homes, live/work condominiums, and mid/low rise residences
- **The Medical Office District**, anchored by the Cleveland Clinic Lou Ruvo Center for Brain Health

The first phase of infrastructure improvements was completed in 2009, and phase IIA was completed in 2012. Three key anchor buildings have been completed, including the Cleveland Clinic Lou Ruvo Center for Brain Health, the Smith Center for the Performing Arts, and the DISCOVERY Children's Museum.

With the impact of the downturn in the economy, plans for development have continued to evolve. The present status of proposed projects is:

- **Parcels A and A2:** The Cleveland Clinic Lou Ruvo Center for Brain Health occupies A, and Cleveland Clinic surface parking is on A2.
- **Parcel B:** The Cleveland Clinic has an option to purchase this land at market value. The City of Las Vegas is planning to construct a 1,200 space garage, wrapped in retail space on the first floor on a portion of the site.
- **Parcel C and N:** Newland companies has the rights to these parcels, which are slated for residential development.

- **Parcels D, F and Part of E:** Most recently, these parcels were the site of the proposed soccer stadium. Because Las Vegas was not awarded an MLS expansion team, these plans have been canceled. The City of Las Vegas is reviewing its options under existing development agreements.
- **Parcel G:** Slated for the Charlie Palmer Hotel. Originally planned for 371 rooms when a basketball arena was proposed, there was talk of downsizing to 111 rooms if the soccer stadium were built instead. With the canceling of the soccer stadium, the future of development on this site is also unclear.
- **Parcel H/I and M3:** The Smith Center for the Performing Arts controls these parcels.
- **Parcel M4:** Originally envisioned as the main connection between downtown and Symphony Park.
- **Parcels J and K:** The Cleveland Clinic has development options on these parcels.
- **Parcel L:** Citra Real Estate Capital LLC is developing a senior care center with assisted living, independent living and long-term care, as well as a 460 space garage. The City of Las Vegas has committed \$16.6 million in new market tax credits.
- **Parcels P and Q:** Forest City Development has exclusive rights to develop a hotel/casino on this land. This land was deeded to Forest City as part of a land swap for the land under City Hall. With the downturn in the economy, and the redevelopment of older casinos downtown, the market to support additional casino development in the area is weak.





2009 Illustrative Site Plan (Source: Newland Companies)



PROPOSED CASINO/HOTEL: PARCELS P AND Q

To be developed by Forest City

DEVELOPMENT OPTIONS UNDER REVIEW: PARCELS D, F AND PART OF E

LOU RUVO CENTER FOR THE BRAIN PARCELS A AND A2: *Cleveland Clinic*

PARCELS B, J AND K

*Undeveloped options Cleveland Clinic
Potential Parking Garage proposed for Parcel B*

SMITH CENTER FOR PERFORMING ARTS AND DISCOVERY CHILDREN'S MUSEUM

PROPOSED RESIDENTIAL DEVELOPMENT : PARCELS C AND N

To be developed by Newland Companies

Cleveland Clinic

The Cleveland Clinic Lou Ruvo Center for Brain Health broke ground in 2007, and opened in 2010. Continuing its commitment to Las Vegas, Cleveland Clinic's Glickman Urological & Kidney Institute began offering services in the City in 2013, although this service line is not offered within the medical district boundaries.

The first building developed in Symphony Park, the Cleveland Clinic Lou Ruvo Center for Brain Health is a nationally recognized multidisciplinary center concentrating on cognitive disorders and offers a full range of interventions and rehabilitation for movement disorders and diseases of aging.

Designed by Frank Gehry, the building is an architectural icon, and has become a destination in its own right.

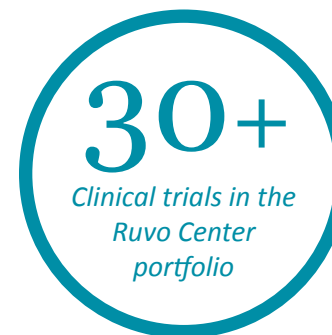
At present, the Cleveland Clinic has reached capacity in the Lou Ruvo Center for Brain Health building, and has recently signed an agreement with the World Market Center that will provide space for the relocation of administrative functions. This will in turn free up space within the Lou Ruvo Center for Brain Health that will be converted to clinical uses.

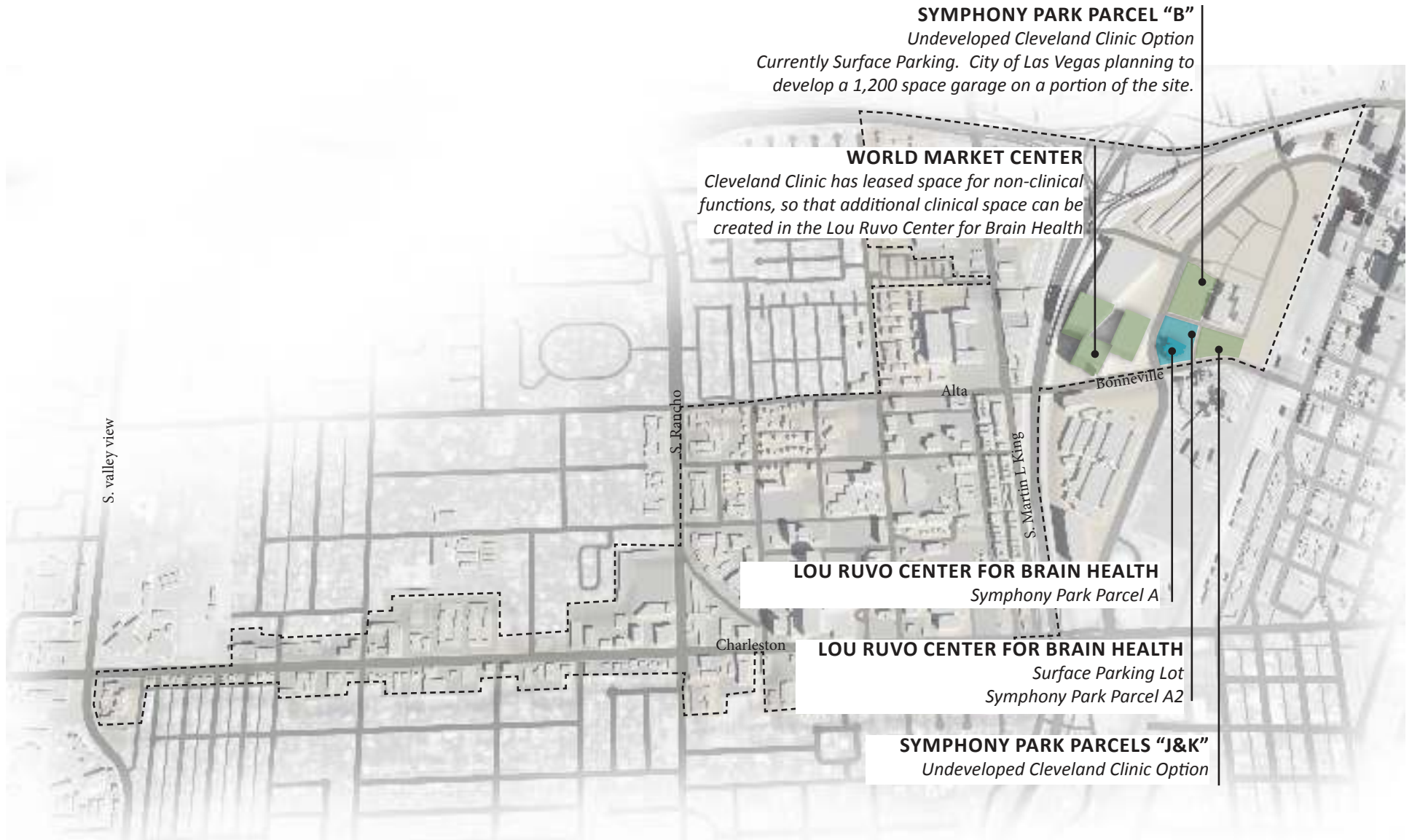
The Clinic has options on Parcels A2, J, K and B within the Symphony Park development. The City and Cleveland Clinic are currently in negotiations related to the status of these options.

Although the Cleveland Clinic operations are at capacity within the existing building, and there is an identified need for 30,000 to 40,000 square feet of additional space, there are no clear expansion plans in place. The Cleveland Clinic and Citra Development may reach an agreement that would allow the Cleveland Clinic to rent space in the Citra senior care development.

The primary impediment to expansion are the reimbursement rates and structures in Nevada which are quite different than those in Ohio and have proven challenging for the Cleveland Clinic's business model.

In general, the Cleveland Clinic has been pleased with the Symphony Park location. There is a need for more supporting development. Out of town patients must stay in the downtown casinos, and it can be difficult to get cab service from downtown to and from the Cleveland Clinic. Additional restaurants would also be desirable. With this in mind, the Cleveland Clinic had been supportive of the soccer stadium development, and continues to believe that more activity in the LVMD would be beneficial.





Nevada Medical Center

Taking the Texas Medical Center as its model, the Nevada Medical Center has assembled a group of member institutions and community leaders to establish a coalition that seeks to enhance the health status of all people in Nevada through collaboration and constructive competition.

Rather than focusing on capital improvements, this group seeks to pursue opportunities to work together on collaborative projects. The project identified as most critical in the initial feasibility study is the development of two academic health science centers based in Reno and Las Vegas.

The Nevada Medical Center's role in promoting the Las Vegas Academic Health Science Center will include advocating for multiple funding sources, including:

- Support from Clark County, municipalities, and the State of Nevada.
- Tax exempt revenue bonds based on Medicare, Medicaid and private insurance income.
- Capital investment related to the new UNLV School of Medicine
- Federal grants for hospital construction, education and research
- Philanthropy from private individuals and non-governmental organization

Additional options could include partnering with the City of Las Vegas to create shared infrastructure projects such as a District Energy System, or partnering with a telecommunications and data provider to create enhanced or discounted data storage and communications systems.



Regional Transportation Commission

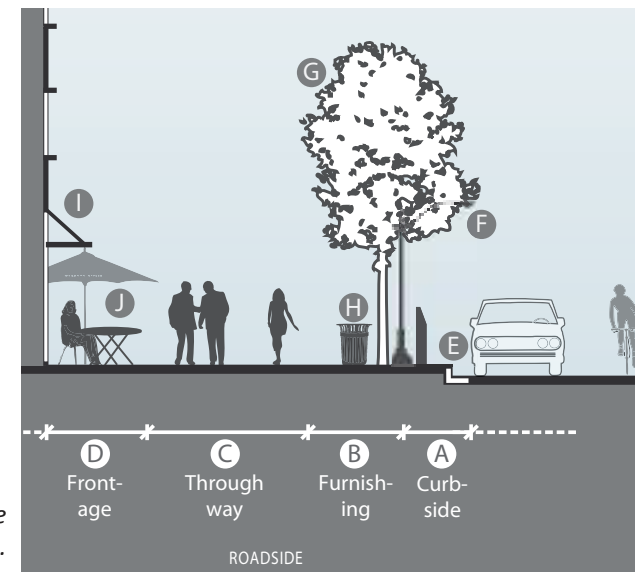
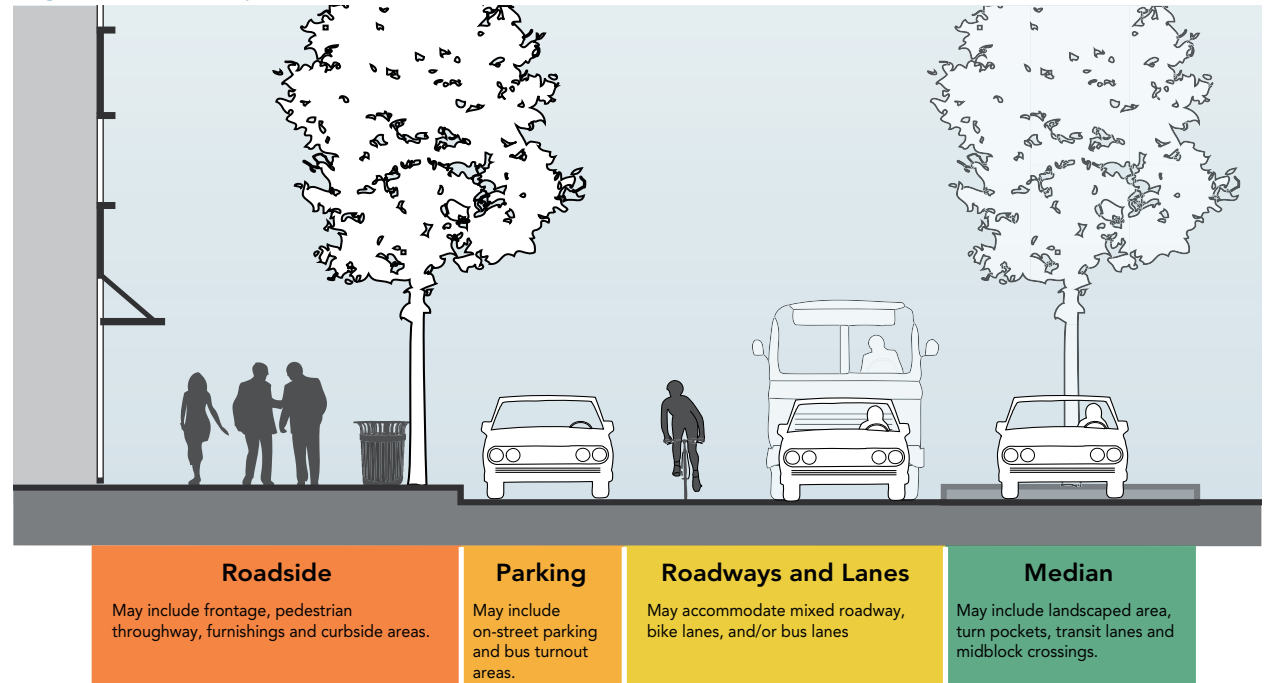
The Regional Transportation Commission of Southern Nevada's (RTC) adopted vision is "to provide a safe, confident and effective regional transportation system that enhances mobility and air quality for citizens and visitors." The RTC has identified four main approaches to improve transportation within current funding issues. These include:

- Improving operational efficiency of the existing infrastructure
- Make the public transit system faster and more reliable
- Improve the experience of riding transit.
- Make the environment friendlier for pedestrians and bicycles

STREET IMPROVEMENTS

It is the RTC's commitment to pedestrian and bicycle transportation that may play the most important role in developing the LVMD as a live/work center. A Bike Share program is scheduled for implementation downtown.

In 2012, the RTC commissioned a study of the Complete Streets concept. Complete Streets are roadways designed to accommodate all users, no matter their age, ability or mode of transportation. This includes motorists, cyclists, pedestrians and all vehicle types. There is a section in the City of Las Vegas Unified Development Code devoted to Complete Street standards. While only applicable to new development, it can provide guidance for the redevelopment of existing streets within the LVMD.



Complete Street zoning diagrams as developed by the RTC, based on national standards.

City of Las Vegas

Capital Improvement Plan 2015-2019

CHARLESTON BOULEVARD LVMD IMPROVEMENTS

- From Shadow Lane to Rancho Drive; provide sidewalk widening where feasible, street trees, banners, and Americans with Disabilities Act (ADA) upgrades. Improve transportation accessibility and options within the LVMD.
- Design only Project Funding: \$1,500,000 (Final Construction Cost undetermined)
- Estimated Project Completion: Unavailable

DOWNTOWN LAND USE AND TRANSPORTATION STUDY

- A study to explore methods for improving access in and around the downtown area; identifying future connections and linkages to the Convention Center, Strip and Airport, evaluating multi-modal connectivity to the LVMD, Cashman Field and Symphony Park, developing streetscape designs specific to downtown.
- Total Project Funding: \$250,000
- Estimated Project Completion: 06/2016

SHADOW LANE LVMD IMPROVEMENTS, ALTA DRIVE TO CHARLESTON BOULEVARD

- Provide sidewalk widening where feasible, street trees, banners, intelligent street lights, ADA upgrades along Shadow Lane. Improve transportation accessibility and options with the LVMD.
- Undergrounding of overhead utilities under investigation
- Total Project Funding: \$2,500,000

- Estimated Project Completion: 12/2017

SIDEWALK INFILL LVMD

- Construct concrete sidewalk, ADA sidewalk ramps and other work necessary to facilitate the improvements along public streets within the project area (Alta, Charleston, Shadow Lane, and Rancho). Reconstruct existing sidewalk ramps that do not meet ADA requirements.
- Total Project Funding: \$1,250,000
- Estimated Project Completion Date: 06/2016

SYMPHONY PARK INFRASTRUCTURE

- In order to proceed with additional development of the site, infrastructure improvements are required. The first phase included streets, 2,100 temporary surface parking spaces, power, water, sewer, and environmental remediation costs.
- Estimated Project Completion Date: 06/2018



SYMPHONY PARK INFRASTRUCTURE

Streets, surface parking, power, water, sewer and environmental remediation



MEDICAL DISTRICT SIDEWALK IMPROVEMENTS

Repair Sidewalks and ADA sidewalk ramps as needed

CHARLESTON FROM SHADOW LANE TO RANCHO

Street Improvements

MEDICAL DISTRICT ROADWAY & STREET IMPROVEMENTS

Street Improvements from UMC to Lou Ruvo Center for Brain Health

SHADOW LANE FROM ALTA TO CHARLESTON

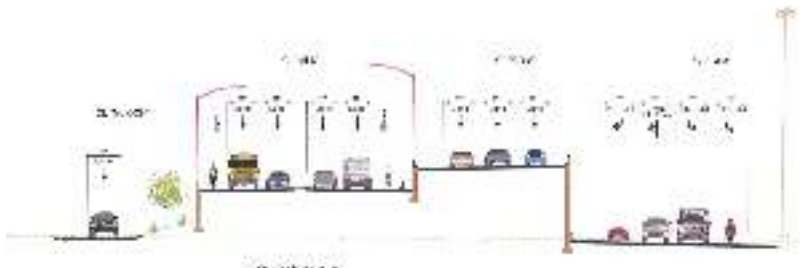
Street Improvements

Project NEON

Project NEON is a 3.7 mile reconstruction of I-15 and US-95. The scope includes:

- New HOV connections
- Reconstruction of the Charleston Boulevard Interchange
- Southbound ramp braiding
- Installation of an Automated Traffic Management System (ATMS)
- Four replacement bridges
- New landscape and aesthetics
- An extension at Martin L. King Boulevard over Charleston
- New Grand Central/Western connections
- Multiple local street improvements
- Construction of HOV direct connect ramps at Western Avenue
- Construction of I-15 access ramps at Alta

The procurement timeline expects the final construction award to be made in November of 2015.



Roadway Section "A"



Project NEON Plan

ALTA/BONNEVILLE RAMPS
*Improvements to underpass in keeping with
 "Complete Street" design guidelines*

BEARDEN EXTENSION
Creates a new entry into the district from Martin L. King Blvd.

CHARLESTON RAMP
Ramp connects Charleston Eastbound to Martin L King flyover

MARTIN L. KING BLVD. FLYOVER
Martin L King crosses over Charleston

CHARLESTON INTERCHANGE
*Improvements create a true diamond
 interchange*

Las Vegas Metropolitan Police Department

The section of the LVMD to the west of the I-15 is covered by the LVMPD Bolden Area Command. Bolden at one time had a high concentration of subsidized housing, and a high proportion of the City's gang activity. As subsidized housing has dispersed throughout the metro area, so has gang activity.

The primary driver of crime in the LVMD now is the transient population. Crimes such as burglary and panhandling are common. The presence of so many transients in the area makes the perception of crime more acute than the actual level of crime.

The Core LVMD (bounded by Alta, Rancho, Charleston and Martin L King) has been designated the "Red District." Within this area the LVMPD and UMC security forces have developed a carefully coordinated plan for handling emergency situations.

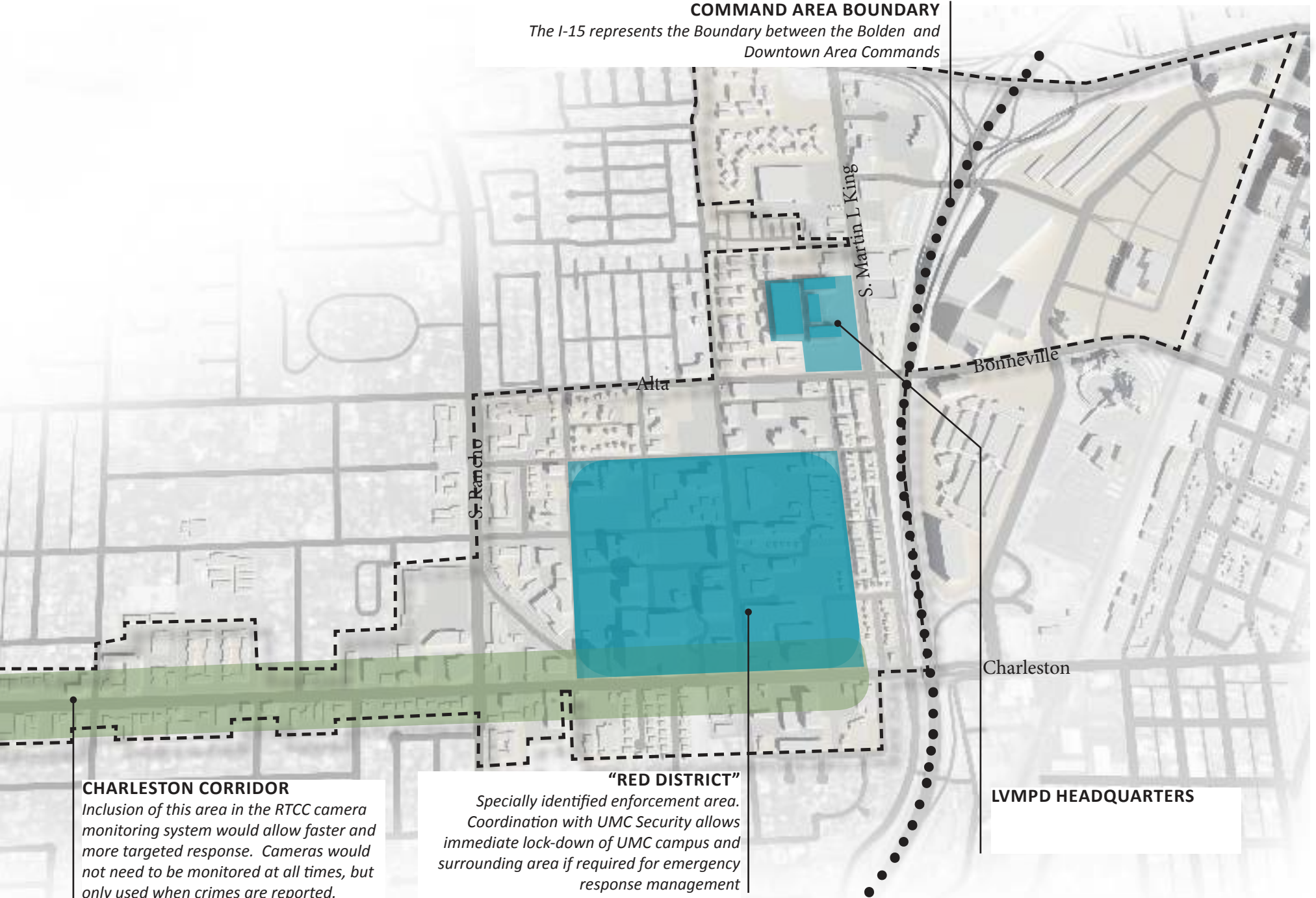
The LVMPD has no plans for physical construction within the LVMD. Although the department headquarters are in the LVMD, the Bolden Area Command headquarters are not.

One possible approach to increased security within the LVMD suggested by the LVMPD is to develop a network of cameras similar to those used on the Strip, and tie them to the Real Time Crime Center (RTCC) monitoring hub, to increase the timeliness and accuracy of police response.



COMMAND AREA BOUNDARY

The I-15 represents the Boundary between the Bolden and Downtown Area Commands



CHARLESTON CORRIDOR

Inclusion of this area in the RTCC camera monitoring system would allow faster and more targeted response. Cameras would not need to be monitored at all times, but only used when crimes are reported.

“RED DISTRICT”

*Specially identified enforcement area.
Coordination with UMC Security allows
immediate lock-down of UMC campus and
surrounding area if required for emergency
response management*

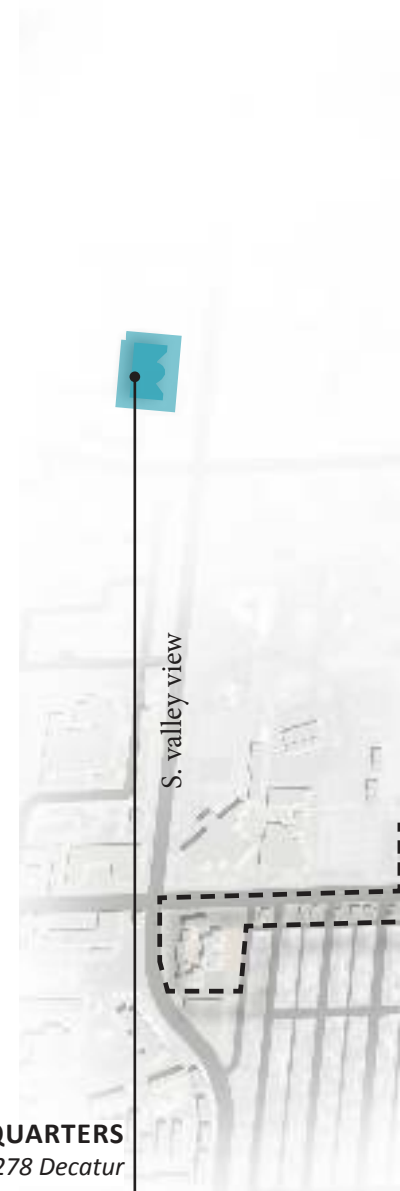
LVMPD HEADQUARTERS

Southern Nevada Health District

The primary Southern Nevada Health District presence in the LVMD in the future will be the State Lab. The 9 acre site at Shadow Lane and Pinto Lane is under a memorandum of understanding (MOU) for collaborative development among Clark County, UMC and UNLV to support the new UNLV School of Medicine. The Southern Nevada Health District continues to operate a TB clinic in a small building on this site, but otherwise it is vacant. The current headquarters, while not in the LVMD, is only a few blocks north of Charleston Boulevard on Valley View. The Southern Nevada Health District just purchased a building further west and north and plans to relocate its headquarters there. Some epidemiology and informatics staff currently housed in the LVMD will also be relocated within the scope of that project.

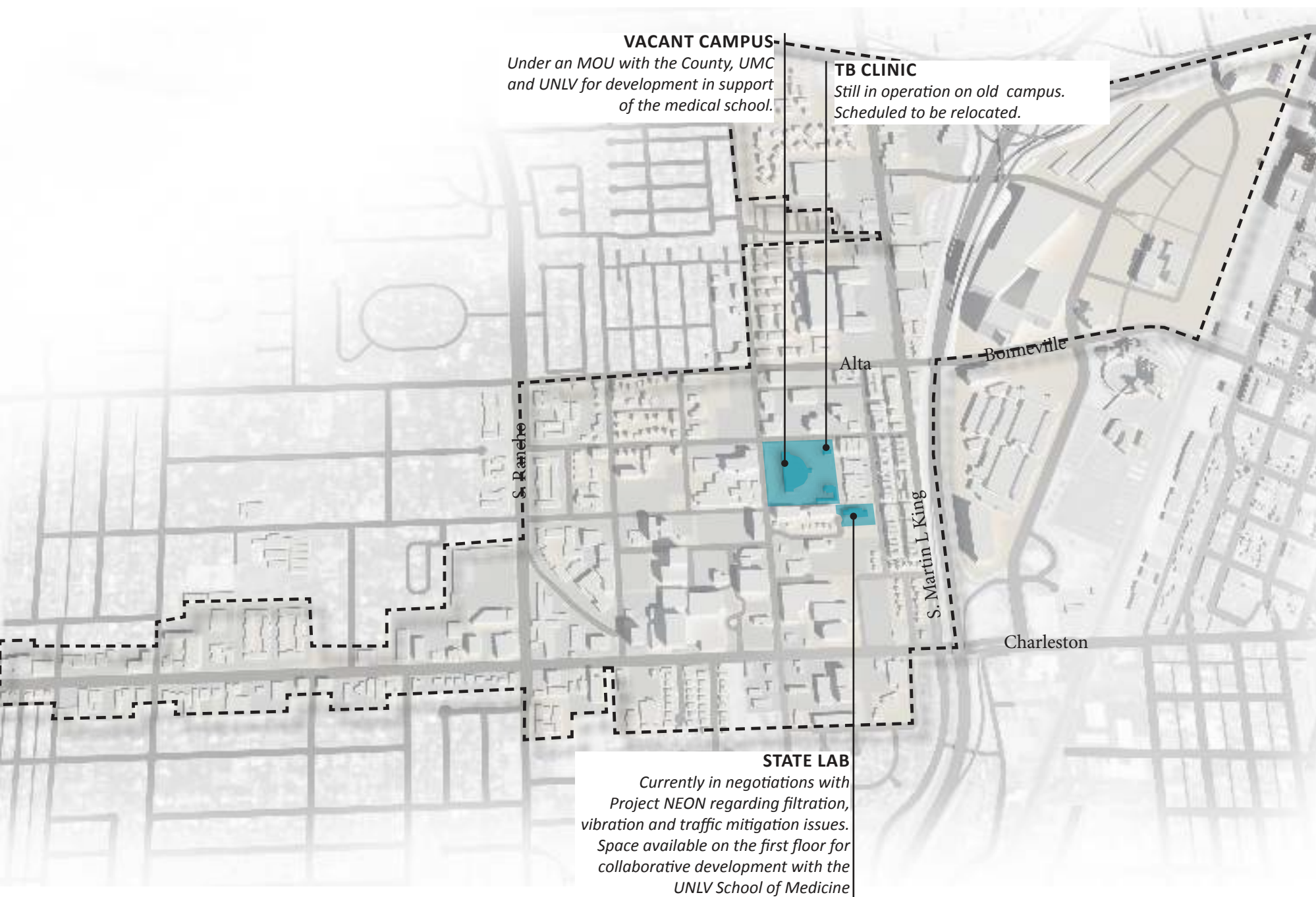
The State Lab has space on the first floor that could be collaboratively developed with the medical school to provide laboratory facilities. The Southern Nevada Health District is interested in developing a residency program with the School of Medicine, and a collaborative lab may also help with the medical school's accreditation process.

The State Lab is currently negotiating an MOU with Project NEON, related to concerns about vibration, filtration and traffic pattern changes when Bearden Drive is extended through to the frontage road. In addition to considering a collaborative lab development, the State Lab would also be open to a cooperative site development agreement with whatever uses are placed on the old campus, to ease some of the traffic and circulation concerns.



CURRENT HEADQUARTERS

Due to be relocated to 278 Decatur



Composite Plan: Existing Stakeholders

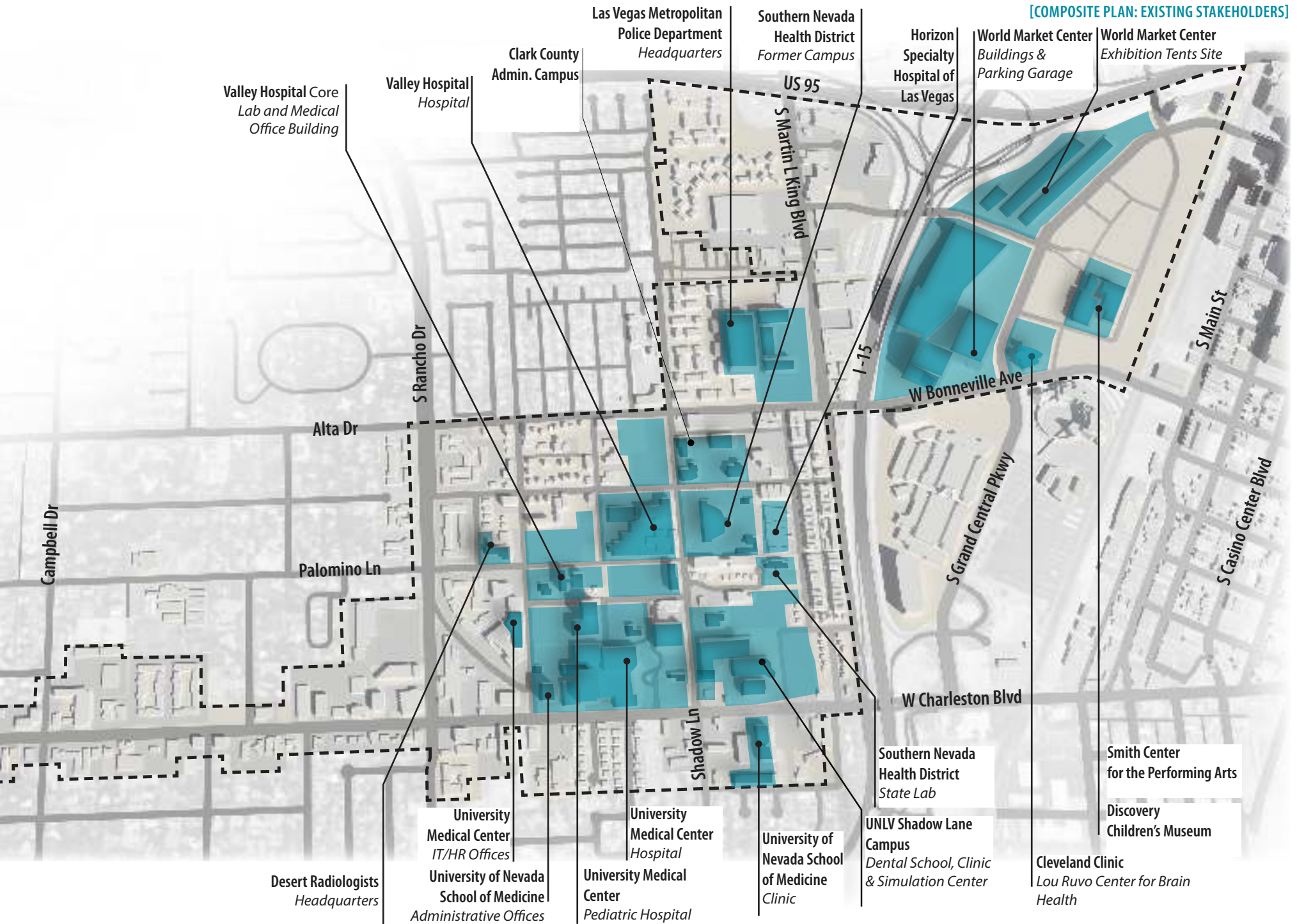
The LVMD contains a number of resources not found elsewhere in the region, that can create the core of a specialty regional medical center. Resources include:

- 800+ hospital beds in two major medical centers.
- The only Level 1 Trauma Center in Nevada
- 170 Patient Chairs in the UNLV School of Dental Medicine Clinic
- Nationally recognized clinical simulation center, shared by UNLV, UNR and Nevada State College
- Advanced imaging modalities, with flagship clinics for two major radiology groups
- Internationally recognized movement disorders clinic
- Specialty burn and transplant units providing services not available elsewhere in the region

Aside from health centered development, the LVMD is also home to the Smith Center, a premier performing arts venue, and the World Market Center, which brings thousands of people to the LVMD twice a year.

While the LVMD itself provides limited residential options, the areas directly adjacent to the LVMD contain some of the most prestigious residential areas in the City. The strength and potential of the surrounding residential neighborhoods will play a critical role in the LVMD's future development.





Projected 15-Year Stakeholder Plans

The next few years will be a time of unprecedented change in the LVMD. The most critical changes will include:

PROJECT NEON

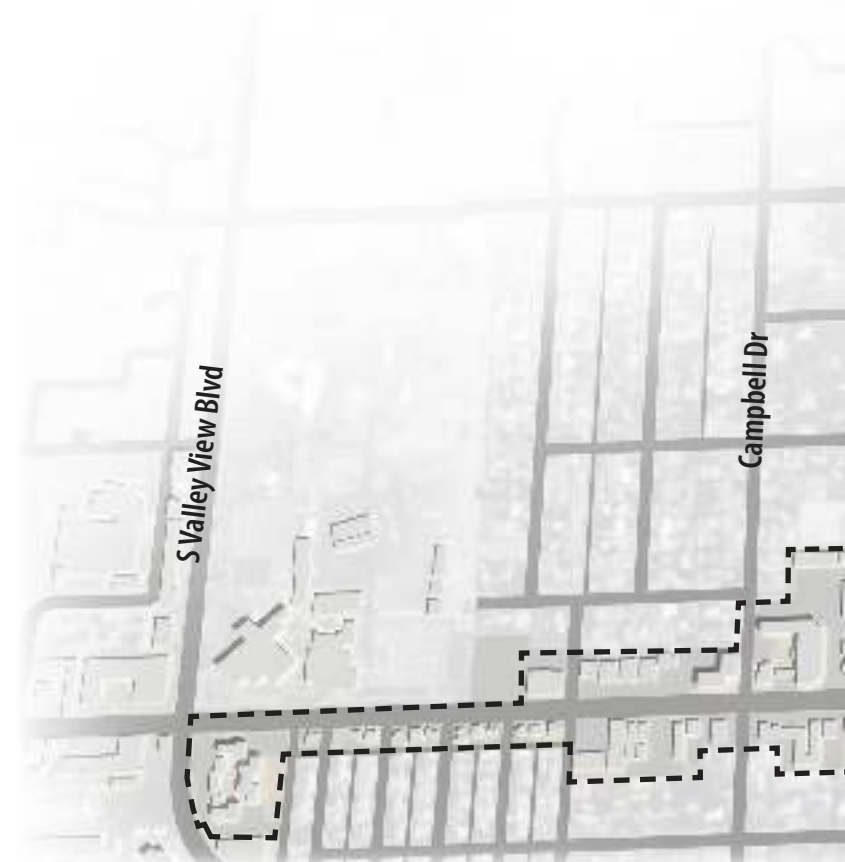
Project NEON will completely change the character of I-15, and its relationship with the LVMD. The Charleston interchange will be rebuilt and new ramps constructed at Alta. Existing development along Martin L King Boulevard will be removed between Alta Drive and Charleston Boulevard, to accommodate widening of the highway. The displacement of development along Martin L King Boulevard could create an opportunity to develop a medical/healthcare support services district north of Alta Drive.

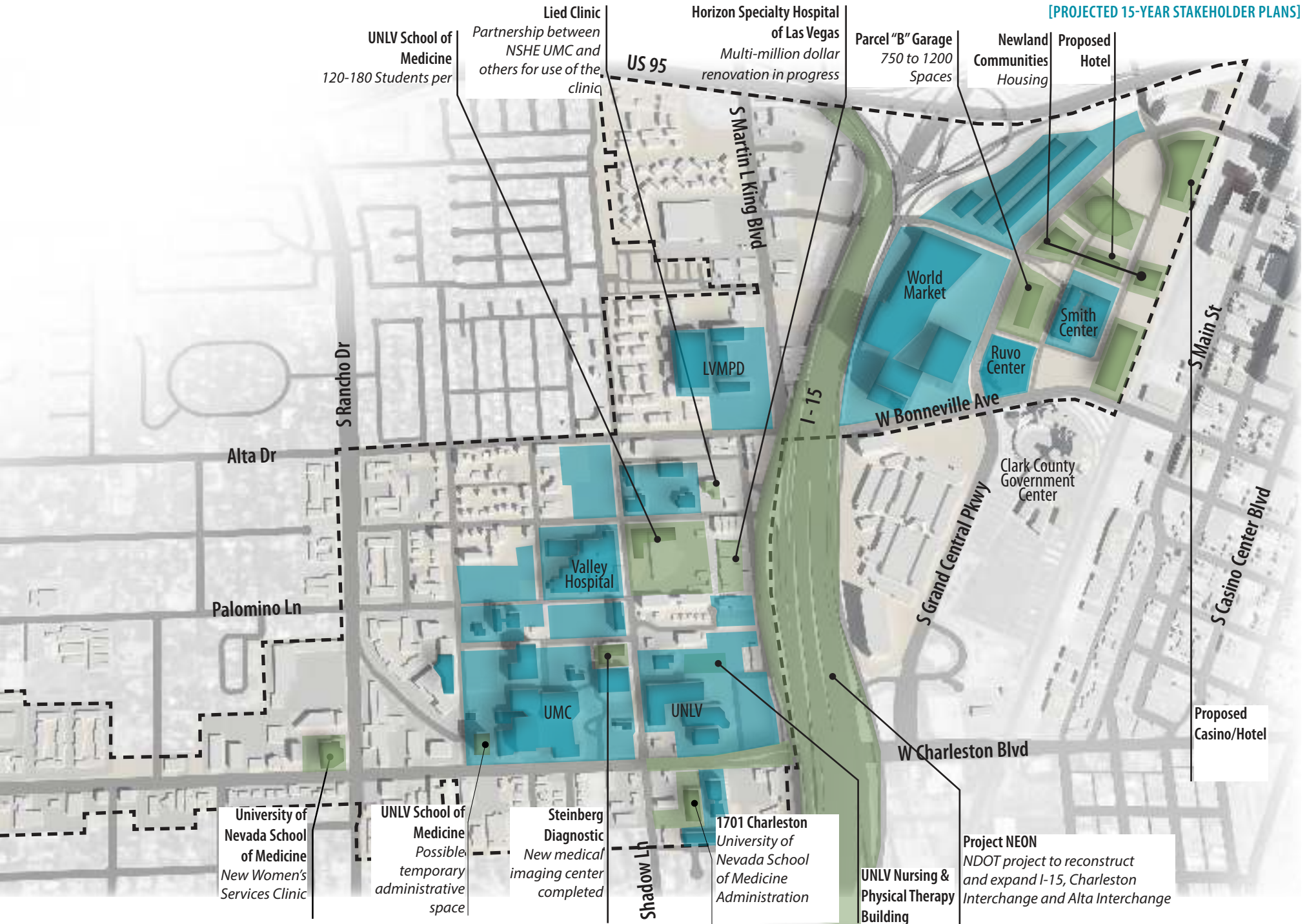
UNLV School of Medicine

While the University of Nevada, and Touro University Medical Schools have had a substantial presence in the LVMD for years, the UNLV School of Medicine project will mark the first time that a full four-year allopathic medical school program will be located within the LVMD. The first phase of building will create educational space, but a fully developed medical school will bring with it the need for additional clinical and research space.

SYMPHONY PARK

Although not initially conceived as a healthcare oriented development, the currently defined plans for this area do have a substantial healthcare component. The potential synergy between the Cleveland Clinic's Lou Ruvo Center for Brain Health and future development could create a concentration of specialty services for the LVMD.





TECHNICAL RECOMMENDATIONS



A Vision for the Future

Illustrative Master Plan

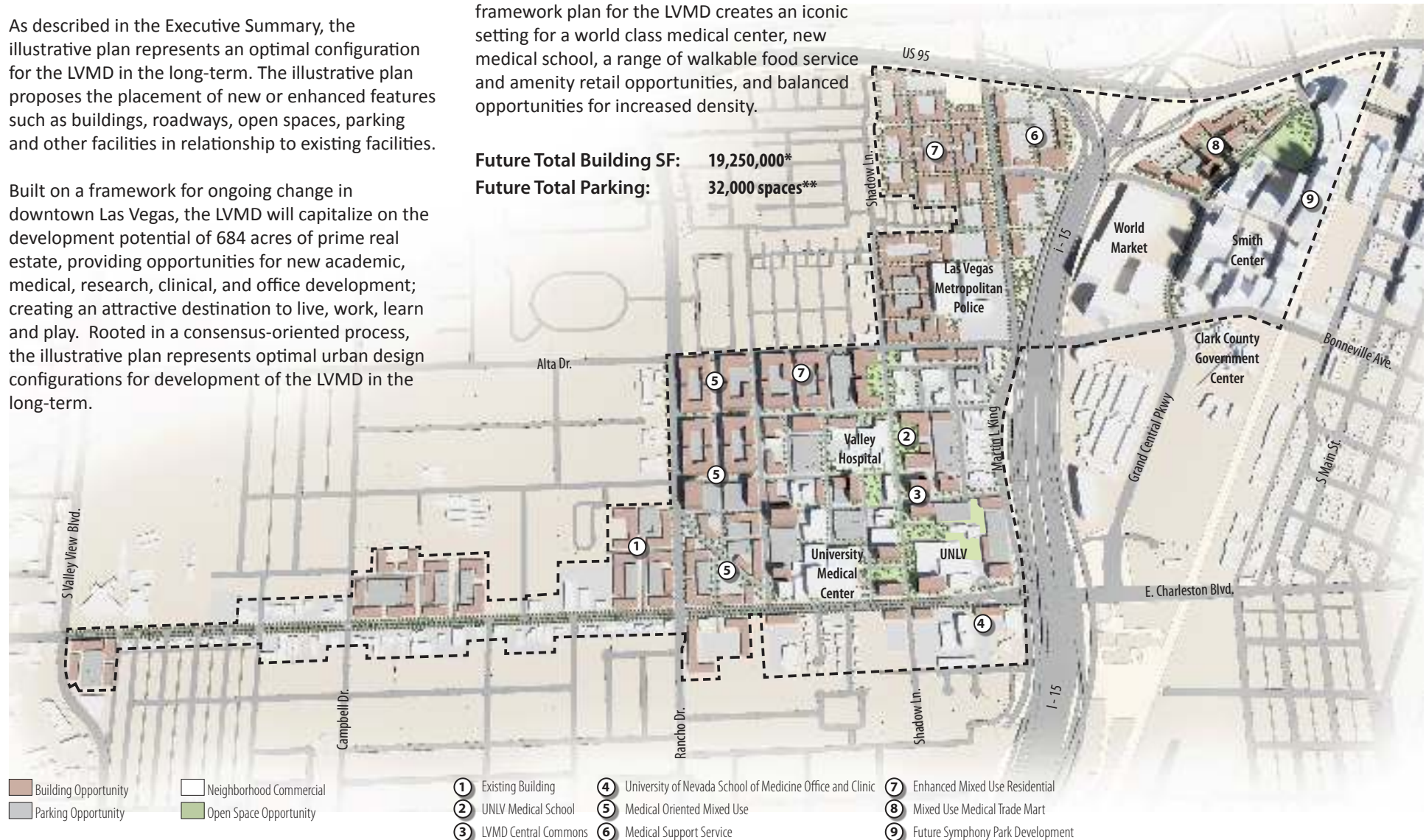
As described in the Executive Summary, the illustrative plan represents an optimal configuration for the LVMD in the long-term. The illustrative plan proposes the placement of new or enhanced features such as buildings, roadways, open spaces, parking and other facilities in relationship to existing facilities.

Built on a framework for ongoing change in downtown Las Vegas, the LVMD will capitalize on the development potential of 684 acres of prime real estate, providing opportunities for new academic, medical, research, clinical, and office development; creating an attractive destination to live, work, learn and play. Rooted in a consensus-oriented process, the illustrative plan represents optimal urban design configurations for development of the LVMD in the long-term.

While deliberately flexible to accommodate future changes and opportunities, the development framework plan for the LVMD creates an iconic setting for a world class medical center, new medical school, a range of walkable food service and amenity retail opportunities, and balanced opportunities for increased density.

Future Total Building SF: 19,250,000*

Future Total Parking: 32,000 spaces**



* Does not include 8,000,000 square feet Symphony Park; Does not include parking garages; Includes estimated approximately 6,000,000 square feet existing building gross area.

** Does not include 15,000 Symphony Park Spaces.

Develop Urban Density

Existing development within the LVMD is at an extremely low density when compared with other medical districts. Most developments currently located in the LVMD rely completely on surface parking, with the exception of the UMC and World Market. Surface parked developments typically max out density at .50 floor area ratio (FAR). To achieve the synergies that characterize a successful medical district, density within the LVMD will need to increase.

This increase in density must occur in a manner that will harmonize with and protect surrounding neighborhoods. As the map shows, the preferred final LVMD densities will vary, depending on the character of surrounding development.

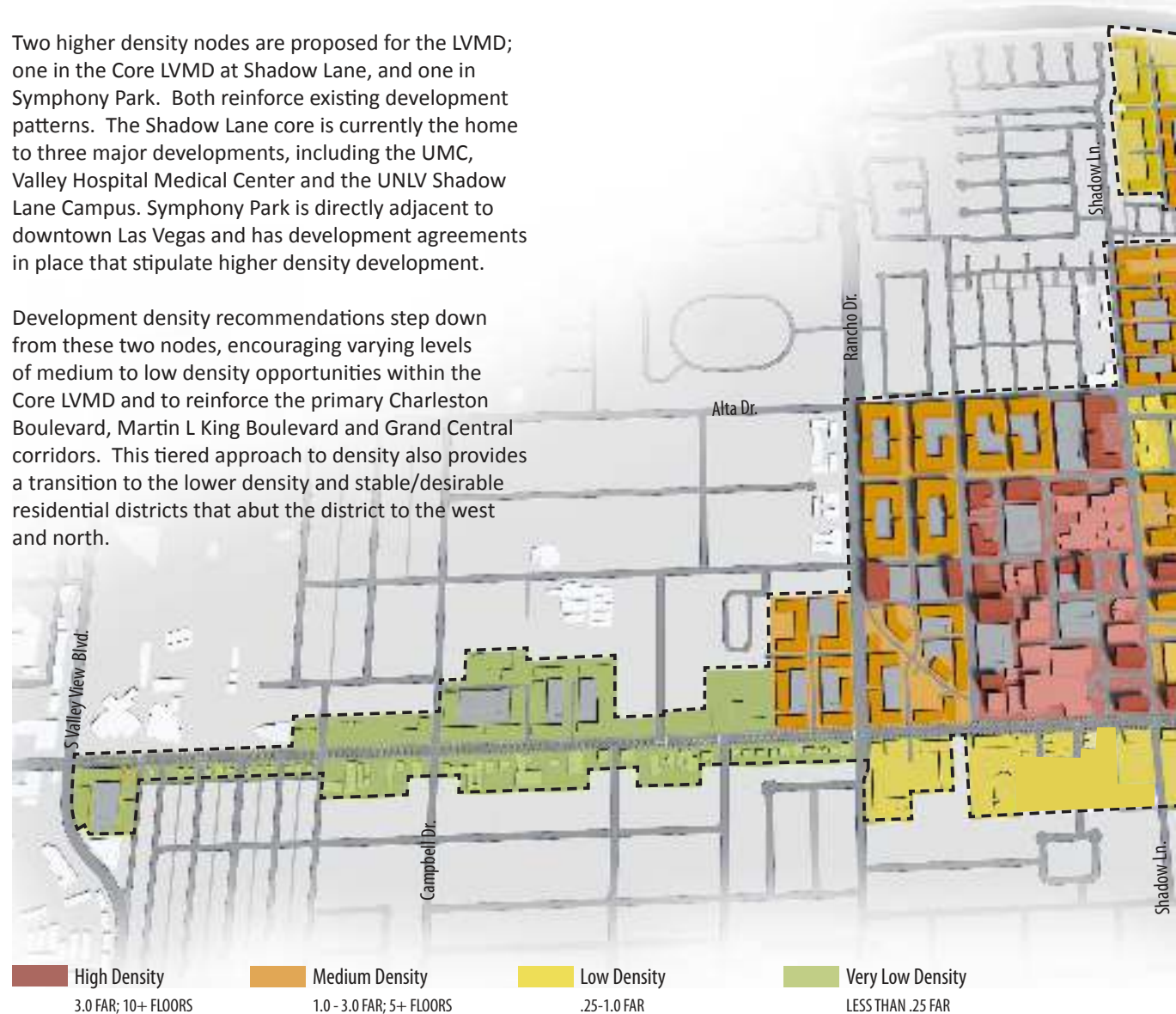
The lowest preferred future density will be located south of Charleston Boulevard between Valley View Boulevard and Rancho Drive. The residential neighborhoods south of the LVMD have worked for years with the City to limit the intensity of development along Charleston Boulevard. Currently, a zoning overlay limits development to one story along Charleston Boulevard between Valley View Boulevard and Rancho Drive. While this regulation has limited development heights, it has also created strong disincentives for investment. As a result, the character of commercial development along Charleston Boulevard is not in keeping with what might be expected in a world class medical center.

The Master Plan proposes maintaining the one-story height limit between Valley View Boulevard and Rancho Drive while increasing the height limit to 70' between Rancho Drive and Martin L. King Boulevard, in-line with existing development which will ease some of the restrictions and could

create new opportunities, while still protecting the residential neighborhoods.

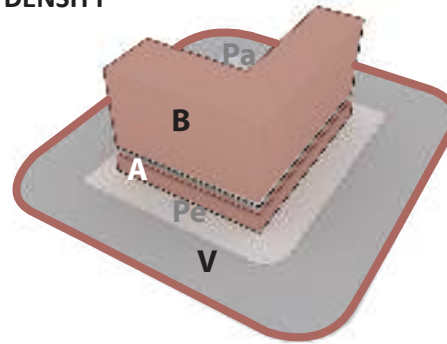
Two higher density nodes are proposed for the LVMD; one in the Core LVMD at Shadow Lane, and one in Symphony Park. Both reinforce existing development patterns. The Shadow Lane core is currently the home to three major developments, including the UMC, Valley Hospital Medical Center and the UNLV Shadow Lane Campus. Symphony Park is directly adjacent to downtown Las Vegas and has development agreements in place that stipulate higher density development.

Development density recommendations step down from these two nodes, encouraging varying levels of medium to low density opportunities within the Core LVMD and to reinforce the primary Charleston Boulevard, Martin L King Boulevard and Grand Central corridors. This tiered approach to density also provides a transition to the lower density and stable/desirable residential districts that abut the district to the west and north.





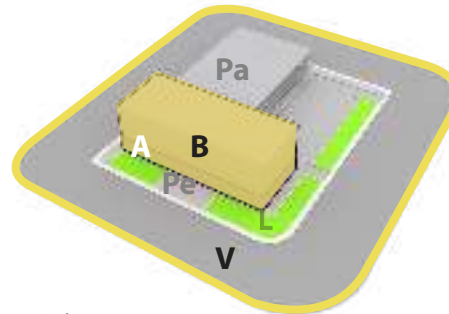
HIGH DENSITY



Characteristics

- Very urban form that creates an active pedestrian street facade along multiple street frontages with appropriate setbacks
- Typically podium development with development mass above structured parking
- Typically 10-20 story development

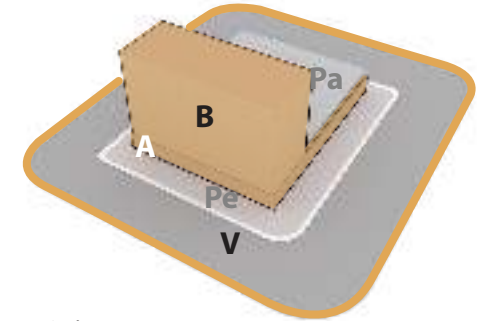
LOW DENSITY



Characteristics

- Mix of urban form that creates an active pedestrian street facade along primary corridor and may rely on landscape to activate secondary development edges
- Typically includes a mix of surface and/or structured parking
- Low-rise “stick” construction, limited to 70’ south of Charleston

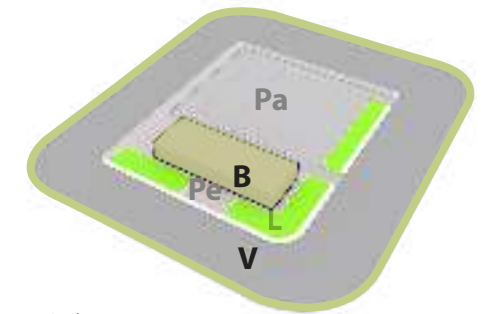
MEDIUM DENSITY



Characteristics

- Urban form that creates an active pedestrian street facade along primary road or roads with appropriate setbacks
- Typically includes adjacent structured parking
- Approximately 5-10 story development and usually not “stick” construction

VERY LOW DENSITY



Characteristics

- Quality suburban form that creates a balanced architectural and landscape oriented active pedestrian street
- Primarily surface parking
- Limited to 1 story

V VEHICLE
Pe PEDESTRIAN

A ACTIVE FIRST FLOOR
Pa PARKING

B BUILDING MASSING
L LANDSCAPE

Emphasize an Urban Mix of Uses

Stand-alone medical facilities and similar office uses are not enough to create an attractive, functional and vibrant medical district. Health-oriented facilities will attract a large and diverse population of employees, patients, students and community members. Each of these groups will bring the need for a range of additional support facilities and community assets to support workforce, including but not limited to dining, exercise facilities, etc. that are available and beneficial to everybody.

The proposed land use map shows how these ancillary uses could be distributed. Each of these general land uses intentionally includes opportunities for a mix of uses within the focused sub-districts. It is not the intention of this plan to restrict certain uses on any particular parcel, rather, the plan hopes to incentivize or encourage certain uses in sub-districts in order to reflect surrounding uses and/or co-locate similar uses for the purposes of maximizing adjacencies.

The creation of the UNLV School of Medicine will bring additional students and medical residents to the area. The UNLV School of Dental Medicine has already noted a lack of suitable housing for students in or near the LVMD. The addition of focused areas to encourage mixed-use residential at the north and west boundaries of the LVMD will address that demand, while creating a more compatible edge between the LVMD and adjacent single-family residential areas.

Commercial development should activate all major pedestrian-oriented corridors and be strategically considered at the corners and center of the medical and educational core. This pattern will allow employees, patients and students to access amenities within a manageable walking distance.

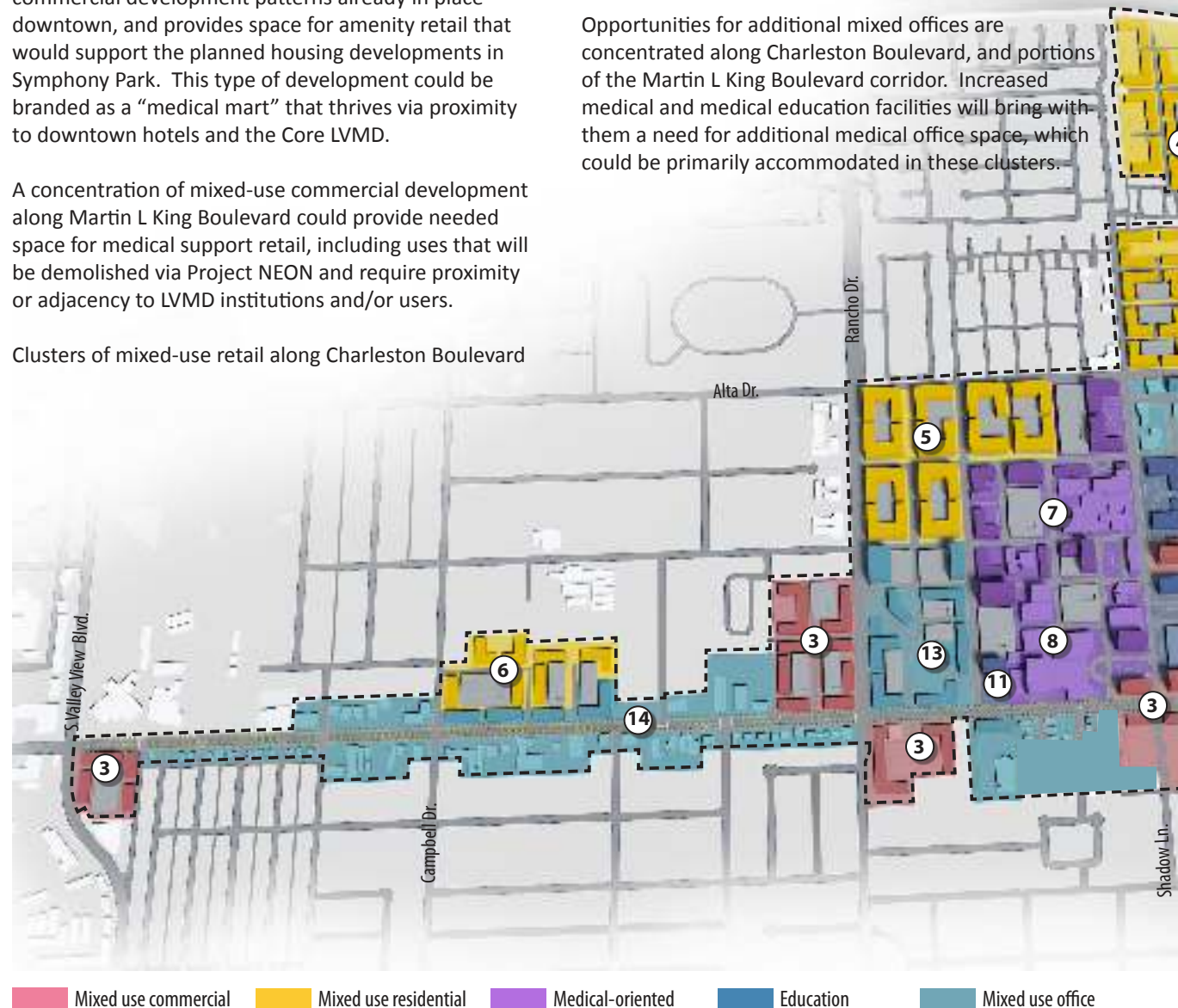
A concentration of commercial development at the north edge of Symphony Park creates a bridge to the commercial development patterns already in place downtown, and provides space for amenity retail that would support the planned housing developments in Symphony Park. This type of development could be branded as a “medical mart” that thrives via proximity to downtown hotels and the Core LVMD.

A concentration of mixed-use commercial development along Martin L King Boulevard could provide needed space for medical support retail, including uses that will be demolished via Project NEON and require proximity or adjacency to LVMD institutions and/or users.

Clusters of mixed-use retail along Charleston Boulevard

could provide much-needed neighborhood amenities and service-oriented retail.

Opportunities for additional mixed offices are concentrated along Charleston Boulevard, and portions of the Martin L King Boulevard corridor. Increased medical and medical education facilities will bring with them a need for additional medical office space, which could be primarily accommodated in these clusters.





MIXED-USE COMMERCIAL

The areas designated as mixed-use commercial include opportunities to disperse neighborhood-oriented and medical support retail in order to activate nodes within the 684-acre LVMD. This designation does not preclude residential, medical-oriented, education, office or other

uses to potentially support a vibrant LVMD. Emphasis should be placed on securing quality retail, restaurants, entertainment and support offices.

Primary considerations include:

- ① LVMD “Medical Mart”
- ② LVMD Medical Support Services
- ③ LVMD Neighborhood Oriented Retail

MIXED-USE RESIDENTIAL

The areas designated as mixed-use residential include opportunities to enhance existing medium density residential areas and support/strengthen existing residential neighborhood edges to the north. This designation does not preclude other uses, but should emphasize

creation of multi-family neighborhoods, live/work units support retail including grocery stores and food and professional offices, especially within the Core LVMD.

Primary considerations include:

- ④ North residential area
- ⑤ Core mix of uses
- ⑥ Charleston residential growth

MEDICAL-ORIENTED

The areas designated as medical-oriented are primarily located on existing hospital lands owned by Valley Hospital Medical Center and UMC. This designation does not preclude other uses but should emphasize concentration of a medical-oriented core. Priority should

be given to development of additional hospital uses, medical mart, medical support services, clinics, research facilities, and a mix of uses that supports these core LVMD assets. Primary zones include:

- ⑦ Valley Hospital Medical Center Areas
- ⑧ UMC Hospital Areas

EDUCATION

The areas identified as education are primarily located on existing UNLV, UNSOM and County land currently under MOU with UNLV for development of the UNLV Medical School. This designation does not preclude other uses nor discourage other educational-oriented

uses elsewhere in the LVMD. These areas emphasize a consolidated educational neighborhood and its important relationship to the medical-oriented areas on the west side of Shadow Lane. Primary zones include:

- ⑨ UNLV Shadow Lane Campus
- ⑩ UNLV School of Medicine
- ⑪ UNSOM

MIXED-USE OFFICE

The LVMD area is primarily medical office in terms of existing land area. Future areas designated as mixed-use office include opportunities to enhance a mixed use office environment within the 684-acre LVMD. This designation does not preclude other uses,

especially within the Core LVMD. Emphasis should be placed on the dispersion of offices, restaurants, personal services across several nodes within the LVMD to create vibrant places to live, work and play. Primary zones include:

- ⑫ North Core Mixed-Use Office
- ⑬ South Core Mixed-Use Office
- ⑭ Charleston Area Mixed-Use Office

Activate the Street

Street character is critical in creating an imagable and branded LVMD character to connect sometimes disparate uses together into a coherent, walkable and vibrant district. The street typological vignettes illustrate how the “Complete Streets” concept can be translated into specific street types of varying capacity to meet the needs of the LVMD while providing distinct pedestrian, bicycle and vehicular zones.

LVMD streets must serve many, often conflicting, demands. Auto travel is a prominent demand on the streets, especially as it relates to hospital access and movement of employees. Similar strategies to increase pedestrian comfort and safety of bicycle travel will help to provide options to the auto-dominant existing conditions. Many bus routes converge on the Bonneville Transit Center and through the LVMD, and transit ridership in the valley will continue to grow.

This component of the Facilities Master Plan recognizes the unique role the streets of the LVMD play with regard to both their transportation function and the adjacent land uses they support. These guidelines are intended to assist in developing designs that support and enhance both functions and prioritize among the many demands to deliver an overall system that provides for all modes of travel and uniquely responds to the local street context.

The guidelines develop a street framework that identifies the unique street type and the objectives for design on specific street segments throughout the LVMD.

The recommendations are intended to augment, supplement and tailor existing roadway guidelines and standards for the more urban and dense mixed-use context of a new vision for the LVMD. The

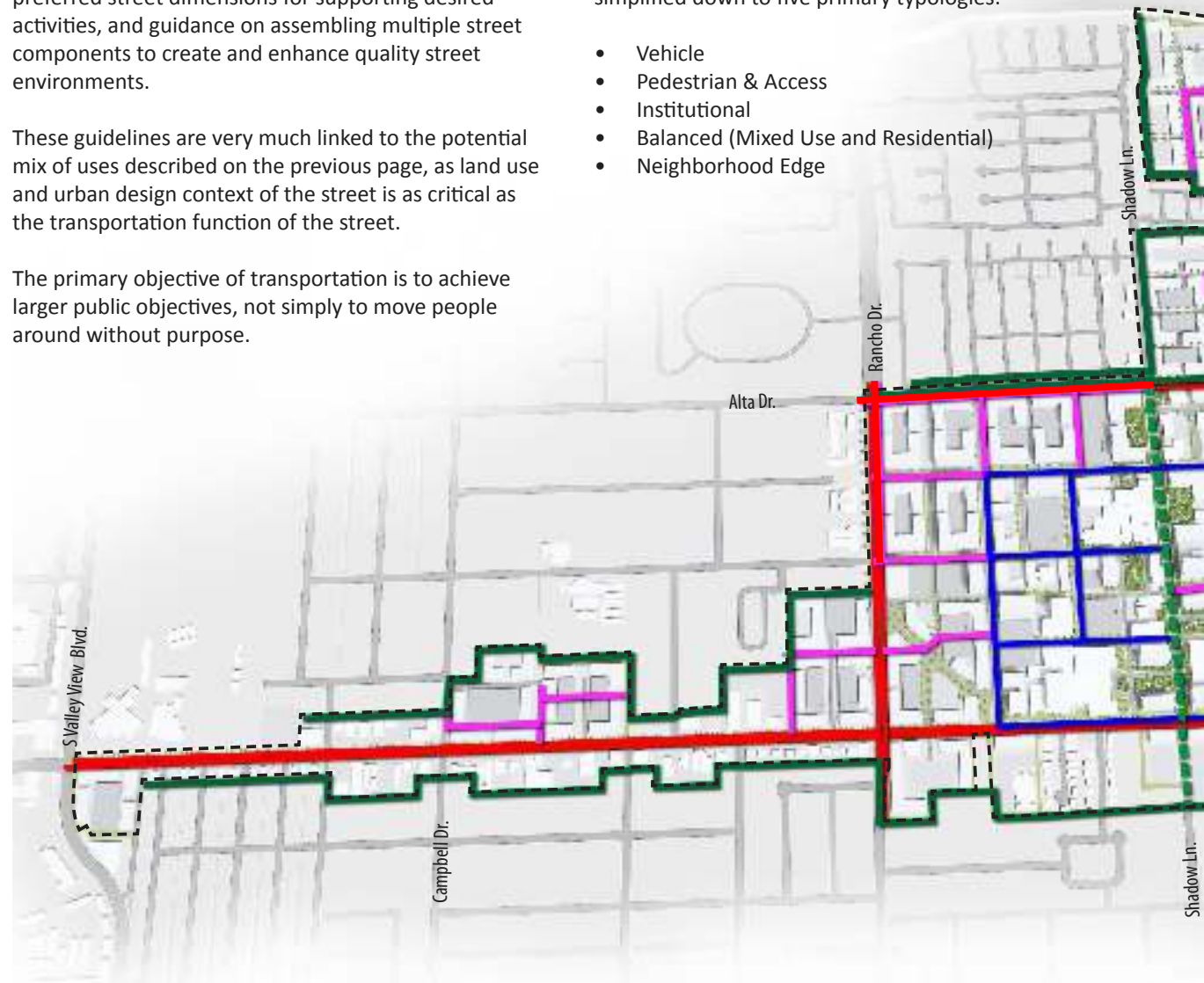
recommendations are not regulatory documents, rather provide general guiding design concepts, preferred street dimensions for supporting desired activities, and guidance on assembling multiple street components to create and enhance quality street environments.

These guidelines are very much linked to the potential mix of uses described on the previous page, as land use and urban design context of the street is as critical as the transportation function of the street.

The primary objective of transportation is to achieve larger public objectives, not simply to move people around without purpose.

Although street typologies and activity varies widely in the LVMD, the rich tapestry of frontage uses has been simplified down to five primary typologies:

- Vehicle
- Pedestrian & Access
- Institutional
- Balanced (Mixed Use and Residential)
- Neighborhood Edge



**VEHICLE**

- Movement of vehicles and freight, improved travel time and reliability as primary objectives
- Potentially limited active ground floor uses.
- Encourage elements for pedestrian, bikes, transit

MIXED-USE BALANCE

- Complete streets for vehicles, bikes, transit, and pedestrians
- Balance needs of several urban-oriented modes
- Design will vary based on land use context

INSTITUTIONAL

- Complete streets for all modes
- Allow for branding and setbacks for larger buildings
- Wider pedestrian, amenity and frontage zones

Building Zone

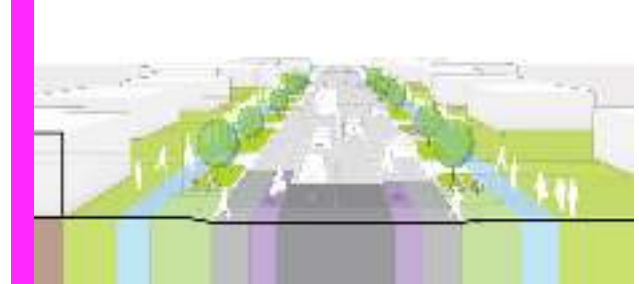
Vehicle/Transit Zone

Pedestrian Zone

Frontage Zone

PEDESTRIAN & ACCESS

- Emphasize wider pedestrian walkways and gathering spaces for shopping, sitting, eating
- Support business and active ground floor uses
- Slower traffic, on-street parking, and bike areas

RESIDENTIAL BALANCE

- Residential-oriented complete streets for vehicles, bikes, transit, and pedestrians
- Balance needs of several residential-oriented modes
- Design context will vary by neighborhood

NEIGHBORHOOD EDGE

- Setbacks and buffers required to preserve character and quality of existing residential neighborhood

Amenity Zone

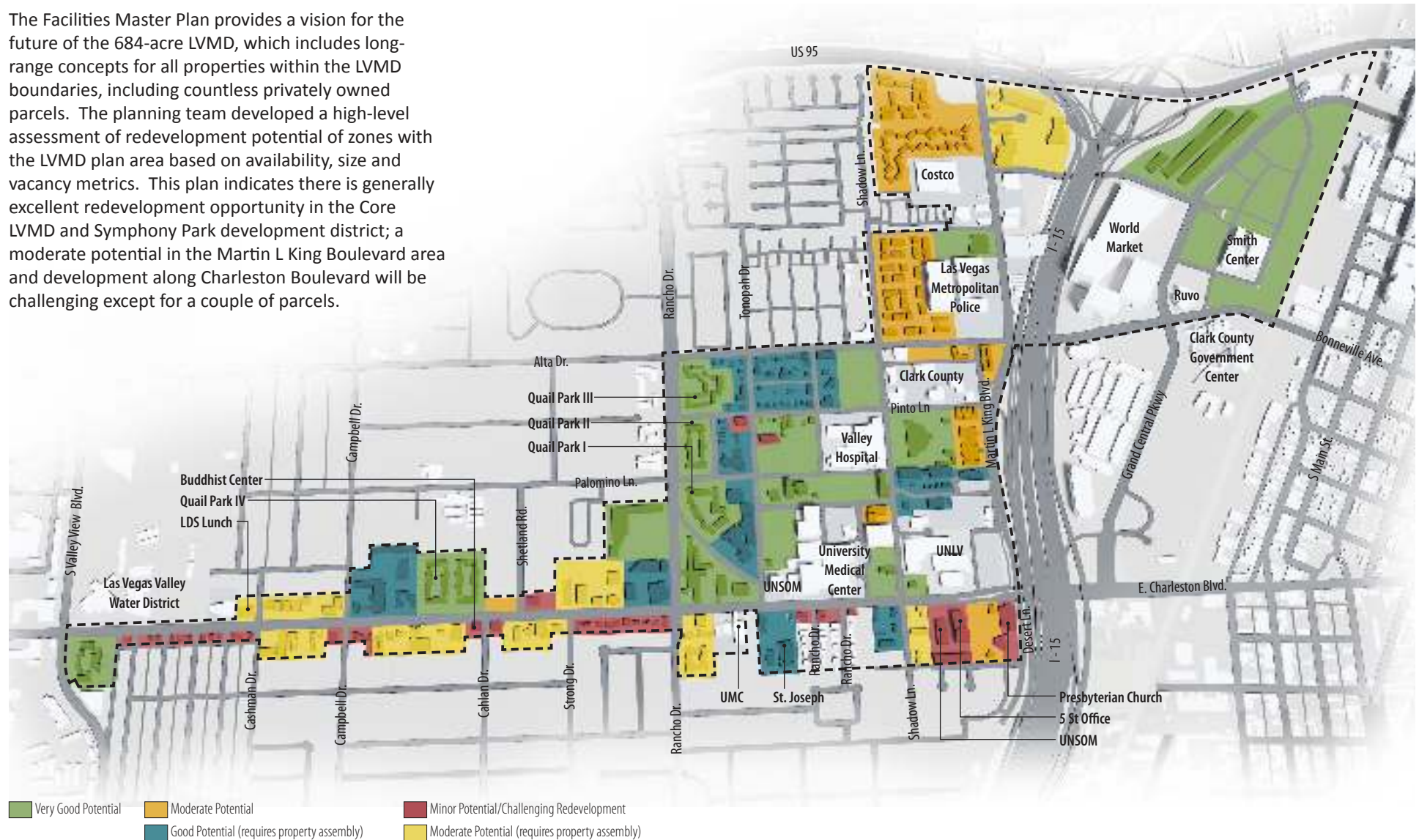
Bicycle Zone

On-Street Parking

Technical Considerations

Redevelopment Considerations

The Facilities Master Plan provides a vision for the future of the 684-acre LVMD, which includes long-range concepts for all properties within the LVMD boundaries, including countless privately owned parcels. The planning team developed a high-level assessment of redevelopment potential of zones with the LVMD plan area based on availability, size and vacancy metrics. This plan indicates there is generally excellent redevelopment opportunity in the Core LVMD and Symphony Park development district; a moderate potential in the Martin L King Boulevard area and development along Charleston Boulevard will be challenging except for a couple of parcels.

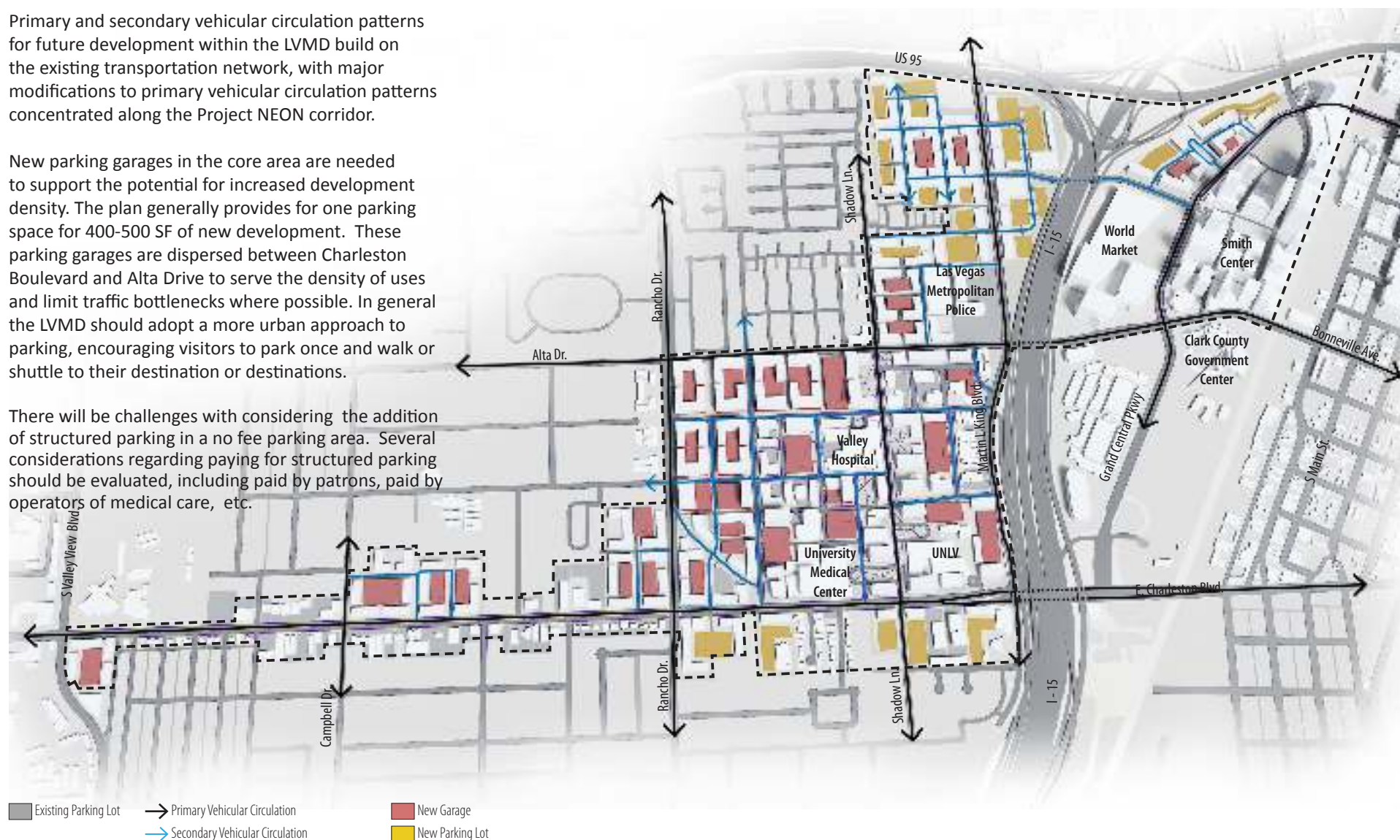


Vehicular Circulation and Parking

Primary and secondary vehicular circulation patterns for future development within the LVMD build on the existing transportation network, with major modifications to primary vehicular circulation patterns concentrated along the Project NEON corridor.

New parking garages in the core area are needed to support the potential for increased development density. The plan generally provides for one parking space for 400-500 SF of new development. These parking garages are dispersed between Charleston Boulevard and Alta Drive to serve the density of uses and limit traffic bottlenecks where possible. In general the LVMD should adopt a more urban approach to parking, encouraging visitors to park once and walk or shuttle to their destination or destinations.

There will be challenges with considering the addition of structured parking in a no fee parking area. Several considerations regarding paying for structured parking should be evaluated, including paid by patrons, paid by operators of medical care, etc.



Streetscape Amenities

To provide further clarity to the district-wide recommendation to activate the street by developing a series of place-based typologies, the Facilities Master Plan suggests width ranges for each zone by street type. These recommendations are generally aligned with “Complete Streets” design principles, and provide specific guidelines to enhance a unique character for this medical-oriented district. General ideas include:

- Provide a vegetation buffer to separate pedestrian and work/live environment from vehicular traffic, to increase comfort in areas adjacent to traffic corridors
- Vary streetscape character by function to reflect neighborhood character and needs
- Activate building facades within frontage zones to improve the pedestrian zone
- Encourage safe accommodation of pedestrians, bikes and transit
- Emphasize pedestrian walkways and gathering, shopping, sitting space where appropriate
- Adhere to “Complete Streets” design principles



	Frontage Zone		Pedestrian Zone		Amenity Zone		Street Parking		Bicycle Zone		Transit Zone *		Vehicle Zone
	Min.	Preferred	Min.	Preferred	Min.	Preferred	Min.	Preferred	Min.	Preferred	Min.	Preferred	(Lane Widths)
Vehicle Emphasis	0'	2'	5'	8'	1'-6"	4'	N/A	N/A	Shared	Shared	Shared	11'	10'
Pedestrian & Access Emphasis	0'	2'	8'	12'	1'-6"	6'	7'	8'	Shared	5'	Shared		10'
Balanced Emphasis (Mixed-Use)	Varies		5'	10'	1'-6"	5'	7'	8'	4'	7'	Shared		10'
Balanced Emphasis (Residential)	Varies		5'	6'	1'-6"	10'	7'	8'	Shared	6'	Shared		10'

*Note: Lanes used by RTC buses should be a minimum of 11'

Landscape and Open Spaces

There is a general lack of landscape character and functional open spaces within the existing LVMD boundaries. Future considerations for a vibrant and walkable environment encourage adding considerable space aligned with increases in density and to emphasize primary LVMD corridors. Considerations include:

- Add Core LVMD open space and a pedestrian spine along Shadow Lane to synthesize office, hospital and mixed-use buildings and provide much need gathering spaces
- Enhance three primary LVMD corridors: Charleston Boulevard, Martin L King Boulevard and Grand Central Parkway, including new streetscape features, street trees, median, protected bike lanes and shared/dedicated transit lane, as well as widened sidewalk with landscape for increased character and pedestrian comfort

- Add vegetation screening buffers along highway and parcel backyards to create greenway links through the LVMD, connecting to neighborhoods, and into downtown Las Vegas



Core LVMD Technical Recommendations

Overview

The historic geographic boundaries of the LVMD, bounded by Alta Drive, Charleston Boulevard, Martin L King Boulevard, and Rancho Drive define a 214-acre campus with considerable medical and educational infrastructure and viable redevelopment potential and constraints that will require collaborative development strategies to achieve maximum density and create a new sense of place in the heart of the LVMD.

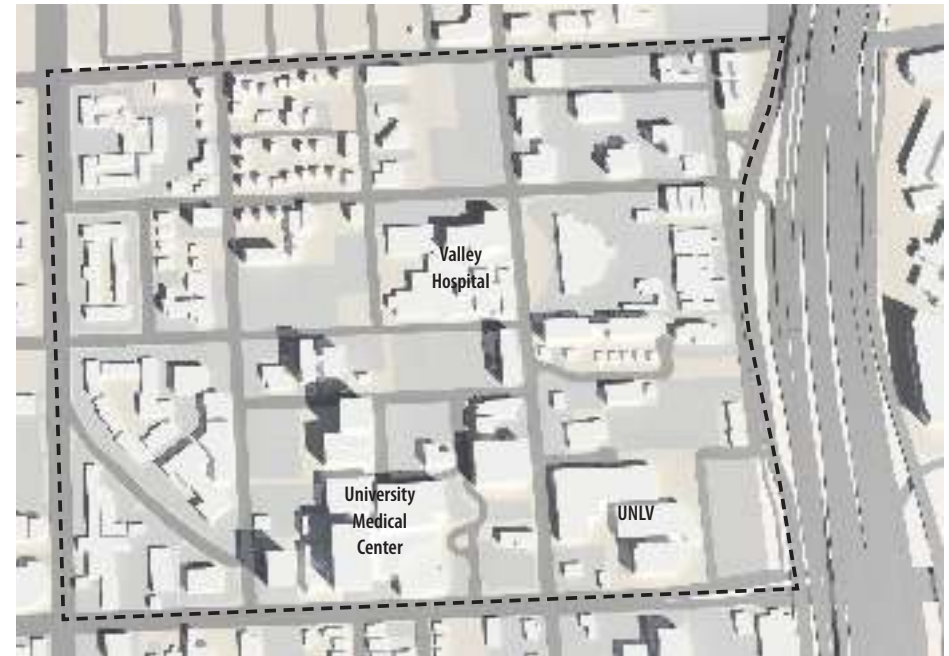
Existing development regulations for the Core LVMD are included as part of the Las Vegas Downtown Centennial Plan, which aims to re-establish the downtown area as a regional core and spur an urban renaissance. There are no building height limits as part of this plan area. A significant change since the Las Vegas Downtown Centennial Plan and driver of new development opportunities is the proposed Project NEON expansion of I-15 and re-organization of Martin L King Boulevard.

Current land use within the Core LVMD include low density residential, retail, office, significant higher education and hospital infrastructure, as well as large areas of surface parking lots. These uses are generally separated and not conducive to encouraging increased density, walkability, or the creation of a vibrant, health-oriented place.

The planning team utilized City Engine to parametrically test different density gradient potentials within the Core LVMD and other LVMD sub-districts based on a series of development “rules,” including:

- Develop all parcels except hospitals, UNLV, County land, police headquarters, and World Market
- Parcels must be self-parked, and parking garages are maxed at 5-6 stories above grade. A generic/hybrid metric of 1 space per 400 SF was applied
- Maximum 175 feet (15 Floors) in most areas

The “maximum” density scenarios were used as a planning tool to test infrastructure capacity of the LVMD and its sub-districts. Via discussion with the LVMD Planning Committee, preferred future density scenarios for the Core LVMD and other LVMD sub-districts were developed.



Core LVMD Existing Conditions

Existing Acres:	161*
Developable Acres:	-
Existing Building Square Feet to Remain	4,000,000
Total Building Square Feet:	4,000,000
Total Floor Area Ratio:	0.57
Total Parking Spaces:	-

*Existing acres do not include area of R.O.W. in the 214 acres gross district area; Developable acres do not include area of R.O.W. and area of parcels of preserved buildings.



Core LVMD “Maximum” Capacity

Existing Acres:	161*
Developable Acres:	111*
Existing Building Square Feet to Remain	3,000,000
Total Building Square Feet:	14,500,000**
Total Floor Area Ratio:	2.10**
Total Parking Spaces:	25,000



Core LVMD Preferred Future Density

Existing Acres:	161*
Developable Acres:	111*
Existing Building Square Feet to Remain	3,000,000
Total Building Square Feet:	9,000,000**
Total Floor Area Ratio:	1.30**
Total Parking Spaces:	15,000

* Existing acres do not include area of R.O.W. in the 214 acres gross district area; Developable acres does not include area of R.O.W. and area of parcels of preserved buildings.

** Square feet and FAR calculation apply developable acres and do not include parking garages.

Charleston Area Technical Recommendations

Overview

Charleston Boulevard serves as the primary east-west thoroughfare through the LVMD and a major vehicular corridor in the Valley. The corridor also bisects several of the most desirable single-family neighborhoods in the downtown area. Much of the highest visible LVMD frontage along Charleston Boulevard is included in the CD-O Designed Commercial Overlay District. The stated purpose of this designation is to preserve and maintain the character of the surrounding land uses with less intense commercial development. Existing regulations include:

- Height limit of one story or 20 feet (whichever is less) for parcels that front Charleston Boulevard between Rancho Drive and Valley View. Lot coverage shall not exceed 30 percent and rear setbacks not less than 25 feet
- Height limit of 35 feet, or two stories for all other parcels
- Las Vegas Downtown Centennial Plan (no restrictions)

These restrictions are strongly supported by the residential neighborhoods adjacent to Charleston Boulevard. However, these same neighborhoods have also expressed a desire for new, upscale development that these very restrictions make economically challenging. Modified development standards might incentivize new development while continuing to protect the neighborhoods could contribute to improving the character of commercial development along the Charleston Boulevard corridor.



Charleston Area Existing Conditions

- Land uses include primarily medical offices in converted single-family homes
- Some higher density exists at Martin L King Boulevard and Valley View
- Considerable surface parking contributes to a general lack of identity along Charleston Boulevard

Existing Acres:	103*
Developable Acres:	-
Ex. Bldg. SF to Remain	750,000
Total Building Square Feet:	750,000
Total Floor Area Ratio:	0.35
Total Parking Spaces:	-



Charleston Area Preferred Future Density

- Enhance existing character of Charleston Boulevard
- Respect Designed Commercial Overlay (generally)
- Consider slightly higher density "nodes" of development at key intersections south of Charleston Boulevard between Valley View and Rancho Drive
- Consider slightly higher density development north of Charleston Boulevard

Existing Acres:	103*
Developable Acres:	56*
Ex. Bldg. SF to Remain	500,000
Total Building Square Feet:	2,250,000**
Total Floor Area Ratio:	0.95**
Total Parking Spaces:	5,000

* Existing acres do not include area of R.O.W. in gross district area; Developable acres does not include area of R.O.W. and area of parcels of preserved buildings.

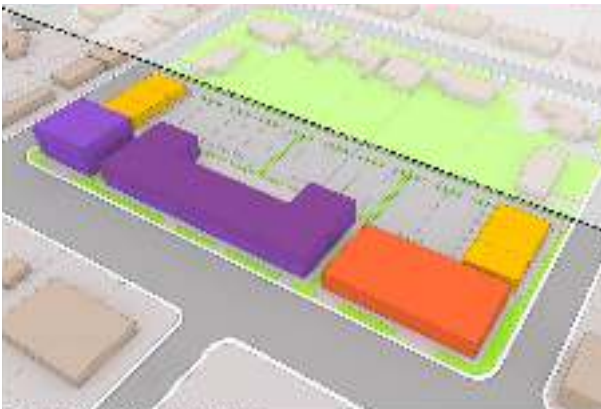
** Square feet and FAR calculation apply developable acres and do not include parking garages.

Charleston Boulevard Recommendations

Following a series of focused neighborhood meetings regarding the future of Charleston Boulevard, the following guiding principles for development should be considered for incorporation by the City as part of the LVMD Facilities Master Plan:

- Restrict density along Charleston Boulevard from Rancho Drive to Valley View Boulevard to 1 story
- Restrict heights along Charleston Boulevard between Rancho Drive and Martin L King Boulevard to 70' while encouraging increased high quality and neighborhood-oriented retail uses
- New higher density development south of Charleston, between Rancho and Martin L King must include significant buffering to mitigate impacts to adjacent single family uses
- Establish an oversight committee to review new development south of Charleston on a case-by-case basis

Charleston Boulevard from Rancho to Valley View
1 Story Density Restriction (Typical)



Sample Parcel Acres:	5.00
Sample Building Square Feet:	110,000
Typical Floor Area Ratio:	0.5

Charleston Boulevard from Rancho to Martin L King
Higher Density Options (Up to 70' Height Typical)



Sample Parcel Acres:	5.00
Sample Building Square Feet:	175,000-225,000
Typical Floor Area Ratio:	1.0

Charleston Area Character - Existing

City Engine was used as part of the Facilities Master Plan to model existing road conditions and rapidly test the visual implications for future opportunities along LVMD's primary corridors.

As the primary address for the LVMD, Charleston Boulevard currently does not meet the aesthetic expectations of a world-class medical district. The corridor is currently defined by:

- Low density development; primarily single-story
- Surface parking at key intersections
- Three travel lanes in each direction with a center turn lane
- 100 foot right-of-way
- A narrow, but continuous, sidewalk with some obstructions
- Existing bus embedded in traffic lanes and mostly underutilized



Charleston Area Character - Future

Charleston Boulevard and the surrounding area has the potential to epitomize the character of a forward-thinking medical district while attracting new neighborhood amenity development and continuing to protect the value of adjacent neighborhoods. Future considerations for the development of Charleston Boulevard should include:

- Continue to brand Charleston Boulevard as the primary address for the LVMD through graphics, signage, banners and a consistency of street furnishings and plant materials within the right-of-way
- Capitalize on key development sites
- Emphasize density north of Charleston Boulevard and adjacent to the Core LVMD
- Prioritize slightly higher development at key sites south of Charleston Boulevard
- Consider traffic lane width reduction
- Add a planted median where appropriate to enhance the aesthetics of the corridor
- Add bike lane, street trees and widened sidewalk/amenity zone
- Consider potential center running transit line



Source: Considerations for Charleston Boulevard as part of the Mobility Master Plan

Martin L King Corridor Technical Recommendations

Overview

Martin L King Boulevard currently contains large retail and “big box” establishments flanking the corridor, including a Costco store and furnishings-related retail capitalizing on proximity to the World Market Center. Multi-family housing units predominately characterize the western edge of the Martin L King Boulevard

area and a new police headquarters with surface and structured parking occupies the corner of Martin L King Boulevard and Alta Drive.

The “maximum capacity” scenario uncovered significant density opportunities for the LVMD, but due to the proximity to the highway interchange and scale of surrounding development, this was largely

considered not feasible. Preferred density options provide opportunities to create an active mix of uses to support the Core LVMD. Aggressive build-to lines and a mix of structured and surface parking opportunities allow for higher density along Martin L King Boulevard and within key areas of this sub-district.



Martin L King Corridor Existing Conditions

Existing Acres:	108*
Developable Acres:	-
Ex. Bldg. SF to Remain	2,000,000
Total Building Square Feet:	2,000,000
Total Floor Area Ratio:	0.42
Total Parking Spaces:	



Martin L King Corridor “Maximum” Capacity

Existing Acres:	108*
Developable Acres:	94*
Ex. Bldg. SF to Remain	850,000
Total Building Square Feet:	12,000,000**
Total Floor Area Ratio:	3.0**
Total Parking Spaces:	30,000



Martin L King Corridor Preferred Future Density

Existing Acres:	108*
Developable Acres:	94*
Ex. Bldg. SF to Remain	850,000
Total Building Square Feet:	4,000,000**
Total Floor Area Ratio:	1.0**
Total Parking Spaces:	6,500

* Existing acres do not include area of R.O.W. in gross district area; Developable acres do not include area of R.O.W. and area of parcels of preserved buildings.

** Square feet and FAR calculation apply developable acres and do not include parking garages.

Martin L King Corridor Character - Existing

Martin L King Boulevard is a vehicular-focused expanse of pavement with the emphasis on moving vehicles. The corridor between Alta Drive and Charleston Boulevard will be completely rebuilt as part of Project NEON, providing opportunities to aesthetically enhance the corridor to support LVMD objectives. The corridor is characterized by:

- Low density development, primarily 1-2 stories
- Surface parking expanses along Martin L King Boulevard
- Three travel lanes in each direction with center turn lane
- Project NEON suggests Martin L King Boulevard remains at grade through Alta Drive, and is elevated over Charleston Boulevard
- Pedestrian improvements including sidewalk widening are anticipated as part of Project NEON



Martin L King Corridor Character - Proposed

Martin L King Boulevard will become a major gateway to the LVMD as part of the Project NEON improvements and increased investment in infrastructure to support infill development. Future considerations for the development of Martin L King Boulevard should include:

- Mixed-use medical service opportunities east of Martin L King Boulevard
- Mixed-use residential opportunities west of Martin L King Boulevard
- Consider traffic lane width reduction
- Consider protected "cycle track" or buffered bike lane on the east side of Martin L King Boulevard
- Improved and widened amenity zones including street trees on both sides of Martin L King Boulevard
- Planted median to soften the expanse of roadway and enhance visual interest



Symphony Park/Grand Central Technical Recommendations

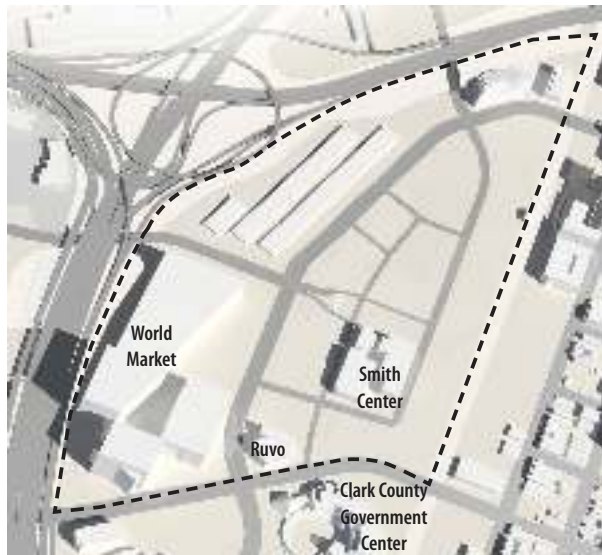
Overview

Grand Central Parkway includes a newly rebuilt parkway with dedicated center bus rapid transit that epitomizes the desired character of streetscape within the LVMD. The parkway currently borders Symphony Park, which represents a significant opportunity for redevelopment to activate downtown and serve the LVMD. The City of Las Vegas has entered into

development agreements for multiple parcels within Symphony Park. At present, three major projects have been completed:

- The Cleveland Clinic's Lou Ruvo Center for Brain Health
- The Smith Center for the Performing Arts
- The DISCOVERY Children's Museum

The maximum capacity scenario tested total square feet possible on vacant parcels in the area assuming reasonable parking ratios and a self-parked requirement limited at 5-6 stories. The preferred future scenario assumes existing development agreements are upheld and previous master plan is built out, focusing new development opportunities towards creation of a mixed-use "medical mart" on the World Market tents.



Symphony Park/Grand Central Existing Conditions

Existing Acres:	117*
Developable Acres:	-
Ex. Bldg. SF to Remain	2,500,000
Total Building Square Feet:	2,500,000
Total Floor Area Ratio:	0.49
Total Parking Spaces:	



Symphony Park/Grand Central "Maximum" Capacity

Existing Acres:	117*
Developable Acres:	68*
Ex. Bldg. SF to Remain	2,500,000
Total Building Square Feet:	10,000,000**
Total Floor Area Ratio:	3.5**
Total Parking Spaces:	22,000



Symphony Park/Grand Central Preferred Future

Existing Acres:	117*
Developable Acres:	20*
Ex. Bldg. SF to Remain	2,500,000
Proposed Symphony Park:	8,000,000
Total Building Square Feet:	12,000,000**
Total Floor Area Ratio:	2.3**
Total Parking Spaces:	5,000***

* Existing acres do not include area of R.O.W. in gross district area; Developable acres do not include area of R.O.W. and area of parcels of preserved buildings.

** Square feet and FAR calculation apply developable acres and do not include parking garages.

*** Does not include 15,000 Symphony Park Spaces.

Symphony Park/Grand Central Character - Existing

The newly reconstructed Grand Central Parkway Streetscape includes several desirable characteristics that should be emulated on future LVMD roadways despite the current sparsity of existing activity and development. Future improvements should improve a more continuous pedestrian environment. Existing conditions include:

- Two travel lanes in each direction
- Dedicated center transit with planted median/ street trees
- No existing sidewalk on southeast side of Grand Central Parkway



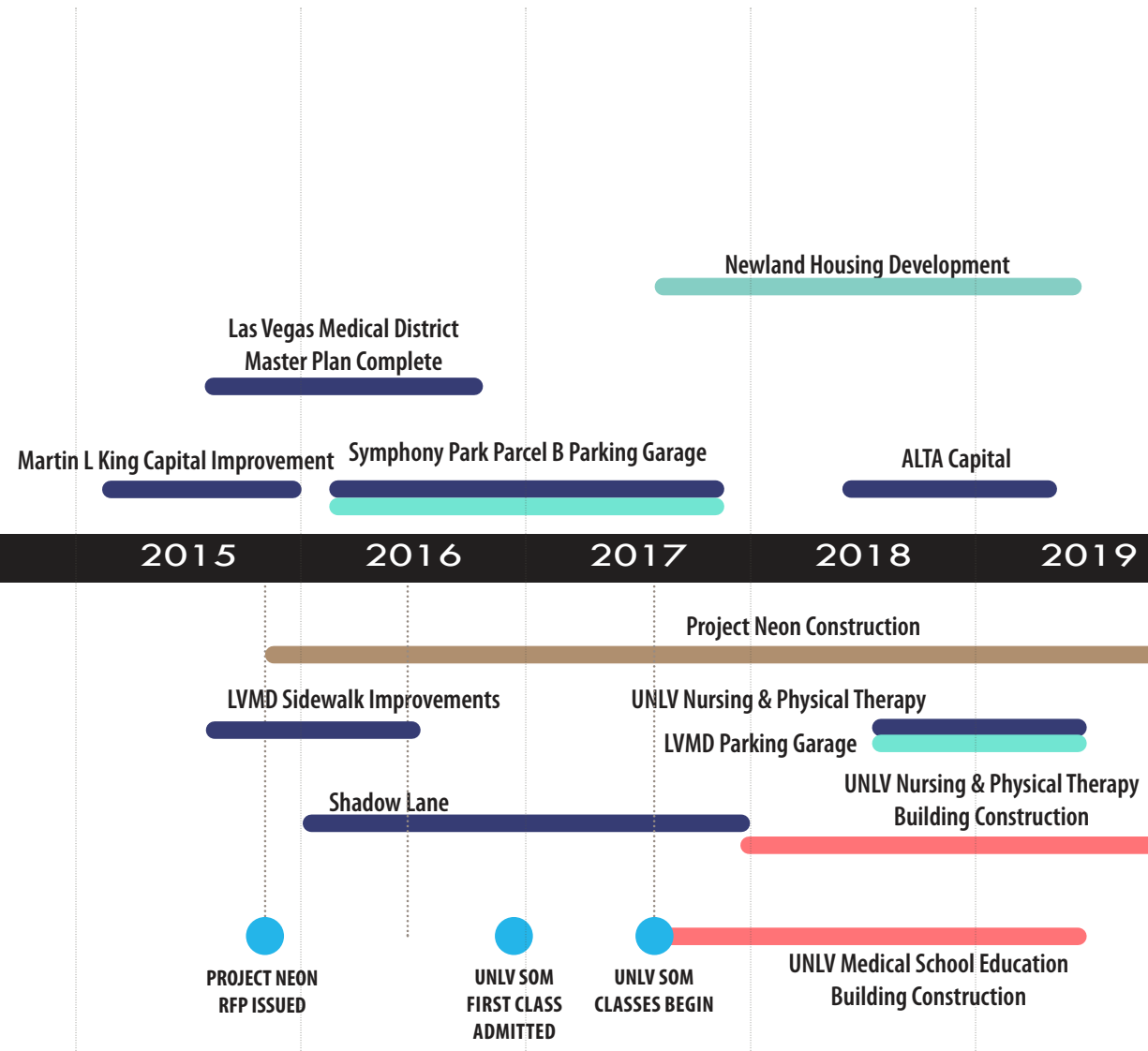
Symphony Park/Grand Central Character - Proposed

As part of an exciting opportunity to connect the Core LVMD uses to the heart of downtown Las Vegas, Grand Central Parkway improvements for the future should consider:

- Medium-density medical mart infill development north and east of Grand Central Parkway
- Development of higher density Symphony Park uses to activate the south and west side of the corridor
- Addition of bike lanes and bike infrastructure
- Prioritization of pedestrian amenities to enhance walkability

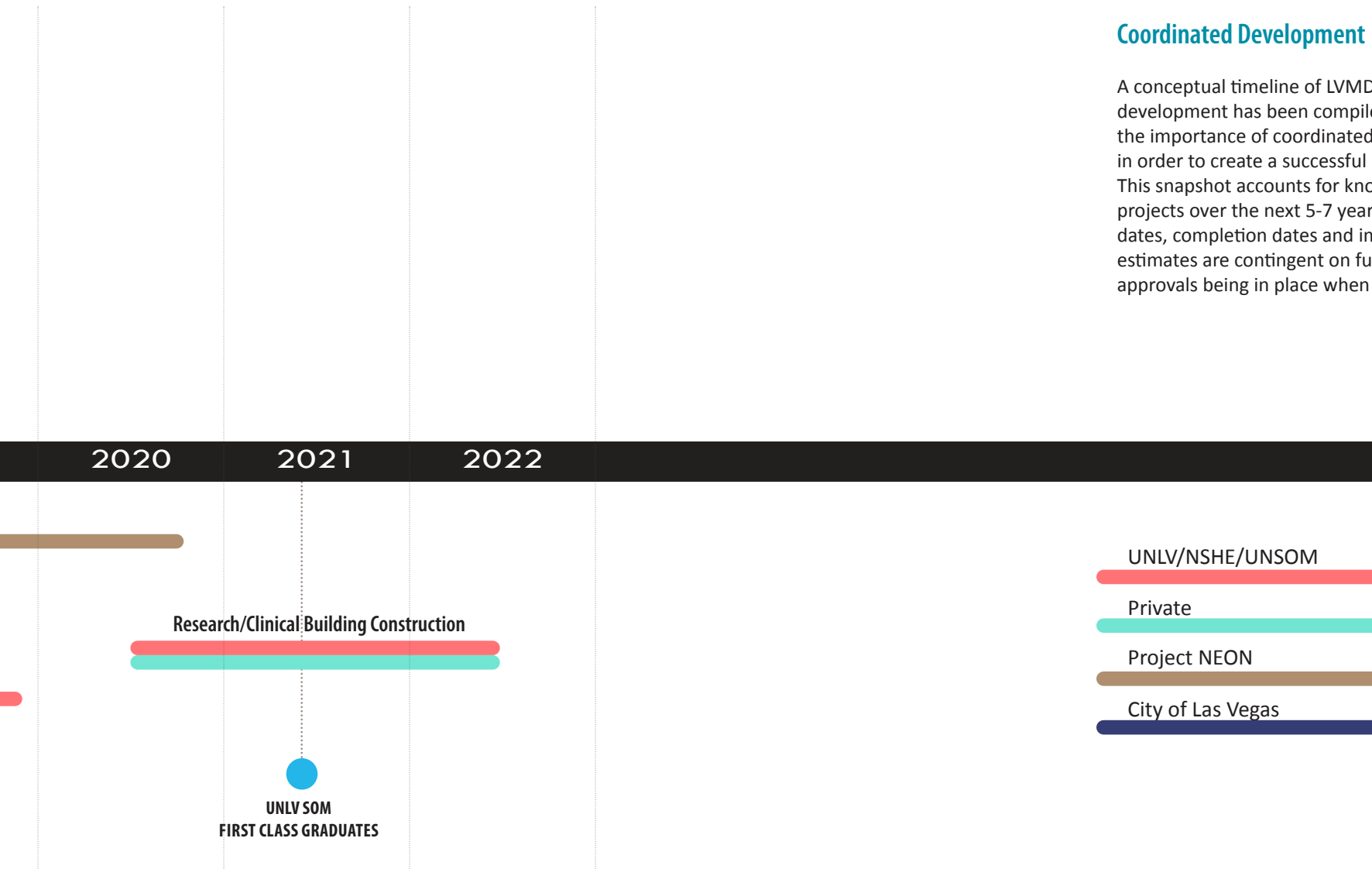


Development Phasing Opportunities



Coordinated Development

A conceptual timeline of LVMD-related proposed development has been compiled to emphasize the importance of coordinated development in order to create a successful medical district. This snapshot accounts for known and potential projects over the next 5-7 years. All project start dates, completion dates and implementation estimates are contingent on funding and approvals being in place when needed.



ACKNOWLEDGMENTS



Acknowledgments

The planning team wishes to thank everyone who participated in stakeholder interviews, and planning committee meetings including:

CITY OF LAS VEGAS

- Mayor Carolyn Goodman
- Councilwoman Lois Tarkanian
- Scott Adams
- Shani Coleman
- Gwen Barnes
- Romeo Betea
- Tammy Christiansen
- Andy Reed
- Kimberly Reid
- Eryn Sebelius
- Robert Summerfield
- Brandy Stanley
- Joanna Wadsworth

CLARK COUNTY

- Jerry Stueve

CLARK COUNTY MEDICAL SOCIETY

- Loretta Moses

CLEVELAND CLINIC

- Justin Schmiedel

DESERT RADIOLOGISTS

- William P. Moore III
- Randall Shelin

LAS VEGAS METROPOLITAN POLICE DEPARTMENT

- William Scott

LAS VEGAS REDEVELOPMENT AUTHORITY

- Scott Carter
- Adrina Ramos-King

MC NEIL ESTATES NEIGHBORHOOD

- Chris Chebegia

NEVADA MEDICAL CENTER

- Eric Hilton
- Gard Jameson
- Julie Murray

NEVADA SYSTEM OF HIGHER EDUCATION (NSHE)

- Marcia Turner
- Lee Quick

PROJECT NEON

- Dale Keller
- Cole Mortensen
- John Taylor

REGIONAL TRANSPORTATION COMMISSION OF SOUTHERN NEVADA

- Nathan Goldberg

SCOTCH 80's NEIGHBORHOOD

- Steve Grogan
- Jessica Saylor

SOUTHERN NEVADA HEALTH DISTRICT

- Cassius Locket
- Sean Beckham

STEINBERG IMAGING

- Jennifer Day
- Robert Potter
- David L. Steinberg
- Mark Windden

UNIVERSITY MEDICAL CENTER

- Mason VanHouweling
- Billy Johnson

UNIVERSITY OF NEVADA, LAS VEGAS (UNLV)

- Barbara Atkinson
- David Frommer
- Maureen Schafer
- Karen West
- Carolyn Yucha

UNIVERSITY OF NEVADA MEDICAL SCHOOL (UNSOM)

- Thomas Schwenk
- Deborah Kuhls
- Wendy B. Nelson

VALLEY HOSPITAL MEDICAL CENTER

- Elaine Glaser
- Joni James

