

Neighborhood Services List



NEIGHBORHOOD SERVICES LIST

Separator Sheet

NOTICE OF NEIGHBORHOOD MEETING
FEBRUARY 23, 2007

NOTICE IS HEREBY GIVEN THAT ON MARCH 4, 2008, MARCH 5, 2008 and MARCH 6, 2008 from 6:30 P.M. to 7:45 P.M. at the following locations, Centennial Hills Community Center, 6001 North Buffalo Drive, Las Vegas, Nevada 89131, East Las Vegas Senior Center, 250 North Eastern Avenue, Las Vegas, Nevada 89101, and Doolittle Community Center, 1950 North "J" Street, Las Vegas, Nevada 89106, the Neighborhood Meeting will provide open discussion the following General Plan Amendments:

GPA-26994 - GENERAL PLAN AMENDMENT - PUBLIC HEARING - APPLICANT/OWNER: CITY OF LAS VEGAS - Request an updated Community Design Element and revise the 2020 Master Plan.

GPA-27003 - GENERAL PLAN AMENDMENT - PUBLIC HEARING - APPLICANT/OWNER: CITY OF LAS VEGAS - Request an updated Streets & Highways/Transportation Element and revise the 2020 Master Plan.

GPA-27004 - GENERAL PLAN AMENDMENT - PUBLIC HEARING - APPLICANT/OWNER: CITY OF LAS VEGAS - Request an updated School Facilities Element and revise the 2020 Master Plan.

GPA-27006 - GENERAL PLAN AMENDMENT - PUBLIC HEARING - APPLICANT/OWNER: CITY OF LAS VEGAS - Request an updated Public Services & Facilities Element and revise the 2020 Master Plan.

Any and all interested persons may appear to express concerns regarding these requests. For further information, please call 229-6301 (TDD 386-9108) <http://www.lasvegasnevada.gov>.

PLANNING AND DEVELOPMENT DEPARTMENT
JOHN KORKOSZ, PLANNING SUPERVISOR
LONG RANGE PLANNING DIVISION

(The information contained above is considered to be accurate; however, there may be minor variations involved.)

City Council Action Letter



CITY COUNCIL ACTION LETTER

Separator Sheet



LAS VEGAS CITY COUNCIL

OSCAR B. GOODMAN
MAYOR

GARY REESE
MAYOR PRO TEM

LARRY BROWN
STEVE WOLFSON
LOIS TARKANIAN
STEVEN D. ROSS
RICKI Y. BARLOW

DOUGLAS A. SELBY
CITY MANAGER

August 22, 2008

Mr. John Korkosz
City of Las Vegas
Planning and Development Department
731 South 4th Street
Las Vegas, Nevada 89101

RE: GPA-27006 – GENERAL PLAN AMENDMENT
CITY COUNCIL MEETING OF AUGUST 20, 2008

Dear Mr. Korkosz:

The City Council at a regular meeting held August 20, 2008 APPROVED the request to adopt a Public Services and Facilities Element and revise the 2020 Master Plan. The Notice of Final Action was filed with the Las Vegas City Clerk on August 21, 2008.

Sincerely,

A handwritten signature in cursive script that reads "Angela Crolli".

Angela Crolli
Senior Deputy City Clerk for
Beverly K. Bridges, CMC, City Clerk

CITY OF LAS VEGAS
400 STEWART AVENUE
LAS VEGAS, NEVADA 89101

VOICE 702.229.6011
TTY 702.386.9108
www.lasvegasnevada.gov

Action Letter



Separator Sheet

PLANNING & DEVELOPMENT



DEVELOPMENT SERVICES CENTER

731 S. Fourth Street
Las Vegas, NV 89101

Voice: 702-229-6301

Fax: 702-474-0352

TTY: 702-386-9108

www.lasvegasnevada.gov

July 25, 2008

Mr. John Korkosz
City of Las Vegas
Planning and Development Department
731 South Fourth Street
Las Vegas, Nevada 89101

RE: GPA-27006 - GENERAL PLAN AMENDMENT

Dear Mr. Korkosz:

Your request to adopt a Public Services and Facilities Element and revise the 2020 Master Plan, was considered by the Planning Commission on July 24, 2008.

The Planning Commission voted to recommend **APPROVAL** of your request.

This item will be considered by the City Council on **August 20, 2008**, at 1:00 P.M. in the Council Chambers of City Hall, 400 Stewart Avenue, Las Vegas, Nevada. ***The Council requires that you or your representative be present at this meeting.*** If you or your representative chooses not to attend, the City Council may act in your absence without your input.

Sincerely,

Peter Lowenstein, AICP
Planning Supervisor
Case Planning Division

PL:clb

Mayor
Oscar B. Goodman

City Council
Gary Reese
(Mayor Pro Tem)
Larry Brown
Steve Wolfson
Lois Tarkanian
Steven D. Ross
Ricki Y. Barlow

City Manager
Douglas A. Selby



Applicant Letter



Separator Sheet

PLANNING & DEVELOPMENT



DEVELOPMENT SERVICES CENTER

731 S. Fourth Street
Las Vegas, NV 89101

Voice: 702-229-6301

Fax: 702-474-0352

TTY: 702-386-9108

www.lasvegasnevada.gov

July 11, 2008

Mr. John Korkosz
City of Las Vegas
Planning and Development Department
731 South Fourth Street
Las Vegas, Nevada 89101

RE: GPA-27006 - GENERAL PLAN AMENDMENT

Dear Mr. Korkosz:

Please be advised the City Planning Commission at its regular meeting on **July 24, 2008** as referred to above, will consider your request. This meeting will be held at 6:00 P. M. at the Council Chambers of City Hall, 400 Stewart Avenue, Las Vegas, Nevada.

A copy of staff's recommendations, any conditions related to your application and the **final agenda** will be available on-line on **Friday, July 18, 2008** at www.lasvegasnevada.gov.

If you do not have access to the Internet and would prefer receiving hard copies of the documentation, please call the Case Planning Division at 229-6301 or come into the Development Services Center at 731 South Fourth Street to request your copies.

The Planning Commission requires that you or your representative be present at this meeting.

Sincerely,

Peter Lowenstein, AICP
Planning Supervisor
Case Planning Division

PL:clb

Mayor
Oscar B. Goodman

City Council
Gary Reese
(Mayor Pro Tem)

Larry Brown
Steve Wolfson
Lois Tarkanian
Steven D. Ross
Ricki Y. Barlow

City Manager
Douglas A. Selby



March 25, 2008

Andy Reed, AICP
Planning Supervisor
Planning & Development Department
731 S. 4th Street
Las Vegas, NV 89101

RE: Public Services & Facilities Element

Dear Mr. Reed:

Please accept this letter as justification to hold in abeyance GPA-27006. Due to an unforeseen delay we request that this application be held to the June 12, 2008 Planning Commission Meeting.

Please do not hesitate to contact me at 229-4851 should you have any questions.

Sincerely,



John Korkosz, AICP
Planning Supervisor
Planning & Development Department

RECEIVED
MAR 25 2008

GPA-27006
04/24/08 PC

Hansen Sheet



Separator Sheet

Report Date 03/26/2008 07:44 AM

Submitted By

Page 1

A/P # 27006 GENERAL PLAN AMENDMENT

Application Information

Stages

	Date / Time	By		Date / Time	By
Processed	02/21/2008 13:53	983978	Temp COO		
Approved			COO Issued		
Final			Expires		

Associated Information

Type of Work	# Plans	0	Declared Valuation	0.00
Dept of Commerce	# Plans	0	Calculated Valuation	0.00
Priority	☒ Auto Reviews	Bill Group	Actual Valuation	0.00

Description of Work

GPA-27006 - GENERAL PLAN AMENDMENT - PUBLIC HEARING - APPLICANT/OWNER: CITY OF LAS VEGAS - Request to adopt a Public Services and Facilities Element and revise the 2020 Master Plan.

Parent A/P #

Project # 27006 Project/Phase Name PUBLIC SERVICES AND FACILITIES Phase #
Size/Area 1.00 ACRE Size Description Subdivision Code
Proposed Start Proposed Stop % Completed 0.00
% Complete Formula

Property/Site Information

Parcel 13934501003

Location

Owner/Tenant

Contact ID 980086 Name CITY OF LAS VEGAS
Mailing Address 731 S. FOURTH STREET Organization
City LAS VEGAS State/Province NV
ZIP/PC 89101 Country ☐ Foreign
Day Phone (702)229-6301 x Evening Phone
Fax Mobile #

Linked Addresses

No Addresses are linked to this Application

A/P Linked Addresses

420 N 4TH ST
LAS VEGAS, 89101-

440 N 4TH ST
LAS VEGAS, 89101-

400 STEWART AVE
LAS VEGAS, 89101-

Linked Parcels

No Parcels are linked to this Application

A/P Linked Parcels

City of Las Vegas

400 Stewart Ave
Las Vegas, NV 89101-2927

GPA Application

Report Date 03/26/2008 07:44 AM

Submitted By

Page 2

A/P Linked Parcels

13934501003

Planning Condition	Description	Effective	Expire	Comments
--------------------	-------------	-----------	--------	----------

There is no planning condition for this project.

GENERAL PLAN AMEND

N Parent Project link required?

General Plan Information

N Project of Regional Significance?

N Redevelopment Plan Amendment?

Final City Council letter received

General Plan Sector
CENTENNIAL HILLS

Annotated minutes received

Staff Recommendation APPROVAL

Meeting Information

Meeting Information	Meeting Date	Meeting Type	Meeting Status	YES Votes	NO Votes	ABSTENTIONS
Comments Added By	Add Date	Modified by	Modified Date			

05/21/2008 CC SCHEDULED

0 0 0

MHAYS 02/21/2008

04/24/2008 PC SCHEDULED

0 0 0

MHAYS 02/21/2008

General Plan Amend Grid	Acres	Existing GPD	Proposed GPD	Approved GPD	Approval Date
Comments Added By		Modified By			

1.00 C C

MHAYS

Template Type A/P #	A/P Type	Status	Stage
---------------------	----------	--------	-------

No children exist for this project

Employee	Employee ID	Last	First	MI	Comments
----------	-------------	------	-------	----	----------

No Employee Entries

Log	Action	Description	Entered By	Start	Stop	Hours
		Comments				

Z-SUBC REASON ALL ITEMS NOT SUBMITTED

02/21/2008 13:53

0.00

Master Plan Element

Application



Separator Sheet

PLANNING & DEVELOPMENT DEPARTMENT

APPLICATION / PETITION FORM

Application/Petition For: Public Services & Facilities Element- GPA

Project Address (Location) _____

Project Name Public Services & Facilities Element Proposed Use _____

Assessor's Parcel #(s) _____ Ward # _____

General Plan: existing _____ proposed _____ Zoning: existing _____ proposed _____

Commercial Square Footage _____ Floor Area Ratio _____

Gross Acres _____ Lots/Units _____ Density _____

Additional Information _____

PROPERTY OWNER City of Las Vegas Contact John Korkosz

Address 731 S. 4th Street Phone: 229-4851 Fax: 385-7268

City Las Vegas State NV Zip 89101

APPLICANT City of Las Vegas Contact John Korkosz

Address 731 S. 4th Street Phone: 229-4851 Fax: 385-7268

City Las Vegas State NV Zip 89101

REPRESENTATIVE John Korkosz or Flinn Fagg Contact _____

Address 731 S. 4th Street Phone: 229-4851 Fax: 385-7268

City Las Vegas State NV Zip 89101

Property Owner Signature* John Korkosz

* An authorized agent may sign in lieu of the property owner for Final Maps, Tentative Maps, and Parcel Maps.

Print Name John Korkosz

Subscribed and sworn before me

This 25th day of MARCH, 20 08

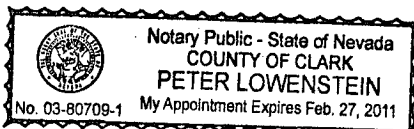
Peter Lowenstein

Notary Public in and for said County and State

FOR DEPARTMENT USE ONLY

Case #	<u>GPA 27006</u>
Meeting Date:	<u>4/24/08</u>
Total Fee:	<u> </u>
Date Received:*	<u>2/21/08</u>
Received By:	<u>M. Hays</u>

*The application will not be deemed complete until the submitted materials have been reviewed by the Planning and Development Department for consistency with applicable sections of the Zoning Ordinance.



SOFI



Separator Sheet



PLANNING & DEVELOPMENT DEPARTMENT

STATEMENT OF FINANCIAL INTEREST

Case Number: **GPA-27006** APN: _____

Name of Property Owner: City of Las Vegas

Name of Applicant: City of Las Vegas

Name of Representative: John Korkosz or Flinn Fagg

To the best of your knowledge, does the Mayor or any member of the City Council or Planning Commission have any financial interest in this or any other property with the property owner, applicant, the property owner or applicant's general or limited partners, or an officer of their corporation or limited liability company?

☐ Yes

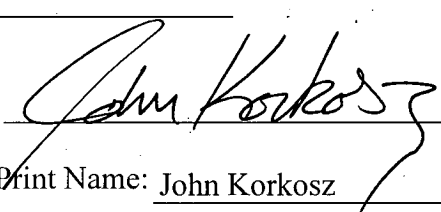
☒ No

If yes, please indicate the member of the City Council or Planning Commission who is involved and list the name(s) of the person or persons with whom the City Official holds an interest. Also list the Assessor's Parcel Number if the property in which the interest is held is different from the case parcel.

City Official: _____

Partner(s): _____

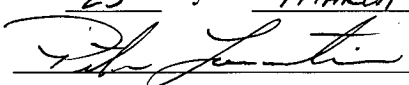
APN: _____

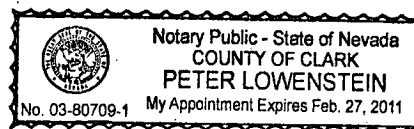
Signature of Property Owner: 

Print Name: John Korkosz

Subscribed and sworn before me

This 25th day of MARCH, 2008


Notary Public in and for said County and State



Justification Letter



Separator Sheet

February 20, 2008

Doug Rankin, AICP
Planning Manager
Planning & Development Department
731 S. 4th Street
Las Vegas, NV 89101

RE: Streets & Highways/Transportation Element

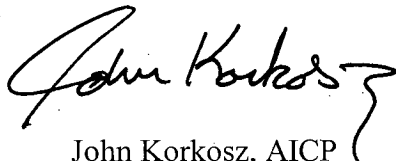
Dear Mr. Rankin:

Please accept this letter as justification for a General Plan Amendment to adopt a Streets & Highways/Transportation Element and amend the 2020 Master Plan.

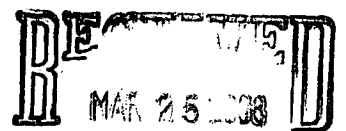
As a component of the Master Plan, the Streets & Highways/Transportation Element, will satisfy NRS requirements and provide a comprehensive document that will assist with the long-range planning efforts of streets, highways, and transportation.

Please do not hesitate to contact me at 229-4851 should you have any questions.

Sincerely



John Korkosz, AICP
Planning Supervisor
Planning & Development Department



GPA-27006
04/24/08 PC

Comments



Separator Sheet



Southern Nevada Regional Planning Coalition

240 WATER STREET MS115, HENDERSON, NEVADA 89009

702.267.1530 - F 702.267.1501 www.snrpc.org

Date: October 21, 2008
To: Coalition Board Members
From: Planning Directors
Re: Conformity Finding – City of Las Vegas Public Services and Facilities Element

In accordance with the Plan Amendment Review Process, adopted by the Coalition Board on January 24, 2002, the Planning Directors reviewed the City of Las Vegas' Public Services and Facilities Element on October 20, 2008.

The Planning Directors are pleased to report that the element substantially conforms and furthers the Southern Nevada Policy Plan. According to the Plan Amendment Review Process, this finding represents final action by the Southern Nevada Regional Planning Coalition unless a member of the Coalition Board requests a formal review within ten (10) days of receipt of this notice.

If you believe a formal review is necessary, please contact the Coalition Secretary, Jennifer Olsen, at 267-1530 to request that this item be put before the Coalition Board.

cc: Planning Directors
Technical Committee
Jennifer Olsen, Coalition Secretary

CITY OF LAS VEGAS PUBLIC SERVICES AND FACILITIES ELEMENT TABLE OF CONTENTS

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SANITARY SEWER SYSTEM

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EXECUTIVE SUMMARY

The Las Vegas 2020 Master Plan calls for regional solutions to address water quality and flood control in Las Vegas. The Public Services and Facilities element provides a comprehensive analysis of public services and facilities within the city while acting as a guide for decision makers to use when determining, prioritizing, and allocating resources for future projects.

The recommendations below are part of the strategy to meet present and future public facilities needs of the City's residents and visitors.

RECOMMENDATION 1: Align plans and policies to support public services and facilities to ensure that all stormwater conveyance systems, structures, and maintenance practices are consistent with federal mandates and NPDES Permit standards.

It is critical that all public services and facilities master plans reflect current guidelines and regulations, while simultaneously considering future growth and technological advancements to ensure the public health, welfare, and safety are protected. Moreover it is important for the city of Las Vegas to comply with state and federal stormwater management guidelines because the EPA identified significant deficiencies with the city of Las Vegas' ability to meet NDEP MS4 Permit requirements during a recent audit. Meeting permit objectives by implementing ordinances, programs, and policies set by NDEP is essential to successfully managing the city's stormwater within the valley's conveyance system.

ACTIONS

- Incorporate the Clark County Regional Flood Control District (CCRFCD) Master Plan update into the city of Las Vegas Central and Northwest Neighborhood Flood Control Master Plans and regulations to ensure they are consistent with the Regional Master Plan and localized hydrologic analysis and drainage systems reflect current conditions.
- Adopt a revised master plan for the sanitary sewer system (Wastewater Collection System) that reflects current demands on the system and projects future demand requirements.
- Align local and regional practices with current NDEP water quality directives by adopting a revised stormwater management master plan that reflects the best management practices (BMPs) for a construction site and post construction program to reduce non-point source pollution as mandated by the Environmental Protection Agency and the Nevada Department of Environmental Protection in order for the city to maintain its Municipal Separate Storm Sewer System (MS4) Permit.
- Provide a user-friendly document to guide staff, developers, and other entities through the MS4 permit process within the city of Las Vegas.

RECOMMENDATION 2: Require utility companies to comply with NRS requirements.

Each franchise agreement between the city of Las Vegas and private utility provider requires an application with associated maps to be submitted for Planning Commission approval. Once approval is granted, all pertinent permits from Building and/or Public Works must be obtained prior to the start of construction. In accordance with NRS 278.145, all utility projects must be presented to the Planning Commission within 60 days after approved for construction, and these records maintained. The city does not presently comply with NRS requirements.

ACTIONS

- Amend Title 19 to require compliance with the requirements of NRS 278.145.
- Amend Title 19 to require a special use permit for utility transmission lines and natural gas distribution lines not located within the public right-of-way.

RECOMMENDATION 3: Develop a long-term and all-inclusive master plan to eliminate aerial utilities by relocating them underground within the city of Las Vegas, especially within the Downtown Centennial Plan area.

The majority of the utilities found in Las Vegas are privately owned. Through franchise agreements between the city and the various utility companies, the public receives the services needed to sustain life. The city has invested enormous effort and substantial funding to re-establish downtown Las Vegas as a premier artistic, cultural, civic, financial, and urban residential center and having overhead utilities in areas that have been redeveloped detracts from the visual character of the area. In order to clear the skies of remnant and unsightly utility lines within the city of Las Vegas, it is vitally important for the city to continue to work with utility providers to formulate plans and strategies to relocate existing and future utilities underground.

ACTIONS

- The city shall coordinate utility installations within the public right-of-way during pavement and utility rehabilitation projects and when new rights-of-way are developed.
- Develop and adopt a master plan to relocate existing overhead utilities underground and amend Title 19 to require infill and redevelopment projects to relocate overhead utilities underground.
- Develop methods to screen or locate other utility appurtenances underground or within an alley.

RECOMMENDATION 4: Continue to support and participate in public services and facilities planning through working groups as identified in Appendix 2 and committee membership.

The city comments on issues regarding public services and facilities through its membership on several committees and active participation in working groups. Strategies addressing key issues and concerns pertaining to water reclamation, treatment facilities, sanitary and storm drain systems, and utilities are paramount to shaping the city's future.

ACTIONS

- Cooperate with the SNWA, local entities, and developers to improve and/or expand water treatment facilities, sanitary and storm drain systems, and utility projects.
- Support and promote the Stormwater Stakeholder Working Group initiatives, thereby ensuring recommended NDEP program enhancements are feasible, executable, and supported by the community.

RECOMMENDATION 5: Conduct a cost/benefit analysis associated with expanding the use of reclaimed water within the city of Las Vegas.

Reclaimed water is a valuable resource in a water-constrained area like Las Vegas. The city produces some of the cleanest reclaimed water in the United States and is engaging in innovative uses to offset potable water demands. Depending on the level of treatment, wastewater can have unlimited potential in fulfilling the needs of city residents; however, implementing and using reclaimed water raises policy issues that can either advance or hinder wastewater technologies.

ACTIONS

- Maximize reclaimed water use by increasing the capacity and number of reclaimed water distribution systems.
- Amend Title 14 to require all turf areas at public facilities such as parks and golf courses to use reclaimed water for irrigation.
- Amend Title 14 to require all commercial and multi-family developments in excess of 15 acres to use reclaimed to irrigate landscape areas.
- Continue to coordinate the planning and development of water distribution facilities with other agencies.

INTRODUCTION

Managing growth in the city through the assurance of adequate and timely public services and facilities to serve the current and future population continues to be a great challenge. As the city of Las Vegas continues to grow, the direction and extent of development will be influenced by the availability of services and systems to support expansion. These systems are necessary to sustain and maintain the high quality and standards of social, physical, economic health, comfort, and general well-being expected by Las Vegas citizens and visitors.

Purpose

The purpose of the Public Services and Facilities element is twofold. First, this element is intended to address the requirements of state law, as set forth in the Nevada Revised Statutes (NRS) Sections 278.150 through 278.160; and second, to recommend strategies and actions to facilitate the implementation of the goals, objectives, and policies contained in the Las Vegas 2020 Master Plan related to public service and facility issues.

The Public Services and Facilities element is intended to accomplish the following:

- Meet the requirements of NRS by showing the general plans for sewage, drainage and utilities, right-of-way, easements, and facilities
- To state goals, objectives and policies to guide future public service and facility expansion that will be needed to serve future development on land designated for urban uses
- To compile a comprehensive listing and description of public services and facilities available within the city
- To describe existing public services and facilities components
- To analyze goals and priorities for public services and facility enhancements
- To describe the city's role in facilitating public services and facilities
- To identify strategies/actions that enhance the city's role in coordinating public services and facility planning and implementation with the Regional Flood Control District, Las Vegas Valley Water District, and other governmental entities

Enabling Legislation

The Nevada Revised Statutes (NRS), Sections 278.150 through 278.230, contain legislation enabling the development and adoption of a master plan. In the 71st Legislative Session, June 5, 2001, the Nevada Legislature passed AB 182, which among other actions, expanded the subjects that *must* be addressed in a master plan. The text of Section 278.160 reads that a Public Services and Facilities Plan is to show "general plans for sewage, drainage and utilities, and right-of-way, easements and facilities therefor, including, without limitation, any utility projects required to be reported pursuant to NRS 278.145."

In accordance with the requirements of NRS 278.145, all public utilities owning an interest in or engaged in the construction and/or operation of a utility project, or on whose behalf the project is constructed, shall, within 60 days of the project's approval, report the location of the project to the planning commission of each city, county, or region in which it is located, and maintain a record of each report received.¹ Furthermore, NRS 278.0195 defines a "utility project" as

1. An electric transmission line which is designed to operate at 200 kilovolts or more; or
2. A line used to transport natural gas, which operates at 20 percent or more of the specified minimum yield strength of the material from which the line is constructed, which has

¹ State of Nevada 'Laws Relating to Planning,' Nevada Division of State Lands, 2006

been approved for construction after October 1, 1991 by the State or Federal Government or a governing body.²

Discussion pertaining to these requirements will be addressed in later sections of this document.

Planning Context

The city of Las Vegas adopted its prior master plan, the Las Vegas General Plan (General Plan), on April 1, 1992. The General Plan includes an Infrastructure Element in Chapter IV. This chapter incorporated Sewer Collection and Treatment Systems, Water Distribution Systems, Flood Control Systems, and Solid Waste, as referenced in the NRS.

After experiencing a 73 percent increase in population during the 1990s, and having concerns about the impacts associated with rapid growth, the city embarked on a two-phase Master Plan project. Adopted in September 2001, the Las Vegas 2020 Master Plan represents Phase I, which forms the framework for the contents of Phase II: a series of elements; special area plans; and long-term land use designations, including a revised future land use map. Public Services and Facilities is among the elements identified for completion during Phase II of the Master Plan project.

The preparation and adoption of the Public Services and Facilities Element is an important step in achieving one of the city's strategic priorities to **"Create, integrate, and manage orderly and sustainable development and growth of our community,"** as called for in the Strategic Plan.³ Priority I. (A) of the Strategic Plan is to:

Integrate all master plans by (1) developing a Utility Plan that focuses on undergrounding downtown utilities and emerging technologies; and (2) updating the Sanitary Sewer Master Plan.

The city of Las Vegas, Regional Flood Control District, Las Vegas Valley Water District (LVVWD), and other city and county entities have worked jointly as members of several committees tasked to develop infrastructure options that will achieve the optimum use of land and public rights-of-way. The city's role and participation in infrastructure related committees is discussed in later sections of this document.

Relationship to Las Vegas 2020 Master Plan

The Master Plan, adopted by the City Council through Ordinance 5250 on September 6, 2000, contains numerous goals, objectives, and policies pertaining directly and indirectly to public services and facilities. In addition, various elements and plans subsequently adopted as part of Phase II of the 2020 Master Plan, such as the Conservation, Water, and Public Safety Elements, contain numerous action and program recommendations related to public services and facilities.

As a component of the Master Plan, the Public Services and Facilities Element is intended to not only satisfy NRS requirements, but also to provide a comprehensive document that will assist

² *Ibid.*

³ City of Las Vegas Strategic Plan Priorities, adopted by City Council December 21, 2005

with the long-range planning efforts of future public service improvements and expansions to meet the needs of the city as it continues to grow. This element provides a baseline of detailed information that will aid in the decision-making processes that determine the city's funding priorities with respect to public services and facilities. The Public Services and Facilities Element links the broad policies of the Master Plan with capital improvement programming, and will assist city decision makers and relevant agencies vested with developing and operating public services infrastructure and facilities.

The following section outlines adopted goals, objectives, and policies within elements of the Las Vegas 2020 Master Plan that are applicable to the Public Services and Facilities Element. The status of each policy or program is noted in Appendix A, Table 2.

Master Plan Goals, Objectives & Policies

Las Vegas 2020 Plan (Adopted 9/6/00)

GOAL 7 (Regional Coordination): Issues of regional significance, requiring the City of Las Vegas to coordinate with other government entities and agencies within the valley, will be addressed in a timely fashion.

OBJECTIVE 7.1: To ensure that the natural resources of the city, particularly those that directly support an enhanced quality of life for its residents, are protected.

POLICY 7.1.3: That the city work with the Las Vegas Valley Water District to ensure that the quality of the city's drinking water remains high, while maintaining an adequate water supply at reasonable cost.

POLICY 7.1.4: That the city support initiatives for the recycling of gray water for non-potable uses and support efforts to maximize water reclamation and aquifer recharge efforts by both the public and private sectors, where such efforts are not likely to result in excessively high groundwater tables. The city shall support the protection of ground water by limiting the locations of potential pollution sources from areas of ground water recharge and pumping.

POLICY 7.1.5: That the city takes the necessary steps to monitor and evaluate the quality of stormwater discharge, and ensure measures are taken to improve the quality where appropriate.

POLICY 7.1.6: That the city coordinates with utility companies and other involved agencies to plan routes and locations for future utilities and to upgrade infrastructure in older areas.

OBJECTIVE 7.2: To ensure that arroyos, washes, and watercourses throughout the city are integrated with urban development in a manner that protects the integrity of the watershed and minimizes erosion.

POLICY 7.2.1: That the city works with the Clark County Regional Flood Control District and the local development industry to integrate natural stream channels and drainage courses into urban development in as natural a state as possible.

POLICY 7.2.4: That the city ensures that development is designed to include measures to mitigate the impact of periodic flooding on those structures [structures constituting existing and future construction of detention basins, washes, and watercourses].

CONSERVATION ELEMENT (Adopted 11/6/02; amended 6/1/05)

SOLID WASTE DISPOSAL GOAL: The amount of solid waste that has been reduced to a minimum through successful recycling programs is disposed of safely in landfill sites using the best available technology, and these waste materials are conveyed to the site along haul routes and in a manner that minimizes exposure of residential areas to these wastes.

OBJECTIVE: To ensure that land use decisions and haul route planning protect residents from exposure to the negative impacts of solid waste disposal.

POLICY: That the location of solid waste haul routes through the city of Las Vegas be minimized, and where these haul routes must unavoidably pass through the City, that these routes be located along highways or primary roads, so that the impact on residential areas is minimized.

ACTION W.1: The city shall work with Clark County and the franchised operator to ensure that truck haul routes are planned to minimize adverse impacts to the citizens of Las Vegas.

POLICY: That the city ensures that the locations of solid waste disposal activities are consistent with the allowable uses set out within the city's approved land use classification system.

ACTION W.2: The city shall work with Clark County and the franchise operator to ensure that the location of transfer stations will be consistent with the Las Vegas 2020 Master Plan.

WATER ELEMENT (Adopted 6/1/05)

OBJECTIVE 2 (Water Quality): To ensure the adequacy and support improvements to the city's water quality.

POLICY 2.2: The city shall encourage further study of the potentially adverse affects of septic systems on shallow aquifer drinking wells, as well as the appropriate steps needed to ensure the protection of residents utilizing those resources.

POLICY 2.3: The city shall continue to enforce the Nevada Administrative Code (NAC 444.786) requiring new development to connect to public sewer whenever public sewer is available within 400 feet of the nearest property line and can be reached by gravity flow. The city shall also continue to enforce NAC 278.460 requiring subdivisions having density of two or more dwelling units per acre to connect to public sewer when public sewer is available within the distance determined by multiplying the number of single-family dwelling units by 100 feet.

POLICY 2.4: The city shall encourage the preservation and restoration of the area's washes to assist in natural groundwater recharge.

POLICY 2.5: The city shall continue to participate in the National Pollutant Discharge Elimination System (NPDES) stormwater program.

OBJECTIVE 3 (Wastewater): To ensure the safe and economic disposal of wastewater generated by the city.

POLICY 3.1: The city shall ensure that as new subdivision development occurs, a comprehensive network of wastewater collection lines is provided by requiring the installation of sewers in all new subdivisions.

OBJECTIVE 4 (Flood Control/Drainage): To ensure that all areas of the city of Las Vegas are protected against flooding and to ensure that physical infrastructure is in place that will divert storm flows to appropriate, purpose-designed storm channels.

POLICY 4.1: The city shall continue to require developers to construct local storm drains in accordance with applicable stormwater master plans.

POLICY 4.2: Since arroyos, washes, and watercourses in their natural state represent visual and possible recreational amenities for adjacent neighborhoods, such areas should not be rechanneled or replaced with concrete structures except where required for bank stability or public safety. Where possible arroyos, washes, and watercourses

throughout the city should be integrated with urban development in a manner that protects the integrity of the watershed and minimizes erosion.

POLICY 4.3: The city shall manage flood control and drainage facilities to have minimal impact on natural washes and their associated habitat.

POLICY 4.4: The city shall require property owners to properly maintain wash corridors on privately owned land, and shall require appropriate easements for such purposes as a condition of development.

POLICY 4.5: The city shall continue to work to preserve the Las Vegas Wash ("The Wash") by maintaining natural features in all areas of work or construction within the city portions of the Wash. The city should work with the Regional Flood Control District to ensure that natural features are not, unless dictated by physical necessity, replaced with concrete flood channels. Natural features shall be privately maintained. In areas planned for urban development along washes, setbacks from the washes should be implemented to minimize the need for channel reconstruction and to provide a valuable open space amenity.

OBJECTIVE 5 (Flood Control/Drainage): To ensure that development is designed to include measures to mitigate the impact of periodic flooding on those structures.

POLICY 5.1: The city shall support the recommendation of the Las Vegas Wash Coordination Committee by ensuring that development within Tier One (one-half mile of the Wash) incorporates appropriate drainage facilities and/or design to mitigate any negative impact on the Wash.

PUBLIC SAFETY ELEMENT (Adopted 9/5/01)

GOAL: That the city participate in the protection of the environmental quality of the Las Vegas Valley and to promote the conservation of our natural resources.

OBJECTIVE 4A: To ensure Public Works has a diversified (which includes use of natural washes or green space such as parks or golf courses), efficient flood control system to protect life and property from severe flood damage at a reasonable cost.

POLICY 4A1: Public Works should develop a two-tiered flood control system which should include an appropriate mix of large regional and smaller city neighborhood flood control facilities.

PROGRAM 4A1.1: Public Works should implement stormwater channel and drain improvements in accordance with the adopted stormwater management program for the City.

POLICY 4A2: The city should continue the implementation of the adopted Master Plan of the Clark County Regional Flood Control District. This Plan provides for the construction and maintenance of the large regional components of the city's flood control system, including detention basins, drainage channels, and storm drains.

POLICY 4A3: Public Works should develop neighborhood master plans consisting of relatively small city drains and other flood control facilities to safely convey flood and nuisance flows to the larger regional facilities. These plans should be prioritized as part of the capital facilities programming process.

POLICY 4A4: Public Works should continue to review plans for new development of property under zoning and subdivision regulations to ensure optimal property drainage in accordance with City Uniform Regulations for the Control of Drainage and the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual.

PROGRAM 4A4.1: Public Works should continue the review of development plans to incorporate, where required, the neighborhood storm drain system plans for the city and the master plan for Clark County Regional Flood Control District.

POLICY 4A5: Public Works should investigate and, where necessary, implement funding mechanisms for city neighborhood stormwater capital programs. Funding sources may include, but not limited to, special improvement districts or stormwater utility fees.

POLICY 4A6: Public Works should continue the inspection and maintenance of existing stormwater facilities to provide for the safe and efficient passage of flood waters.

POLICY 4A7: Public Works should continue to maintain a broadly based Flood Hazard Reduction Program, which meets the requirements of the National Flood Insurance Program (NFIP). The city should continue to participate in the federal Community Rating System, thus assuring the availability of flood insurance to city residents and businesses at the least possible cost.

POLICY 4A8: Public Works should continue to support the update of Flood Insurance Maps for existing city areas and to create new maps for developing areas, subject to FEMA review.

OBJECTIVE 4B: The city should continue to participate in a multi-jurisdictional effort to develop, implement, and monitor water quality standards for stormwater discharge.

POLICY 4B.1: Public Works should continue to implement the comprehensive Stormwater Quality Management Plan in accordance with the valley-wide NPDES stormwater discharge permit.

PROGRAM 4B1.1: Public Works should continue to participate in valley-wide programs for stormwater quality management

PROGRAM 4B1.2: Public Works should initiate the implementation program for Storm Water Quality Management Plan.

PROGRAM 4B1.3: Public Works should continue to inventory the existing stormwater facilities to address non-point pollution sources.

PROGRAM 4B1.4: Information Technologies Department should encourage the use of the city Geographic Information System (GIS) in coordination with Clark County GIS in the creation and maintenance of Storm Water Quality Management Plan data to evaluate the plan's effectiveness.

POLICY 4B2: Public Works should modify city regulations as needed in order to implement stormwater quality discharge standards as they are developed by the State and the U.S. Environmental Protection Agency.

PROGRAM 4B2.1: Public Works should coordinate with all appropriate entities and agencies in the valley to establish individual stormwater quality responsibilities and to prepare a funding strategy.

BACKGROUND

Federal and state laws, as well as a series of planning and policy documents, guide the city of Las Vegas' activities related to stormwater and sanitary sewer issues. Below is a brief overview of these resources.

Federal Law

Federal water quality legislation includes the Federal Water Pollution Control Act (FWPCA), also known as the Clean Water Act. In 1972, amendments to FWPCA prohibited the discharge of any pollutant to water within the United States from a source unless authorized by the National Pollutant Discharge Elimination System (NPDES) permit. The NPDES mandates that plans and programs for stormwater management be developed, adopted, and implemented to assure that municipalities “effectively prohibit non-stormwater discharge into the storm drain and require controls to reduce the discharge of pollutants from stormwater systems into waters of the United States to the maximum extent possible.”⁴ The NPDES Municipal Separate Storm Sewer System (MS4) permit covers:

*discharges into receiving waters of the United States within the city of Henderson, city of Las Vegas, city of North Las Vegas, Clark County Regional Flood Control District (CCRFCD), and Clark County not including Boulder City, Laughlin, Mesquite, NDOT, and Nellis Air Force Base.*⁵

The focus of the MS4 Permit for the Clark County Regional Flood Control District is on the discharge of municipal stormwater runoff into “Las Vegas Wash, its tributaries, and other waters of the United States.” The permit is valid for five years, with annual updates provided (if necessary) to address changes either in proposed program elements, in conditions cited in the permit area, or both. The city of Las Vegas’ compliance with federal requirements will be discussed in more detail in a later section.

State Law

The Office of the State Engineer in the Nevada Division of Water Resources regulates all ground water and surface water resources (other than the federally regulated Colorado River) within the State. The General Water Law Act of 1913 gives the Nevada State Engineer jurisdiction over all wells tapping into artesian water or water in definable underground aquifers. The 1939 Nevada Underground Water Act grants the State Engineer total jurisdiction over all groundwater in the state. Nevada water law follows the doctrine of prior appropriation, or “first in time, first in right,” meaning the first person to file on a water resource for beneficial use is typically considered first for a permanent right to the water, subject to the Nevada State Engineer’s determination of available unappropriated water. Obtaining a permit to develop groundwater or surface water consists of completing an application, having the Nevada State Engineer act on the application, and then issuing the permit or denying the application.

Las Vegas Valley Water District

The Las Vegas Valley Water District (LVVWD) delivers water to the city of Las Vegas through its distribution systems, which includes pumps, reservoirs, and pipelines. They construct and maintain the water distribution system for the city of Las Vegas and portions of unincorporated Clark County.

⁴ NEED A REFERENCE TO NPDES HERE.

⁵ Las Vegas Valley Storm Water Management Plan for Municipal Separate Storm Sewer System, September 2003

A number of documents, developed with the cooperation of the city of Las Vegas and other local jurisdictions, help guide policy and outline current and future plans for provisions of water within the greater Las Vegas metropolitan area. These guiding documents are summarized below.

Southern Nevada Water Authority Water Resource Plan

In 1996, the Southern Nevada Water Authority (SNWA) Water Resource Plan was first adopted. The plan addresses southern Nevada's current and future water resources, via demand forecasting, conservation measures and goals, and environmental issues that can influence the timing and delivery of available water resources. The plan is reviewed annually and updated as needed.

Las Vegas Wash Comprehensive Adaptive Management Plan

The Las Vegas Wash Comprehensive Adaptive Management Plan was developed in January 2000. The Plan focuses on the implementation of engineering solutions to address water quality, erosion control, and wetlands restoration concerns in the Las Vegas Wash.

Las Vegas Valley 208 Water Quality Management Plan

The Federal Water Pollution Control Act Amendments of 1972 and 1977 require control of all sources of water pollution in order to meet the goals of the Act. Section 208 of the Act requires the development of an integrated regional water quality management program to deal with water pollution sources. In May of 1975, the Nevada State Legislature passed Assembly Bill 468 mandating certain duties and power to counties, thus designating the Clark County Board of Commissioners (BCC) as the Area-Wide Water Quality Management Planning Organization. In 1997, the BCC approved an amended plan, titled the Las Vegas Valley 208 Water Quality Management Plan Amendment (208 Plan). The main purposes of the amendment were:

- Revise the 1990 208 Plan Amendment
- Include effects of sustained regional growth and development
- Revise stormwater permitting to a more inclusive non-point section
- Provide water-quality planning to a horizon year of 2020⁶

As a wastewater discharger within the Clark County, Nevada, the city of Las Vegas continues to work with other wastewater entities, including the Clark County Water Reclamation District, the city of Henderson, and city of North Las Vegas to ensure a proactive, integrated approach to water quality management.

Valley-Wide Reuse Plans

In addition to federal and state laws, Las Vegas uses separate policy approaches to implement water reclamation systems. The Las Vegas City Council adopted Ordinances 3502 (May 2, 1990), 3519 (July 18, 1990), and 3582 (June 5, 1991) to encourage the conservation of water by banning artificial lakes, restricting irrigation, limiting landscaped turf, and restricting the irrigation of golf course to reclaimed, non-potable water.

⁶ The Las Vegas Valley 208 Water Quality Management Plan Amendment, Montgomery Watson, July 1997

Additionally, new resort hotels are required to implement water saving technologies such as low-flow showerheads and toilets.

EXISTING CONDITIONS

Re-use/Reclamation Water

Southern Nevada reclaims 100 percent of its wastewater, returning most of it to Lake Mead, thereby contributing to an increased water allotment for Nevada under the return flow credit scheme. This means wastewater from homes and businesses flowing into the sewage system is “renewed,” and therefore not contributing to a net water use.

Water re-use (used interchangeably with water reclamation) can be categorized into three groups:

1. Potable/non-potable: Potable water is fit for human consumption, while non-potable water cannot be safely consumed.
2. Direct/indirect: Direct reuse occurs when water leaving treatment facilities is transmitted without interruption to the end-user destination, while indirect reuse occurs when treated effluent is first released in a larger body of water or aquifer, from where it is later retrieved and retreated for use.⁷
3. Planned/unplanned: Unplanned indirect reuse occurs when treated wastewater is unintentionally released into a body of water used as an intake for potable water treatment.⁸ As officials become aware of the wastewater in their inflow, they plan for reuse, involving additional treatment and monitoring to mitigate the negative effects of wastewater.

Though reclaimed water is not treated to the extent necessary for human consumption, it still has many uses such as:

- Urban: landscape irrigation such as golf courses and parks, fire protection, toilet flushing
- Agricultural: irrigation of crops, both food and non-food
- Recreational: fishing and boating
- Environmental: sustaining river flows or creating/maintaining wetlands
- Industrial: power plants and cooling towers
- Temporary applications: construction and dust control uses⁹

Uses such as those listed above have yet another benefit in that they replenish ground water basins, referred to as ground water recharging. Even though most recycled or reclamation water is used as non-potable water, it has the potential to fill most water demands, depending on the level of treatment to ensure the quality of water meets federal and state requirements. The greater the chance the water will be used for human consumption, the greater the level of treatment required.

⁷ Strategies for Water Reclamation: The Role of Policy and Technology in the Las Vegas Water Supply, Massachusetts Institute of Technology Engineering Systems Division, January 2007

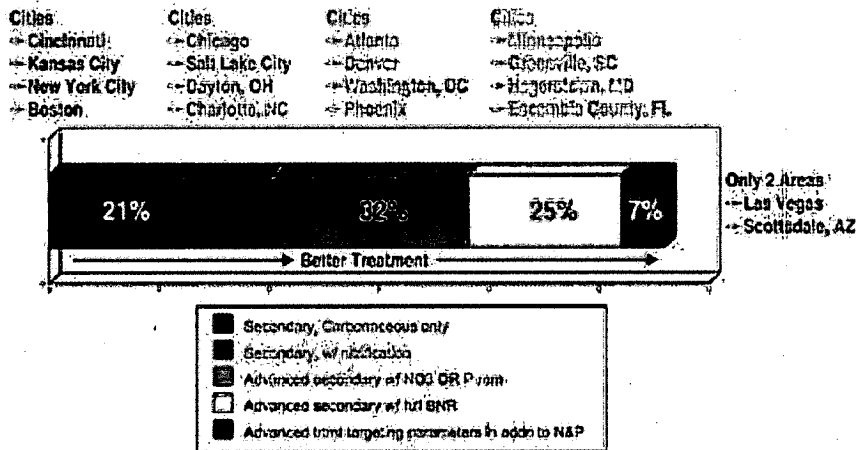
⁸ *Ibid.*

⁹ *Ibid.*

Water Treatment in Las Vegas

Wastewater treatment facilities in Las Vegas are ranked in the top seven percent in the nation (illustrated in Figure 1) because of the rigorous cleaning processes and quality of treatment utilized within these facilities.

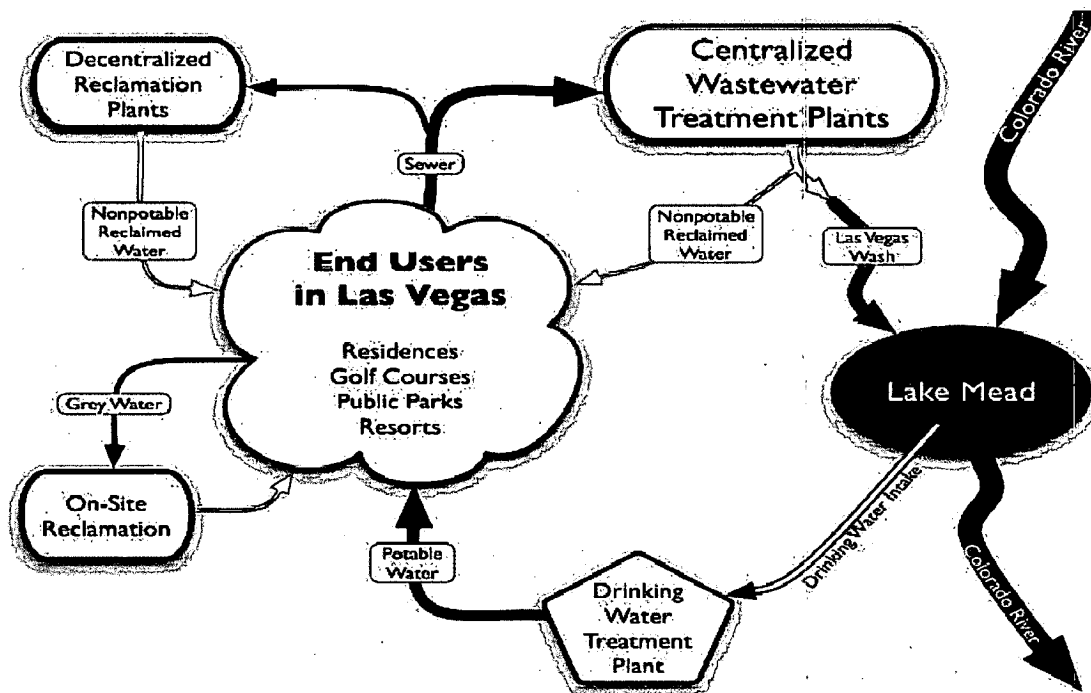
Figure 1: Levels of wastewater treatment in the U.S



Source: Clean Water Coalition

Reclaimed water in Las Vegas is of high quality and goes through rigorous cleaning for several reasons: environmental protection, return flow credit, and potable water conservation. Naturally, the level of treatment and reclamation system used is based on the intended use. There are several ways to reclaim water in the city, which are broadly grouped into three separate categories and distinguished by size and location: centralized, decentralized, and on-site. These are illustrated in Figure 2 and described in more detail below.

Figure 2: Map of the Las Vegas Water Systems



(Note: Figure is an abstract Map of the Las Vegas Water System, showing the various ways water reclamation technologies are being used to reduce the demand for potable water.)

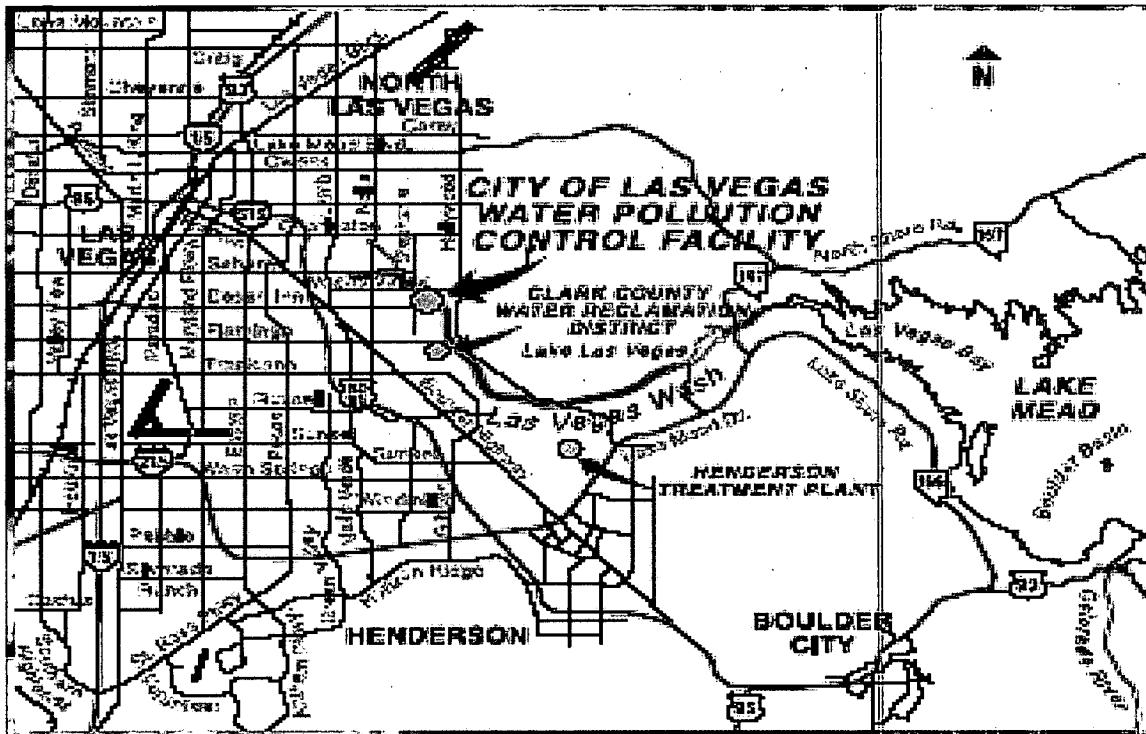
Source: Strategies for Water Reclamation: The Role of Policy and technology in the Las Vegas Water Supply, Massachusetts Institute of Technology Engineering Systems Division (January 2007)

Centralized Reclamation

A centralized wastewater treatment plant is the largest reclamation approach that includes centralized water systems transporting water for an entire urban area and may involve reclaiming and distributing effluent through the same region.¹⁰ Clark County Water Reclamation District (CCWRD), the city of Henderson, and the city of Las Vegas run centralized wastewater treatment and reclamation facilities for the Las Vegas Valley. The city's centralized facility is the Water Pollution and Control Facility (WPCF), located on Vegas Valley Drive on the Las Vegas Wash in unincorporated Clark County (Map 1).

¹⁰ Strategies for Water Reclamation: The Role of Policy and technology in the Las Vegas Water Supply, Massachusetts Institute of Technology Engineering Systems Division, January 2007

Map 1: Water Pollution Control Facilities



Source: City of Las Vegas Water Pollution Control Facility Brochure

The facility started operations in 1958, and can currently treat up to 91 MGD of wastewater generated by more than 650,000 residents and businesses in the city and North Las Vegas. Public Works Department, Environmental Division staff continually monitors wastewater discharge from businesses to prevent toxic chemicals from entering the plant and possibly passing through it. Reclaimed water from the city's wastewater treatment plan is either discharge highly treated effluent to Lake Mead or divert it for non-potable reuse for such uses as golf courses, parks, and power plants.

Decentralized Reclamation

Decentralized plants receive sewage from residences and businesses in their vicinity and deliver treated water for direct non-potable reuse to nearby customers and public facilities such as golf courses, schools, and parks.¹¹ These types of facilities utilize small-scale dual-distribution systems to deliver the reclaimed water to potential users. Two such plants existing within the city of Las Vegas are the Bonanza Mojave Water Resource Center, and Durango Hills Water Resource Center.

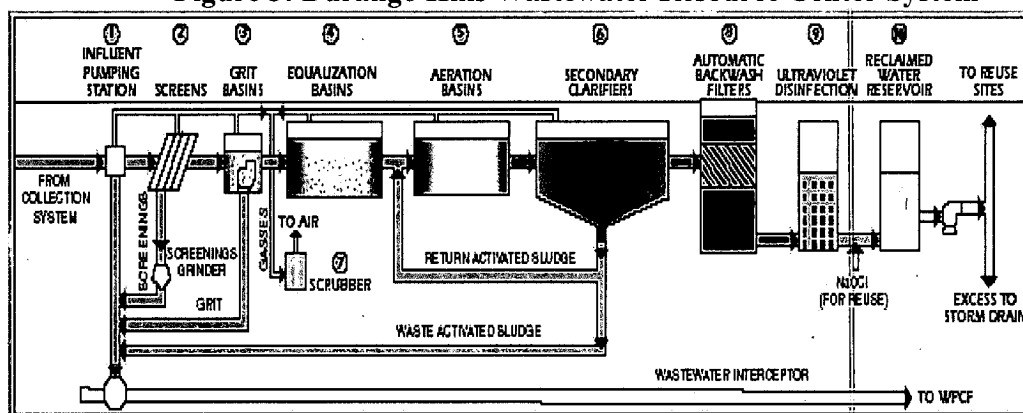
The Bonanza Mojave Water Resource Center is a 1 MGD facility owned and operated by the city of Las Vegas. The facility became operational in May 1999 and has the capacity to produce

¹¹ *Ibid.*

approximately 1,120 AFY of reclaimed water. Currently, reclaimed water from this plant is used to irrigate the Desert Pines Golf Course and Park.

The Durango Hills Water Resource Center (also known as the Northwest Water Resource Center) is a collaborated project between the city of Las Vegas and Las Vegas Valley Water District. The facility collects and treats wastewater flow from municipal sewer interceptors and produces recycled water as illustrated in Figure 3.¹²

Figure 3: Durango Hills Wastewater Resource Center System



Source: City of Las Vegas Durango Hills Resource Center brochure (1999)

Built on 100 acres of city owned property between Gowan Road and Cheyenne Avenue, the 13-acre facility is surrounded by 87 acres of recreational amenities. The 10 MGD satellite reuse facility is capable of providing more than 11,200 AFY of reclaimed water for golf courses, schools, and parks. Every gallon of water recycled means one less gallon of drinking water pumped from the LVVWD's treatment plant. The facility became operational on July 6, 2001, and cost approximately \$37 million, one of the largest public works projects ever undertaken by the city. The city of Las Vegas owns and operates the Durango Hills Water Resource Center, while the LVVWD constructed and operates the recycled water distribution system, comprised of one main pump station, a storage reservoir, some 17 miles of pipelines, two remote booster-pumping stations, and four recharge wells.¹³ The recycled water is used to irrigate Highland Falls, Eagle Crest, TPC at Summerlin, TPC at the Canyons, Badlands, Canyon Gate, and Angel Park golf courses.

Role of the City

The development and management of water resources within Clark County, Nevada has been delegated to the Southern Nevada Water Authority. In 1991, seven local water agencies formed the Southern Nevada Water Authority (SNWA) to address water issues on a regional basis, rather than an individual water purveyor basis.¹⁴ This includes securing water resources via the Colorado River Compact, which was reworked as the Colorado River Basin Agreement and approved in December 2007 (Seven States Sign Colorado River Water Pact

¹² City of Las Vegas Durango Hills Water Resource Center brochure (1999)

¹³ *Ibid.*

¹⁴ SNWA Cooperative Agreement, July 1991

USATODAY 12/14/2007). The city of Las Vegas plays an important role in water resource management through the operation of wastewater and stormwater treatment plants, which contribute to return flow credits for Colorado River water use. Moreover, the city is in the process of developing a stormwater management program along with each of the cities within the Las Vegas Valley and the Regional Flood Control District as well as participates on regional planning committees. The city's involvement in water conservation efforts are discussed in the Conservation element of the 2020 Master Plan.

Projects

Some milestones in history pertaining to wastewater collection system projects are listed in Table 1 below.

Table 1: Milestones in History

Year	Occurrence
1912	First sewage system in Las Vegas links the streets of Fremont, Main, Fifth Street, Clark, Lewis, and Stewart, and ends on the outskirts of town, with a pipe discharging into the desert near Bonanza and Ninth Street
1931	First wastewater treatment plant is built on 15 th Street and Harris Avenue
1941	Plant moves further east to a site at Eastern Avenue and Harris Avenue
1948	New 7.5 MGD plant is built at Manning Street and Harris Avenue
1955	City of Las Vegas purchases 160 acres of land for a water treatment plant on Vegas Valley Drive
1958	First wastewater treatment unit at the city's new Water Pollution Control Facility goes into operation
1968	Second separate wastewater treatment unit comes on line, expanding capacity to 30 MGD
1981	Additional chemicals are introduced into the disinfection treatment mix. Plant capacity increases to 41 MGD
1991	The third and fourth plants come on line, increasing capacity to 66 MGD
1994	New infiltration facility comes online. Later this year, newly activated sludge plant is put into service to meet stricter permit limits as needs increase
1997	Sodium hypochlorite replaces chlorine gas for wastewater disinfection, eliminating the need to store gaseous chlorine on site
1999	Ferric chloride replaces alum as a flocculent, resulting in savings on chemicals while decreasing odors
2003	Began use of Biological Nutrient Removal methods, increasing capacity with fewer chemical costs
2004	Water Pollution Control facility treats an average of 63 MGD, with the capacity to treat up to 91 MGD

Source: City of Las Vegas Department of Public Works, water pollution control facility brochure

In order to keep up with growth, maintain existing systems, and upgrade outdated equipment with the newest technologies, the Department of Public Works forecasts capital improvement projects through the city's five-year Capital Improvement Plan. Table 2 lists forecasted projects involving the city's water treatment plants, which includes plant upgrades and major sewer interceptor lines within the city.

Table 2: Sewage Treatment Plant Projects

Fiscal Year	Priority	Project Title	Estimated Cost	Funding Source
2008	1	Water Pollution Control Facility Expansion	\$2,000,000	Service Fees
	2	Filtration Modification	1,010,000	Service Fees
	3	Headworks Update	350,000	Service Fees
	4	Warehouse Expansion	1,100,000	Service Fees
	5	IT Upgrades	2,000,000	Service Fees
	6	Dewatering Back drives	200,000	Service Fees
	7	Security Upgrades	400,000	Service Fees
	8	Siloxane/Engine Replacement	1,100,000	Service Fees
	9	Plant Optimization	470,000	Service Fees
	10	HVAC/Odor Systems	500,000	Service Fees
	11	Pavement Sealing	130,000	Service Fees
	12	Bonanza/Mojave WRC Headworks	275,000	Service Fees
	13	Compliance directed projects	500,000	Service Fees
2009	1	Water Pollution Control Facility Expansion	\$11,000,000	Service Fees
	2	Filtration Modification	3,690,000	Service Fees
	3	Headworks Update	3,000,000	Service Fees
	4	IT Upgrades	2,500,000	Service Fees
	5	Dewatering Back drives	1,000,000	Service Fees
	6	Security Upgrades	2,000,000	Service Fees
	7	Compliance directed projects	700,000	Service Fees
2010	1	Water Pollution Control facility Expansion	\$10,000,000	Service Fees
	2	Headworks Update	900,000	Service Fees
	3	Compliance directed projects	500,000	Service Fees
2011	1	Water Pollution Control facility Expansion	\$10,000,000	Service Fees
	2	Compliance directed projects	500,000	Service Fees
2012	1	Compliance directed projects	\$500,000	Service Fees

Source: City of Las Vegas Capital Improvement Plan FY 2008

Funding/Financing

All costs associated with the water treatment plants are paid through service fees and a portion of a voter-approved one-quarter cent sales tax.

**Table 3: CAPITAL IMPROVEMENT PLAN (CIP) FOR
WATER TREATMENT PLANTS**

FIVE YEAR SUMMARY

<u>FISCAL YEAR</u>	<u>SEWAGE TREATMENT PLANT</u>
2008	\$ 10,035,000
2009	\$ 23,890,000
2010	\$ 11,400,000
2011	\$ 10,500,000
2012	\$ 500,000
TOTAL	\$ 56,325,000

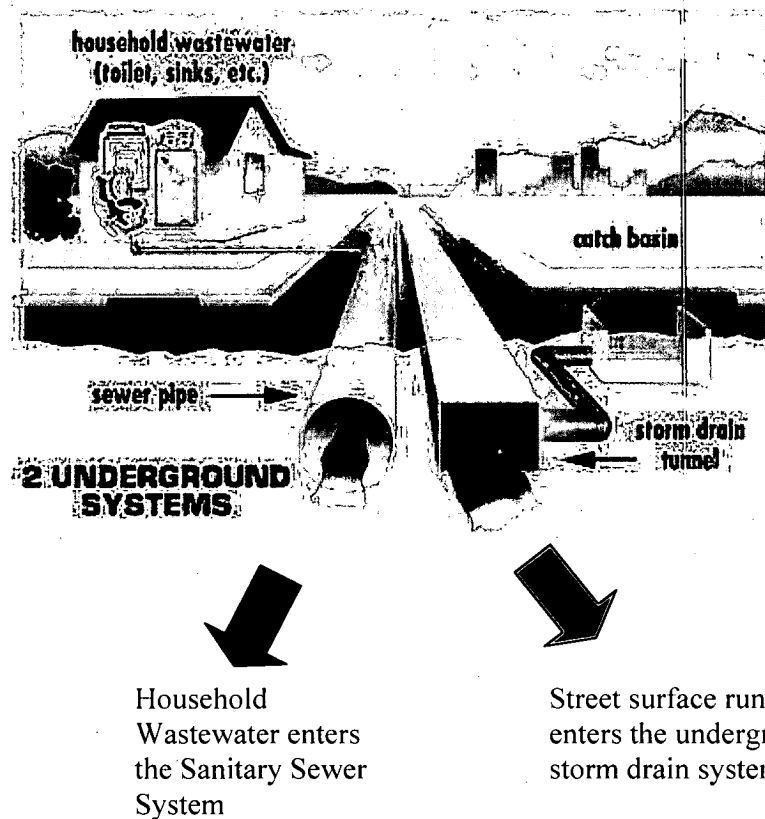
Source: City of Las Vegas Capital Improvement Plan FY 2008

SEWER SYSTEMS

The city of Las Vegas has two types of sewer systems: sanitary and storm sewers (see Figure 4). Sanitary wastewater systems convey wastewater from toilets, showers, and sinks into the city's wastewater treatment facility. Once there, wastewater flows through three levels of filtration treatment before being discharged into the Las Vegas Wash and eventually Lake Mead. In contrast, the stormwater system is intended to route rainwater quickly off the streets during rainstorms, unfortunately, it also carries all urban runoff including chemicals, trash, and other pollutants, which go straight into the Las Vegas Wash.¹⁵ Both types of sewer systems are discussed in subsequent sections.

¹⁵ Storm water Quality Management Committee website, www.lvstormwater.com/thesystem.htm

Figure 4: Two Systems of Drainage



Source: Stormwater Quality Management Committee (2007)

Sanitary Sewer System

The Department of Public Works developed the first sanitary sewer master plan in 1951. This report provided plans for the city limits of Las Vegas and for the newly developing area known as the "Strip."¹⁶

In 1959 the sanitary sewer master plan was updated via a report to reflect growth trends in southern Nevada. The report was updated in 1963 and represents the basis for how our current sanitary sewer system is built.¹⁷ In 1974, an amendment to the previous report addressed long-range system needs, including increasing line diameter sizes, identifying collection line locations, and deleting the collection system detail for North Las Vegas.¹⁸ Additionally, the report reflected EPA funding requirements and required a different analysis of the sewerage system, placing emphasis on industrial waste, inflow and infiltration, and rate studies.

¹⁶ City of Las Vegas General Plan 1992

¹⁷ *Ibid.*

¹⁸ *Ibid.*

In 1980, an Action Plan was prepared that was similar to the 1974 report, which focused on regulatory and economic analysis of the city sewer system. The report included expected annexations and improvements to the system regardless of the number of annexations.

A 1982 report on the sanitary sewer system reflected changing technologies and sophistication associated with detailed collection systems analysis. This analysis included the process of relating land use designations to population and flow projections. There were two conclusions drawn from the prior master and action plans: First, the plans evolved from building a system capable of meeting projected populations to a perspective of monitoring and analyzing the system for its relationship to directions of growth, design criteria, and financing. Second, the system capacity is based upon projections far greater than actual growth because the city must also accept all sewage flows from North Las Vegas in addition to its own wastewater, as described below.

North Las Vegas

In April 1952 and as amended thereafter, the city of Las Vegas and city of North Las Vegas entered into an interlocal agreement permitting North Las Vegas to connect its wastewater collection system to the city of Las Vegas' Sandhill Interceptor Sewer. The city of Las Vegas agreed to accept and treat all of North Las Vegas' wastewater at specific interceptor connection points, with North Las Vegas installing, operating, and maintaining its own collection system. The agreement provides for user charges (which include operating costs), a water sampling program to verify and modify treatment and connection fees to be charged to all users. The billing rates are based on "equivalent residential units" (ERU) for each type of user discharge. The agreement defines an ERU as being the "wastewater discharge equivalent to that discharged by a single-family dwelling unit, i.e., 90,000 gallons of domestic strength wastewater per year."¹⁹ User charges in (Table 4) for wastewater discharged into the Sandhill Interceptor Sewer are calculated based on the water volume, five-day biochemical oxygen demand (BOD₅) and suspended solids (SS) as follows:

Table 4: Sanitary Sewer Interlocal Agreement

City of North Las Vegas Wastewater Collection Rates	
PARAMETER	RATE
Volume	\$272.51/million gallons
BOD ₅	\$ 56.29/thousand pounds
SS	\$ 35.54/thousand pounds

City of Las Vegas/City of North Las Vegas Interlocal Agreement (November 4, 1981)

Furthermore, North Las Vegas pays an annual amount equal to the incremental change in ERUs discharged into the city's system, which is greater than the number reported on the preceding December 1, multiplied by \$50.00. If a decrease in ERUs discharged into the city's system occurs for two or more consecutive years, the base number of ERUs is determined to be the same as of December 31 of the last year before the year in which the

¹⁹ City of Las Vegas Interlocal Agreement with the city of North Las Vegas, approved by City Council November 4, 1981

decrease occurred.²⁰ In 2006, the city of Las Vegas collected approximately \$10.5 million from the city of North Las Vegas for the wastewater treatment services.

Role of the City of Las Vegas

The city of Las Vegas Department of Public Works constructs, operates, and maintains the sewer collection system, along with treating and discharging treated water back into the Las Vegas Wash. Solid waste is managed and maintained through a franchise agreement with Republic Services of southern Nevada.

Projects

Sewage collection projects are forecasted through the city's five-year Capital Improvement Plan. Those projects scheduled and funded in 2008 are listed in Table 5.

Table 5: Sewage Collection Projects for 2008

Fiscal Year	Priority	Project Title	Estimated Cost	Funding Source
2008	1	Stewart Avenue Repair/Replacement	\$1,500,000	Service Fees
	2	Horse Drive Interchange	1,800,000	Service Fees
	3	Coran/Tonopah Repair/Replacement	3,109,000	Service Fees
	4	Vegas Drive- Michael/Rancho Repair/Replacement	3,277,000	Service Fees
	5	Martin Luther King Boulevard- Owens Relief Sewer	650,000	Service Fees
	6	Jones Boulevard- Elkhorn/Horse	1,700,000	Service Fees
	7	Elkhorn Road- Rainbow/Torrey Pines	1,200,000	Service Fees
	8	Rancho Drive- Painted Desert Sewer Rehabilitation	1,414,000	Service Fees
	9	Antelope- Westcliff Relief Sewer	845,000	Service Fees
	10	Commerce Street Sewer	350,000	Service Fees
	11	Gowan North Channel Phase IV- Lone Mountain Sewer	2,000,000	Service Fees
	12	Sewer Oversizing and Extension Agreements	500,000	Service Fees

Source: City of Las Vegas Capital Improvement Plan FY 2008

Funding/Financing

The sanitary sewer collection system serves the Las Vegas and North Las Vegas communities. All costs associated with the sanitation operation, including debt service on bonds, are paid for through service fees and a portion of a voter-approved one-quarter cent sales tax.²¹

²⁰ City of Las Vegas Wastewater Collection System Master Plan, February 1994

²¹ City of Las Vegas Capital Improvement Plan (2007)

**Table 6: CAPITAL IMPROVEMENT PLAN (CIP) FOR
SANITARY SEWER COLLECTION**

FIVE-YEAR SUMMARY

<u>FISCAL YEAR</u>	<u>SEWER COLLECTION</u>
2008	\$ 25,281,400
2009	\$ 24,359,000
2010	\$ 21,262,000
2011	\$ 17,710,000
2012	\$ 9,319,650
TOTAL	<u>\$ 97,932,050</u>

Source: City of Las Vegas Capital Improvement Plan FY 2008

Stormwater (Drainage) System

Las Vegas is located in the Mojave Desert, an arid environment and notably one of the driest regions of the country, with an average of 4.49 inches of rainfall per year.²² Historically, Las Vegas has experienced destructive rainstorms between the months of July and September, when moist, unstable air from the Gulf of Mexico is exerted upward by the hot air currents.²³ This meteorological phenomenon results in severe thunderstorms with intense rainfall. Steep mountain slopes and rock-hard desert grounds repel rainwater, causing a rapid flow that amasses in the lower elevations of the urbanized valley.²⁴

In the early days of Las Vegas, storm drains were nonexistent. Floodwaters from infrequent storms were allowed to run through the streets and desert with devastating results. Floods have been reported in the area as far back as 100 years. The U.S. Soil Conservation Service compiled a report titled, "History of Flooding, Clark County, Nevada 1905-1975," that documented 194 different flooding events resulting in damage to both private and public facilities. One such flood occurred on July 23, 1923, when floodwaters flowed through almost every building in the city, including those located on Fremont Street, resulting in damages estimated at \$25,000. As the city grew, so did the problems with flooding and their associated costs. Since 1960, the Las Vegas area has experienced at least 11 floods totaling over one million dollars in damages each, 21 separate flash flood events, and 31 related deaths.²⁵

In May 1963, the city of Las Vegas prepared a master plan for the Stormwater Disposal, but insufficient funding prevented the plan from being implemented. After flooding from the storms of July 1975 and August 1983, the city recognized the need for detention basins. In 1985, the Nevada State Legislature passed a bill permitting the creation of local districts for

²² City of Las Vegas Water Element, adopted by City Council June 1, 2005

²³ "History of Flooding in Clark County," Clark County Regional Flood Control District website, 2003-2006

²⁴ *Ibid.*

²⁵ *Ibid.*

the control of floods. The Clark County Regional Flood Control District (CCRFCDD) was formed in early 1986 by county ordinance. The responsibilities charged to CCRFCDD included developing a comprehensive flood control master plan to alleviate flooding in the valley, regulating land use in flood hazardous areas, and funding the construction of flood control facilities. The CCRFCDD Master Plan, the "Las Vegas Valley Master Plan Update" (MPU), is the guiding document that sets the agenda for countywide stormwater drainage systems and facilities. Furthermore, the city has developed and adopted three subsidiary master plans (neighborhood studies) working in conjunction with the CCRFCDD MPU. These studies concentrate on more localized and detailed comprehensive hydrologic analysis and storm drain facility plans for specific areas within city limits. Specific and detailed technical information pertaining to flood control drainage systems can be accessed in the CCRFCDD MPU and/or one of the city's three Neighborhood Studies. Below is a brief outline of the three neighborhood flood control master plans. It should be noted that these neighborhood flood control master plans have not been adopted by ordinance, but are used as a policy guideline for the Public Works Department.

1. Northwest Neighborhood Flood Control Master Plan

The Northwest Neighborhood Flood Control Master Plan, Volume I, was developed in December 1997. The purpose of the plan was to present a localized "comprehensive hydrologic analysis and storm drain facility plan for an approximately 30 square mile study area."²⁶ The study area is bounded by Elkhorn Road to the north, Hualapai Way and U.S. 95 to the west, Alexander Road and Lake Mead Boulevard to the south, and Decatur Boulevard and Rancho Road to the east (see Northwest Neighborhood Study Phase 1 Appendix 4). The study provided a detailed existing and future condition hydrology and neighborhood drainage plan.

2. Northwest Neighborhood Flood Control Master Plan Phase 2

The Northwest Neighborhood Flood Control Master Plan Phase 2 was prepared by in June 1998. The purpose of the Plan provided a comprehensive hydrologic analysis and storm drain facility plan that encompasses approximately 24 square miles bounded by Moccasin Road to the north, Sheep Mountain Road and Mainwal Boulevard to the west, Elkhorn Road and Horse Drive to the south, and Decatur Boulevard to the east (see Northwest Neighborhood Study Phase 2 Vicinity and Watershed Appendix 4). The result of the drainage analysis is "a flood control collection and conveyance system incorporating a network of existing and proposed facilities to reduce the risk of flood hazards to both public and private property located within this developing neighborhood."²⁷

3. Central Neighborhood Flood Control Master Plan

The Central Neighborhood Flood Control Master Plan was prepared in March 2005. The study area encompasses approximately 28 square miles bounded by Lake Mead Boulevard to the south, Durango Drive to the east, Desert Inn Road to the north, and Las Vegas Wash to the west (see Central Neighborhood Study Vicinity and Watershed Appendix 4). The HEC-1 (Hydrologic Engineering Center) analysis (DOS program used

²⁶ "City of Las Vegas Northwest Neighborhood Flood Control Master Plan," PBS&J, December 1997

²⁷ City of Las Vegas, "Northwest Neighborhood Flood Control Master Plan Phase 2," PBS&J, September 1999

to determine the runoff from a site during a rainfall) for the study conforms to the 2002 MPU models, but is more detailed, the sub-basins are generally smaller (for 10-year only), and the analysis includes numerous flow splits to more accurately estimate street and facility flows. These flows are then used to determine the need for local drainage facilities and collectors for the 2002 MPU facilities.²⁸ The results of the analysis and conceptual design provide the city with a complete and comprehensive storm drainage analysis for the neighborhood.

Flood control has become more than just the protection of structures and the safe movement of water to a final discharge point. It has become a land use matter because many of the detention basins are being created as joint-use facilities. Detention basins are now being designed to provide open space with sports fields. These facilities can be used for recreational facilities the majority of the time and are closed to recreational uses during storm events. Ultimately, creating joint-use detention basins represents effective management of City resources through coordinated planning and fiscal management. Specific examples of using flood control facilities for recreation areas include soccer fields at Buckskin Basin Park and linear parks, which also provide access to larger open spaces and a framework for trails at Peccole Park and Pueblo Park.

The city of Las Vegas currently has a finite number of regional drainage channels and storm drains as well as 14 detention basins in and around the city (see Map 8 NEED CORRECT MAP NUMBER).²⁹ As demand continues to grow within the city, the Department of Public Works has programmed an additional 28 miles of channels and storm drains within the next 10 years, with the ultimate goal of expanding the system to 281 miles of regional channels and storm drains.

Municipal Separate Storm Sewer System Permit

In accordance with National Pollutant Discharge Elimination System (NPDES) requirements under the Clean Water Act (CWA), a regional Municipal Separate Storm Sewer (MS4) permit has been issued to the Clark County Regional Flood Control District (the city of Las Vegas is a co-permittee) allowing for municipal discharges into federal listed impaired water bodies (waters of the United States). The permit is issued every five years and is scheduled to expire in June 2008.

Developed to address the MS4 permit requirements, the Las Vegas Valley Stormwater Management Plan (SWMP) sets forth a regional stormwater runoff plan. The key element of the SWMP is the implementation of Best Management Practices (BMPs) by each municipality to address stormwater quality and quantity within their area of jurisdiction through the reduction of stormwater contaminants prior to entering the public storm system. Principal concerns by EPA/NDEP are sedimentation and the potential for construction, industrial activities, and existing and new development to carry and release inorganic and organic material into the valley watershed.

²⁸ City of Las Vegas, "Central Neighborhood Flood Control Master Plan," PBS&J, March 2005

²⁹ City of Las Vegas Department of Public Works, "Engineering Planning Flood Control," 2007

In September 2005, the EPA conducted a program audit of the Las Vegas Valley Storm Water Management Program. The current MS4 permit requires temporary pollution prevention methods to reduce erosion and sediment transport during construction activities as well as the capture and treatment of sediments in detention basins throughout the Las Vegas Watershed. However, the EPA's audit findings determined the performance of these approaches to be deficient. The EPA also cited the following insufficiencies and inadequacies of other program requirements:

1. Construction site stormwater runoff management:
 - Inadequate construction site inspection and enforcement program
 - Lack of erosion and sediment control regulations
2. Post Construction stormwater runoff management:
 - Lack of ordinance to minimize water quality effects of new development
 - No requirement for permanent Best Management Practices (BMP) for new development and redevelopment
3. Industrial site storm runoff management:
 - No list of industrial sites that could contribute significant pollution
4. Stormwater runoff management related to operation and maintenance of treatment systems and controls:
 - Inadequate plan for sediment removal from regional detention basins

To avoid potential penalties for noncompliance with the MS4 requirements, the city of Las Vegas Department of Public Works and the Planning and Development Department are involved in the development of a new stormwater management program to more effectively lessen the potential release of pollutants into the Las Vegas watershed.

Modifications to the SWMP and individual municipality stormwater management programs require additional methods to improve water quality long-term. Several working groups have been formed of which the city is represented [Stormwater Quality Management Committee (SQMC), Development Guidelines Working Group (DGWG), Stormwater Stakeholders Working Group (SSWG), Construction Guidelines Working Group (CGWG)] to identify new stormwater management goals and objectives as related to construction management, new and significant redevelopment, and existing detention basin facilities (see Appendix 1).³⁰ Additionally, these groups are in the process of developing a new stormwater management plan that is regional in approach and will serve as a policy and regulatory mechanism to identify appropriate BMPs for a desert environment, maintenance responsibilities, and public outreach efforts. An extension of the MS4 Permit was submitted to the EPA to allow for the completion and city council adoption of the stormwater management plan, which is anticipated during the first quarter of 2009.

³⁰ Clark County Regional Flood Control District, "Storm water Stakeholders Open House" (November 15, 2007)

Significant Projects

Significant projects completed by the city that have greatly contributed to reducing flood zone hazards and the potential of both property damage and loss of life are mentioned in the following paragraphs. Additionally, the city works with developers of master planned communities to integrate arroyos, washes, and watercourses with urban development that protects the integrity of the watershed in its most natural state, while incorporating recreational amenities within the areas. Examples of these cooperative measures can be found at the Buckskin Detention Basin, Peccole Park, Arbors Park, Pueblo Park, in Kyle Canyon, and other areas within the Summerlin master-planned community.

Washington Avenue and Conveyance System

In the 1990s, Washington Avenue east of I-15 had an open channel. When stormwaters filled the channel, residents anxiously watched as floodwater rose above the channel, draining into their neighborhoods. To eliminate the damage and risks associated with flooding, the city of Las Vegas Public Works Department constructed three (3) 12-foot by 8-foot reinforced concrete boxes in 1998, to safely convey floodwaters and removed approximately 1,000 residents from the flood zone. Photos 1-4 depict before and after photos of Washington Avenue.

Photo 1: Washington Avenue on a Good Day, 1990



Source: City of Las Vegas Department Public Works, 2007

Photo 2: Washington Avenue in 1990 on a Bad Day



Source: City of Las Vegas Department Public Works, 2007

Photo 3: Flooding at Washington Avenue and Mojave, 1983



Source: City of Las Vegas Department of Public Works, 2007

Photo 4: Washington Avenue (Post Improvements), 2007



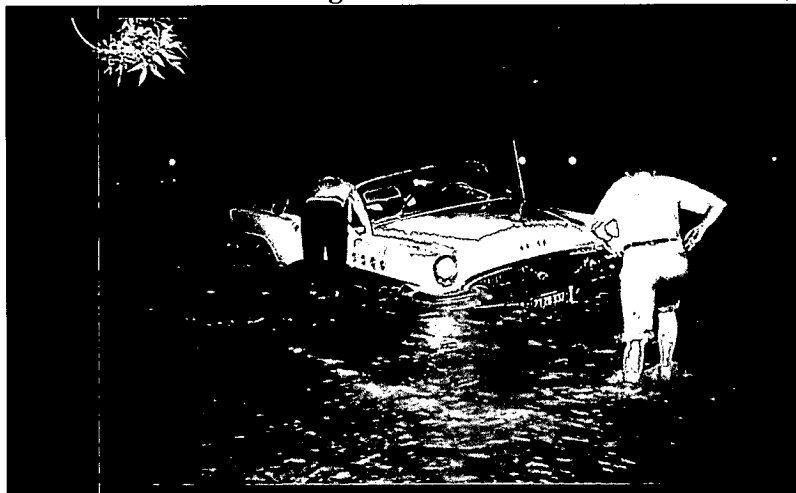
Source: City of Las Vegas Department of Public Works, 2007

Freeway Channel System

The Freeway Channel System was an extension of the Washington Avenue Conveyance System to protect Downtown Las Vegas and to assist in reducing flooding that historically affected the Charleston Boulevard Underpass (see Figures 9-13). The project began in April

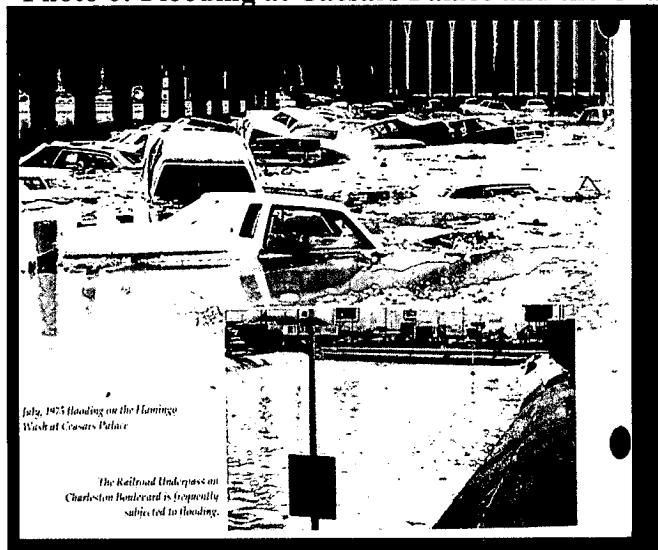
2000 and was completed in 2002 at a cost of \$36.2 million, the largest single project funded by the Regional Flood Control District and the largest ever built by the city.³¹ The project consists of large reinforced concrete boxes, extending over five (5) miles from Sahara Avenue to Bonneville Avenue. The trunk line includes triple 14-foot by 10-foot reinforced concrete boxes (Photo 10).

Photo 5: Flooding at Seventh Street and Charleston, 1957



Source: City of Las Vegas Department of Public Works, 2007

Photo 6: Flooding at Caesars Palace and the Charleston Boulevard Underpass, 1975



Source: City of Las Vegas Department of Public Works, 2007

³¹ City of Las Vegas Department of Public Works, 2007

Photo 7: I-15 Freeway Channel (Charleston/Boulder Highway), 1999



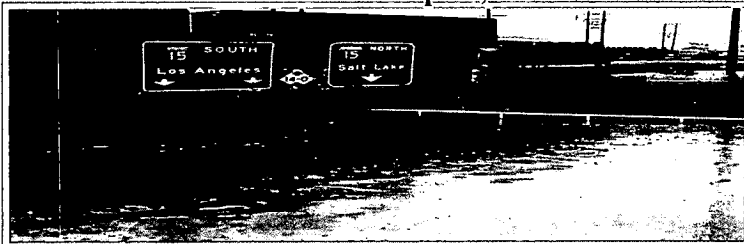
Source: City of Las Vegas Department of Public Works, 2007

Photo 8: I-15 Charleston Underpass, 1999



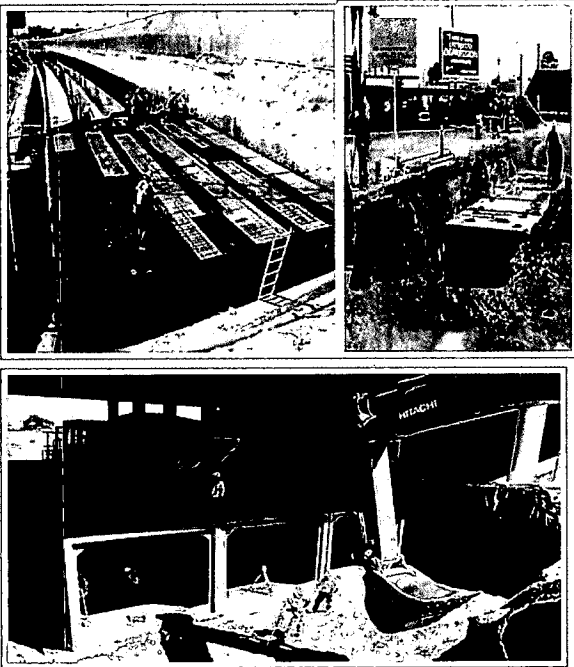
Source: City of Las Vegas Department of Public Works, 2007

Photo 9: Charleston Underpass, 1999



Source: City of Las Vegas Department of Public Works, 2007

Photo 10: I-15 Freeway Channel Construction, 2002

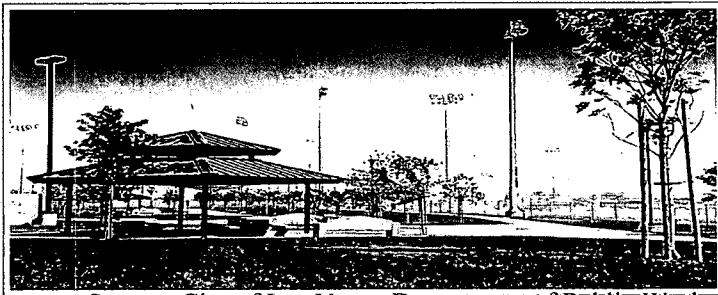
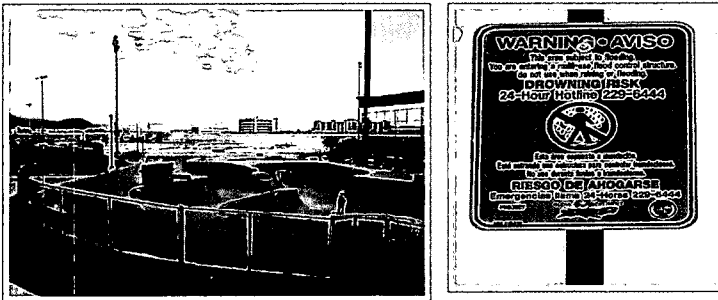


Source: City of Las Vegas Department of Public Works, 2007

Gowan South Detention Basin

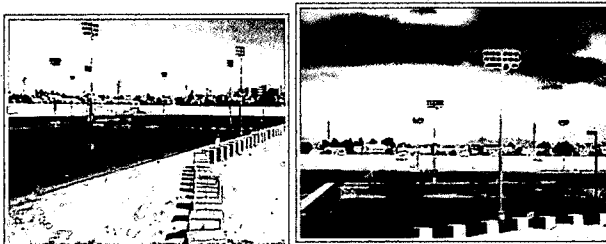
The Gowan South Detention Basin Expansion/Sports Complex project was completed in 2002. It combined the existing Gowan Detention Basin with the Buckskin Detention Basin and expanded it to include a park and baseball field complex. The project consisted of removing approximately 300,000 cubic yards (CY) of material from the basin. The excavation, earthwork, and major drainage improvements were funded through the Regional Flood Control District at a cost of \$2.7 million. The detention basin capacity increased from 400 to 600 acre-feet, and nine ball fields were constructed with seven (7) being above the 25-year flow and the other two (2) above the 100-year flow (see Figures 15-16).

Photo 11: Gowan South Detention Basin Expansion/Sports Complex



Source: City of Las Vegas Department of Public Works, 2007

Photo 12: Buckskin Detention Basin

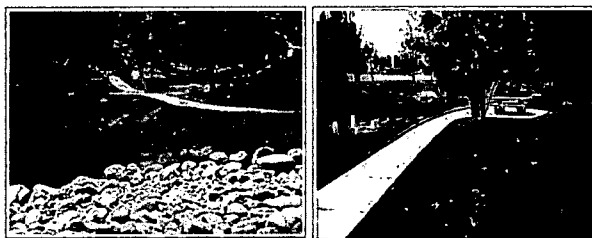


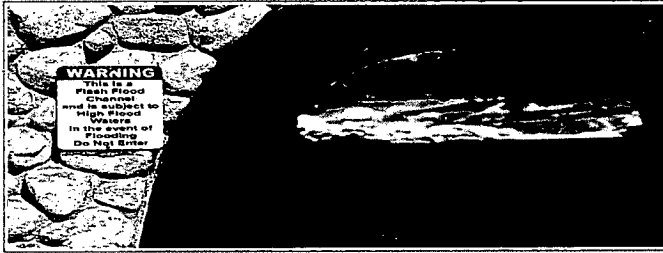
Source: City of Las Vegas Department of Public Works, 2007

Peccole Park & Pueblo Park:

Both Peccole Park and Pueblo Park are examples of drainage channels that also function as open space and parkland. These parks are able to be used the majority of the time and are only subject to flooding during rain events. Flood control channel parks have significantly increased the open space within master-planned communities like Peccole Ranch and Summerlin.

Picture 13: Peccole Park





Source: City of Las Vegas Department of Public Works, 2007

Picture 14 Pueblo Park



Source: City of Las Vegas Planning & Development Department, 2008

Projects

In cooperation with the Clark County Regional Flood Control District, the city anticipates constructing several conveyance systems and water detention basins that are part of the CCRFCD master plan and are an integral part of the valley-wide flood control system. These projects are identified in the city's Capital Improvement Plan FY 2008 Table 7.

Table 7: Storm Drainage Capital Improvement Projects-2008

Fiscal Year	Priority	Project Title	Estimated Cost	Funding Source
2008	1	Alta Parallel System	\$460,410	CCRFCD
	2	Brent Lane & Tule Springs Detention Basins	676,800	CCRFCD
	3	Brush Street Storm Drain	375,000	Fund Balance
	4	Centennial Parkway- Grand Teton Branch	1,500,000	CCRFCD
	5	Drainage Contribution Projects	200,000	Fund Balance
	6	Gowan North Channel- El Capitan/Western beltway	4,663,332	CCRFCD
	7	Horse Interchange Drainage	3,000,000	CCRFCD
	8	Jones Boulevard- Alta/Borden	736,750	Fund Balance
	9	Las Vegas Wash- Elkhorn Road System	4,253,279	CCRFCD
	10	Las Vegas Wash- Jones Boulevard	2,127,065	CCRFCD
	11	Lone Mountain System- Cliff Shadows Parkway	2,410,000	CCRFCD
	12	Lone Mountain System- La Madre Branch	2,664,407	CCRFCD
	13	Oakey Storm Drain	1,638,281	CCRFCD
	14	Owens Avenue System	1,139,400	CCRFCD
	15	Peak Drive System	2,632,086	CCRFCD
	16	Rancho Detention Basin- Phase 2	5,206,616	CCRFCD

17	Rancho Drive System- El Campo Grande Storm Drain	3,048,479	CCRFGD
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Source: City of Las Vegas Capital Improvement Plan FY 2008

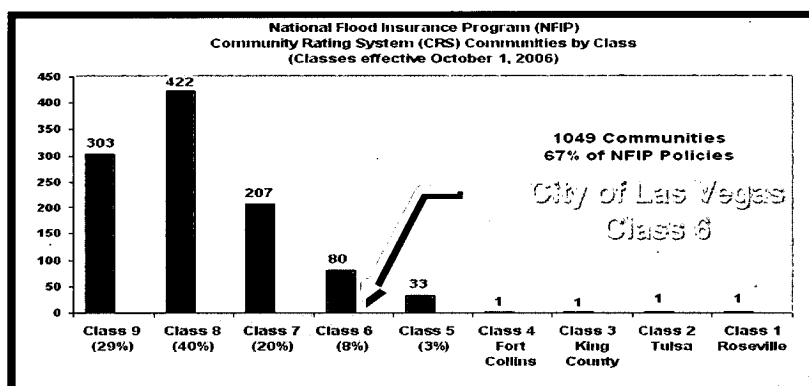
Flood Control Programs

The National Flood Insurance Program (NFIP) is administered by the Federal Emergency Management Agency (FEMA), which establishes rules and requirements to deal with assorted issues involving flood insurance and hazard mitigation. All six local governments in Clark County currently participate in NFIP and apply rRevised uniform regulations for the control of drainage per state statute. Participating in NFIP requires that communities adopt flood hazard maps and flood plain regulations prepared by and in compliance with FEMA.³²

Initiated in 1990, the Community Rating System (CRS) is a voluntary program that recognizes community flood plan management activities that exceed FEMA requirements. The program objectives are to reward insured residents for their community's continued involvement, while providing an incentive for new flood protection activities.³³ By participating in the program, flood insurance premium rates are reduced, thereby reflecting the reduced flood risk resulting from the community activities and goals of CRS. These goals include: (1) reducing flood losses; (2) facilitating accurate insurance rating; and (3) promoting awareness of flood insurance.

Nationwide, approximately 20,000 communities participate in NFIP, and nearly 1,049 communities have verified Community Rating System (CRS) Programs (see Chart 1). A Class 1 rating requires the most credit points from 18 activities, and therefore gives the greatest premium discount, while a Class 10 identifies a community that does not apply for the CRS and, therefore, receives no discount. The city of Las Vegas holds a rating as a Class 6 community, placing them in the top eight percent (8%) of participating communities across the United States; only 37 communities rate higher than Las Vegas.³⁴

Chart 1: FEMA Community Rating System



Source: City of Las Vegas Department of Public Works, 2007

Role of the City of Las Vegas

³² "Regulatory Program," Clark County Regional Flood Control District website (2003-2006)

³³ "The Community Rating System," Clark County Regional Flood Control District website (2003-2006)

³⁴ City of Las Vegas Department of Public Works, 2007

The Department of Public Works reviews applications and plans to ensure new development and redevelopment contains infrastructure to control storm flows and integrates with regional flood control systems. Additionally, they manage the National Pollutant Discharge Elimination System (NPDES) program, which implements the 1990 Clean Water Act. The NPDES mandates that plans and programs for stormwater management be developed, adopted, and implemented to assure that municipalities “effectively prohibit non-stormwater discharge into the storm drain and require controls to reduce the discharge of pollutants from stormwater systems to waters of the United States to the maximum extent possible.”³⁵ The Department of Public Works Environmental Division ensures the city meets NPDES requirements.

Funding/Financing

The city has established a five-year capital improvement program for storm drainage projects that account for detention basins as well as collection and runoff systems to alleviate and/or prevent localized flooding.

**Table 8: CAPITAL IMPROVEMENT PLAN (CIP) FOR
FLOOD WATER CONVEYANCE SYSTEMS**

FIVE-YEAR SUMMARY

<u>FISCAL YEAR</u>	<u>STORM DRAINAGE</u>
2008	\$36,731,905
2009	\$63,712,106
2010	\$65,011,820
2011	\$99,068,677
2012	<u>\$49,586,656</u>
TOTAL	\$314,111,164

Source: City of Las Vegas Capital Improvement Plan FY 2008

Sales tax is the primary revenue source for Regional Flood Control (RFC). These funds are applied to projects contained in an approved master plan. The City is the “lead agency” in the design and construction of RFC projects within its hydrographic area; the CCRFCD funds facilities at the regional level. Local flood control funding and priorities as well as development review fall within the purview of the city.

The city coordinates its funding needs with those of the RFC based on three levels of analysis:

1. Nominal Drainage Projects represent scattered, inexpensive improvements, generally not exceeding \$20,000.

³⁵ Water Element of the Las Vegas 2020 Master Plan, June 2005

2. City-funded Flood Control projects target larger projects within planning areas up to two square miles. Typically, these projects consists of smaller, but more numerous storm drains to safely convey flood waters through city neighborhoods to the Clark County Regional Flood Control master planned facilities. These types of storm drains are not available for Regional Flood Control District funding, but are specifically targeted for local flood control in five-year plans.
3. Regionally funded projects are not funded by the city. These improvements are typically projects funded by the RFC master plan, which affect the city, along with providing the large outfalls for the smaller city funded storm drains.

Utilities

The city of Las Vegas relies on the continual supply of affordable energy resources and telecommunications from private companies to maintain the standard of living to which our community is accustomed. The utility infrastructure continues to expand with growth and new development in the city and surrounding areas. Utilities such as power, gas, water, cable, and telecommunications within the city of Las Vegas are all supplied by either private or quasi-public companies. The city of Las Vegas does not own the rights to any of these utilities, the city possesses franchise agreements for use of city rights-of-way. In fiscal year 2006-2007, franchise fees collected for utilities totaled approximately \$45.9 million, as illustrated in Table 9.

Most utilities are located underground within the public right-of-way with the exception of various utility boxes (electrical, gas, water, phone, cable, mail) and overhead power transmission lines. With the exception of utility transmission line requests of 15,000 volts (15 kv) or larger (Title 19, Chapter 4), utilities are not required to go through a public hearing. Currently, NRS 278.145 states utility companies are required to give an updated report of the location of the approved utility within 60 days of the projects approval. However, permitting utility transmission lines as a conditional use reduces the Planning and Development Department's oversight of utility line documenting.

Table 9: City of Las Vegas Franchise Fees Collected- Fiscal Year 2006-2007

Franchisee	Separate Non- Franchise Fees Paid*	Total Fees	% of Total Fees
Cheetah	N/A	\$1,790	0.7%
Cox	N/A	\$5,427,052	10.9%
Elec.			
Lightwave	N/A	\$5,773	0.0%
Embarq	N/A	\$3,944,618	8.0%
IdaComm	N/A	\$100	0.0%
Level 3	\$641	\$3,720	0.0%
Metro	N/A	\$100	0.0%
Nevada			
Power	N/A	\$27,931,459	56.4%

S.W. Gas	N/A	\$8,168,076	16.5%
Wiltel	\$17,317	\$19,704	0.0%
XO Comm.	N/A	\$378,602	0.8%
Xspedius	N/A	\$40,244	0.1%
Others (non-utility)**	\$35,379	\$3,646,238	6.6%
TOTAL	\$53,337	\$49,567,476	100.0%
TOTAL MINUS OTHERS	\$17,958	\$45,921,238	

Source: City of Las Vegas Business Services Division, 2007

Note:

* Non-Franchise Fees: Linear-foot and flat fees for E-Three, Level 3 and Wiltel: gross revenue fee for AMR (Jan and July), Medicwest (May and Nov), and RSSN's M01 license (April and Oct)

** Others are all those companies not considered a utility

Rights-of-Way/Easements

Right-of-way is the total width of the linear segment of land required for road paving and for placement of future utilities and infrastructure (gas, water, sewer, telephone, and electric facilities). The right-of-way also includes landscaping, sidewalks, and curb and gutter. Arterial roads (primary thoroughfares), in the city of Las Vegas, are generally located at one-mile intervals along selection lines and major collector roads (secondary thoroughfares) are traditionally located at half-mile intervals along quarter-section lines.

The subdivision and site development plan review process provides for the dedication of right-of-way for all street system improvements by property owners. The property owner is responsible for "half-street" improvements of master planned, arterial streets that are located immediately adjacent to a proposed development. This includes the construction of travel lanes, parking lanes, sidewalks, curbs, gutters, and streetlights. Additionally, developers are required to construct, at minimum, 32-foot, two-way, paved roadways to link subdivisions to existing roadways if linkage is not already available per Regional Transportation Commission Uniform Standard Drawing 209 and 209A to comply with EPA requirements related to PM₁₀ non-attainment areas for dust and other particulate matter.

An easement is a right granted from a property owner to another for a portion of the owner's land for a specific use. Utility easements (gas, electric, sewer, water, telephone, etc) are strips of land used by utility companies for the purpose of installing and maintaining utility lines and structures. As with utility easements, storm drain easements are permanent and run with the land. Property designed as an easement still belongs to the property owner; however, the owner gives up certain rights, such as the right to build permanent structures (additions, decks, fences, etc.) within the easement, thereby permitting utility companies to have the right to access that portion of the land designated as a utility easement.

The city currently has franchise agreements with utility companies such as Nevada Power, Southwest Gas, Cox Communications, Las Vegas Valley Water District, and several telecommunication and cable companies to utilize city-owned right-of-way and easements located within the city of Las Vegas. The exact duration of the agreements vary, but normally

have up to a 15-year duration. Once an agreement is established, the city grants the franchisee the right to rent, use, and occupy right-of-way within the corporate limits of the city. The utility company must comply with applicable ordinances, rules, regulations, specifications, and be granted the appropriate permits and approvals prior to installing equipment within city right-of-way.

Role of the City of Las Vegas

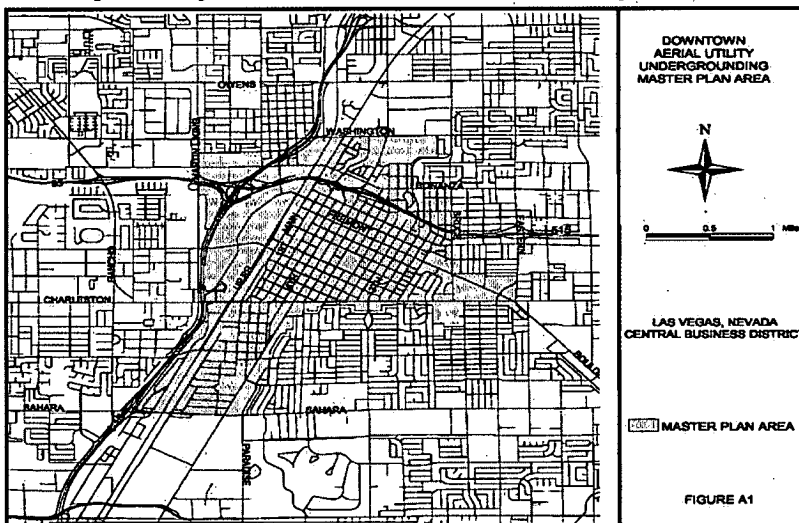
The city coordinates with private utility companies to ensure the adequate provision of electricity, natural gas, water, and telecommunication infrastructure to existing and new development. The Public Works Department inspects work performed by utility companies to ensure compliance with Public Utilities Commission of Nevada rules and regulations, as well as the city's franchise agreements with the utility companies.

Projects

Project Clear Skies is a city of Las Vegas Public Works Department initiative to develop a master plan to relocate all aerial utilities to underground locations in city street right-of-way or utility easements within downtown Las Vegas. The initial focus of the proposed plan is to address both existing and future infrastructure requirements. A major component of the planning effort is the development of a financial strategy and implementation plan that will utilize developer utility undergrounding requirements found in the Downtown Centennial Plan area, and the possible formation of "special districts over-sizing and line extension agreements with front-foot assessments (a property assessment based on the lineal footage of a property) to subsequent developers."³⁶

The Project Clear Skies area consists of approximately 3.84 square miles in Downtown Las Vegas, roughly bounded by Washington Avenue on the north; Sahara Avenue on the south; I-15 on the west; and portions of Paradise Road, Eastern Avenue, and Bruce Street on the east. The area encompasses all of the city's Downtown Centennial Plan area and additional areas to the north and southeast (see Map 9 below).

Map 2: Project Clear Skies Master Planning Area



³⁶ City of Las Vegas Department of Public Works, 2007

Source: City of Las Vegas Department of Public Works, May 2006

The city of Las Vegas hired R.W. Beck Consulting to provide long-term and all-inclusive plans to eliminate aerial utilities in the Downtown Redevelopment District. Key components of the plan include stakeholder issues, participation of project teams, assessments of affected utilities, implementation plan, and financial planning considerations. A meeting was held on May 13, 2008 that resulted in Nevada Power stating that they will provide R.W. Beck with their final load tables and maps identifying what is necessary to power the downtown by the end of June 2008. Another meeting is tentatively scheduled for sometime toward the end of July 2008 where R.W. Beck will provide a draft report that coordinates each utility company's master plan with rehabilitation projects for stormwater, sanitary sewer, and road improvements in the Downtown Redevelopment District. R.W. Beck plans to have a final report for City Council approval by the end of December 2008.

ANALYSIS

The existence and delivery of adequate infrastructure is the foundation of the lifestyle that Las Vegas residents and visitors enjoy. One of the most important functions of the city is to assure sufficient public facilities are provided to meet the needs of all people and developed lands within the city. Ensuring the highest quality of life mandates that existing facilities be maintained, improved, and expanded to accommodate urban development and economic growth.

Recognizing the need for adequate public infrastructure is necessary for continued growth. It is critical to link development to infrastructure and to ensure new development doesn't overburden the existing infrastructure.

Sanitary Sewer System

Sewer system expansion is dependent on the growth within the city. The city of Las Vegas adopted a Wastewater Collection System Master Plan in February 1994 to address existing and future system needs, which is used today to size sewer lines for new development. In view of the fact that the document is over 14 years old, the Department of Public Works is currently revising the plan with an anticipated release date in the summer of 2008. Public Works forecasts restoration, replacements, and the expansion of the existing systems through the city's CIP. The sanitary sewer system is also an important link in the ability of the SNWA to obtain return flow credits because the sanitary sewer system water is treated at the city's wastewater treatment facility where the water is returned to Lake Mead or the treated water is used for irrigation. Table 11 identifies the projects, schedules, estimated costs, and funding source for approved projects.

Table 11: Sewage Collection Projects 2009-2012

Fiscal Year	Priority	Project Title	Estimated Cost	Funding Source
2009	1	Permanent Flow Monitoring System	\$210,000	Service Fees
	2	Vegas Drive- Rancho/I-15 Repair/Replacement	5,611,000	Service Fees
	3	Kyle Canyon Road- US 95 Interchange	1,500,000	Service Fees
	4	Rampart Boulevard Diversion- Alta/Cheyenne	3,000,000	Service Fees
	5	Torrey Pines Drive- Dorrell/Grand Teton	1,960,000	Service Fees
	6	Oakey Boulevard Sewer Rehabilitation	3,500,000	Service Fees

	7	Jones Boulevard- Guy/Moccasin	1,456,000	Service Fees
	8	Tropical Parkway- Hualapai/Western beltway	500,000	Service Fees
	9	Elkhorn Road- Jones/Decatur	1,143,000	Service Fees
	10	Cheyenne Avenue Relief Sewer- Durango/Cimarron	979,000	Service Fees
	11	Moccasin Road- Jones/Bufalo	3,000,000	Service Fees
	12	Sewer Oversizing and Extension	500,000	Service Fees
	13	Sewer Rehabilitation	800,000	Service Fees
	14	Minor Sewer Modification Related to RTC Projects	200,000	Service Fees
2010	1	Charleston Boulevard Repair/Replacement	\$3,721,000	Service Fees
	2	Fort Apache Relief Sewer- Grand Teton/Severance	1,400,000	Service Fees
	3	Mountain Edge Parkway- Buffalo/Fort Apache	2,750,000	Service Fees
	4	Rancho Drive- Grand Teton/Lone Mountain/Coran	11,500,000	Service Fees
	5	Cliff Shadows Parkway- Cheyenne/Lone Mountain	391,000	Service Fees
	6	Sewer Oversizing and Extension	500,000	Service Fees
	7	Sewer Rehabilitation	800,000	Service Fees
	8	Minor Sewer Modification Related to RTC projects	200,000	Service Fees
2011	1	Torrey Pines Drive- Grand Teton/Moccasin	\$3,000,000	Service Fees
	2	Sewer Oversizing and Extension	500,000	Service Fees
	3	Sewer Rehabilitation	800,000	Service Fees
	4	Minor Sewer Modification Related to RTC Projects	200,000	Service Fees
	5	Permanent Flow Monitoring System	210,000	Service Fees
	6	Rancho Drive- Grand Teton/Lone Mountain/Coran	13,000,000	Service Fees
2012	1	Alexander Road- Rancho/Decatur	\$219,650	Service Fees
	2	Grand Teton Drive- Us 95/Cimarron	1,100,000	Service Fees
	3	Fort Apache Road- Centennial/Lone Mountain	2,000,000	Service Fees
	4	El Capitan Way- Centennial/Lone Mountain	2,000,000	Service Fees
	5	Bonneville Underpass Rehabilitation	2,500,000	Service Fees
	6	Sewer Oversizing and Extension	500,000	Service Fees
	7	Sewer Rehabilitation	800,000	Service Fees
	8	Minor Sewer Modification Related to RTC Projects	200,000	Service Fees

Source: City of Las Vegas Capital Improvement Plan FY 2008

North Las Vegas

The current interlocal agreement between the city and North Las Vegas is valid until July 2009. Both entities are currently in the process of negotiating a new agreement to allow the city of North Las Vegas time to construct its own sewer treatment plant, which is scheduled for completion in 2011.

Stormwater (drainage) Systems

The CCRFCDs "Las Vegas Valley Master Plan Update" is required by NRS 543.596 to be updated at a minimum every five years. The latest version was adopted by the Las Vegas City Council on October 22, 2002 and is currently in the process of being revised with an expected released date in the later part of 2008.

Furthermore, the city's three Neighborhood Master Plans do not have state or federal mandates requiring revisions, nor does the city anticipate updating these documents in the near future due to budgetary constraints.

Projects

In order to meet the demands placed upon the city's stormwater drainage systems, the Department of Public Works has forecasted projects that are necessary for the expansion and proper operation of the city's stormwater systems. Through the city's CIP, stormwater system projects to replace, improve, and expand the current system have been identified, prioritized, scheduled, and funded as indicated in Table 12.

Table 12: Storm Drainage Capital Improvement Projects 2009-2012

Fiscal Year	Priority	Project Title	Estimated Cost	Funding Source
2009	1	Alta Parallel System	\$8,139,999	CCRFCD
	2	Brent Lane and Tule Springs Detention Basins	7,150,688	CCRFCD
	3	Centennial Parkway-Grand Teton Branch	1,500,000	CCRFCD
	4	Gowan North Channel-El Capitan/Western Beltway	4,961,482	CCRFCD
	5	Horse Interchange Drainage	3,000,000	CCRFCD
	6	Las Vegas Wash- Elkhorn Road System	5,275,864	CCRFCD
	7	Lone Mountain System- La Madre Branch	2,500,000	CCRFCD
	8	Oakey Storm Drain	4,822,000	CCRFCD
	9	Owens Avenue System	10,654,342	CCRFCD
	10	Peak Drive System	2,000,000	CCRFCD
	11	Flamingo- Boulder Highway System	8,353,335	CCRFCD
	12	Freeway Channel- Owens/Miller	578,113	CCRFCD
	13	Gowan Outfall- Lone Mountain Branch	1,186,738	CCRFCD
	14	Las Vegas Wash- Decatur Boulevard	1,097,556	CCRFCD
	15	Las Vegas Wash- Smoke Ranch Drive	1,221,265	CCRFCD
	16	Oakey- Meadows Storm Drain	1,005,177	CCRFCD
	17	Rancho Drive System- Beltway/Fort Apache	265,547	CCRFCD
2010	1	Alta Parallel System	\$10,200,000	CCRFCD
	2	Las Vegas Wash- Elkhorn Road System	10,737,336	CCRFCD
	3	Owens Avenue System	11,033,000	CCRFCD
	4	Las Vegas Wash- Decatur Boulevard	17,474,575	CCRFCD
	5	Oakey- Meadows Storm Drain	13,972,760	CCRFCD
	6	El Capitan Branch- Lone Mountain/Tropical	1,594,149	CCRFCD
2011	1	Las Vegas Wash- Elkhorn Road System	\$22,763,152	CCRFCD
	2	Owens Avenue System	11,603,742	CCRFCD
	3	Freeway Channel- Owens/Miller	10,314,770	CCRFCD
	4	Gowan Outfall- Lone Mountain Road	10,593,424	CCRFCD
	5	Las Vegas Wash- Decatur Boulevard	10,400,000	CCRFCD
	6	Las Vegas Wash- Smoke Rancho Road	11,788,990	CCRFCD
	7	Oakey- Meadows Storm Drain	20,000,000	CCRFCD
	9	Las Vegas Wash- Grand Teton System	584,305	CCRFCD
	8	Las Vegas Wash- Rainbow System	1,020,294	CCRFCD
2012	1	Las Vegas Wash- Smoke Ranch Road	\$10,000,000	CCRFCD
	2	Oakey- Meadows Storm Drain	10,000,000	CCRFCD
	3	Rancho Drive System- Beltway/Fort Apache	4,740,199	CCRFCD
	4	El Capitan Branch- Lone Mountain/Tropical	13,807,476	CCRFCD
	5	Las Vegas Wash- Grand Teton System	11,038,981	CCRFCD

Source: City of Las Vegas Capital Improvement Plan FY 2008

Municipal Separate Storm Sewer System Permit (MS4)

In response to discrepancies noted by EPA/NDEP, the Las Vegas Valley MS4 Permittees have adopted two overall strategies. First, the working groups as described in Appendix 2 will address the details of the various program enhancements for the construction site and post construction programs to develop BMP's that will reduce stormwater pollutants. Experience has shown that those groups effectively deal with technical and administrative issues, and in engaging a broader spectrum of permittees, staff members and departments previously represented on SQMC. Secondly, stakeholder involvement is necessary to assure recommendations pertaining to enhancements are feasible, executable, and have community support.³⁷

Furthermore, potential revisions to Title 19 and adoption of a new stormwater ordinance are being considered for adoption to align with current EPA/NDEP water quality directives. Stormwater program policy including management plans specific to each jurisdiction are required for implementation beginning Fiscal year 2009.

IMPLEMENTATION

The implementation of this master plan element will fall upon both the Planning and Development Department and the Public Works Department. With respect to stormwater management, both the Planning and Development Department and the Public Works Department are involved in the development of best management practices (BMP's) to reduce construction site and post construction runoff. Both departments represent the city on various working groups to study stormwater management on a regional basis. Amendments to both Title 18 (Subdivision Ordinance) and Title 19 (Zoning Ordinance) will be necessary for the city to implement BMP's to reduce construction site and post construction runoff. Moreover, both departments will be required to review the BMP's on development plans. Additionally, funding for post construction inspections will be necessary for either the Planning and Development Department or the Public Works Department to ensure the property owner complies with the approved plans.

Amendments to Title 19 will also be required to ensure compliance with NRS requirements, which will be the responsibility of the Planning and Development Department. Requiring a special use permit for a certain utilities will help ensure compliance with NRS requirements.

Removing above ground utilities, including utility boxes within the Downtown Centennial Plan area is an important aspect to revitalizing this area as the premier government and urban living environment within southern Nevada. Above ground utilities and utility boxes detract from the aesthetics of the streetscape and when they are large enough they represent a visual impediment to the fenestration of a building as seen in photo 16. The Planning and Development Department will play a critical role in this area by amending Title 19 and by working with utility providers to locate utilities underground.

³⁷ Letter dated January 8, 2008 from CCRFCD to Bureau of Water Pollution Control

Photo 15 Urban Lofts Utility Fixtures



Source: City of Las Vegas Planning & Development Department, 2008

Implementation of the reclamation of waste water section of this master plan element will fall upon the Public Works Department. Funding for a cost/benefit analysis will also be necessary to identify the feasibility of expanding the use of reclaimed water. The Planning and Development Department will also play an important role amending Title 14 to reflect the need for using reclaimed water at parks and golf courses.

The recommendations below were developed from an analysis detailed in previous sections of this element and are intended to be comprehensive, taking into account the public service and facility needs of residents and visitors, current conditions, and future service and facility expenditures. As a vision of the future, it is recognized that the Master Plan must be flexible and adjustments made periodically to adapt to changing political, economic, and social conditions. This document provides a comprehensive analysis of the public services and facilities within the city, and acts as a guide for decision makers to use when determining, prioritizing, and allocating resources for future projects. Recommendations and corresponding actions relating to services and facilities are provided below.

RECOMMENDATION 1: Align plans and policies to support public services and facilities to ensure that all stormwater conveyance systems, structures, and maintenance practices are consistent with federal mandates and NPDES Permit standards.

It is critical that all public services and facilities master plans reflect current guidelines and regulations, while simultaneously considering future growth and technological advancements to ensure the public health, welfare, and safety are protected. Moreover it is important for the city of Las Vegas to comply with state and federal stormwater management guidelines because the EPA identified significant deficiencies with the city of Las Vegas' ability to meet NDEP MS4 Permit requirements during a recent audit. Meeting permit objectives by implementing ordinances, programs, and policies set by NDEP is essential to successfully managing the city's stormwater within the valley's conveyance system.

ACTIONS

- Incorporate the Clark County Regional Flood Control District (CCRFCD) Master Plan update into the city of Las Vegas Central and Northwest Neighborhood Flood Control Master Plans and regulations to ensure they are consistent with the Regional Master Plan and localized hydrologic analysis and drainage systems reflect current conditions.
- Adopt a revised master plan for the sanitary sewer system (Wastewater Collection System) that reflects current demands on the system and projects future demand requirements.
- Align local and regional practices with current NDEP water quality directives by adopting a revised stormwater management master plan that reflects the best management practices (BMPs) for a construction site and post construction program to reduce non-point source pollution as mandated by the Environmental Protection Agency and the Nevada Department of Environmental Protection in order for the city to maintain its Municipal Separate Storm Sewer System (MS4) Permit.
- Provide a user-friendly document to guide staff, developers, and other entities through the MS4 permit process within the city of Las Vegas.

RECOMMENDATION 2: Require utility companies to comply with NRS requirements.

Each franchise agreement between the city of Las Vegas and private utility provider requires an application with associated maps to be submitted for Planning Commission approval. Once approval is granted, all pertinent permits from Building and/or Public Works must be obtained prior to the start of construction. In accordance with NRS 278.145, all utility projects must be presented to the Planning Commission within 60 days after approved for construction, and these records maintained. The city does not presently comply with NRS requirements.

ACTIONS

- Amend Title 19 to require compliance with the requirements of NRS 278.145.
- Amend Title 19 to require a special use permit for utility transmission lines and natural gas distribution lines not located within the public right-of-way.

RECOMMENDATION 3: Develop a long-term and all-inclusive master plan to eliminate aerial utilities by relocating them underground within the city of Las Vegas, especially within the Downtown Centennial Plan area.

The majority of the utilities found in Las Vegas are privately owned. Through franchise agreements between the city and the various utility companies, the public receives the services needed to sustain life. The city has invested enormous effort and substantial funding

to re-establish downtown Las Vegas as a premier artistic, cultural, civic, financial, and urban residential center and having overhead utilities in areas that have been redeveloped detracts from the visual character of the area. In order to clear the skies of remnant and unsightly utility lines within the city of Las Vegas, it is vitally important for the city to continue to work with utility providers to formulate plans and strategies to relocate existing and future utilities underground.

ACTIONS

- The city shall coordinate utility installations within the public right-of-way during pavement and utility rehabilitation projects and when new rights-of-way are developed.
- Develop and adopt a master plan to relocate existing overhead utilities underground and amend Title 19 to require infill and redevelopment projects to relocate overhead utilities underground.
- Develop methods to screen or locate other utility appurtenances underground or within an alley.

RECOMMENDATION 4: Continue to support and participate in public services and facilities planning through working groups as identified in Appendix 2 and committee membership.

The city comments on issues regarding public services and facilities through its membership on several committees and active participation in working groups. Strategies addressing key issues and concerns pertaining to water reclamation, treatment facilities, sanitary and storm drain systems, and utilities are paramount to shaping the city's future.

ACTIONS

- Cooperate with the SNWA, local entities, and developers to improve and/or expand water treatment facilities, sanitary and storm drain systems, and utility projects.
- Support and promote the Stormwater Stakeholder Working Group initiatives, thereby ensuring recommended NDEP program enhancements are feasible, executable, and supported by the community.

RECOMMENDATION 5: Conduct a cost/benefit analysis associated with expanding the use of reclaimed water within the city of Las Vegas.

Reclaimed water is a valuable resource in a water-constrained area like Las Vegas. The city produces some of the cleanest reclaimed water in the United States and is engaging in innovative uses to offset potable water demands. Depending on the level of treatment, wastewater can have unlimited potential in fulfilling the needs of city residents; however, implementing and using reclaimed water raises policy issues that can either advance or hinder wastewater technologies.

ACTIONS

- Maximize reclaimed water use by increasing the capacity and number of reclaimed water distribution systems.
- Amend Title 14 to require all turf areas at public facilities such as parks and golf courses to use reclaimed water for irrigation.
- Amend Title 14 to require all commercial and multi-family developments in excess of 15 acres to use reclaimed to irrigate landscape areas.
- Continue to coordinate the planning and development of water distribution facilities with other agencies.

CONCLUSION

Existing resources such as wastewater treatment facilities, sanitary sewer lines, and stormwater conveyance systems must be maintained and/or replaced to ensure optimal performance to support the high quality of services and facilities that the community has come to expect. Utilities such as electric power services, natural gas facilities, cable television communications, telephone services, and similar infrastructures from private companies will continue to be operated under franchise agreements with the city for use of public right-of-way and easements. Strategies to develop and implement 'Project Clear Skies' continue to progress between the city and the various utility companies. Efficient, consistent and innovative updated master plans to supplement regional documents will provide guidance and direction to developers, staff, and other entities about the city's development process, thereby ensuring adherence to local, state, and federal mandates, while aligning projects to the city's Capital Improvement Plan.

Focused effort and creativity are necessary to enhance the community's portfolio of available water resources, reclaimed water being one such resource. Even though reclaimed water has the potential to support a large range of uses, it inherits many uncertainties in mitigating the risks to human health, in addition to costs associated with treatment facilities and methods for assessing, monitoring, and detecting contaminants. The city's wastewater treatment facilities are some of the top in the nation. As standards, codes, and federal regulations change, in addition to expanding the possible uses, the processes used within these facilities will need to be adapted in order to continue to provide the quality of water Las Vegas has come to expect.

The Public Services and Facilities element will assist city officials in establishing a foundation for the city's role in public services and facilities, in addition to providing guidance for implementing an infrastructure that shapes the city's future. Furthermore, it will strengthen the link between capital improvement programming and the 2020 Master Plan by providing a baseline of information regarding existing conditions, analyses of future public services, and facility needs and options.

Appendix 1: Master Plan Goals, Objectives, and Policies Update

POLICY #	POLICY DESCRIPTION	STATUS
LAS VEGAS 2020 MASTER PLAN		
7.1.3	That the city work with the Las Vegas Valley Water District to ensure that the quality of the city's drinking water remains high, while maintaining an adequate water supply at reasonable cost.	Requirements of NPDES and MS4 permits are maintained. City has a council representative on the SNWA Board of Directors to ensure water quality remains high and is readily available at a reasonable price.
7.1.4	That the city support initiatives for the recycling of gray water for non-potable uses and support efforts to maximize water reclamation and aquifer recharge efforts by both the public and private sectors, where such efforts are not likely to result in excessively high groundwater tables. The city shall support the protection of ground water by limiting the locations of potential pollution sources from areas of ground water recharge and pumping.	The city and Las Vegas Valley Water District (LVVWD) utilize the Durango Hills Treatment Facility for the recycling of gray water. City officials are currently researching potential scenarios for recycling and using gray water.
7.1.5	That the city takes the necessary steps to monitor and evaluate the quality of stormwater discharge, and ensure measures are taken to improve the quality where appropriate.	City officials use a multi-jurisdictional approach to monitor and evaluate the quality of stormwater discharge by participating in the Stormwater Quality Management Committee (SQMC). The SQMC was formed to manage program development and compliance activities under the State issued National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) permit. The permit authorizes discharge of stormwater to the Las Vegas Wash from storm sewer systems owned and operated by the cities of Las Vegas, North Las Vegas, Henderson, and Clark County in return for implementation of certain stormwater pollution reducing activities by the Permittees.

POLICY #	POLICY DESCRIPTION	STATUS
LAS VEGAS 2020 MASTER PLAN		
7.1.6	That the city coordinates with utility companies and other involved agencies to plan routes and locations for future utilities and to upgrade infrastructure in older areas.	The city is working with utility companies through Project Clear Skies to upgrade and relocate utilities underground within the Downtown area. In addition, the city participated in monthly Regional Transportation Commission of Southern Nevada (RTC) Utility Coordination Committee meetings to discuss routes, locations, and current utility projects.
7.2.1	That the city works with the Clark County Regional Flood Control District and the local development industry to integrate natural stream channels and drainage courses into urban development in as natural a state as possible.	The city is working with the BLM to preserve an existing major wash and incorporate it into the conservation area. In addition, the city successfully negotiated a Development Agreement with Kyle Canyon Development Group preserving three major existing washes. Some of these washes are being included in the Regional Flood Control District Master Plan Update.
7.2.4	That the city ensures that development is designed to include measures to mitigate the impact of periodic flooding on those structures.	The city's Flood Control Section reviews all development actions submitted to the city's Planning & Development Department allowing for the request of a Technical Drainage Study or a "Meet with Flood Control" requirement. This insures that the development is in accordance with drainage studies for all areas greater than two acres in size. Regional Flood Control District reviews all projects in FEMA flood zones and adjacent to Regional Flood Control facilities.

POLICY #	POLICY DESCRIPTION	STATUS
WATER ELEMENT		
2.2	The city shall encourage further study of the potentially adverse affects of septic systems on shallow aquifer drinking wells, as well as the appropriate steps needed to ensure the protection of residents utilizing those resources.	City representatives participate in the Clark County Air Quality and Environmental Management meetings to ensure potentially adverse affects of septic tanks on drinking water are addressed and steps are implemented to eliminate contaminating these valuable resources.
2.3	The city shall continue to enforce the Nevada Administrative Code (NAC 444.786) requiring new development to connect to public sewer whenever public sewer is available within 400 feet of the nearest property line and can be reached by gravity flow. The city shall also continue to enforce NAC 278.460 requiring subdivisions having density of two or more dwelling units per acre to connect to public sewer when public sewer is available within the distance determined by multiplying the number of single-family dwelling units by 100 feet.	Southern Nevada Health District requirements and Title 18 of the city of Las Vegas Municipal Code follow the standards set forth in NAC 444.786; city complies with these requirements. Additionally, the city complies with NAC 278.460 through development standards as outlined in Title 18 and throughout the review process.
2.4	The city shall encourage the preservation and restoration of the area's washes to assist in natural groundwater recharge.	The city is working with the BLM to preserve an existing major wash and incorporate it into the conservation area. In addition, the city successfully negotiated a Development Agreement with the Kyle Canyon Development Group preserving three major existing washes. Some of these washes are being included in the Regional Flood Control District Master Plan Update.
2.5	The city shall continue to participate in the National Pollutant Discharge Elimination System (NPDES) stormwater program.	City continues to participate in the NPDES stormwater management program. Ordinances are being drafted to include monitoring and enforcement.

POLICY #	POLICY DESCRIPTION	STATUS
WATER ELEMENT		
3.1	The city shall ensure that as new subdivision development occurs, a comprehensive network of wastewater collection lines is provided by requiring the installation of sewers in all new subdivisions.	Through the requirements of Title 18, development standards, throughout the review process, and the Wastewater Collection System Master Plan, the city ensures that subdivision developments comply with established requirements.
4.1	The city shall continue to require developers to construct local storm drains in accordance with applicable stormwater master plans.	City ensures through technical drainage study review that local storm drains are constructed according to regional and neighborhood stormwater master plans. These studies must comply with the criteria established in the Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual.
4.2	Since arroyos, washes, and watercourses in their natural state represent visual and possible recreational amenities for adjacent neighborhoods, such areas should not be rechanneled or replaced with concrete structures except where required for bank stability or public safety. Where possible arroyos, washes, and watercourses throughout the city should be integrated with urban development in a manner that protects the integrity of the watershed and minimizes erosion.	The city is preserving about four miles of natural wash/alluvial fan north of Moccasin Road as a regional flood corridor, and three major washes in the Kyle Canyon Gateway Development. Public Works maintains them wherever possible.
4.3	The city shall manage flood control and drainage facilities to have minimal impact on natural washes and their associated habitat.	The city is incorporating the wash north of Moccasin Road into the Regional Flood Control District Master Plan Update and other washes into development agreements. The city complies with NPDES and MS4 permit requirements and is currently working on updates.

POLICY #	POLICY DESCRIPTION	STATUS
PUBLIC SAFETY ELEMENT		
4.4	The city shall require property owners to properly maintain wash corridors on privately owned land, and shall require appropriate easements for such purposes as a condition of development.	City requires public drain easements to be maintained by the private property owner: violators are cited by Code Enforcement. Homeowner Associations are required to maintain these facilities.
4.5	The city shall continue to work to preserve the Las Vegas Wash ("The Wash") by maintaining natural features in all areas of work or construction within the city portions of the Wash. The city should work with the Regional Flood Control District to ensure that natural features are not, unless dictated by physical necessity, replaced with concrete flood channels. Natural features shall be privately maintained. In areas planned for urban development along washes, setbacks from the washes should be implemented to minimize the need for channel reconstruction and to provide a valuable open space amenity.	The city works with the CCRFCD to establish the needs in the Las Vegas Wash. The Upper Las Vegas Wash above Moccasin Road is being preserved in its "natural" state. Through drainage study requirements and the review process, setbacks based on geotechnical reports are adhered to per Title 20 of the city of Las Vegas Municipal Code requirements. Additionally, Federal Emergency management Agency (FEMA) rules and requirements for structures within flood and hazard mitigation zones are concurrently applied.
5.1	The city shall support the recommendation of the Las Vegas Wash Coordination Committee by ensuring that development within Tier One (one-half mile of the Wash) incorporates appropriate drainage facilities and/or design to mitigate any negative impact on the Wash.	The city has a representative from the Department of Public Works who is a committee member of the Las Vegas Wash Coordination Committee. The Las Vegas Wash Coordination Committee will evaluate all facts, issues, and concerns regarding the Las Vegas Wash in order to develop and implement a practical, comprehensive approach for managing the Wash in a timely manner.

POLICY #	POLICY DESCRIPTION	STATUS
PUBLIC SAFETY ELEMENT		
4A1	Public Works should develop a two-tiered flood control system which should include an appropriate mix of large regional and smaller city neighborhood flood control facilities. PROGRAM 4A1.1: Public Works should implement stormwater channel and drain improvements in accordance with the adopted stormwater management program for the City.	The Department of Public Works has had a two-tier regional and local flood control program in place since 1990. Until 1997, regional facilities (100-year systems) were constructed by the Regional Flood Control District, and local facilities (10-year systems) were constructed primarily by Regional Transportation Commission. In 1997, Public Works started developing Neighborhood Stormwater Master Plans to tie into the RFCD regional plan. In 2005, Public Works completed the neighborhood plans for the entire area south of Moccasin. These neighborhood plans in undeveloped areas in the northwest are being fully implemented by private development to meet Design Manual Criteria. Over 100-miles of local storm drain has been constructed by private developers to date.
4A2	The city should continue the implementation of the adopted Master Plan of the Clark County Regional Flood Control District. This Plan provides for the construction and maintenance of the large regional components of the city's flood control system, including detention basins, drainage channels and storm drains.	The city is committed to the timely implementation of the master Plan. Public Works coordinates corridor with Regional Flood Control District and Regional Transportation Commission of Southern Nevada improvements wherever possible to minimize construction impacts and save money. Furthermore, staff is currently working on developing a 2008 Master Plan Update to address changes within the valley..

POLICY #	POLICY DESCRIPTION	STATUS
PUBLIC SAFETY ELEMENT		
4A3	Public Works should develop neighborhood master plans consisting of relatively small city drains and other flood control facilities to safely convey flood and nuisance flows to the larger regional facilities. These plans should be prioritized as part of the capital facilities programming process.	The Department of Public Works has neighborhood drainage plans for all areas with the city with the exception of the area north of Moccasin Road, which is currently being developed.
4A4	Public Works should continue to review plans for new development of property under zoning and subdivision regulations to ensure optimal property drainage in accordance with City Uniform Regulations for the Control of Drainage and the Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual. PROGRAM 4A4.1: Public Works should continue the review of development plans to incorporate, where required, the neighborhood storm drain system plans for the city and the master plan for Clark County Regional Flood Control District.	The Flood Control Section reviews all Development Actions submitted to the city's Planning & Development Department allowing for the request of a Technical Drainage Study or a "Meet with Flood Control" requirement. This insures that the development is in accordance with Clark County Regional Flood Control District's Hydrologic Criteria and Drainage Design Manual as well as the Uniform Regulations for the Control of Drainage.
4A5	Public Works should investigate and, where necessary, implement funding mechanisms for city neighborhood stormwater capital programs. Funding sources may include, but not limited to, special improvement districts or stormwater utility fees.	The Local Stormwater Neighborhood Plans for the entire city are being successfully implemented as private development occurs. This has saved the city well over \$100 million in the last 10-years. Public Works continues to apply for local neighborhood drainage projects. The CCRFCD provides 100 percent funding for the construction of local drainage facilities within one-quarter mile of a CCRFCD facility and 50 percent after the initial one-quarter mile.

POLICY #	POLICY DESCRIPTION	STATUS
PUBLIC SAFETY ELEMENT		
4A6	Public Works should continue the inspection and maintenance of existing stormwater facilities to provide for the safe and efficient passage of floodwaters.	The Department of Public Works currently inspects and maintains all open air and large space reinforced concrete boxes and reinforced concrete pipe facilities twice annually. Public Works is currently working on a program to inspect facilities by televising and assessing all Regional Flood Control District facilities by the year 2013.
4A7	Public Works should continue to maintain a broadly based Flood Hazard Reduction Program, which meets the requirements of the National Flood Insurance Program (NFIP). The city should continue to participate in the federal Community Rating System, thus assuring the availability of flood insurance to city residents and businesses at the least possible cost.	The Department of Public Works maintains a broadly based Flood Hazard Reduction program and on October 1, 2003, lowered their rating from a Class 7 to Class 6 in FEMA's Community Rating System, placing the city in the top eight percent of participating communities across the United States. This allows for a 20 percent reduction in flood insurance to property owners in the flood zone.
4A8	Public Works should continue to support the update of Flood Insurance Maps for existing city areas and to create new maps for developing areas, subject to FEMA review.	The Department of Public Works completed a Flood Insurance Rate Map revision effective January 3, 2007 that removed 32 homes from 100-year special flood hazard along Lake Mead Boulevard between H Street and Gregory Street. This change allows property owners to no longer be "required" to carry flood insurance. Through continuous support of updating Flood Insurance Maps, the city has decreased the number of parcels in special flood hazard areas from 6500 in 1995 to approximately 1800 currently.

POLICY #	POLICY DESCRIPTION	STATUS
PUBLIC SAFETY ELEMENT		
4B.1	Public Works should continue to implement the comprehensive Stormwater Quality Management Plan in accordance with the valley-wide NPDES stormwater discharge permit. PROGRAM 4B1.1: Public Works should continue to participate in valley-wide programs for stormwater quality management PROGRAM 4B1.2: Public Works should initiate the implementation program for Stormwater Quality Management Plan. PROGRAM 4B1.3: Public Works should continue to inventory the existing stormwater facilities to address non-point pollution sources. PROGRAM 4B1.4: Information Technologies Department should encourage the use of the City Geographic Information System (GIS) in coordination with Clark County GIS in the creation and maintenance of Stormwater Quality Management Plan data to evaluate the plan's effectiveness.	The Department of Public Works is currently working with the Las Vegas Valley Stormwater Quality Committee to update the Stormwater Management Plan (SWMP) by June 2008. The Department of Public Works is currently working with the Regional Flood Control District staff and the staff from other entities in the Valley to comply with the implementation program approved by the state in the SWMP. The 2008 Master Plan shares the data from the city of Las Vegas Geographic Information System (GIS) in coordination with Clark County GIS.

POLICY #	POLICY DESCRIPTION	STATUS
PUBLIC SAFETY ELEMENT		
4B2	Public Works should modify city regulations as needed in order to implement stormwater quality discharge standards as they are developed by the State and the U.S. Environmental Protection Agency. PROGRAM 4B2.1: Public Works should coordinate with all appropriate entities and agencies in the Valley to establish individual stormwater quality responsibilities and to prepare a funding strategy.	The Department of Public Works is participating with the Las Vegas Valley Stormwater Quality Committee through the Stakeholder Outreach Program to meet this requirement. A draft ordinance has been prepared and is presently being reviewed.

Appendix 2: NEW WORKING GROUPS FORMED BY THE SQMC TO ADDRESS KEY ISSUES

Development Guidelines Working Group (DGWG)	Construction Program Working Group (CPWG)	Detention Basin Working Group (DBWG)
Mission: To analyze alternatives for a program to reduce the impact of the new developments and significant redevelopment on runoff quality	Mission: To analyze alternatives for a program to reduce the impact of construction activities on runoff quality	Mission: To determine the feasibility of retrofitting existing detention basins to address water quality
Issues to be resolved: • Post construction planning measures (e.g. Low Impact development) • Structural and non-structural runoff controls • Long-term BMP maintenance • New/revised ordinances, regulations, and policies • Impacts of changed policies on community services, developers, and land values • Planning at regional versus local level	Issues to be resolved: • An ordinance or regulatory mechanism to require erosion and sediment controls • Requirements for construction site operators to implement appropriate erosion and sediment control Best Management Practices (BMP) • Requirements for construction site operators to control waste • Procedures for receipt and consideration of information submitted by the public • Procedures for site inspection and enforcement of control measures	Issues to be resolved: • Determine the feasibility of retrofitting an existing detention basins to address water quality • If feasible, develop retrofit designs and costs • Implement retrofit and conduct runoff monitoring for water quality performance • Determine whether additional basin retrofits are warranted
	Stormwater Stakeholders Working Group (SSWG)	
	Mission: To use a consensus-based process to develop program recommendations that meet the permit requirements and are acceptable to the community	

Source: Clark County Regional Flood Control, "Stormwater Stakeholders Open House," November 15, 2007

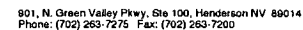
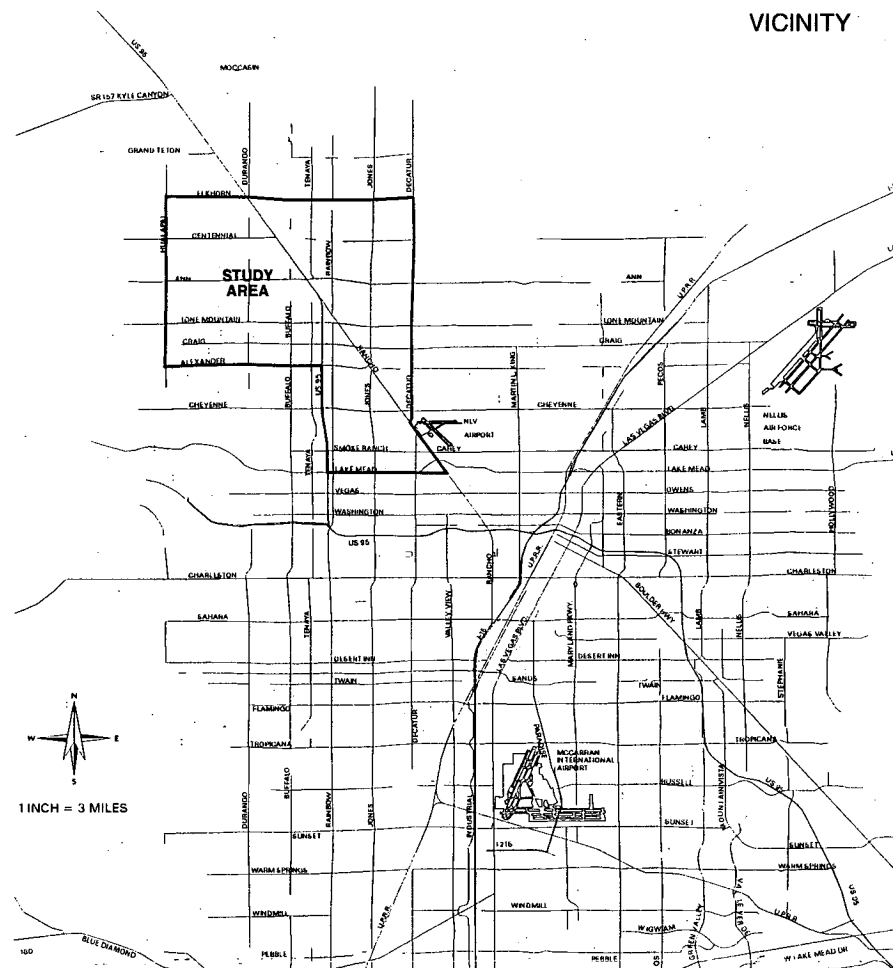
ABBREVIATIONS

AFY	Acre Feet per Year
BCC	Clark County Board of Commissioners
BMI	Basic Management, Incorporated
BMP	Best Management Practices
BOD	Biochemical Oxygen Demand
CAWCP	Central Arizona Water Conservation District
CCRFGD	Clark County Regional Flood Control District
CCWRD	Clark County Water Reclamation District
CELEBRATE	City Employee Lowering Energy Cost By Recycling
and Tracking Efficiency	
CIP	Capital Improvement Plan
CNLV	City of North Las Vegas
CRS	Community Rating System
CY	Cubic Yards
EPA	Environmental Protection Agency
ERU	Equivalent Residential Units
FEMA	Federal Emergency Management Agency
FWPCA	Federal Water Pollution Control Act
GIS	Geographic Information System
LVVWD	Las Vegas Valley Water District
MGD	Million Gallons per Day
MS4	Municipal Separate Storm Sewer System
MTBE	
MWD	Metropolitan Water District
NAC	Nevada Administrative Code
NDEP	Nevada Division of Environmental Protection
NDOT	Nevada Department of Transportation
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NPDES	National Pollutant Discharge Elimination System
NRS	Nevada Revised Statute
RSSN	Republic Services of Southern Nevada
SNWA	Southern Nevada Water Authority
SS	Suspended Solids
SWMP	Stormwater Management Plan
WCPF	Water Pollution & Control Facility

Plans (PMT)



Separator Sheet





Northwest Neighborhood Study Phase 2

VICINITY MAP

-  SHEEP MOUNTAIN NATIONAL WILDLIFE AREA
-  RED ROCK CANYON NATIONAL CONSERVATION AREA
-  QUAIL SPRINGS WILDERNESS STUDY AREA
-  LA MADRE MOUNTAIN WILDERNESS STUDY AREA
-  TOiyABE NATIONAL FOREST
-  PAIUTE RESERVATION
-  FLOYD LAMB STATE PARK

 Northwest Neighborhood Phase 2 Study Area

 Master Plan Area

 Ultimate Development Boundary

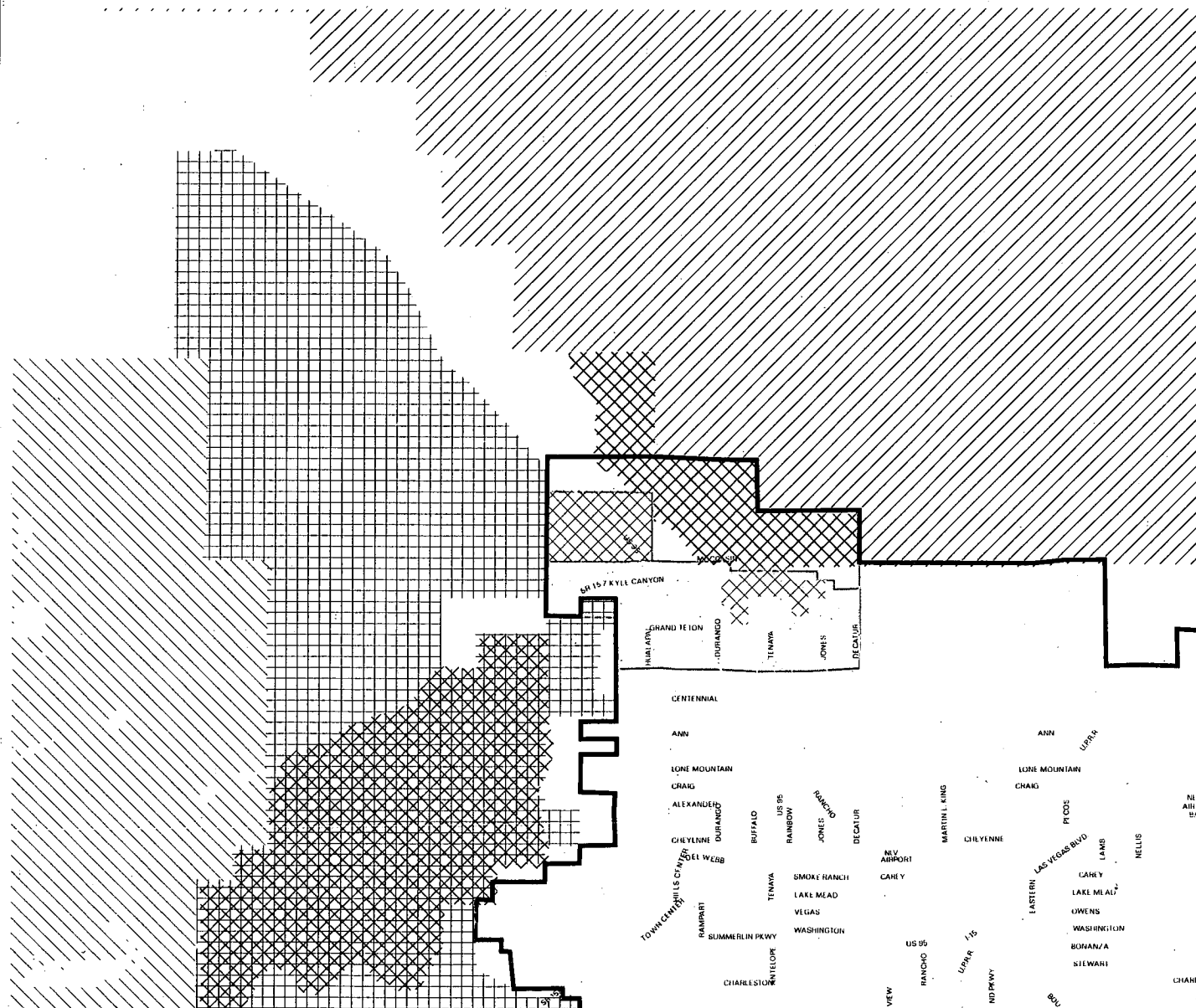


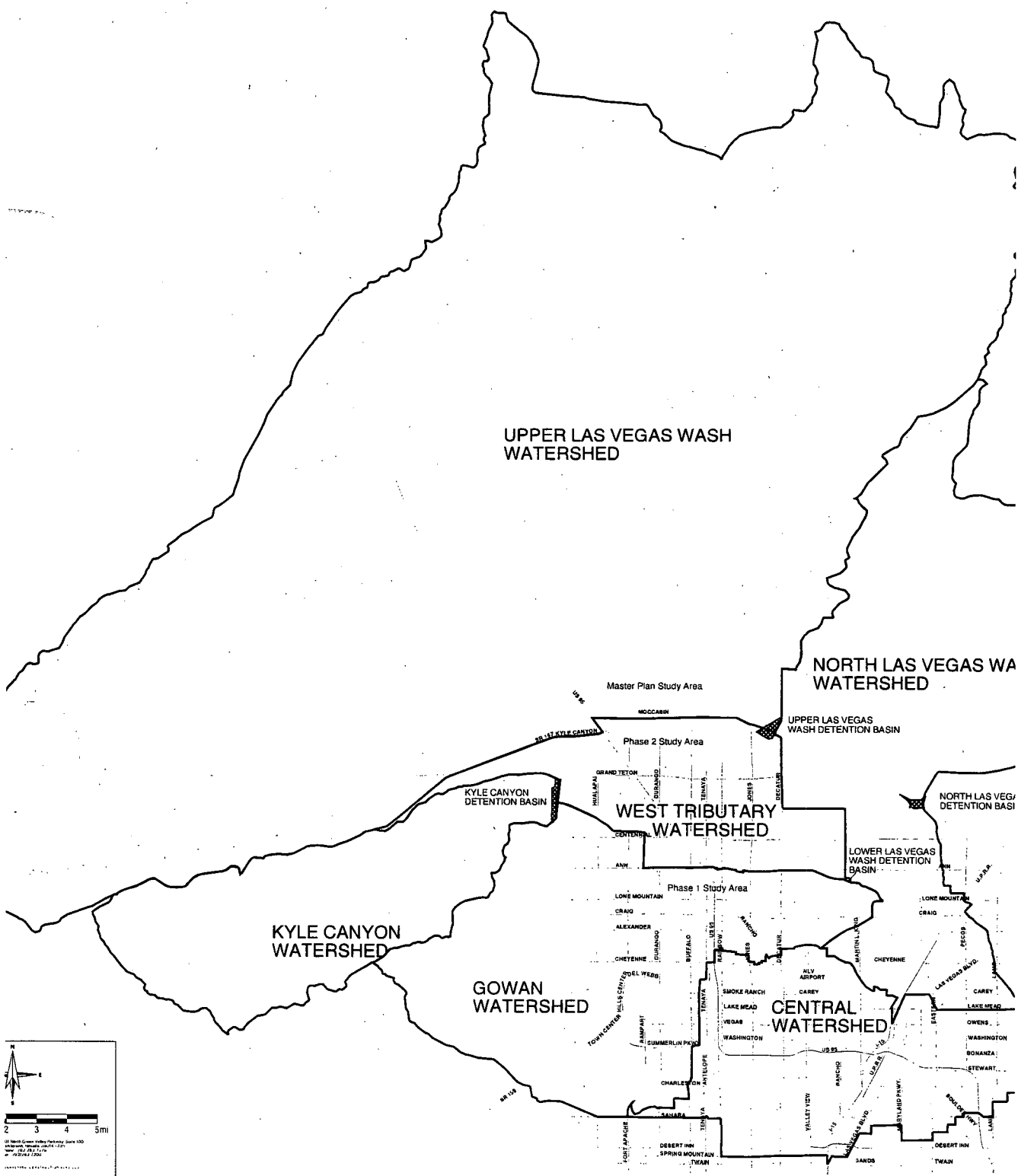
1 INCH = 3 MILE



1001 South Green Valley Parkway, Suite 100
Henderson, Nevada 89014-0130
Phone: (702) 263-1775
Fax: (702) 263-1760

ENGINEERING PLANNING GIS SURVEYING CONSTRUCTION SERVICES





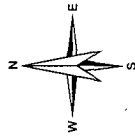


City of Las Vegas

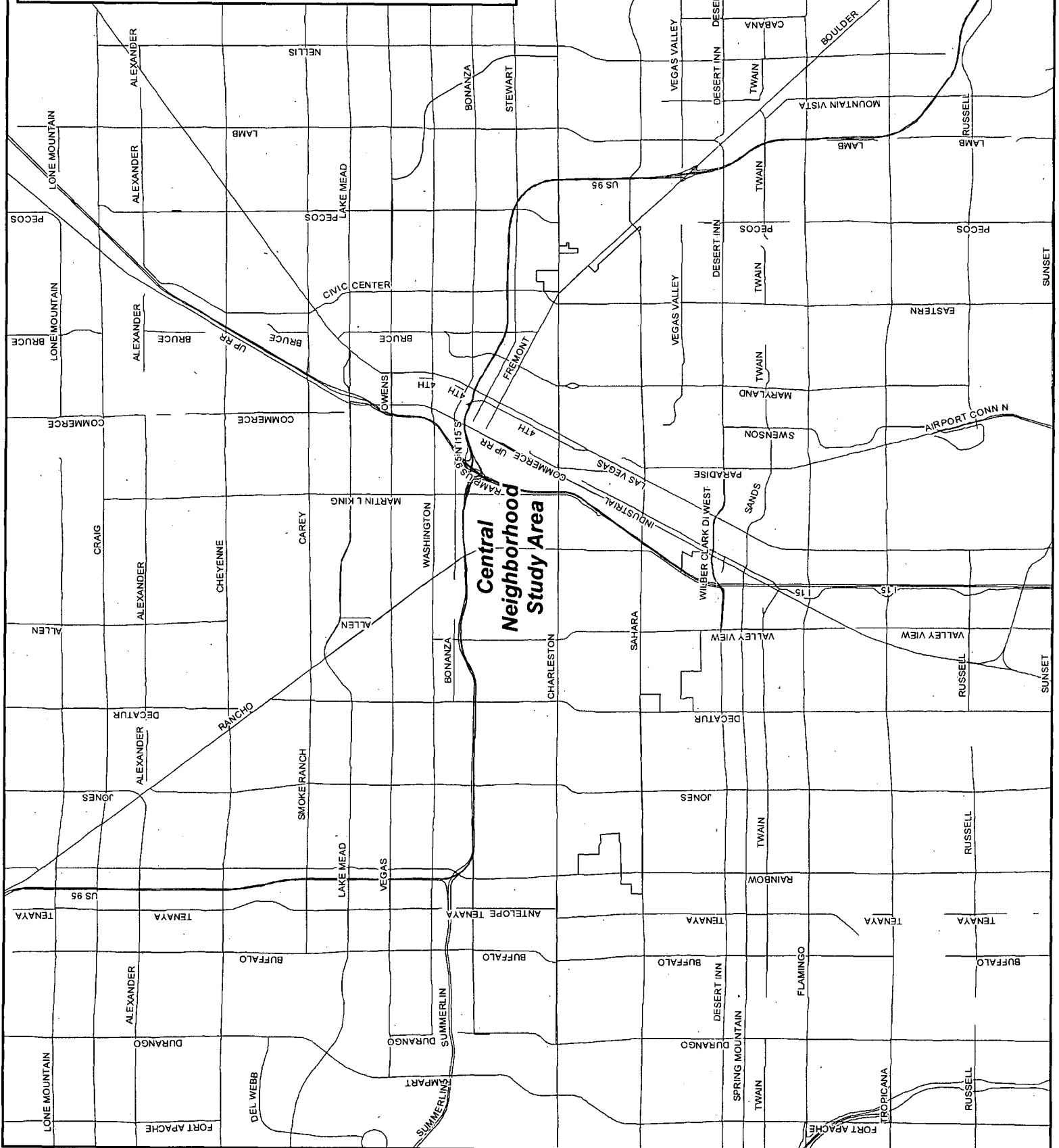
Central Neighborhood Flood Control Master Plan

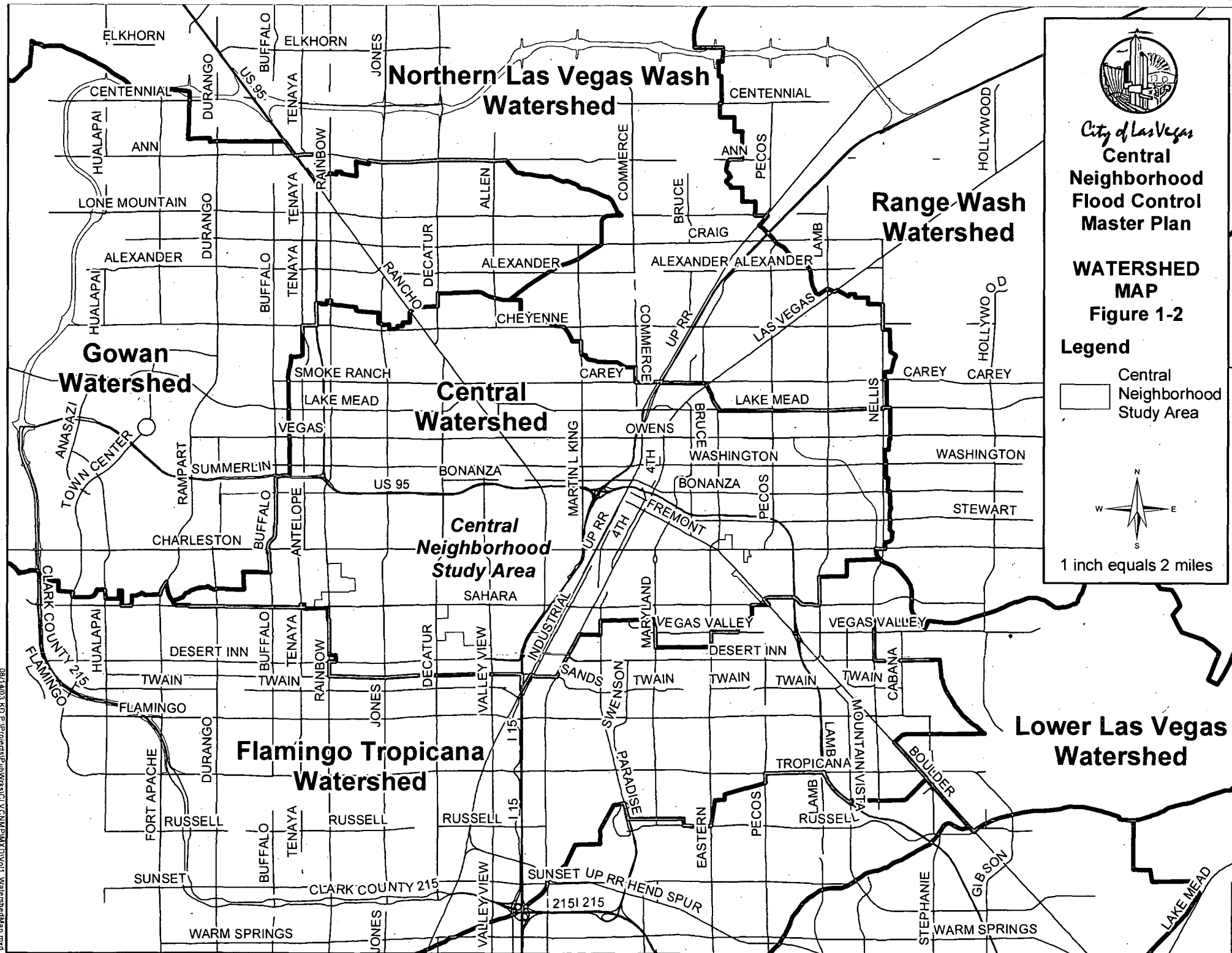
VICINITY MAP

Figure 1-1



1 inch equals 2 miles





CITY OF LAS VEGAS
PLANNING AND DEVELOPMENT DEPARTMENT
CURRENT PLANNING DIVISION
731 SOUTH FOURTH STREET
LAS VEGAS, NEVADA 89101

NOVEMBER 20, 2007

TO: LAS VEGAS REVIEW JOURNAL AND LAS VEGAS SUN
FROM: PLANNING AND DEVELOPMENT DEPARTMENT
SUBJECT: PUBLICATION OF PUBLIC HEARING NOTICES

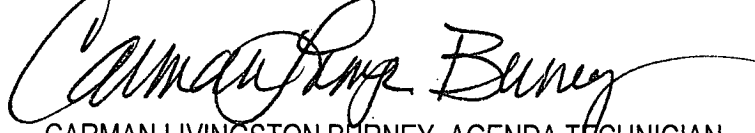
PLEASE PUBLISH THE ATTACHED NOTICES OF PUBLIC HEARING

RE: GPA-26994, GPA-27003, GPA-27004 AND GPA-27006 (GENERAL PLAN AMENDMENTS)

DATE TO BE PUBLISHED: SATURDAY, FEBRAURY 23, 2008

PLEASE SEND THIS OFFICE TWO (2) COPIES OF THE AFFIDAVIT OF PUBLICATION AT YOUR EARLIEST CONVENIENCE.

PLANNING AND DEVELOPMENT DEPARTMENT

A handwritten signature in black ink, reading "Carman Livingston Burney". The signature is fluid and cursive, with the first name "Carman" being the most prominent.

CARMAN LIVINGSTON BURNEY, AGENDA TECHNICIAN
CURRENT PLANNING DIVISION

/CLB

ATTACHMENT