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John J. Lee

City Manager
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Council Members
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City of North Las Vegas
Request for Proposal ("RFP")
RFP 2020-003 Citywide Landscaping

February 19, 2020

Proposals will be received electronically only through the Nevada Gov eMarketplace (NGEM) System at www.ngemnv.com until **March 24, 2020 at 1:00 P.M.** (the "Proposal Due Date"), and all proposals will be publicly opened and read shortly thereafter in Conference Room 703 inside City Hall at the above listed address.

An optional Pre-Proposal Meeting will be conducted at **1:00 P.M., local time, February 24, 2020** in Conference Room 703 inside City Hall at the above listed address.

Questions and/or concerns regarding this Proposal should be submitted in NGEM or sent by e-mail to leakem@cityofnorthlasvegas.com prior to the deadline for questions of **March 9, 2020 at 12:00 p.m.** local time. All questions and concerns must be received by the question deadline.

Proposal documents may be accessed at www.ngemnv.com, at the City of North Las Vegas website at www.cityofnorthlasvegas.com at the Purchasing Bid Advertisements Page, or in person at the Purchasing Office, Monday through Thursday, 8:00 a.m. – 4:45 p.m. at City Hall, 2250 Las Vegas Boulevard North, Suite 708, North Las Vegas, NV 89030. The City reserves the right to reject any and all Proposals, waive any informality or technicality, or to otherwise accept Proposals deemed in the best interest of the City.


Catherine A. Raynor, MMC, City Clerk

Published Las Vegas Review Journal February 19, 2020

**City of North Las Vegas
Request for Proposal (“RFP”)
RFP 2020-003 City Wide Landscaping**

1. PUBLIC RECORDS:

The RFP documents and all Proposals submitted in response thereto are public records. You are cautioned not to put any material into the Proposal that is proprietary in nature. The City is a public agency as defined by state law. As such, it is subject to the Nevada Public Records Law (Chapter 239 of the Nevada Revised Statutes). The City’s records are public records, which are subject to inspection and copying by any person, unless declared by law to be confidential.

2. PERFORMANCE OF WORK:

The successful Respondent shall perform all the work described in this RFP as may be necessary to complete the contract in a satisfactory and acceptable manner according to the terms set forth herein and in any agreement entered into with the City.

3. FORM OF CONTRACT:

Execution of the Contract by all named parties will authorize delivery of goods or services obtained under this RFP.

4. ELECTRONIC RESPONSE THROUGH NGEM SYSTEM:

Proposals must be submitted online through the Nevada Government eMarketplace (NGEM). The NGEM System is an electronic bidding system used by a consortium of local government entities in Nevada for supplier registration and the submission of electronic bids and proposals. The NGEM System is available at www.ngemnv.com. There is no cost for any Respondent to use the NGEM System, however, all Respondents must register prior to gaining access to see the details of any solicitation and to submit a bid or proposal online. All Proposals must be submitted on the NGEM System no later than the Proposal Due Date and time. Per the Terms of Use of the NGEM System, Proposals may not be submitted after the Proposal Due Date, and the server clock will govern.

5. EXPLANATION TO RESPONDENT:

Any explanations desired by Respondent regarding the meaning or interpretation of specifications must be requested in writing and with sufficient time allowed for a reply to reach Respondent before submission of its Proposal. Oral explanations given before the award of the Contract will not be binding. Any written interpretation made will be furnished to all Respondents, and its receipt by the Respondent will be acknowledged. Interpretation of the meaning of the plans, specifications or other pre-Proposal documents will not be binding if presented to any Respondent orally. Every request for such interpretation should be in writing addressed to Marie Leake by email at leakem@cityofnorthlasvegas.com or by mail at ATTN: Marie Leake, Buyer, City of North Las Vegas, 2250 Las Vegas Blvd, North, Suite 708, North Las Vegas, NV 89030. Any and all such interpretations and any supplemental instructions deemed necessary will be in the form of a written addendum to the specifications which, if issued, will be mailed or e-mailed to all known prospective Respondents. Failure of any Respondent to receive any such addendum or interpretation shall not relieve such Respondent from any obligation

under the Proposal documents as submitted. All addenda issued shall become part of the Proposal documents.

6. METHOD OF EVALUATION AND AWARD OPTIONS:

The evaluation of the Proposals will be conducted by City personnel. The City will award this Request for Proposal based on the Respondent who submits the most responsive, responsible Proposal deemed to be in the City's best interest according to the evaluation criteria set forth within this RFP. Please prepare your Proposal according to the appropriate sections and your Proposal will be evaluated accordingly. The City reserves the right to reject all Proposals. Pursuant to NRS 332.065(3), the City shall not enter into a contract with a Respondent to this Proposal unless the contract includes the written certification that the company is not currently engaged in, and agrees for the duration of the contract not to engage in, a boycott of Israel.

7. ASSIGNMENT OF CONTRACTUAL RIGHTS:

It is agreed that the Contract must not be assigned, transferred, conveyed, or otherwise disposed of by either party in any manner, unless approved in writing by the other party or unless otherwise allowed pursuant to NRS 332.095(2). The Respondent will be an independent contractor for all purposes and no agency, either expressed or implied, exists.

8. CONDITIONS OF PROPOSAL SUBMITTAL:

- (a) The Proposal must be signed by a duly authorized official of the proposing firm or company submitting its Proposal.
- (b) No Proposal will be accepted from any person, firm, or corporation that is in arrears for any obligation to the City, or that otherwise may be deemed irresponsible or unresponsive by City staff or City Council.
- (c) No Proposal will be accepted from any person, firm, or corporation if that person, firm, or corporation or any of its principals are debarred, suspended, proposed for debarment, declared ineligible or voluntarily excluded from transactions with any federal or state department or agency. By signing and submitting a Proposal to the City, the Respondent certifies that no current suspension or debarment exists.
- (d) All Proposals shall be prepared in a comprehensive manner as to content, but no necessity exists for expensive binders or promotional material. Respondents must submit one original and two copies of its Proposal.

9. PROTESTS:

The City will publish the Recommendation of Award Notification on the City's website (www.cityofnorthlasvegas.com). Any Respondent may file a notice of protest regarding the proposed award of the Contract by the North Las Vegas City Council. Respondents will have five (5) business days from the date the Recommendation of Award is published to submit the written protest to the City Clerk. The written protest must include a statement setting forth, with specificity, the reasons the person filing the protest believes that applicable provisions of the Contract documents or law were violated. At the time a notice

of protest is filed, the person filing such notice of protest shall post a bond with a good and solvent surety authorized to do business in the State of Nevada, and supply it to the City Clerk. The bond posted must be in an amount equal to the lesser of (i) twenty-five percent (25%) of the total value of the Proposal submitted by the person filing the notice of protest; or (ii) two hundred fifty thousand dollars (\$250,000).

A notice of protest filed in accordance with this section shall operate as a stay of action in relation to the award of the Contract until a determination is made by the North Las Vegas City Council. A person who makes an unsuccessful proposal may not seek any type of judicial intervention until after the North Las Vegas City Council has made a determination on the notice of protest and awarded the Contract. Neither the City nor any authorized representative of the City is liable for any costs, expenses, attorney's fees, loss of income or other damages sustained by a person who submits a Proposal, whether or not the person files a notice of protest pursuant to this section.

If a protest is upheld, the bond posted and submitted with the notice of protest will be returned to the person who posted the bond. If the protest is rejected, a claim may be made against the bond by the City in an amount equal to the expenses incurred by the City because of the unsuccessful protest.

10. LICENSES:

All Respondents must provide a copy of all appropriate licenses in accordance with the laws of the State of Nevada, prior to submission of Proposals for this project. Upon award, the successful Respondent will be required to obtain a North Las Vegas Business License.

11. PUBLIC OPENING:

Proposals received will be opened and the name of the Respondent's company will be read publicly at the time and place indicated in the Request for Proposal documents. Respondents, their authorized agents and the public are invited to be present. No responsibility will attach to any City official or employee for the pre-opening of, or the failure to open, a Proposal not properly addressed or identified.

12. TERM OF THE CONTRACT:

The Contract shall have a term of three years with two, one year extensions.

13. INSURANCE:

Prior to the commencement of the Contract, the successful Respondent must provide properly executed Certificates of Insurance to the City, which shall clearly evidence all insurance required by the City, including a policy or certificate of comprehensive general liability insurance in which the City, its public officials, officers, employees, agents, and volunteers shall be the named insured or be named as an additional insured. In compliance with this provision, the Respondent may file with the City a satisfactory policy providing a minimum \$1,000,000 "blanket coverage" policy or certificate of insurance. Such insurance will (i) waive subrogation against the City, its officers, agents, servants, and employees; (ii) will be primary and any insurance or self-insurance maintained by the City will apply in excess of, and not contribute with, the insurance required; (iii) will include or be endorsed to cover the Respondent's contractual liability to the City; and (iv) disclose all deductibles and self-insured retentions in the Certificate of Insurance. No deductible or

self-insured retention may exceed \$250,000.00 without the City's written approval. Required insurance shall not be canceled, allowed to expire or be materially reduced in coverage until after 30 days' written notice has been given to, and approved in writing by, the City Attorney or the City Risk Manager.

The policy shall provide the following minimum limits:

COMMERCIAL GENERAL LIABILITY

Each Occurrence	\$1,000,000 each occurrence/accident
Products/Completed Operations	\$2,000,000 aggregate
Property Damage	\$1,000,000
Personal/Advertising Injury	\$1,000,000
COMBINED SINGLE LIMIT OF Aggregate of	\$1,000,000 \$2,000,000

AUTOMOBILE LIABILITY

Bodily Injury - - - - -	\$1,000,000 each accident
Property Damage - - - -	\$1,000,000 each accident

Coverage must include all owned, leased, hired, non-owned and employee non-owned vehicles, where applicable, Personal Injury Protection.

PROFESSIONAL LIABILITY

Claim or Loss	\$1,000,000
General Aggregate	\$2,000,000

Coverage must include professional misconduct or lack of ordinary skill for those positions defined in the scope of work for this Proposal.

Such insurance shall include the specific coverage set out herein and be written for NOT LESS THAN the limits of liability and coverage provided in the "Insurance Service Office", or required by law and other governing agencies, whichever is greater. The cost of this insurance shall be deemed included in the Proposal prices and no additional compensation will be made.

In addition, the Respondent shall furnish evidence of a commitment by the insurance company to notify the City by registered mail of the expiration or cancellation of the insurance policies required not less than 30 days before the expiration or cancellation is effective.

WORKER'S COMPENSATION INSURANCE:

Each successful Respondent shall secure, maintain in full force and effect, and bear the cost of complete Worker's Compensation Insurance in accordance with the Nevada Industrial Insurance Act - Nevada Revised Statutes, Chapter 616A-616D, inclusive, for the duration of the Contract and shall furnish the City, prior to the execution of the Contract, a Certificate of Insurance which meets the requirements of the Nevada Industrial Insurance Act. The City, or any of its officers or employees, will not be responsible for any claims or suits in law or equity occasioned by the failure of the successful Respondent to comply with the provisions of this paragraph. If the successful Respondent has no employees, then Exhibit D- Affidavit of Rejection of Coverage for Workers' Compensation must be completed and submitted with response to this Proposal.

14. INDEMNITY:

The successful Respondent agrees to defend, indemnify, and hold the City, its officers, agents, and employees, harmless from any and all liabilities, causes of action, claims, damages, losses, expenses, proceedings, actions, judgements, reasonable attorneys' fees, and court costs which the City suffers or its officers, agents, or employees suffer, as a result of, or arising out of, the negligent or intentional acts or omissions of Respondent, its subcontractors, agents, and employees, in the fulfillment or performance of the work described herein until such time as the applicable statutes of limitation expire.

15. PROVISIONS PROVIDED BY LAW:

Each and every provision and clause required by law to be inserted in the Contract shall be read and enforced as though it were included herein, and if through mistake or otherwise any such provision is not inserted, or is not correctly inserted, then upon the application of either party the Contract forthwith shall be physically amended to make such insertion or correction. The Respondent's attention is directed to the fact that all applicable City, County, State and Federal laws, and the rules and regulations of all authorities having jurisdiction over the project shall apply to the Contract throughout its duration, and they will be deemed to be included in the Contract the same as though herein written out in full.

16. ADDENDA INTERPRETATIONS:

If it becomes necessary to revise any part of this Request for Proposal, a written addendum will be provided publicly. The City is not bound by any oral clarifications changing the scope of work for this project. The addendum must be acknowledged and returned in the Proposal submission.

17. CANCELLATION OF CONTRACT:

The City reserves the right to cancel the award or execution of any contract at any time before the Contract has been approved by the City Council without any liability or claims thereof against the City.

18. TERMINATION FOR CONVENIENCE:

The City shall have the right at any time to terminate further performance of the Contract, in whole or in part, for any reason whatsoever (including no reason). Such termination shall be effected by written notice from the City to the Respondent, specifying the extent and effective date of the termination. On the effective date of the termination, the

successful Respondent shall terminate all work and take all reasonable actions to mitigate expenses. The successful Respondent shall submit a written request for incurred costs for services performed through the date of termination within 30 days of the date of termination. All requests for reimbursement of incurred costs shall include substantiating documentation requested by the City. In the event of such termination, the City agrees to pay the successful Respondent within thirty days after receipt of a correct, adequately documented written request. The City's sole liability under this Paragraph is for payment of the costs for the services requested by the City and actually performed by the successful Respondent.

19. TAXES:

The City is exempt from State, Retail, and Federal Excise Taxes. The Proposal price must be net, exclusive of taxes.

20. EXCEPTIONS:

Each Respondent must list on a separate sheet of paper any exceptions to the Request for Proposal specifications and attach it to its Proposal. Exceptions, deviations, or contingencies requested in Respondent's Proposal, while possibly necessary in the view of the Respondent, may result in lower scoring or disqualification of the Proposal.

21. FISCAL FUNDING OUT:

In the event the City fails to appropriate funds for the performance of this contract, the Contract will terminate once the existing funds have been exhausted.

22. LIMITATION OF FUNDING:

The City reserves the right to reduce estimated or actual quantities, in whatever amount necessary, without prejudice or liability to the City, if funding is not available or if legal restrictions are placed upon the expenditure of monies for the services required under the Contract.

23. ESCALATION:

Prices may not be increased. The price submitted in your Proposal must remain firm throughout this project.

24. AUDIT OF RECORDS:

(a) The successful Respondent agrees to maintain financial records pertaining to all matters relative to this Proposal in accordance with standard accounting principles and procedures and to retain all records and supporting documentation applicable to this Proposal for a period of three (3) years after completion of this Proposal and any subsequent extensions thereof. All records subject to audit findings shall be retained for three (3) years after such findings have been resolved. In the event the successful Respondent goes out of existence, the successful Respondent shall turn over to the City all of its records relating to this Proposal. The successful Respondent agrees to give the City access to records immediately upon request.

- (b) The successful Respondent agrees to permit the City or the City's designated representative(s) to inspect and audit its records and books relative to this Proposal at any time during normal business hours and under reasonable circumstances and to copy and/or transcribe any information that the City desires concerning successful Respondent's operation hereunder at the City's discretion. The successful Respondent further understands and agrees that said inspection and audit would be exercised upon written notice. If the successful Respondent or its records and books are not located within Clark County, Nevada, and in the event of an inspection and audit, successful Respondent agrees to deliver the records and books or have the records and books delivered to the City or the City's designated representative(s) at an address within the City as designated by the City. If the City or the City's designated representative(s) find that the records and books delivered by the successful Respondent are incomplete, the successful Respondent agrees to pay the City or the City's representative(s)' costs to travel (including travel, lodging, meals, and other related expenses) to the successful Respondent's offices to inspect, audit, retrieve, copy and/or transcribe the complete records and books. The successful Respondent further agrees to permit the City or the City's designated representatives to inspect and audit, as deemed necessary, all records of this project relating to finances, as well as other records including performance records that may be required by relevant directives of funding sources of the City.
- (c) If, at any time during the term of this Proposal, or at any time after the expiration or termination of the Proposal, the City or the City's designated representative(s) finds the dollar liability is less than payments made by the City to the successful Respondent, the successful Respondent agrees that the difference shall be either: (a) repaid immediately by the successful Respondent to the City or (b) at the City's option, credited against any future billings due the successful respondent.
- (d) The successful Respondent must assert its right to an adjustment under this clause within 30 days from the date of receipt of the written order; however, if the City decides that the facts justify, the City may receive and act upon an invoice submitted before final payment of the Proposal.
- (e) The successful Respondent shall provide current, complete, and accurate documentation to the City in support of any equitable adjustment. Failure to provide adequate documentation, within a reasonable time after a request from the City will be deemed a waiver of the successful Respondent's right to dispute.

25. INDEPENDENT CONTRACTOR:

In the performance of services under the Contract, the successful Respondent and any other persons employed by it shall be deemed to be an independent contractor and not an agent or employee of the City. The City shall hold the successful Respondent as the sole responsible party for the performance of this Contract. The successful Respondent shall maintain complete control over its employees. Nothing contained in the RFP, Contract or award by the City shall create a partnership, joint venture or agency. Neither

party shall have the right to obligate or bind the other party in any manner to any third party.

26. COMPANY PERSONNEL:

The successful Respondent is solely responsible for the supervision and control of its staff performing work under this contract; however, the City reserves the right to request removal from its premises the successful Respondent's "on site" staff personnel for just cause, and the successful Respondent shall take reasonable action to comply with the request. Upon award of the Contract a listing of all personnel authorized to participate in the awarded program shall be submitted and included as part of the executed agreement.

27. KEY PERSONNEL:

For the City of North Las Vegas:

Marie Leake, Buyer. She is responsible for the administration and audit of the Contract and any changes. She can be reached at (702) 633-2440, Monday through Thursday, 6:00 a.m. to 4:00 p.m.

John Runiks, Manager, Infrastructure Maintenance. He or his designee is responsible for monitoring the project and is responsible for any requested changes by the Respondent. He can be reached at (702) 633-1267, Monday through Thursday, 7:00 a.m. to 5:00 p.m.

The cutoff time for any questions regarding this Request for Proposal is January 21, 2020 at 12:00 p.m. local time. Any questions submitted beyond this cutoff time will not be answered.

**City of North Las Vegas
Request for Proposal (“RFP”)
RFP 2020-003 City Wide Landscaping**

Definitions

Certificates of Insurance – a document issued by an insurance company/broker that is used to verify the existence of insurance coverage under specific conditions granted to listed individuals. This document should list the effective date of the policy, the type of insurance coverage provided, the type and dollar amount of applicable liability, and shall list the City of North Las Vegas , its public officials, officers, employees, agents, and volunteers, as an additional insured.

City - the City of North Las Vegas.

City Attorney – the lawyer employed by the City of North Las Vegas, who is legally appointed as legal counsel to transact business on behalf of the City of North Las Vegas.

City Clerk - a public officer charged with recording the official proceedings and vital statistics of the City of North Las Vegas.

City Council - the legislative body that governs the City of North Las Vegas.

City Manager - a person not publicly elected but appointed by the City Council to manage the City of North Las Vegas.

City Records - information, minutes, files, accounts or other records which the City of North Las Vegas is required to maintain, and which must be accessible to review by the public.

City Staff - any person currently employed by the City of North Las Vegas.

Contract – the written agreement between the City and the Respondent selected by the City as having the best Proposal, as approved by City Council and fully executed by the parties.

Key Personnel - defined City employees listed in Paragraph 27.

Pre-Proposal Meeting – a meeting that Respondent may attend to have the project requirements defined. This allows the Respondent to ask questions necessary to enable Respondent to provide a Proposal.

Nevada Public Records Law – as defined in NRS Chapter 239.

Proposal - document submitted in NGEM by Respondent to the City of North Las Vegas offering the product or service that meets the requested specifications. Respondent will fill out the Proposal documents with their price offering and complete all required documents.

Purchasing Department – The City of North Las Vegas Department that reviews the Proposals for compliance to specifications, reviews the pricing, and awards the Contract to the most responsive and responsible Respondent.

Recommendation of Award Notification – notification to the general public that the City has recommended a Respondent who has been selected based on having the best Proposal by meeting the criteria listed in the Proposal documents. This Recommendation of Award goes to

the City Council and upon City Council approval will be selected to fulfill the requirements as outlined in the Request for Proposal.

Representative – person who represents a company and compiles questions to enable the company to submit a proposal that accurately identifies the City’s requirements.

Request for Proposals – the official legal published advertisement of the Proposal requirements.

Respondent(s) or Proposer(s) – Vendor who offers the requested service or product to the City on the official Request for Proposal.

Subcontractor - a person who, or business that, contracts to provide some service or material necessary for the performance of another's contract.

Warranty - a guarantee on purchased goods that they are of the quality represented and will be replaced or repaired if found to be faulty.

CITY OF NORTH LAS VEGAS
RFP 2020-003 City Wide Landscaping

SCOPE OF WORK

1. **Introduction:** The City of North Las Vegas is seeking Proposals from qualified Respondents for an award for City Wide Landscaping. The City currently has 73 locations requiring maintenance of city-owned facilities, streetscapes and street medians. The City of North Las Vegas may add or remove locations as it deems necessary. This RFP includes the scope of work, The City of North Las Vegas Parks Services Landscape Maintenance Standards (**Exhibit G**) that awarded respondent must adhere to, reports that must be completed by awarded respondent (**Exhibit H, I & J**), a list of City Facilities, which the City may remove or add to (**Exhibit K**) and Additional Work Labor Cost Sheet that must be completed and submitted with proposals by **ALL** respondents. Respondents to this proposal must complete **Exhibit L** and will need to provide examples of at least five (5) years' experience greater than or equal to the scope provided in the Bid. Respondents must furnish list of appropriate traffic control set up equipment and a staffing list that includes qualified irrigation technicians. **Exhibit M** shows the Median Island and Streetscape Maintenance Responsibilities.

SCOPE OF WORK

1. The scope of work consists of furnishing labor and equipment necessary to provide complete and continuous maintenance at city-owned facilities, streetscapes and street medians as described in the attached exhibits of the following:

(a) Plant Material. All plants, shrubs, tree and turf are the responsibility of the contractor, and each shall be maintained up to the standards set forth herein. Failure to report and address irrigation issues and/or disease shall result in the Contractor being responsible for the replacement and associated costs. This does not include damage as a result of vandalism that damages the plant material directly, accidents, or other extreme circumstances including severe weather, in which the Owner will be responsible for the costs as designated in **Exhibit L**, in the respondent's proposal for the following:

(b) Control, programming and maintenance of the irrigation system, including everything down-stream from the water meters, unless otherwise specified. This includes all irrigation lines and components attached to water lines less than 6". City of North Las Vegas to provide parts.

(c) Ground plane surface within the project site, including but not limited to parking lots, walkways, gravel mulch, organically mulched areas, walls, headers, and mow strips.

(d) Other items as identified in the Contract Documents, if applicable.

(e) Map Locations

2. Specific performance standards for each of these areas of responsibility are included in the following sections of the City of North Las Vegas Parks Services Landscape Maintenance Standards, in **Exhibit G**, are to be followed unless otherwise stated in writing by the Project Administrator.

3. The sites to be maintained under the provisions of the agreement are located in Exhibit K. These locations are diversely landscaped with turf ground cover, shrubs, trees, cacti and are irrigated by manual and/or automatically controlled systems. Contractor acknowledges he/she has visited the sites and surrounding areas and has evaluated the extent to which the physical condition thereof will affect the services to be provided. Contractor accepts the premises in its present physical condition and agrees to make no demands upon City/or any improvements or alterations thereto.

4. SEASONAL AND OVERALL INSPECTION OF LANDSCAPE

a. Daily inspections or as when scheduled for maintenance will be a part of the maintenance routine. In addition, a comprehensive inspection should be conducted on a monthly basis to analyze plant materials for signs of stress, damage and potential trouble from the following:

- i. INFESTATION: Moles, gophers, ground squirrels, rabbits, snails, slugs, insects, etc.
 - ii. DISEASE: Withering of leaves, die-back, blackened or galled branches, wilt, fungus growths, cancer, bleeding bark, root rot, stunted growth, discolored or blotchy foliage.
 - iii. LOSS OF VIGOR: In normally healthy plants, this is seen as a failure to thrive, a dropping of unopened flowers, leaves that are small for the species, or thin or leggy growth. These symptoms may have many causes: heat stress, desiccation, wind and frost damage, improper irrigation, incorrect installation, damage from construction or maintenance vehicles, or altered growing conditions. Treat each instance individually when determining cause of decline and treatment.
- a. FERTILIZER OR SOIL CHEMICAL IMBALANCE: Fertilizer "burn" at leaf margins, unusually light green or yellowish-green leaf color (chlorosis), yellow/brown salt "burn" at leaf margin, or other symptoms.

Spraying and applications of fertilizers and soil chemicals should be applied discriminately, and confined to the areas affected.

5. PROTECTION OF PLANT MATERIALS

a. In general, the City of North Las Vegas Parks Services Landscape Maintenance Standards (**Exhibit G**) provides for the proper maintenance of landscape materials on a day-to-day basis, or during undisturbed environmental conditions. This manual is for recommendations only. There will be occasions where weather, construction activities, renovation of existing site improvements or revisions in site design will impact established plantings. The following guidelines for the protection of plant materials should be part of the maintenance crew's operational procedures:

6. CHEMICAL POLLUTANTS

Do not permit chemical pollution to contaminate planting areas. This includes paints and thinners, caustics and solvents, detergent solutions, salts, petroleum products and pesticides or herbicides not specifically being applied to the plant materials.

7. TRAFFIC CONTROL

a. Do not drive or park maintenance vehicles under the drip line of trees or on lawn

or ground cover areas.

- b. Provide adequate protective barriers around landscaped areas during operation of landscape contractor's maintenance or construction equipment. Do not operate heavy equipment beneath the drip line of trees.
- c. Take necessary safety precautions to protect maintenance crew and roadway users from hazards.

LOCATION	PERMITTED WORK HOURS
All School Zones	School zones shall be time restricted based on the bell times of the associated school. Typical work hours are 8:00 a.m. - 2:00 p.m, may vary based on location
Craig Road Ann Road Centennial Boulevard Lake Mead Boulevard Carey Avenue Lamb Boulevard Decatur Boulevard Martin Luther King Tropical Parkway Aliante Parkway Aviary Way	1 lane closed: 9:00 a.m.-3:00 p.m. 2 or more lanes closed: 9:00 p.m.-5:30 a.m.
Cheyenne Avenue	From Decatur to Losee: 9:00 p.m.-5:30 a.m. East of Losee: 1 lane closed: 9:00 a.m.-3:00 p.m. ; 2 or more lanes closed: 9:00 p.m.-5:30 a.m
Losee Road	9:00 p.m.-5:30 a.m.
Notes:	1. Locations other than those listed may have work hours restricted on a case by case basis depending on the type of work proposed. 2. Other jurisdictional agencies may place additional conditions on projects that cross agency boundaries or that take place within their R.O.W. The most restrictive time shall govern. 3. Work zones near residential areas may be restricted based on the type of work proposed.

8. ALTERATION OF FINISH GRADES

- a. Do not permit construction to raise the finish grades in established landscaped areas.
- b. Do not permit machine excavation within the drip line of existing trees. If excavation must intrude into this zone, only hand excavation should be permitted. Obtain permission of PA when roots greater than 3" in diameter or roots with a diameter greater than 50% of the diameter of the main trunk must

- be cut.
- c. Do not permit soil, rock, gravel, lumber, polluted products or other materials to be stockpiled beneath the drip line of trees or shrubs without mitigating measures approved by the PA.
 - d. Do not permit concrete or stone paving to be laid within the drip line of existing trees. Exception: paving may extend to no more than one-quarter (1/4) of the drip line area if a corresponding thinning of the crown is performed simultaneously with the completion of the paving work.
 - e. Exceptions to these guidelines may be unavoidable and will be judged on a case-by-case basis by the PA.

9. PROTECTION AGAINST DISEASE/INSECTS/ANIMAL PESTS

- a. Remove, by corrective pruning, plant materials damaged by fire, weather or mechanical means immediately after the damage has been identified.
- b. Transport diseased or infested plant materials completely off the site immediately after their removal. Do not permit pruned materials from diseased planting to be stockpiled anywhere on site at any time. Plant parts, soil, debris, etc. removed from the site shall be disposed of at a legitimate dump site. Disposal of material by dumping in the desert will be viewed by the Owner as grounds for Termination of Contract.
- c. Inspect new plant materials for signs of insect infestation or disease upon delivery to the site. If possible, quarantine new materials for 3 weeks prior to installation.
- d. Control damage from animal pests, such as rabbits, with approved techniques; cost of such protection, such as sprays and protective fencing, is part of the basic services.

10. PROTECTION DURING SPRAYING

Immediately wash off sprayer drippings and materials accidentally spilled on plants.

11. EROSION PREVENTION

The two common forms of erosion are sheet erosion and gulying. Sheet erosion is gradual; gulying may be sudden and dramatic. Bring any potential problems to the attention of the PA. Contractor will seek to prevent erosion through the following:

- a. Sheet Erosion: Be aware of gradual changes in the color or texture of soil. Disc and mulch areas subject to sheet erosion. Install contour furrows or interceptor ditches where required on long slopes.
- b. Gully Erosion: Be aware of the formation of "rills" in the natural depressions of a slope or deeper cutting in swales. Control of gulying varies, from dissipation of flow through use of gravel or other surface treatment, to construction of check dams or diversion ditches.
- c. Remove downstream accumulations of soil transported by erosion, to prevent damage to roots of downstream plant materials.

12. ONGOING MAINTENANCE TASKS

- a. Applicable Standards- Use of the City of North Las Vegas Parks Services Landscape Maintenance Standards as a minimum standard only as described within (Exhibit G). Drought-Tolerant, Low Maintenance Plants for Southern Nevada, Southern Nevada Water Authority, Clark County Cooperative Extension Service, SNH 80-02 July. Lawns for Southern Nevada, Clark County Cooperative Extension Service, SNH 80-03-J. Desert Gardening, Clark County Cooperative Extension Service, SNH 80-0-IJ.

13. MOWING - OPERATION

- a. Mowing operations shall be performed in a manner that ensures a smooth surface appearance without scalping or allowing excessive cuttings to remain.
- b. Turf shall be mowed with a rotary-type mower.
- c. All equipment shall be adjusted to the proper cutting heights and shall be adequately sharpened.
- d. Mowing height shall be 1.5 inches for all Bermuda turf areas (April-October). Mowing height *may* be set as high as 2-1/2 during the dormant season (November- March). Mowing heights may vary for special events, athletic field requirements or other special conditions per request from PA a minimum of one (1) week advance notice.
- e. Mowing operation shall be completely performed at least forty-two (42) times per year or as requested to accommodate excessive growth periods.

14. EDGING/DETAIL/WEED CONTROL - GENERAL OPERATION

- a. All turf areas shall be kept neatly edged and all grass invasions eliminated. Maintain areas between plants weed-free. Control weeds by physical removal or application of accepted herbicides.
- b. All grass-like type weeds, morning glory or vine/weed types, ragweed or other underground spreading weeds shall be kept under strict control.
- c. Remove all weeds and grass from walkways, curb and gutter expansion joints, roadways, driveways, parking lots, patios, drainage areas and hillsides.
- d. Methods for removal of weeds, turf encroachment and detailing shall incorporate mechanical and/or chemical means of eradication.
- e. Cultivate or use herbicide to remove weeds and turf around the base of new trees.
- f. Use only recommended and legally-approved herbicides to control weed growth. Follow manufacturer's recommendations for application methods, rates, etc.

15. MECHANICAL EDGING

- a. Mechanical edging of turf shall be performed at a minimum of once weekly June – August, twice monthly April – May and September October, and once per month November through March for a total of at least twenty-five (25) times per year.
- b. Mechanical edging shall be completed as one operation in a manner that ensures a well-defined edge.
- c. Walkways, curbs, gutters, and any other areas which catch grass clippings shall

be cleaned immediately following each mechanical edging and clippings removed from the site.

- d. When designed edges exist in flower beds, these edges shall be kept clean, sharp, well defined and free of weeds and grass invasions.
- e. All turf edges including, but not limited to, sidewalks, patios, drives, curbs, shrub beds, flower beds, ground cover beds and around the base of trees shall be edged to a neat and uniform line.
- f. The edge of turf shall be trimmed or limited around all sprinklers (to provide maximum water coverage), valve boxes, meter boxes, backflow devices and other obstacles.

16. CHEMICAL APPLICATION - EDGING

- a. Chemical application may be used in and around areas such as planters, areas adjacent to buildings, trees, fence lines, sprinkler heads, etc. Prior to application of chemicals, all areas shall be trimmed to proper mowing height. Chemicals shall be applied in a manner to limit drift to six inches (6"). Precautionary measures shall be employed since all areas will be open for public access during application.
- b. Spot treat with a portable sprayer or wick wand using an effective herbicide, applying per manufacturer's recommendation. Water shall not be applied to treated areas for four to eight (4 - 8) hours after each application or in accordance with manufacturer's recommendations.
- c. Weeds treated with a contact weed chemical shall be left in place for a minimum of seven (7) days. If kill is not complete, a second application shall be applied.
- d. Weeds treated using a systemic chemical shall be left in place per manufacturers recommendation. If kill is not complete by the time specified in the manufacturer's recommendation, a second application shall be applied.
- e. After complete kill, all dead weeds shall be removed from area.

17. CLEARANCE - EDGING

- a. Where trees and shrubs occur in turf areas, all grass growth shall be limited to at least eighteen inches (18") from the trunk of trees and away from the drip line of shrubs by use of approved chemicals. Line trimmers and other types of maintenance equipment shall not be operated so as not to damage plant materials.
- b. Linear chemical edging of turf boundaries may be performed in a manner that ensures a defined turf edge and limits its encroachment into beds or across boundaries where it is impractical to edge mechanically. A six inch (6") barrier width shall be considered normal.
- c. Detailing valve boxes, meter boxes, and similar small obstacles in turf areas may be performed in a manner that ensures operability, ease of location or a clean appearance. A six inch (6") clearance shall be considered normal.

18. EDGING/DETAILING/WEED CONTROL- FREQUENCY: ALL AREAS TO BE MAINTAINED SHALL RECEIVE NO LESS THAN THE FOLLOWING:

- a. Mechanical Edge Turf: A minimum of once weekly June – August, twice monthly April – May and September October, and once per month November through March for a total of at least twenty-five (25) times per year.
- b. Detail Chemical Application: Once a month, April to September, and once every two months, October to March or on an as-needed basis.
- c. Chemical Application: Beds, planters, walkways, hard court areas, picnic pavilions, drainage areas, play areas, patios, walkway and curb and expansion joints, roadways, parking lots and hillsides on an as-needed basis.
- d. Inspect, Spot-treat or Mechanically Remove Weeds as necessary once per week.

19. LITTER CONTROL/ CLEANING - OPERATION

- a. Complete policing and litter pick-up to remove paper, glass, trash, weeds, unwanted grass, leaves, spilled drinks, bird droppings, pet droppings, gum, undesirable materials and other accumulated debris to be maintained in areas including, but not limited to, all landscaped areas, building entrances, colonnades, walkways, curbs, gutters, between and around planted areas, all areas under trees, steps, planters, drains, catch basins and the corners and edges along the parking lot area.
- b. Litter pick-up shall be completed as early as PA deems practical.
- c. Removal shall be in the most appropriate way for each area whether it be by raking, sweeping, blowing, or pressure washing and litter and debris shall be disposed of by the contractor.

20. LITTER CONTROL - FREQUENCY

- a. Successful bidder shall provide all labor, equipment and materials to maintain and clean all areas seven (7) days a week in the frequency noted in **(Exhibit K)** or as requested by the PA.
- b. The entire site is to be cleaned and maintained at the frequency listed in **(Exhibit K)**

21. TRASH BIN REMOVAL - OPERATION AND FREQUENCY

- a. All trash and accumulated debris shall be removed from the site by the Contractor.
- b. Trash receptacles on each site shall be maintained according to the frequencies in Exhibit A-1 or as directed by PA.
- c. All trash receptacles will be emptied when they are half full or have a foul odor. Large in-ground trash cans will need to be emptied with a specialized crane and truck provided by the contractor a minimum of one (1) time monthly.
- d. Specialized in ground trash receptacles will be emptied a minimum of once monthly from March - November, then bi-monthly the remainder of the year, where applicable.

22. RAKING - OPERATION

- a. Accumulation of leaves shall be removed from all curbs, gutters, sidewalks, parking lots and landscaped areas including beds, planters and turf areas under

trees and shall be disposed of in mulching bay onsite or hauled off site.

- b. Contractor shall rake smooth decomposed granite areas on a bi-weekly basis. Contractor shall add matching rock mulch to areas that are thinning as needed and shall insure that no bare spots or plastic is exposed. Additional materials needed will be provided by the PA.

23. RAKING - FREQUENCY

- a. Ground Cover Beds Under Trees - Bi-weekly or as requested by the PA.
- b. Rock Mulch Areas Bi- weekly or as requested by the PA.

24. TREES SHRUBS PRUNING AND HEDGE TRIMMING -OPERATION

Do not clip shrubs into balled or boxed forms unless specifically called for in the design. Only shrubs designated as "hedges" are to be sheared. Periodically pinch back "wild" growth on shrubs as called for in the maintenance requirements for individual plants. All tree "suckers" are to be removed to encourage healthy growth.

25. CLEARANCE

Maintain clearance for branches overhanging beyond curb line into the paved section of roadways. Prune all plant materials where necessary to maintain a 7 foot pedestrian visibility and clearance and to prevent or eliminate hazardous situations. All other pruning will be performed by another tree contractor hired by Owner. Pruning is to be approved by PA prior to pruning operations.

- a. Remove all clippings from the site on the day that plant materials are pruned or trimmed.
- b. Plant ties shall be checked frequently and either retied to prevent girdling, or removed along with the stakes when no longer required
- c. Remove all new growth on shrubs to maintain appropriate clearances.
- d. Remove all dead shrubs and trees. Provide a list of removed shrubs and trees immediately after removal.

26. RUNING AND HEDGE TRIMMING - FREQUENCY

- a. Shrubs: Clearance Pruning - All shrubs should be trimmed for clearance three times per year and on an as-needed basis. All shrubs should be pinched back periodically to remove wild growth.
- b. Ground Cover Thinning - as needed.
- c. Prune plant material for vehicular and pedestrian visibility on an as-needed basis to achieve a maximum height of no taller than 2.5 feet from top of curb line.

27. STAKING AND TYING

- a. Inspect staking monthly and within forty-eight (48) hours after high (over 30 mph) winds to prevent girdling of trunks or branches, and to prevent rubbing that causes bark wounds.
- b. Replace missing or damaged stakes where the tree caliper is less than three inches (3"). Stake(s) should support the tree, yet allow 2" of trunk movement in all directions.

- c. Stake in those cases where tree has been damaged and requires staking for support.
- d. Stake new trees or recently planted trees which have not previously been staked.

28. MATERIALS

Tree stakes, two (2) per tree, shall be lodge pole pine treated with a wood preservative and not less than eight feet (8') in length for 5-gallon size trees and not less than ten feet (10') for 15-gallon trees.

- a. Tying will be done using "V.I.T. twist brace". Other Types of ties may be substituted with PA approval.
- b. Stakes will not be placed closer than eight inches (8") from the trunk of the tree, and permit 2" of trunk movement in all directions.
- c. Stakes and ties will be placed so no chafing of the bark occurs.
- d. Damaged trees shall be staked and tied within twenty-four (24) hours. Replacement stakes or new staking shall be completed within five (5) days.
- e. Stakes and ties will be provided by the PA

29. WATERING CONTROLLER OPERATION

Since water requirements by plants vary according to the season and a particular year, extremely close attention shall be paid to the demands of the plants as influenced by their exposure to sun, wind, shade, and location in the individual planters. The variation in the size of plants installed, as well as the species and varieties, shall be taken into consideration. All landscaped and turf areas shall be irrigated as required to maintain adequate growth and appearance with a schedule most conducive to plant growth. The delivery of adequate moisture to the landscaped areas shall include, but not be limited to, hand watering, operation of manual valves, proper utilization of automatic controllers, and the bleeding of valves to water specific areas as needed. Desert (xeric) plant material shall not be over watered. All irrigation watering will be managed by the City via a centrally controlled computer irrigation system.

- a. All watering shall be programmed in compliance of the guidelines set forth by the local governing water purveyor.
- b. Adequate soil moisture will be determined by contracted staff via weekly e-mail communications, this includes excessive slopes, or dry spots and stations.
- c. The City will adjust all watering via onsite inspection from PA and e-mail correspondence from the contractor.
- d. Consideration must be given to the soil condition, humidity, minimizing water runoff and the relationship of conditions which affect day and night watering. Contact PA for adjustment of water for special circumstances.
- e. Watering shall be accomplished at night or early morning and in full compliance with all ordinances established by the City of North Las Vegas and shall be regulated to avoid interference with any use of the facility, roadway, paving or walks. Ice should not be allowed to form on sidewalks or other surfaces due to irrigation runoff.

- f. In areas where wind creates problems of spraying water into private property or road right-of-ways, the controllers shall be set to operate during the period of lowest wind velocity which would normally occur at night or early morning hours.
- g. Irrigation system will be controlled in such a way as not to cause any excessively wet or "waterlogged" areas which could interfere with the ability to mow all turf. "In lawn" trees and other planting shall be protected from over-watering and runoff drowning.
- h. New turf (up through the sixth mowing) shall be watered immediately after mowing. Well established turf shall not be watered for at least four (4) hours after mowing.
- i. All ground cover areas shall be watered as needed to maintain a healthy condition, care being taken not to over-water in shady areas.
- j. Initial watering problems and extraordinary changes will be approved by PA.
- k. All sites listed in **(Exhibit K)** are controlled by the Parks Maintenance Division via computerized irrigation control. It is the responsibility of the contractor to notify the City via e-mail for all irrigation changes needed within 24 hours upon discovery.

30. IRRIGATION SYSTEM MAINTENANCE

- a. Contractor shall maintain in an operational state, at all times, the complete irrigation system, consisting of back-flow devices, remote controllers, automatic controllers, control valves, control valve wires, gate valves, quick couplers, booster pump, pressure regulators, filters, strainers, irrigation lines < 6". Tubing, risers, sprinkler heads, bubblers, and emitters. All irrigation systems shall be regularly inspected and tested at frequencies specified herein. The City will provide all parts and components for irrigation systems. The contractor shall request a needed parts list in writing 24 hours in advance.
- b. Contractor shall provide personnel fully trained in all phases of landscape irrigation systems including, but not limited to, operation, maintenance, adjustment and repair.
 - 1. Adjustment of valves and sprinkler heads
 - 2. Removal of obstruction
 - 3. On-site repairs to valves, sprinkler heads and quick couplers including, but not limited to, providing small parts such as solenoids, screens, diaphragms, gaskets, springs, screws, adjustment screws, washers, "O" rings and nozzles.
 - 4. Replacement of all risers and swing joints to the lateral lines
 - 5. Replacement of all types of irrigation heads, shrub heads and emitters
 - 6. Replacement of all missing covers to valve boxes
 - 7. Providing caps and plugs
 - 8. All components needed to repair lateral lines of PVC or tubing including reburial if surfaced.
 - 9. All components needed to repair or replace gate valves, ball valves, automatic valves, quick couplers, heads and pressure regulators

- 10. Main line repair (defined as equal to or greater than a 6" line) will be considered additional work unless it is a result of contractor negligence and/or operation.
- c. Contractor will contact PA and request all irrigation parts needed for tasks being performed. This includes irrigation head type and model number, nozzle size and emitter GPH. The PA will obtain all parts and have them available to the contractor by the next work day after receiving verbal request, followed by a confirming written request.
- d. Replacement by contractor of inoperative irrigation components shall be completed within 24 hours.
- e. Replacements for the irrigation system shall be with originally specified equipment of the same size and quality or substitutes approved by the PA prior to any installations.

31. IRRIGATION SYSTEM OPERABILITY AND TESTING

In order to ensure the operability of the irrigation system, Contractor shall sequence controller(s) to each station manually to check on the function of all facets of the irrigation system and report any damage or incorrect operation to the PA.

During the testing, Contractor shall

- a. Adjust all sprinkler heads for correct coverage to prevent excessive runoff and/or erosion and to prevent the spread onto roadways, sidewalks, hard surface areas and private property.
- b. Unplug clogged heads and flush lines to free lines of rocks, mud and debris.
- c. Replace or repair inoperable irrigation equipment.
- d. All system malfunctions, damage and obstructions shall be recorded and corrective action taken.
- e. Repair/replace malfunctioning quick couplers, manual or automatic valves and sprinkler heads within one watering cycle.
- f. Correct malfunctioning irrigation systems and equipment within two hours of identification or following verbal notification.
- g. Control the irrigation system during inclement weather conditions and limit the use of water concurrent with the weather situation to the satisfaction of the PA.
- h. Flushing of the irrigation lines of grit and gravel shall be done by removing the last head on each lateral and operating the system until those materials are expelled.
- i. Document weekly via e-mail all irrigation work performed and location, controller ID, and station number.

32. IRRIGATION SYSTEM OPERABILITY AND TESTING - FREQUENCY: OPERATION AND MAINTENANCE OF THE IRRIGATION SYSTEM SHALL RECEIVE NO LESS THAN THE FOLLOWING:

- a. Check for operability all controllers, quick couplers, valves, and sprinkler heads; once per week or as problems/conditions indicate a need.
- b. Adjust and correct for coverage; as needed.

- c. Repair and/or replace damaged or inoperable controllers, valves, quick couplers, heads and broken water lines as needed.
- d. Check valve boxes for safety and security purposes; once per week.

33. USE OF CHEMICALS - OPERATIONS

- a. All work involving the use of chemicals shall be in compliance with all Federal, State and local laws and will be accomplished by or under the direction of a State of Nevada Licensed Pest Control Operator. Contractor shall have a full compliance, Hazard Communication/Right-to-know program in place at the start of the Contract period. The Contractor must provide copies and material specification data sheets (MSDS) to the City and they must be approved by the City and a copy of all MSDS sheets must be kept on-site. Contractor shall not store fertilizers or other chemicals on-site.
- b. A listing of proposed chemicals to include commercial name, application rates and type of usage shall be submitted to the PA for approval at the commencement of the contract. No work shall begin until written approval of use is obtained from the PA.
- c. Chemicals shall only be applied by those persons with or under the direction of an individual with a valid Nevada Pest control Applicator's License. Applications shall be in strict accordance with all governing regulations.
- d. Records of all operations starting dates, times, methods of applications, chemical formulations, applicator's names and weather conditions shall be made and notification to PA retained in an active file for a minimum of three (3) years.
- e. All chemicals requiring a special permit for use must be registered with the State of Nevada and a permit obtained with a copy to the North Las Vegas Parks Services Division.
- f. All regulations and safety precautions listed in the guide entitled, "Apply Pesticides Correctly," published by the U.S. Environmental Protection Agency shall be adhered to.
- g. Chemicals shall be applied when air currents are still, preventing drifting onto adjacent property and preventing any toxic exposure to persons whether or not they are in or near the area of application.

34. SWEEPING - OPERATIONS

Methods for sweeping of roadway, walkway areas and parking lots can incorporate one or all of the following: Power pack blowers, vacuums, brooms and push power blowers. Under extenuating circumstances, the City may use its street sweepers for parking lots. The contractor will remove debris the street sweepers cannot pickup.

35. SWEEPING - FREQUENCY

Sweeping of roadways or walkways shall be performed weekly or after each mowing or mechanical edging.

36. AERATION - OPERATION/FREQUENCY

- a. Aerate all turf areas by using a device that removes cores to a minimum depth

of 1-1/2 inches at no more than six inch (6") spacing.

- b. Turf aeration shall be accomplished two (2) times a year on the entire turf area and four (4) times a year on athletic fields and event areas.
- c. Aeration may be required immediately after vertical mowing (thatch removal) operation and just prior to over-seeding and fertilization.
- d. Aeration cores will not be collected.

37. TURF CLIPPING REMOVAL- OPERATION/FREQUENCY

- a. Turf clippings will accumulate a minimum of 6 times a year depending on weather and mowing conditions.
- b. All turf clippings will be vacuumed up and disposed of in the mulch bin area.

38. FERTILIZATION - OPERATION

Fertilization may be controlled by an automated fertilizer injector system operated by the City. In the areas where such system is not in place, the Contractor is responsible for manual fertilization services.

39. PLANT MATERIALS - OPERATIONS

- a. All plant material additions and/or replacement outside the scope of this contract shall be accomplished upon approval of a time and materials proposal and shall not be included in the annual maintenance cost bid items.
- b. Plant materials shall conform to "Horticultural Standards" of American Association of Nurserymen, as to kind, size, age, etc. Plans of record and specification should be consulted to ensure correct identification of species. Plant material larger than those specified may be supplied if complying in all other respects.
- c. Substitutions may be allowed but only with prior written approval by the PA.
- d. All new or replacement plant materials or trees will be inspected prior to installation by the PA.

40. QUALITY

- a. Plants shall be sound, healthy, and vigorous, free from plant disease, insect pests or their eggs, and shall have healthy normal root systems and comply with all state and local regulations governing these matters and shall be free from any noxious weeds.
- b. All trees shall be measured six inches (6") above the ground surface.
- c. Where caliper or other dimensions of any plant materials are omitted, it shall be understood that these plant materials shall be normal stock as recommended by the American Nurseryman Standard. They must be sturdy enough to stand safely without staking.
- d. Shape and Form: Plant materials shall be symmetrical, and/or typical for variety and species.
- e. All plant materials must be provided from a licensed nursery and shall be subject to acceptance as to quality by the PA.

41. PLANT MATERIALS GUARANTEE

All shrubs shall be guaranteed to live and remain in healthy condition for no less than sixty (60) days from the date of acceptance of the job by the PA.

42. TREE REPLACEMENT

All trees permanently damaged, by any means, will be replaced with the identical species of tree existing previously, unless otherwise notified, in writing, by the PA. Size of the replacement shall be of like size. The need for and the size of replacement will be determined by the PA. The Contractor will be responsible for all costs associated with tree replacement required due to damage from the Contractor or Contractor's staff, or failure by the Contractor to adequately report and address any issues (i.e. irrigation, disease, etc.).

43. DISPLAY GARDENS/ENHANCED DESERT AREAS

- a. Minimize disruption to surrounding undisturbed areas during maintenance activities.
- b. Prevent excess irrigation water from flowing onto undisturbed desert areas to minimize problems with weed growth.
- c. Remove stakes, tree ties, etc. as soon as practical so that areas appear as natural as possible.
- d. Prevent any access by vehicles into undisturbed areas. Strictly limit pedestrian access to essential maintenance tasks only.
- e. Provide fencing or other temporary barriers if required to prevent maintenance personnel or others from entering undisturbed areas.

44. DISEASE/INSECT CONTROL - OPERATION

- a. All landscaped areas shall be maintained, free of disease and insects that could cause damage to plant materials including, but not limited to, trees, shrubs, ground cover and turf.
- b. The PA shall be notified immediately of any disease, insects or unusual conditions that might develop.
- c. A disease control program to prevent all common diseases from causing serious damage shall be provided on an as-needed basis. Disease control shall be achieved utilizing materials and rates recommended by a licensed Nevada Pest Control Advisor, with the PA's written approval.

45. CULTIVATING - OPERATION

Cultivate beds and planter areas to ensure a neat appearance using appropriate equipment designed to loosen the soil to a depth of three inches (3"). Care shall be taken to not disturb plant materials or their roots in accomplishing this operation.

46. RODENT CONTROL - OPERATION

All areas shall be maintained free of rodents including, but not limited to gophers and ground squirrels that could cause damage to turf, shrubs, ground cover, trees and irrigation systems.

47. RENOVATION/ VERTICAL MOWING - OPERATION

- a. Vertical mowing will be performed a minimum of twice yearly (athletic fields a

minimum of three times yearly).

- b. Care shall be taken to avoid unnecessary or excessive injury to the turf grass.
- c. Sweep or rake the dislodged thatch from the turf areas and place in appropriate trash bin(s).
- d. Standard renovating or vertical mowing type equipment shall be used.

48. VERTICAL MOWING – TURF

Vertical mow to remove thatch in turf areas to encourage healthy growth and to maintain acceptable appearance.

49. RENOVATION - TURF

- a. Renovate to the soil line and remove all excessive thatch in turf area.
- b. After thatch is removed and upon completion of turf renovation, all turf areas shall be over seeded, mulched and watered with approval for additional work by the PA.
- c. Areas to be over seeded will be seeded utilizing blends or mixtures at the rate application recommended by the PA.
- d. Mulch shall be spread evenly over the entire area to reestablish turf to an acceptable quality.

50. TURF RESEEDING/RESTORATION OF BARE AREAS- OPERATION

- a. Oversee all damaged, vandalized or bare areas as needed to reestablish turf to an acceptable quality.
- b. Areas to be over seeded will be seeded utilizing blends or mixtures at the rate of application recommended by the PA.

51. GROUND COVER

All dead, diseased and unsightly branches, vines or other growth shall be removed as they develop. All ground cover areas shall be pruned to maintain a neat edge along planter box walls. Any runners that start to climb fences, shrubs or trees shall be pruned out of these areas.

52. RESTROOM CLEANING/MAINTENANCE

All restrooms will be cleaned a minimum of twice daily or more as needed (7) days week upon arrival to site, This includes re-stocking of toilet tissue, emptying trash cans, disinfecting and scrubbing all toilets, floors and walls. Any repairs, malfunctions or clogged plumbing will be reported to the PA immediately for service.

53. SUPPLEMENTAL SERVICES

If the City desires the Service provider to additional tasks not set forth in the Scope of work, The City will notify the Service Provider of that fact in writing ("Supplemental Services"). If such changes cause significant increase or decrease in the Service Provider's cost or time required for performance, the parties shall formally amend the

Agreement. Any claim of Services Provider for adjustment under this clause must be asserted in writing within thirty (30) calendar days from the date of receipt by Service Provider of City's notice of changes, or such claim shall be deemed waived by Service Provider and Services Provider will be deemed to agree to the changes without_ modification of compensation or time of performance hereunder. All such Supplemental Services shall be performed at the rates set forth in Additional labor costs included in proposal

54. INTERPRETATION OF THE MAINTENANCE SPECIFICATIONS

Should any misunderstanding arise, the PA will interpret the Agreement. If the Contractor disagrees with the interpretation of the PA, he shall continue with the work in accordance with the PA's interpretation. Within thirty (30) days after receipt of the interpretation, he may file a written request for a hearing before a Disputes Review Panel, as provided herein. All disputes between the PA and the Contractor shall be resolved in the following manner:

The PA and the Contractor will endeavor to conduct good faith negotiations in an effort to resolve any and all disputes in a timely manner. If any disputes between the parties remain unresolved after fifteen (15) calendar days, the PA and the Contractor shall, within fourteen (14) calendar days, prepare a brief, concise written report summarizing the basis for the dispute, the negotiations accomplished and results thereof, and the current status of all relevant unresolved issues.

Copies of each written summary shall be exchanged between the .PA and the Contractor, and provided to the City Manager, or his designee. Within fifteen (15) calendar days thereafter, the City's City Manager, or his designee, will render a determination regarding such dispute. Such determination will be the final administrative determination.

If the Contractor disagrees with the determination of the City Manager, or his designee, the Services Provider may only initiate an action in a court of competent jurisdiction in Clark County to resolve such dispute. Toe parties retain the right to all remedies available at law or in equity. The parties agree that no dispute under this Agreement shall be submitted to or resolved through arbitration or mediation.

55. Pre-Commencement Acceptance Forms- Contractor to provide PA with report upon (joint inspection) with PA's representative, detailing items below for each site within two weeks of award of contract.

- a. Plant Materials: General condition of existing plant materials including trees, shrubs, vines, ground covers, and lawn: record plant materials which are damaged or dying.
 - b. Irrigation System: General condition of existing irrigation system, making sure that faulty electrical controllers, broken or inoperable sprinkler heads or broken pipes or other malfunctioning items are reported.
 - c. General Site: Including walkways, planter beds, and turf.
 - d. Playgrounds, picnic areas, shade shelters, gazebos.
- Contractor acknowledges he/she has visited the sites and the surrounding areas and has evaluated the extent to which the physical condition thereof will affect the services to be provided. Contractor accepts the premises in its present physical condition, and agrees to make no demands upon City/or any improvements or alterations thereto.

56. Contractor Responsibilities:

All forms the below forms need to be completed and turned in with monthly billing

- a. Weekly Landscape Function Report **Exhibit H**
- b. Schedule of Monthly Maintenance Operations Report **Exhibit I**
- c. Contractor Complaint Log **Exhibit J**

57. General Requirements:

- a. All work shall be performed in a professional, workmanship-like manner using quality equipment and materials.
- b. Contractor shall provide the labor and equipment necessary for the provision of grounds and landscape maintenance services, except as otherwise specified hereinafter. No work of the contract will be sub contracted by the Contractor without the express written permission of the PA. The premises shall be maintained with nothing but acceptable City of North Las Vegas Park Services Landscape Maintenance Standards (**Exhibit G**) at no less than the frequencies set forth herein.
- c. In accordance with acceptable City of North Las Vegas Park Services Landscape Maintenance Standards (**Exhibit G**) and practices, including those specific practices set forth below and applicable codes, laws and regulations, do work necessary to promote and maintain the healthy growth and attractive appearance of the project site.
- d. Contractor shall provide monthly via e-mail a Schedule of Monthly Maintenance Operations, Weekly Landscape Function Reports and Complaint Logs (**Exhibit H, I & J**).
 - i. Name of maintenance foreman or person filing report.
 - ii. Period covered by report and other noteworthy or key dates.
 - iii. Names of crew persons working on job. Owner to be notified of changes in personnel within 2 working days.
 - iv. Work performed and completed to date and projected work for the next month.
 - v. Synopsis of weather conditions for the month noting extremes in wind, rain, temperature, etc.
 - vi. Application of agricultural chemicals and fertilizers used on site including type, rates, purpose for application, and results of application.
 - vii. List of maintenance equipment used on site.
 - viii. Condition of plant material, specifically noting physical abnormalities related to temperature, moisture, insects, diseases, poor drainage, death and replacement, etc.
 - ix. Report vandalism.
 - x. Irrigation schedule changes, inspections and current status.

Provide equipment, materials and labor necessary to complete the work. Equipment shall be maintained in a clean condition.

e. Contractor is to provide landscape and grounds maintenance services including, but not limited to, the maintenance of turf, ground cover, shrubs and trees; renovation of turf and ground cover areas; the pruning of trees and shrubs; providing weed control; parking areas; disease and pest control; picnic areas; gazebo; community gardens; playgrounds; operating and maintaining specific components of the irrigation system; and the maintenance of any appurtenant structures and equipment pursuant to specifications and frequencies established by the City of North Las Vegas, Roadway Division, as set forth herein.

f. Contractor shall not work or perform any operations during periods of inclement weather, which may destroy or damage ground cover, athletic or turf areas.

g. The Contractor recognizes that during the course of this Agreement, interfacing activities may be conducted by City work forces and other contracted parties that may hinder their work. These activities may include but not be limited to, special events, landscape refurbishment, irrigation system modification or repair, construction and/or storm-related operations. The Contractor may be required to modify or curtail certain of his operations during these periods and shall promptly comply with any request by the Project Administrator (PA).

h. Contractor shall respond to all emergencies within two (2) hours of notification. Any call out responses after regular working hours agreed upon by contractor and PA shall be paid according to bid price on additional work labor cost. All notification will be done via phone and documented with an e-mail by the PA. Contractor is required to respond to the call out and document response via e-mail within 24 hours on remedy of complaint.

i. The Contractor shall perform a maintenance inspection weekly during daylight hours of all areas within the premises. Such inspection shall be both visual and on-site, and shall include inspection of the entire irrigation system to check for proper condition, operations, and reliability.

j. The Contractor shall notify the PA in writing of specialty type maintenance, i.e., fertilizer, herbicide, insecticide, and of major cultural practices, 48 hours in advance.

58. Certification/Reports

a. Payment

Contractor will submit a monthly invoice to the City either by mail or electronically through e-mail and will be paid monthly in arrears based on the monthly price submitted in the bid. Periods of less than one month will be pro-rated on the monthly bid price. City reimbursement schedule can take up to thirty days after payment submitted.

b. Maintenance Function Reports

Contractor shall maintain and keep current a record of all ongoing, seasonal, and additional maintenance functions performed on a daily basis, by Contractor's personnel. Said report shall be in a format acceptable to the PA and shall be submitted to the PA concurrently with the monthly invoicing. The monthly payment will not be processed until such report is received by the PA. All payments be made monthly in arrears.

59. Certification

When applicable, the Contractor shall submit with the monthly invoice an attached report indicating, for those specialty type maintenance operations completed, the following information:

- a. Quantity and complete description of all commercial and organic fertilizer(s) used.
- b. Quantity and label description of all grass seed used.
- c. Quantity and complete description of all soil amendments used.
- d. Copies of corresponding pesticide use report signed by a licensed Nevada Pest Control Operator for all chemical, disease and pest control work performed.

60. CONTRACTOR'S NONCOMPLIANCE

- a. If the PA determines that there are deficiencies in the performance of this Agreement, the PA will provide a written or electronic notice to the Contractor to correct the deficiency within specified time frames. Should the Contractor fail to correct deficiencies within said time frame, the PA may:
 - b. Deduct from Contractor's payment those applicable portions of the Monthly Contract Sum; Upon receiving electronic notification and failure to respond within five (5) days' notice to the Contractor for failure to correct the deficiencies, correct any and all deficiencies, and the total costs incurred by completion of the work by an alternate source, whether it be City forces or separate private contractor, will be deducted and forfeit from the payments to the Contractor from the City. Failure to respond via electronic communication for (2) hour emergency service, (24) hour or next scheduled working day response will result in a penalty letter being issued. These actions will be construed as a penalty for adjustment of payment to Contractor to recover City cost due to the failure of the Contractor to complete or comply with the provision of this Agreement. Failure to respond to electronic complaints, required reports, or emergency service requests will result in a penalty letter being issued. The City's issuance of three (3) penalty letters to a Contractor during any 12 month period constitutes grounds for termination of the contract.

61. ADDITIONAL WORK

- a. The PA may, at his discretion, authorize the Contractor to perform additional work including, but not limited to. special event needs, rentals needs, graffiti abatement, tree pruning above six feet, main line repairs (main line described as greater than 6"), rockscape/turf install and/or removal, pressure washing, repairs and replacements when the need for such work arises out of extraordinary incidents such as vandalism, acts of god, and third-party negligence; or improvements in order to add new, modify existing, or to refurbish existing landscaping and irrigation systems. **(See Exhibit L)** Additional Labor Cost if the PA determines that the labor for work resulting from vandalism, acts of god or third-party negligence can be performed by Contractor's present work force, PA may modify the Contractor's Ongoing Maintenance Schedule in order to compensate Contractor in performing said work. Absent said modification, any work not provided for elsewhere in this Agreement and authorized by the PA and performed by the Contractor shall be paid for only upon approval of a time and materials proposal.
- b. Prior to performing any additional work, the Contractor shall prepare and submit a written description of the work with an estimate of labor and materials. No work shall commence without the written authorization from the PA. Notwithstanding the above authorization, when a condition exists wherein there is imminent danger of injury to the public or damage to property, the PA may verbally authorize the work to be performed. Upon receiving a verbal authorization, the Contractor shall submit a written estimate to the PA for approval.

- c. All additional work shall commence on the specified date established and Contractor shall proceed diligently to complete said work within the time allotted.

62. DAMAGES BY CONTRACTOR

- a. All damages to existing facilities caused by the Contractor or his employees or agents shall be repaired or replaced at the Contractor's expense. All damages caused by the Contractor's inaction shall also be the Contractor's responsibility.
- b. All such repairs or replacements shall be completed within the following time limits:
 - 1. Irrigation damage shall be repaired or replaced within one watering cycle.
 - 2. All damages to shrubs, trees, turf or ground cover shall be repaired or replaced within five (5) working days
 - 3. Provide to PA, as-built drawing for any modification resulting from landscape contractor's repairs within (5) working days.
 - 4. All repairs or replacements shall be completed in accordance with the following maintenance practices:
 - 5. Trees - Minor damage, such as bark lost from impact of mowing equipment, shall be repaired by a qualified landscape maintenance person at the cost of the Contractor. If damage results in the loss of a tree, the damaged tree shall be removed and replaced. The PA must approve the replacement.
 - 6. Shrubs- Minor damage may be corrected by appropriate pruning at the cost of the contractor. Major damage shall be corrected by removal and/or replacement of the damaged plant material. The PA must approve the replacement.
 - 7. Chemicals -All damage resulting from chemical operation, either spray-drift or lateral-leaching, shall be corrected at the cost of the contractor and the soil conditioned with activated charcoal to ensure its ability to support plant life.

63. OFFICE OF INQUIRIES AND COMPLAINTS

- a. The Contractor shall maintain a local office with electronic communication at some fixed place located in the Las Vegas Metropolitan area and shall maintain a telephone there, listed in the telephone directory in his own name or in the firm name by which he is most commonly known, and shall, during the daily hours of maintenance operation, have some responsible person(s) employed by the Contractor to answer and take the necessary action regarding all inquiries and complaints that may be received from the PA, City personnel, the public, or patrons using the facilities. An answering service shall be considered an acceptable substitute to full time coverage, provided Contractor is advised of the complaint within one (1) hour of receipt of complaint by the answering service. During normal working hours, the Contractor's foreman or other employee of the Contractor, who is responsible for providing maintenance services, shall be available for notification through radio or phone communications.
- b. Whenever immediate action is required to prevent injury, death or property

damage to the facilities being maintained, City may, after reasonable attempt to notify the Contractor, cause such action to be taken by the City work force and shall charge the cost thereof, as determined by the PA, against the Contractor, or may deduct such cost from any amount due to Contractor from City.

- c. The Contractor shall maintain a written log of all complaints, the date and time thereof and the action taken pursuant thereto or the reason for non-action. The log of complaints shall be open for the inspection of the PA at a reasonable time. (**See Exhibit J**) Contractor Complaint Logs.
- d. All complaints shall be rectified as soon as possible, but in all cases within 24 hours after notification, to the satisfaction of the PA. If any complaint is not rectified within 24 hours, the PA shall be notified immediately of the reason for not resolving the complaint followed by a written report to the PA within five (5) days. If the complaints are not resolved within the time specified or to the satisfaction of the PA, the PA may correct the specific complaint and the total cost incurred by the City will be deducted from the payments owed to the Contractor from the City.

64. SAFETY

- a. Contractor agrees to perform all work outlined in this Agreement in such a manner as to meet all accepted standards for safe practices during the maintenance operation and to safely maintain stored equipment, machines, and materials or other hazards consequential or related to the work; and agrees additionally to accept the sole responsibility for complying with all local, County, State and other legal requirements including, but not limited to, full compliance with the terms of the applicable OSHA Safety Orders at all times to protect all persons including Contractor's employees, agents of the City, vendors, members of the public or others from foreseeable injury, or damage to their property. Contractor shall inspect all potential hazards at said facilities and keep a log indicating date inspected and action taken.
- b. It shall be the Contractor's responsibility to inspect and identify any condition(s) that renders any portion of the premises unsafe, as well as any unsafe practices occurring thereon. The PA shall be notified immediately of any unsafe condition that requires major correction. Contractor shall be responsible for making minor corrections including, but not limited to, filling holes in turf areas and replacing valve box covers, to protect members of the public or others from injury.

65. PROTECTION

- a. Take precautionary measures to protect plant materials, ground surface treatments, pedestrians, irrigation system, lighting and electrical system, storm drainage system, signage, and other elements from damage from maintenance operations.
- b. Site maintenance shall also include temporary erection of fences, barriers and signs for the protection of landscape areas, as required by the PA.
- c. Perform work in accordance with applicable laws, codes, and regulations required by authorities having jurisdiction over such work.
- d. Provide for inspections and permits required by Federal, State or local authorities in furnishing, transporting, and installation of agricultural chemicals,

plants, etc.

- e. Protection of Keys: The Contractor shall be fully responsible for protection of irrigation system time clock keys furnished him and shall also be responsible to see that the irrigation system time clock is properly locked upon completion of the work, if such action is directed by the Owner's representative. Should the key(s) allotted to the contractor or his employees become lost or stolen, Owner reserves the right to have the corresponding locks re-keyed and the sufficient amount of keys re-issued to the Owner's involved personnel at the Contractor's expense.

66. HOURS AND DAYS OF MAINTENANCE SERVICE

- a. Hours of maintenance service shall be seven (7) days a week between 6 AM to 5 PM, with holiday hours paid per item as outlined in (**Exhibit L**) Additional Labor cost, year-around.
- b. Any changes in the days and hours of operation heretofore prescribed shall be subject to approval by the PA.
- c. All School Zones shall be restricted based on the bell times of the associated school. Typical work hours are 08:00 a.m. – 2:00 p.m. times may vary based on locations.
- d. The following roads with 1 lane closed: 9:00 a.m. – 3:00 p.m. & 2 or more lanes closed: 9:00 9.p.m – 5:30 a.m. are Craig Road, Ann Road, Centennial Parkway, Lake Mead Boulevard, Carey Avenue, Lamb Boulevard, Decatur Boulevard, Martin Luther King Boulevard, Tropical Parkway, Aliante Parkway, Aviary Way,
- e. Cheyenne Avenue from Decatur to Losee Road: 9:00 a.m. – 3:00 p.m.. East of Losee Road: 1 lane closed; 9:00 p.m. – 5:30 a.m. & 2 or more lanes closed; 9:00 p.m. – 5:30 a.m.
- f. Locations other than those listed may have restricted on a case by case basis depending on the type of work proposed. Other Jurisdictional agencies may place additional conditions on that cross agency boundaries or that takes place within their R.O.W. The most restrictive time shall govern. Work zones near residential area may be restricted based on the type of work proposed.
- g. An Approved Typical Traffic Control Plan must be onsite when working within CNLV R.O.W. This will include a Right-of-Entry permit needed as well. The permit & Right-of Entry is good for one year from date of awarded contract. All fees will be waived.
- h. Any work that takes place on center medians, traffic control must be present in both direction. If herbicides or preemergent is being applied, a mobile TPC is allowed per one direction only.

67. MAINTENANCE SCHEDULES

- a. Contractor shall provide a work schedule for the facilities which shall be submitted to the PA within ten (10) days after the effective date of this Contract. Said work schedule shall be set on the annual calendar identifying all the required tasks and frequencies of work. The schedule shall delineate the time frames for the Ongoing Maintenance Function by day of the week, morning and

afternoon. (See Exhibit I) Schedule of Monthly Maintenance Operations

b. The Contractor shall submit revised schedules when actual performance differs substantially from planned performance. Said revisions shall be submitted to the PA within five (5) working days prior to scheduled time for the work.

c. The above provisions are not construed to eliminate the Contractor's responsibility in complying with the requirements to notify the PA for Specialty Type maintenance as set forth immediately hereinafter.

d. Contractor shall notify the PA, in writing, at least 48 hours prior to the date and time of all "Specialty Type" maintenance operations. All associated labor costs are to be covered by the Contractor. "Specialty Type" operations are defined as:

1. Turf Aeration (equipment to be provided by Contractor)
2. Turf Renovation/Reseeding (materials provided by the PA)
3. Spraying of Trees, Shrubs or Plants,
4. Aesthetic Tree Pruning
5. Other items as determined by the PA.

68. CONTRACTOR'S STAFF

a. The Contractor shall provide sufficient personnel to perform all work in accordance with the specifications set forth herein: All the Contractor's maintenance personnel shall be supervised at each individual job site by a qualified, English/Spanish speaking foreman in the employ of the Contractor. All changes in supervision will be reported to the PA within 24 hours. Failure to do so will result in a penalty letter (Section 7.01).

b. Contractor shall take appropriate action under this Contract concerning any employee whose conduct or activity shall, in the reasonable exercise or discretion by the PA, be deemed detrimental to the interest of the public patronizing the premises. Contractor shall take such appropriate action within a reasonable time following notice from the PA.

c. Contractor will be responsible for supplying each of his employees working at these sites with an identification badge, and uniform which they must wear in a visible place on their person at all times when on the Owner's property. Contractor will be responsible for all fees associated with obtaining the badges and will be responsible for obtaining new badges for any new employees who will be working on this site, and collecting badges from employees who are no longer working at this site.

d. The Contractor shall require each of his employees to wear work attire appropriate for their respective tasks and any safety regulations applicable thereto. Employees shall be uniformly dressed in a manner satisfactory to the PA, and shall wear an identification badge and uniform to be visibly displayed during the entire work shift.

e. Contractor shall provide magnetic signs and affix them to each side of work vehicles while performing work under this contract. The signs are to read as follows: PROVIDING LANDSCAPE SERVICES TO THE CITY OF NORTH LAS

VEGAS PARK SERVICES DIVISION.

69. SIGNS/IMPROVEMENTS

Contractor shall not post signs or advertising matter upon the premises or improvements thereon, unless prior approval is obtained from the PA.

70. UTILITIES

The City shall pay for all utilities. However, water usage shall not exceed amount required to comply with irrigation schedules established by the Contractor and approved by the PA. Contractor shall insure that watering occurs in compliance with City of North Las Vegas Ordinances.

71. NON-INTERFERENCE

Contractor shall not interfere with the public use of the premises and shall conduct his operations as to offer the least possible obstruction and inconvenience to the public or disruption to the peace and quiet of the area within which the services are performed.

72. GENERAL PLANT CARE

a. Landscape plantings will require maintenance throughout the year. Maintenance is especially important during the first year after installation of new materials, when most plantings are becoming established.

b. Major maintenance tasks will include regular watering of plantings, fertilization, mowing, weed control, insect and disease control, and general pruning of trees and shrubs, as required or directed by the PA.

2. Additional Documents required for your Proposal: The following information is mandatory and should be separately identified. Failure to complete and submit any section may be grounds for rejection. These documents are attached as exhibits to this Scope of Work:

EXHIBIT A OFFER STATEMENT AND BUSINESS FORM - Provide the name and address of Respondent for purpose of notice or other communication relating to the Proposal. Proposals must be signed by a business entity official who has been authorized to make such commitments.

EXHIBIT B CERTIFICATE-DISCLOSURE OR OWNERSHIP/PRINCIPALS - This form must be notarized.

EXHIBIT C QUALIFICATIONS AND EXPERIENCE - References - Provide three (3) governmental agencies or private businesses with which you have conducted business transactions during the past three (3) years. At least two (2) of the references named are to have knowledge of your debt payment history.

EXHIBIT D AFFIDAVIT OF REJECTION OF WORKER'S COMPENSATION - Please fill this form out in its entirety. This form must be notarized.

EXHIBIT E NON-COLLUSION AFFIDAVIT - This form must be notarized.

EXHIBIT F Written Certification Required by NRS 332.065(3) for contracts with an estimated annual amount required for performance that is in excess of \$100,000.00.

EXHIBIT L Additional Work Labor Cost Sheet

3. Evaluation Process: Proposals will be evaluated by a selection committee. The evaluation process is composed of the following steps:

- (1) Review of all Proposals for conformance to this RFP.
- (2) The elimination of all Proposals, which deviate substantially from the basic intent of the solicitation.
- (3) An evaluation of the remaining Proposals.
- (4) Interviews and presentation(s) of Proposals by Respondents (if the City determines a need for such).
- (5) Possible unannounced visit by some or all of the City selection committee to one or more of the projects/businesses represented by Respondent.
- (6) Selection of one Proposal which will be recommended to the City of North Las Vegas City Council.
- (7) Negotiation/finalization of a Professional Services Agreement between the City and the selected Respondent.

4. Evaluation Factors: The City reserves the right to accept a Proposal other than the lowest total expense offered. The following factors will be considered in the evaluation of individual Proposals. The City's Selection Committee will score each Proposal on a 100-point scale. The purpose of scoring the Proposals is to establish a prioritized order in which to continue further discussions. The following are the criteria and points associated for each that the committee will be using:

- A. Completeness of the Proposal (30 points total)
 - Response to RFP provisions (5 points)
 - Respondent 's references (20 points)
 - Respondent 's presentation (5 points)
- B. Management Qualifications (70 points total)
 - Respondent's plan, pricing, list of landscape staff, and maintenance equipment list (60 points)
 - Value-added Proposals within the submittal (10 points)

5. Award of Contract: The recommendation by the selection committee to the City Council to award the Contract will be based upon the Proposal which is most advantageous to the City. All Proposals shall remain firm for ninety (90) calendar days after the Proposal opening. Refer to the Evaluation Process and Evaluation factors sections within this

document.

6. **Modifications:** The City may institute changes or modifications to the Work and will notify all participants in a timely manner by an addendum to this RFP.
7. **Rejection of Proposals:** The City reserves the right to reject any and all Proposals received in response to this solicitation if determined not to be in the best interest of the City. Once received, the Proposals shall become the property of the City and are subject to public disclosure under the Nevada Public Records Act. Respondents are not entitled to recover any Request for Proposal preparation costs or other damages should the City not make an award or fail to successfully negotiate the Contract.
8. **Incorporation of Proposal into the Contract:** The contents of the RFP and the selected Respondent's Proposal shall be incorporated, in total, into the Contract. In the event there is a conflict between the RFP and the Contract, the terms of the Contract will prevail.

**City of North Las Vegas
Request for Proposal ("RFP")
RFP 2020-003 City Wide Landscaping
Citywide Landscaping**

**EXHIBIT "A"
PROPOSAL SUBMITTAL PAGE**

This Proposal is submitted in response to **RFP 2020-003 Citywide Landscaping** and constitutes an offer by this company to enter into a contract as described herein.

_____		_____	
AUTHORIZED SIGNATURE NAME (TYPE OR PRINT)		LEGAL NAME OF FIRM	
_____		_____	
AUTHORIZED SIGNATURE		DATE	
_____		_____	
TITLE	TELEPHONE NUMBER	FAX NUMBER	
_____	_____	_____	
ADDRESS OF FIRM			

CITY	STATE	ZIP CODE	

E-MAIL ADDRESS: _____

CNLV-BUSINESS LICENSE NO: _____

___ A COPY OF MY CNLV BUSINESS LICENSE IS ATTACHED

___ A COPY OF MY LANDSCAPING CONTRACTOR'S LICENSE

FOR INFORMATIONAL PURPOSES ONLY

Is this firm a ESB, Minority, Women or Disabled Veteran Business Enterprise?

___ No ___ Yes If YES specify ___ MBE ___ WBE ___ DVBE ___ ESB

Has this firm been certified as a ESB, Minority, Women or Disabled Veteran Business Enterprise?

___ No ___ Yes If YES specify Certifying Agency _____

Please attach a copy of your certification.

EXHIBIT "B"
FORM A
CERTIFICATE – DISCLOSURE OR OWNERSHIP/PRINCIPALS

1. DEFINITIONS

"City" means the City of North Las Vegas.

"City Council" means the governing body of the City of North Las Vegas.

"Contracting Entity" means the individual, partnership, or corporation seeking to enter into a contract or agreement with the City of North Las Vegas.

"Principal" means, for each type of business organization the following: (a) sole proprietorship – the City of the business; (b) corporation – the directors and officers of the corporation; but not any branch managers of offices which are a part of the corporation; (c) partnership – the general partner and limited partners; (d) limited liability company – the managing member as well as all the other members; (e) trust – the trustee and beneficiaries.

2. INSTRUCTIONS

The Contracting Entity shall complete Block 1, Block 2, and Block 3. The Contracting entity shall complete either Block 4 or its alternate in Block 5. Specific information, which must be provided, is highlighted. An Officer or other official authorized to contractually bind the Contracting Entity shall sign and date the Certificate, and such signing shall be notarized.

3. INCORPORATION

This Certificate shall be incorporated into the resulting Contract or agreement, if any, between the City and the Contracting entity. Upon execution of such Contract or agreement, the Contracting Entity is under a continuing obligation to notify the City in writing of any material changes to the information in this Certificate. This notification shall be made within fifteen (15) days of the change. Failure to notify the City of any material change may result, at the option of the City, in a default termination (in whole or in part) of the Contract or agreement, and/or a withholding of payments due the Contracting Entity.

Block 1 Contracting Entity	Block 2 Description
Name	RFP 2020-003 Citywide Landscaping.
Address	
Telephone	
EIN or DUNS	

BLOCK 3	TYPE OF BUSINESS
<input type="checkbox"/> Individual <input type="checkbox"/> Partnership <input type="checkbox"/> Limited Liability Company <input type="checkbox"/> Corporation <input type="checkbox"/> Trust <input type="checkbox"/> Other:	

EXHIBIT "B"
(CONTINUED)

FORM B

CERTIFICATE – DISCLOSURE OR OWNERSHIP/PRINCIPALS

CERTIFICATE-DISCLOSURE OR OWNERSHIP/PRINCIPALS (Continued)

BLOCK 4 DISCLOSURE OF OWNERSHIP AND PRINCIPALS

In the space below, the Contracting Entity must disclose all principals (including partners) of the Contracting Entity, as well as persons or entities holding more than one-percent (1%) ownership interest in the Contracting Entity.

	FULL NAME/TITLE	BUSINESS ADDRESS	BUSINESS PHONE
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			

The Contracting Entity, or its principals or partners, are required to provide disclosure (of persons or entities holding an ownership interest) under federal law (such as disclosure required by the Securities and Exchange Commission or the Employee Retirement Income Act), a copy of such disclosure may be attached to this Certificate in lieu of providing the information set forth in Block 5 above. A description of such disclosure documents must be included below.

I certify under penalty of perjury, that all the information provided in this Certificate is current, complete and accurate.

BLOCK 5 DISCLOSURE OF OWNERSHIP AND PRINCIPALS – ALTERNATE

If the Contracting Entity, or its principals or partners, are required to provide disclosure (of persons or entities holding an ownership interest) under federal law (such as disclosure required by the Securities and Exchange Commission or the Employee Retirement Income Act), a copy of such disclosure may be attached to this Certificate in lieu of providing the information set forth in Block 4 above. A description of such disclosure documents must be included below.

further certify that I am an individual authorized to contractually bind the above named Contracting Entity.

Name

Date

Subscribed and sworn to before me this _____ day of _____, 2020

Notary Public

EXHIBIT "C"

QUALIFICATIONS AND EXPERIENCE RESPONDENT

Name: _____

1. Respondent shall provide a brief description of the Responder's qualifications, certifications, experience, and number of years in operation.

2. Provide three (3) examples of contracts similar in size and scope that have been completed in the past five (5) years. The City reserves the right to verify references for the companies identified. Ensure references have given permission to be contacted by the City.

Example Contract 1:

Company Name: _____

Company Address: _____

Point of Contact: _____ Phone Number: _____

E-Mail Address: _____

Brief Description of Contract Scope:

Term of Contract (Base plus Option Years): _____

Year of Base Contract Award: _____ Year Contract Completed: _____

Base Contract Amount: \$ _____ Total Contract Amount (including all option years) \$ _____

Did the contract contain a liquidated damages clause? YES NO

If yes, were damages assessed? YES NO If yes, what was the amount assessed? \$ _____

EXHIBIT "C"
QUALIFICATIONS AND EXPERIENCE RESPONDENT
(CONTINUED)

Example Contract 2:

Company Name: _____
Company Address: _____
Point of Contact: _____ Phone Number: _____
E-Mail Address: _____

Brief Description of Contract Scope:

Term of Contract (Base plus Option Years): _____

Year of Base Contract Award: _____ Year Contract Completed: _____

Base Contract Amount: \$ _____ Total Contract Amount (including all option years) \$ _____

Did the contract contain a liquidated damages clause? YES NO

If yes, were damages assessed? YES NO If yes, what was the amount assessed? \$ _____

Example Contract 3:

Company Name: _____
Company Address: _____
Point of Contact: _____ Phone Number: _____
E-Mail Address: _____

Brief Description of Contract Scope:

Term of Contract (Base plus Option Years): _____

Year of Base Contract Award: _____ Year Contract Completed: _____

Base Contract Amount: \$ _____ Total Contract Amount (including all option years) \$ _____

Did the contract contain a liquidated damages clause? YES NO

If yes, were damages assessed? YES NO If yes, what was the amount assessed? \$ _____

EXHIBIT "D"
AFFIDAVIT OF REJECTION OF COVERAGE
FOR WORKERS' COMPENSATION UNDER NRS 616B.627 AND NRS 617.210

In the State of Nevada, County of Clark, _____, being duly sworn, deposes and says:

1. I make the following assertions pursuant to NRS 616B.627 and NRS 617.210.
2. I am a sole proprietor who will not use the services of any employees in the performance of this Contract with the City of North Las Vegas.
3. In accordance with the provisions of NRS 616B.659, I have not elected to be included within the terms, conditions and provisions of chapters 616A to 616D, inclusive, of NRS, relating thereto.
4. I am otherwise in compliance with the terms, conditions and provisions of chapters 616A to 616D, inclusive, of NRS.
5. In accordance with the provisions of NRS 617.225, I have not elected to be included within the terms, conditions and provisions of chapter 617 of NRS.
6. I am otherwise in compliance with the terms, conditions and provisions of chapter 617 of NRS.
7. I acknowledge that the City of North Las Vegas will not be considered to be my employer or the employer of my employees, if any; and that the City of North Las Vegas is not liable as a principal contractor to me or my employees, if any, for any compensation or other damages as a result of an industrial injury or occupational disease incurred in the performance of this Contract.

I, _____, do here swear under penalty of perjury that the assertions of this affidavit are true.

Signed this _____ day of _____, 20_____

Signature _____

State of _____

County of _____

Signed and sworn to (or affirmed) before me on this _____ day of _____, 20_____

by _____ (name of person making statement).

Notary Signature

EXHIBIT "E"
NON-COLLUSION AFFIDAVIT



CITY OF NORTH LAS VEGAS

Non-Collusion Affidavit

State of _____ County of _____

_____ being first duly sworn deposes that:

- (1) He/She is the _____ of _____, the Firm that has submitted the attached Proposal;
- (2) He/She is fully informed respecting the preparation and contents of the attached Proposal and of all pertinent circumstances respecting such Proposal;
- (3) Such Proposal is genuine and is not a collusive or sham Proposal;
- (4) Neither the said Firm nor any of its officers, partners, City, agents, representatives, employees or parties in interest, including this affiant, has in any way colluded, conspired, connived or agreed, directly or indirectly, with any other vendor, firm, or person to submit a collusive or sham proposal in connection with the contract or agreement for which the attached Proposal has been submitted or to refrain from making a proposal in connection with such contract or agreement, or collusion or communication or conference with any other firm, or, to fix any overhead, profit, or cost element of the proposal price or the proposal price of any other firm, or to secure through collusion, conspiracy, connivance, or unlawful agreement any advantage against the City of North Las Vegas or any person interested in the proposed Contract or agreement; and
- (5) The Proposal of service outlined in the Proposal is fair and proper and is not tainted by collusion, conspiracy, connivance, or unlawful agreement on the part of the Firm/team or any of its agents, representatives, City, employees, or parties including this affiant.

(Signed): _____

Title:

Subscribed and sworn to before me this _____ day of _____ 201__

Notary Public

My Commission expires: _____

EXHIBIT "F"
WRITTEN CERTIFICATION



CITY OF NORTH LAS VEGAS

WRITTEN CERTIFICATION PURSUANT TO NRS 332.065(3)

Pursuant to NRS 332.065(3), a governing body or its authorized representative shall not enter into a contract with an estimated value in excess of \$100,000 with a company unless the contract includes a written certification that the company is not currently engaged in, and agrees for the duration of the contract not to engage in, a boycott of Israel.

By signing below, the Respondent agrees and certifies that it does not currently boycott Israel and will not boycott Israel during any time in which it is entering into, or while in contract, with the City. If at any time after the signing of this certification, the Respondent decides to engage in a boycott of Israel, the Respondent must notify the City in writing.

AUTHORIZED SIGNATURE NAME (TYPE OR PRINT) LEGAL NAME OF RESPONDENT

AUTHORIZED SIGNATURE DATE

TITLE

EXHIBIT “G”

City of North Las Vegas Parks Services Landscape Maintenance Standards



PARK DESIGN STANDARDS

Prepared by,
City of North Las Vegas

Parks and Recreation Department
and

Public Works Department

March 10, 2011

Updated: May 2018

Park Design Standards
North Las Vegas Parks and Recreation Department

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GENERAL INFORMATION

It is the intent of the City of North Las Vegas Parks and Recreation Department and the Public Works Department to design and construct parks that adhere to the latest technologies and design aspects. These design standards are applicable to all newly constructed facilities, regardless if they are to be maintained publicly or privately (i.e., HOA).

PARK LOCATIONS

The facilities master plan assists in defining future park needs by acreage and facilities, and locates parks based on demographics. All effort should be made to locate parks symmetrically throughout the City, ensuring equal access to both locations and amenities throughout.

Parks are designed and amenitized according to level of service (LOS) methodologies. These methods suggest that communities determine level of service through research and surveys combined with insight into social and economic characteristics.

PARK TYPES

It is desirable for each park to have a unique element and identity. The use of plantings, plazas, water features, walking paths, and site furnishings can enhance the park identity. The use of site-specific topography is also encouraged to add to elements of individuality to each park.

The City of North Las Vegas has classified its parks into the following categories:

- Pocket Parks
Generally less than 5 acres, these facilities are used to provide limited park services and recreational needs, but are easily accessible to the immediate neighborhood. Generally, landscaped areas, small picnic shelters and small play structures are included. Access is generally by interconnected trails, sidewalks, or low-volume residential streets; off-street parking is typically not available
- Neighborhood Parks
Generally five to ten acres, these parks are designed to accommodate residents within a one-mile radius. These parks provide the primary park services and are easily accessible to local residents. These will house more varied play equipment, targeting multiple age groups. These parks are not intended for large group use or large events, but serve as the recreational and social focus of the neighborhood.
- Community Parks
Generally between ten and 25 acres, these parks are gathering spots for multiple neighborhoods and are designed to accommodate residents within a 2.5 mile radius. These parks feature both passive and active amenities and may preserve significant unique features of the community. These parks will often include lighted sports fields and courts, designed to be reserved for youth athletics. These parks may often provide large group programming and events.

- Regional Parks
Generally large areas that provide a destination facility for the surrounding community and region, these parks may be upwards of 200 acres. Generally, these parks offer multiple active opportunities across a wide range of leisure activities; these parks may also have stand-alone theater, concert or event component with power and water accessibility. Typically, these parks offer a multi-field sport complex.

PARK MASTER PLANS

Permits: Permits shall be obtained by the Developer prior to constructing some of the elements listed herein, in accordance with the City of North Las Vegas Building Department requirements.

Park Master Planning: All plans shall be approved by the Director of Parks and Recreation or his Designee. Amenities within the park shall be determined by same.

DESIGN HIGHLIGHT

Crime prevention through environmental design (CPTED) shall be part of every trail and park design in the City of North Las Vegas.

"CPTED is the proper design and effective use of the built environment which may lead to a reduction in the fear and incidence of crime, and an improvement of the quality of life." - National Crime Prevention Institute

The Four Strategies of CPTED

1. **Natural Surveillance** - A design concept directed at keeping intruders easily observable. Promoted by features that maximize visibility of people, parking areas and building entrances: doors and windows that look out on to streets and parking areas; pedestrian-friendly sidewalks and streets; front porches; adequate nighttime lighting.
2. **Territorial Reinforcement** - Physical design can create or extend a sphere of influence. Users can develop a sense of territorial control while potential offenders perceiving this as discouraging. This can be achieved by defining property lines and distinguishing private from public spaces using landscape plantings, pavement designs, gateway treatments, and CPTED fences.
3. **Natural Access Control** - A design concept directed primarily at decreasing crime opportunity by denying access to crime targets and creating an offenders perception of risk is gained by designing streets, sidewalks, building entrances, and neighborhood gateways that clearly indicate public routes and discourage access to

Conformance with Requirements: All new and altered parks shall conform to all applicable federal, state and local governing agency's requirements, codes, ordinances, rules, regulations, etc. This shall include, but is not limited to, the City of North Las Vegas, Clark County, State of Nevada, and all applicable utility companies. It shall be incumbent upon the Developer and his agents to be in full compliance with all such requirements. Where conflicts between documents occur, the more stringent requirement shall prevail.

ADA Accessibility: All new and altered construction shall comply with the Americans with Disabilities Act (ADA).

MASTER PLANNING PROCESS

Initiation to Preliminary Conceptual Plan:

- The Developer contacts the Parks and Recreation Department to initiate the planning process.
- Point of contacts from the Developer, Public Works and the Parks and Recreation Department shall be designated.
- A pre-design meeting between the Developer and Parks and Recreation Department Representatives prior to beginning the park design process is required. The purpose of the meeting is to determine City park needs as defined in the Parks and Recreation Comprehensive Plan. The number, types and sizes of fields, courts and other major amenities shall be determined by the Parks and Recreation Department Representatives to support the Parks and Recreation Comprehensive Plan.
- Preliminary Conceptual Plan: Three sets of the colored preliminary park site plan at a scale between 1/8" = 1'-0" and 1" = 100' shall be submitted to the Director of Parks and Recreation or his Designee for review and approval. Elevations, perspectives and other renderings shall be provided as requested.
- Cut Sheets of Park Amenities shall be submitted with the preliminary conceptual plan.
- A Cost Estimate shall be submitted with the preliminary conceptual plan.

Review to Draft Conceptual Plan:

Parks and Recreation staff shall review the preliminary conceptual plan and provide comments to the Developer for incorporation in a revised plan.

- The Developer shall submit the revised plan to the Parks and Recreation Point of Contact.
- If no further revisions are required, the plan shall be approved by the Director of Parks and Recreation as the Draft Conceptual Park Plan.

Public Input Process to Approved Park Master Plan:

- The Parks and Recreation Point of Contact shall set-up a presentation to the Parks and Recreation Advisory Board (PRAB). Comments on the plan shall be gathered. Permission to take the plan to public town hall meetings shall be requested.

- If no further revisions are necessary, the town hall meetings shall be arranged by the Parks and Recreation Point of Contact. The Developer shall arrange for public notification of the meeting. The Developer shall provide power point presentations and mounted renderings that illustrate the plan. Public comments shall be gathered.
- The Developer shall produce a Public Comment Plan incorporating the public comments. A second meeting with the Parks and Recreation Advisory Board shall be scheduled by the Parks and Recreation Point of Contact. The Developer shall provide power point presentations that illustrate the Draft Conceptual Plan and the Public Comment Plan. Comments from the Parks and Recreation Advisory Board shall be gathered. A recommendation from the PRAB to the City Council shall be solicited.
- The Developer shall revise the plans as directed by the Parks and Recreation Point of Contact. A power point presentation shall be produced and presented to the City Council. Approval of the plan, with or without modifications shall be solicited from the City Council. Modifications to the plan and a second meeting with the City Council may be required to gain approval.

Construction Documents:

All construction documents shall be approved by the Director of Parks and Recreation before permit submittal occurs.

The following is a list of the minimum required construction documents required for public park projects:

Architectural Plans: for restrooms and other buildings.

Civil Engineering Plans: Utility, Horizontal Control, Details.

Electrical Power and Telephone Plans.

Grading Plan: A detailed grading plan of the park project shall be submitted.

Construction Plan: A detailed construction plan of the park project shall be submitted.

Lighting/Electrical Plan: A detailed lighting plan shall be submitted.

Photometric Plan: Detailed photometric plans, showing lighting levels, shall be submitted.

Structural Plans: All elements that require structural engineering shall be detailed and submitted.

Irrigation Plan: A detailed irrigation plan shall be submitted. See Appendix B.

Planting/Landscape Plan: A detailed planting plan shall be submitted.

Construction Details: Details of all constructed elements shall be submitted.

Irrigation Details: Details of all irrigation assemblies shall be submitted.

Planting Details: Details of all plant materials and conditions shall be submitted.

Technical Specifications: Technical specifications for safety surfacing, planting and irrigation are found within this document. These specifications, at minimum, shall be incorporated in the plan set for the park project.

Cost Estimate.

Color and Materials Boards shall be submitted upon request.

All drawings shall be sealed in accordance with Nevada Revised Statutes.

GENERAL DESIGN STANDARDS

Standard Civil Details. Copy all referenced standard civil engineering RTC "Blue Book" type details onto the drawings, for both on-site or off-site work. Do not simply reference the number of the details and assume that the workers on site have a copy of the book.

Parking and CAT Bus Stops/Pullout Areas. Include the minimum number of handicapped parking spaces required by the Planning Department and ADA Guidelines. Reference the Regional Transportation Commission design standards for bus stops.

Bicycle Parking Standards. At every city park and occupied city building over 5,000 square feet, provide bicycle parking for a minimum of two bicycles. Provide more racks at more locations around the facility depending on the expected usage. Location of the bike racks shall be well lit, highly visible by the public, adjacent to and visible from the building entrances or park amenities being served, and on routes that minimizes conflicts with vehicles and pedestrians.

Accessible Exterior Surfaces. Reference the "Accessible Exterior Surfaces Technical Article" (June 21, 1999) by the U.S. Architectural and Transportation Barriers Compliance Board for acceptable ADA exterior surfaces other than concrete and asphalt. Note that decomposed granite (without heavily mixed stabilizer similar to concrete) is NOT an acceptable surface when wet.

Grading. Slope limited to 5 to 1 maximum in turf areas. Other non-turf areas may be any reasonably approved slope.

Do not place berms near concrete surfaces, which are flush to the adjacent turf, hardscape, or decomposed granite surfaces. Children will use the hard surface as a starting bike acceleration area to use the berm as a jump.

Do not place berms immediately adjacent to play equipment areas, tennis courts, or other activity areas so that irrigation water runoff runs into the activity area.

Do not place trees on turfed berms. The normal turf irrigation water does not have an opportunity to soak in for the tree's use before running off.

Pavers. When using pavers, they must be set on a concrete base; no sand beds. The city has bad history of the pavers settling and creating tripping hazards.

Retaining Walls. Avoid all retaining walls where an alternate grading plan design can adjust the grades in slopes instead.

Retaining Wall Waterproofing. Waterproof the backside of all site retaining walls by hot mopping 2 layers of 15 pound felt, or better waterproofing system. Protect the waterproofing system from backfill with a protective board.

Underground Utility Tracing. Provide trace wire with identification for all underground utilities installed in non-conductive pipe (sanitary sewer, storm sewer, water, swimming pools) and natural gas. Trace wire is not required for irrigation systems.

Fire Department Access. Comply with NFPA 1, NFPA 1901, CNLV requirements and/or currently applicable regulations for fire lanes and fire access roadways.

The general requirements stipulate minimum 24' width, 28'/52' inside/outside radii, 81' diameter bulb turn-around where dead ends exceed 150', 13'-6" minimum clear height and maximum angles of approach/departure of 6% for a minimum of 25 feet with a maximum achieved grade of 12%. The gradient of fire lanes or access roadways adjacent to structures shall not exceed 6% run or cross slope to facilitate aerial fire apparatus staging.

Speed bumps are prohibited installations per the fire code, because they slow down emergency response. However, the Fire Department may allow the installation of speed humps built to their standards, as they have a lower profile (3.25"), which does not unnecessarily hinder emergency apparatus response times.

Due to the many variables encountered on sites and building designs, the design team should meet early in the design process with the Fire Department to demonstrate how these requirements will be incorporated into the site design.

PARK DESIGN ELEMENTS

Walkways and Circulation

Care is to be taken to ensure pedestrian circulation throughout the park is efficient, and complies with CPTED recommendations and ADA requirements. The design should also consider maintenance and its pattern during the design of the park. Sidewalks utilized specifically for pedestrians will be a minimum of 8 feet in width.

- Paths shall be concrete pavement, minimum 4" thick and in conformance with the geotechnical soils report recommendations.
- Concrete paths shall have a medium broom finish Sidewalk slopes and cross slopes will comply with ADA standards, unless technically infeasible
- There is to be a 2' minimum clear zone adjacent to both sides of all bike paths from any vertical object, except where water or utility maintenance access is needed. Vertical clear zones of 8 feet for foot and biking trails, and 10 feet at undercrossing and for equestrian trails are required.
- All circulation paths within a park must be lighted per lighting standards.

Parking

Parking and vehicular circulation is an important consideration in park design and should be designed for maximum efficiency while considering security and accessibility components.

DESIGN HIGHLIGHT

Park Parking Rules of Thumb

The following may give some guidance for determining the number of spaces needed. The number of spaces can vary greatly depending on whether every activity is busy at once and what events are programmed for the park.

Soccer/ multi-use	60 spaces per field
Baseball/Softball Fields	48 spaces per field
Tennis Courts	4 per court
Basketball court	10 per court
Bocce Courts	4 per court
Horseshoe Court	2 per court
Tot Lots/Water Feature	4-6 per structure

1. Ensure that all parking meets ADA guidelines and zoning requirements. A minimum of 4 spots per acre must be provided, with additional spaces required as indicated below

2. Ensure that parking lot lighting meets current IES standards.
3. Plant non-deciduous trees (24 inch box minimum) adjacent to parking lots to provide shading.

Signage

The City of North Las Vegas Parks and Recreation Department will review all park signs and propose standard designs and language for all park signage. All signage must be approved prior to installation.

The current Manual on Uniform Traffic Control Devices (MUTCD) shall be followed where possible for all roads, parking lots and parks. All signs shall have graffiti-resistant coating.

The following is a list of the general signs required in park projects and the locations / quantity of each type of sign to be installed

- Park Hours Custom Hours: Coordinate with Project Manager whether the park will have non-standard hours of operation. If the park does have non-standard operating hours provide the sign drawing showing attachment to the Park Rules sign.
- Park Rules: One sign located at each main pedestrian entrance and one sign located at each vehicular entrance.
- Report Vandalism: One sign located at the main entrances to areas that may attract vandalism such as playground equipment areas, skate parks and group shelters. Avoid mounting signs to posts of shade or picnic structures.
- Dog Bag Dispensers: One sign mounted on post above dog waste bag dispenser. Coordinate with Dog waste bag dispenser design requirements in Site Furnishings Section 12 93 00 (Dog Station).
- Multi-Use Facility (Detention Basin): One sign at each entrance to detention basins. Note: reference Drainage Basins paragraph in this section for additional signage requirements.
- No wheeled Toys: Signs are required to be installed at entry points to resilient surface tracks.
- Children's Park (Designated): One sign located above park rules sign. Reference park rules sign for locations. Note: This sign to be used only if council appropriates the park specifically for children.
- Winter Irrigation: One sign located at each main pedestrian entrance and vehicular entrance. Also install signs around the perimeter of turf areas at a maximum spacing of 100 lineal ft. between signs or as deemed necessary. Mount on post with other signs and if necessary on light poles. Note: Winter Irrigation sign only to be included in the construction documents if the park is scheduled to be completed between the months of November and February.
- Walk Loop/Amenity: When a park has a walk loop, provide sign(s) at main parking lot(s). Sign size to be determined by park layout.

Lighting

Lighting shall be incorporated into the design of parks and shall follow CPTED guidelines. This applies to all aspects of a park including but not limited to: parking lots, plaza areas, playground areas, shade structures, restrooms, and along all walking paths. All new lighting will be LED.

Construction Material

1. Use steel, metal, aluminum, recycled material or approved equal for park fixtures and ramadas. Wood will not be permitted. Roofing material must be 20 year guaranteed metal, standing seam with Kynar finish.
2. Between turf and landscaped areas, install headers consisting of concrete, brick, ultraviolet-treated vinyl or metal.
3. Windscreen material to be double leno polypropelent, 85% shade open mesh. Color is to be dark green or black.

AMENITIES AND SITE FURNISHINGS

Park amenities vary with the size of the park, its location, and the current and future needs of the area. Every park should normally include at least the following amenities:

1. Park signage
2. Park restroom (required for parks > 5 acres)
3. A minimum 8 foot wide concrete loop walk connecting all major elements within the park (for pedestrian circulation, maintenance vehicles and emergency vehicles)
4. Shaded tot lot (separate amenities for different age groups)
5. Drinking fountains, picnic tables, park benches, trash receptacles, BBQs, and dog waste dispensers.

Quantities will vary based on park size and need. Refer to each individual section for more detailed information.

Drinking Fountains

In open areas, a minimum of one freestanding fountain for adult and child usable heights must be provided and must meet current ADA accessibility guidelines. For parks larger than 1 acre, one drinking fountain per 2 acres must be provided. Colors are to be approved by the City of North Las Vegas. Locate chillers within 24 inches of the drinking fountains and no recirculating pumps are allowed. Use copper water piping for the drinking fountains, and insulate chilled water tubing.

Acceptable manufacturers are:

- Haws
- MDF
- Sunroc
- Acorn (outdoor wall mount)
- Metcraft (outdoor wall mount)
- Willoughby (outdoor wall mount)

Drinking fountains at restrooms are to be wall mounted to the building. Doggie drinking fountains must be provided at dog parks and may be provided in other areas as approved by the Parks and Recreation

Department. Drinking fountains shall drain to the public sewer. If an application arises where sewer connection is not available, draining through a French drain may be possible, but will need to be approved by the city's Parks and Recreation Department and Utilities.

Trash Receptacles

Trash Receptacles shall be mounted with concrete pads that do not conflict with grass mowing and irrigation equipment. Where two trash receptacles are co-located they shall be installed level with each other.

- Smooth, integral concrete
- City of North Las Vegas logo
- Color shall be beige or as approved by Parks and Recreation Department
- Epoxy to surface in location(s) directed. Locations shall be approved prior to epoxy.

- Minimum quantities: A minimum of 3 trash receptacles or 1 per acre (whichever is greater) shall be provided for open spaces. In addition, the following shall be adhered to:
 - Ball fields and large ramadas: 2 each
 - Tennis courts: 1 each
 - Basketball courts: 1 each
 - Restrooms: 1 each
 - Tot lots 1 each
 - Parking lots: 1 each
 - Dog parks: 1 per area
 - Water play area: 1 each
 - Other sports amenities: 1 each

Pet Waste Stations

- Stainless steel
- Locking front access panel
- 400-bag capacity
- Signage
- Provide at intervals of 1,500 feet along paths or trails
- For parks, stations should be provided at a ratio of approximately two per five-acre area. For dog parks, a minimum of one at the entry and one for each area.

DESIGN HIGHLIGHT

Amenity Access

Often site furnishings require specialized equipment for offloading. The designer should consider access to the site in the design. It is the contractor's responsibility to schedule deliveries, equipment, and progress of the work to avoid conflicts and to ensure equipment is

Picnic table

A minimum of 1 picnic table, or 1 picnic table per 1.5 acres (whichever is greater) is required.

- Smooth, integral concrete
- City of North Las Vegas logo
- Skate resistant design
- Color shall be beige or as approved by the Parks and Recreation Department
- Epoxy to surface in location(s) directed. Location to be approved prior to epoxy.

Park Benches

Park benches shall be placed on concrete pads that provide ADA accessibility. Concrete pads are to be designed to reduce conflict with grass mowing and irrigation systems. Benches shall be set back from walkways and trails to avoid user conflicts. A minimum of 2 benches are required, or 1 per ½ acre (whichever is greater).

- Smooth, integral concrete
- City of North Las Vegas logo
- Skate resistant design
- Color shall be beige or as approved by the Parks and Recreation Department
- Epoxy to surface in location(s) directed. Location to be approved prior to epoxy.

Barbeque Grills

A minimum of 2 barbecues, or 1 per acre (whichever is greater) is to be provided. All shaded ramadas are to have an additional grill.

- Single or family
- Smooth, integral concrete
- City of North Las Vegas logo
- Color shall be beige or as approved by the Parks and Recreation Department
- Epoxy to surface in location(s) directed. Locations shall be approved prior to epoxy.

Lighted Flag Poles

Provide one flagpole at each park. Provide two light fixtures per flag pole, as defined by the United States Flag Code. The fixtures must be shielded such that the point source is not visible outside of a 15-ft. radius.

SHADE STRUCTURES

Two types of shade structures are used for parks. Both fabric and metal structures are used whereas only metal is used for trails. The following describes the types of shade structures to be used.

The proposed structure(s) shall be modular and prefabricated, and include the structural steel frame, fabric/metal roof, steel cables, all fasteners, and installation of structure(s) including foundations. All shade structures shall be engineered and designed to meet a 90 mph wind load, 10 psf snow load, and 10 psf live load.

Installations of shade structures shall be performed by manufacturers licensed and bonded in the State of Nevada (Clark County) and comply with manufacturer's instructions for assembly, installation, and erection per approved drawings.

- Manufacturers not on the approved list may be considered.
- Shade structures shall be lighted according to CPTED rules and regulations.

The size of the shade structure will vary with each project. The minimum size for a metal shade structure is 12 feet x12 feet. The dimensions of concrete underneath shade ramadas used for picnic areas shall match the dimensions of the ramada. The size will depend on the equipment being covered.

Acceptable manufacturers for metal shade structures are:

- Poligon
- Classic Recreation Systems
- Approved equal

Acceptable manufacturers for fabric shade structures are:

- USA Shade
- Shade Systems
- Approved equal

Steel

- Must be designed to meet requirements of the American Institute of Steel Construction (AISC) Specifications and the American Iron and Steel Institute (AISI) Specifications for Cold Formed Members.

- All connections shall have a maximum internal sleeving tolerance of .0625 inches using high tensile strength steel sections with a minimum sleeve length of six inches.
- All non-hollow structural steel members shall comply with ASTM A-36
- All hollow structural steel members shall be cold formed, high-strength steel and comply with ASTM A-500, Grade C.
- All steel plates shall comply with ASTM A-572, Grade 50.
- All galvanized steel tubing shall be triple coated for rust protection using an inline electro-plating coat process. All galvanized steel tubing shall be internally coated with zinc and organic coatings to prevent corrosion.
- Tension cable: Steel cable is determined based on calculated engineering load.
- For light and medium loads; ¼-inch (nominal) galvanized 7x19 strand cable is to be used.
- For heavy loads; 3/8-inch (nominal) galvanized 7x19 cable is to be used.
- There shall be no sharp edges.

Bolts

- All structural field connections of the shade structure shall be designed and made with high strength bolted connections using ASTM A-354, Grade B or SAE J249, Grade 8.
- All stainless steel bolts shall comply with ASTM F-593, Alloy Group 1 or all bolt fittings shall include rubber washers for a water-tight seal at joints.
- All nuts shall comply with ASTM F-594, Alloy Group 1 or 2.
- Bolts shall be cut down after the nut so no sharp edges are exposed.

Welding

- All shop welded connections shall be in strict accordance with the requirements of the American Welding Society (AWS) Specifications.
- Structural welds shall be in compliance with the requirements of the “prequalified” welded joints where applicable and by certified welders. No onsite or field welding shall be permitted.

Powder coating

Shade structures shall receive powder coating. Powder used in the powder coat process shall have the following characteristics:

- Specific gravity: 1.68 +/- 0.05
- Theoretical coverage: 114 +/- 4 ft²/lb./mil
- Mass loss during cure: <1%
- Maximum storage temperature: 750 F at 50 percent relative humidity 87

Fabric Roof Systems & Properties

- UV shade fabric is made of UV stabilized cloth and of a UV stabilized high-density polyethylene
- Mesh shall be raschel knitted with monofilament and tape yarn filler to ensure that material will not unravel if cut. The fabric knit is to be made using monofilament and tape filler that has weight of 195 grams per square meter.

- Fabric shall conform and pass the ASTM E84 testing standard for Fire Protection.
- Stretch stentored fabric weight (oz./m2) 6.9 fabric width 10 feet
- Roll length 164 feet, roll size 63 inches x 16.5 inches; weight 68 lbs.
- Life expectancy is ten years in sun with minimum fading after six years (three years for red).
- Temperature -22° F maximum temperature +176° F
- All sewing threads are to be double stitched. Thread shall be manufactured from 100 percent expanded PTFE, mildew-resistant exterior approved thread. Thread shall meet or exceed the following:
 - Flexible temperature range
 - Very low shrinkage factor
 - Extremely high strength; durable in outdoor climates
 - Resists flex and abrasion of fabric
 - Unaffected by cleaning agents, acid rain, mildew, and salt water; rot
 - resistant and unaffected by most industrial pollutants
 - Treated for prolonged exposure to the sun
- Mechanical connections need to be safety cabled (clevises or turnbuckles)
- Reinforcement at corners to reduce tearing
- Separation of fabric and framework to reduce tearing
- There shall be a minimum seven feet of clearance from the highest designated play surface (platform) of a play structure and the shade structure.

TRASH ENCLOSURES

General Information

Trash enclosures must be concrete masonry construction with graffiti resistant coating and shall meet Republic Services requirements. Design team is responsible for Republic Services approval for location. Contact Republic Services customer service at (702) 735-5151 for location approval.

The number, location, and colors are to be approved by the City of North Las Vegas Parks and Recreation Department. Aesthetics must be approved through the Community Development and Services Department.

Trash enclosures shall be designed based on the following:

- One trash enclosure is to be provided for approximately every ten acres
- Trash enclosures shall have positive drainage
- Trash enclosure locations must allow for Fire Department access
- Recycle receptacles may be preferred and should be coordinated with the Parks and Recreation Department
- Gates shall be metal and perforated
- Regulatory signage – include a “no public dumping” sign in a visible location. Sign shall be white/red and include the current North Las Vegas Municipal code and city logo.
- Slide bolts shall be used for single gate. The slide bolt shall be lockable and minimum 3/4” diameter. Deadbolt lock will not be accepted.
- Hinges – gate hinges shall be designed to withstand the weight of the gate. Warranty for hinges shall be a minimum of five years.

FENCING

Chain Link Fencing

The following information provides general information for fencing located in parks and along trails. If fencing is located in another surface other than concrete, the fencing will need to be installed with a mow curb. The use of used, light wall, rerolled, regalvanized, or open seams on any post or rail are not acceptable.

Acceptable manufacturers are:

- Anchor Fence Co.
- American Fence Corp.
- Tiberti Fence
- Approved equal

Fencing shall comply with the following standards:

- ASTM F669 Light Industrial Fence quality
- ASTM F1083
- ASTM F1234
- ASTM 525, G210
- ASTM A392

Components

- Line post spacing: At intervals not exceeding 10 feet
- Line posts: 2.38-inch diameter. Gate posts: 3.5-inch diameter.
- Corner and terminal posts: 3.5-inch diameter
- Top, bottom and brace rail: 1.66-inch diameter, plain end, sleeve coupled
- Grind all bolts to within 1/8-inch of nut. A 1/2-inch gap is to be provided at the bottom of fencing between the fabric and concrete curbing or slab.
- Schedule 40 pipe shall be hot-dip galvanized inside and out.

Fabric

- Fabric is to be double-knuckle chain link at top and bottom (9 gauge). Fabric wire (steel): Zinc coated wire fabric.
- Fabric for fencing under 16 feet in height: Two-inch diamond mesh interwoven wire, 9 gauge, top selvage knuckle end closed, bottom selvage knuckle end closed.

Post Braces

Post braces shall be provided for each gate, corner, pull, and end post for use with fabric, six feet or more in height, and shall consist of a round tubular brace extending to each adjacent line post at approximately mid height of the fabric, and a truss consisting of a rod not less than 5/16-inch nominal

diameter from the line post back to the gate, corner, pull, or end post, with a turnbuckle or other equivalent provision for adjustment. Truss rods may be eliminated in any line of fence where there is a continuous center rail.

Post Tops

Post tops shall consist of ornamental tops or combination tops with shepherd hook supporting arms, as required for security purposes. The top shall be provided with a hole suitable for the through passage of the top rail. The post tops shall fit over the outside of the posts and shall exclude moisture from posts.

Top Rails

Top rails shall be in lengths of not less than 18 feet, and shall be fitted with couplings for connecting the lengths into a continuous run. "Swaged"-type connections are not acceptable. The couplings shall be not less than six inches in length with a wall thickness of .070 inches; and shall allow for expansion and contraction of the rail. Open seam outside sleeves are not acceptable.

Tension Bars

Tension bars shall not be less than 3/16-inch x 3/4-inch and not less than two inches shorter than the normal height of the fabric with which they are to be used. One tension bar shall be provided for each end and gate post, and two for each corner post, pull post, top, and bottom rail. Tension bars shall be 0.078-inch thick steel.

Ties or Clips

Ties or clips shall be 11 gauge galvanized steel ties and shall be provided in sufficient number for attaching the fabric to the line posts, top, mid, and bottom rails; at intervals not exceeding 15 inches.

Bands or Clips

Bands and clips shall be 11 gauge galvanized steel, and shall be provided in sufficient number for attaching the fabric and stretcher bars to all terminal posts at intervals not exceeding 15 inches.

Tension bands shall be:

- Formed from flat or beveled steel
- Minimum thickness after galvanizing of 0.078 inches
- Minimum width of 3/4-inch for posts 4-inch O.D. or less and
- Minimum thickness of 0.108-inch by 7/8-inch for posts larger than 4-inch

O.D.

Brace bands shall be:

- Formed from flat or beveled steel
- Minimum thickness of 0.108-inch after galvanizing
- Minimum width of ¾-inch for posts 4-inch O.D.
- Attachment bolts shall be 5/16-inch x 1-1/4-inch galvanized carriage bolts with nuts

Gates

Acceptable manufacturers are:

- Anchor Fence Co.
- American Fence Corp.
- Tiberti Fence
- Approved equal

Gates shall comply with the following standards:

- ASTM F900

Gate Hardware

- Gate posts: 3.5-inch diameter
- Gate frame: 1.90-inch diameter for welded fittings and truss rod fabrication
- Horseshoe gate latch. Center gate stop and drop rod. Three ball and socket-type gate hinges per leaf and hardware for padlock.
- Gate frame shall be round or rectangular tubular members, welded at all corners or assembled with corner fittings.
- Welded joints shall be top coated with aluminum paint to match the frame color. Gates assembled with corner fittings shall have adjustable truss rods 5/16-inch minimum diameter on panels five feet wide or wider. Truss rods shall be the same base material and finish as the gate frame. Gate leaves shall have vertical interior bracing at maximum intervals of eight feet and shall have a horizontal member if the fabric height is eight feet or more.
- Gate fabric shall be the same type used in fence construction. The fabric shall be securely attached to the gate frame at intervals not exceeding 15 inches. Gate accessories shall be of the materials as specified for the fence.
- Hinges shall be structurally capable of supporting the gate leaf and allow the gate to open and close without binding. The hinges shall be so designed to permit the gate to swing a full 180 degrees. 180-degree swing industrial-style hinges are not acceptable.
- Single gate latch shall be capable of retaining the gate in a closed position and shall have provision for a padlock.
- Double gate latch shall be a drop rod or plunger bar arranged to engage the gate stop. Locking devices shall be constructed so that the center drop rod or plunger cannot be raised when the gate is locked. The latching devices shall have provision for a padlock.
- Gate stops shall be provided for all double swing gates.
- Gate keepers shall be provided for each gate leaf over five feet wide.
- Locking hardware shall consist of slide bolt and padlock.

Wrought Iron Fencing

Wrought iron fencing shall be used at play areas and skate parks unless otherwise determined by the City of North Las Vegas. If fencing is located in another surface other than concrete, the fencing will need to be installed with a mow curb.

- Durable, weather resistant, vandal resistant commercial grade galvanized steel. Six feet tall, eight feet wide panels, 5/8-inch pickets. Two-inch square posts. All connections shall be welded; no sharp edges. Three-inch maximum openings. Single and double gates to match powder coat finish, color to be determined by Public Works, Parks and Recreation Department.
- Locking hardware shall consist of slide bolt and padlock

RESTROOMS

General Requirements

Restroom floorplan or type shall be approved by the City of North Las Vegas Parks and Recreation Department and varies depending on the park size and amenities. One of three restroom floor plans is typical: trailhead, neighborhood park, or concession.

Restroom buildings shall have vehicular access for maintenance staff, as required by city staff. However, removable bollards shall be provided to hinder public vehicular access, if applicable.

Colors are to be approved by the City of North Las Vegas Parks and Recreation Department.

Provide concrete access around perimeter of building.

Restroom Building Standards

- Standard buildings should have both men's and women's facilities.
- All vertical concrete surfaces shall be coated with non-sacrificial graffiti resistant coating. Refer to Graffiti Resistant Coating Section.
- All interior restroom walls are to be epoxy paint coated white.
- Provide a slip resistant gray epoxy coating on restroom floors to comply with building code.
- Any architectural features that may promote climbing, footholds, handholds, etc. are discouraged. Example: An eight-foot screen wall would be preferred over a five-foot screen wall due to climb ability.
- Electrical gear shall be housed in an enclosure.
- Masonry partitions are to be installed in restroom facilities between stalls.
- Where applicable, plumbing chase to have eight-foot wide clearance to allow for a maintenance bay with a combination maintenance/plumbing area.
- Provide signage, address, fire extinguishers, Knox-Box, etc. per City of North Las Vegas Building and Fire Safety code.
- Restroom signs: recessed, cast aluminum, and shall meet ADA requirements.
- Restroom windows: provide high open screened/mesh windows with powdercoated decorative metal grating to provide ventilation and light during daylight hours.
- Restroom doors: to be made of a solid phenolic material with breakaway hinges. Ensure ADA

compliance is met.

- Restroom gates: Powder-coated tube steel restroom gates shall be used in lieu of doors on the men's and women's restroom entries. Tube steel is to be 3/16-inch minimum and gates shall have the ability to be locked in both the open and closed positions using a heavy duty slide bolt that accepts a padlock.
- The joint where floor/wall/ceiling come together shall have a joint sealant over the joint.
- Comply with Southern Nevada Health District standards for concession layout.
- Best brand locks shall be used on all lockable doors and gates.

Prefabricated restroom

A prefabricated restroom needs must to be approved through the State of Nevada Manufactured Housing Division, ICC, or be on the approved Clark County fabricator list.

Recommended products:

- Public restroom company
- CXT concrete buildings
- Approved equal

Custom-built restroom

CMU block building, split face, with fluted or decorative block accents required, unless otherwise specified.

Roof is to be corrugated metal over a weather resistant barrier. All interior ceiling must be smooth and painted. Sheetrock is not permitted. Access to the maintenance bay from the restrooms shall be restricted.

Maintenance Bay

Maintenance bay is to have 16-foot minimum width x 20-foot depth with a 10-foot clearance (all access to high voltage switch gears inside chase). If a roll-up door is required it shall be a 10-foot commercial coiling roll-up door (electric with a keyed switch on the exterior of the building), with a manual chain override including metal jambs, and vandal resistant lock. Provide a tube steel gate with slide bolt lock and padlock latch at exterior threshold that protects the roll-up door. Tube steel thickness shall be a minimum of 3/16-inch and powder coated.

Maintenance bay shall also have a hollow metal man door, with Best brand locks.

Man door shall also have a powder coated 3/16-inch minimum thick tube steel gate protecting it.

If there is a roll-up door, a man door is required. If there is no roll-up door or man door, then double doors 8 feet wide are required (with a powder-coated 3/16– inch minimum thick tube steel gate protecting them).

Maintenance bay is to include a commercial grade mop sink and an eye wash station.

Provide sufficient sleeves and pull strings for irrigation controllers, electrical and electrical controls, Musco controls, and phone lines. Provide sufficient electrical service for irrigation controllers per park maintenance requirements.

Provide conduit as required (usually two inch) with pull string for telephone line.

The conduit shall stub up into maintenance bay. Provide all telephone board and equipment required by service provider.

Provide access for Musco control link interior to the maintenance bay.

Provide lighting in maintenance bay with occupancy sensors/switches.

Electrical

Refer to the restroom lighting sub-section in Section XIII Lighting for detailed information on restroom lighting requirements.

Fixtures

All fixtures are to be stainless steel with push buttons (when applicable). Fixture counts will be reviewed when the restroom is for larger sport facilities. Fixtures to include: drinking fountains, sinks, urinals, toilets, mirrors, toilet paper dispensers, hand dryers, and soap dispensers.

One hose bib shall be located within equal distance to the men's and women's restrooms and shall be recessed with a locking door. Detention grade fixtures shall be used. All fixtures are to be wall-mounted, except hand dryers, which are recessed.

Toilet paper dispensers to be heavy duty double roll with bar and padlock.

Recommended products:

- Acorn
- Willoughby
- Approved equal

Drinking fountains, outdoor wall-mount brass. Airtrol valves on the fountains only; no plastic valves:

- Acorn
- Willoughby
- Approved equal

Wall-hung lavatories- vandal proof with brass Airtrol valve bodies on all brands; no plastic:

- Acorn
- Willoughby
- Approved equal

Lavatory faucets- public areas:

- Moen

- Willoughby
- Approved equal

Toilets- vandal proof, wall hung only with integral seat:

- Acorn
- Willoughby
- Approved equal

Urinals- vandal proof:

- Acorn
- Willoughby
- Approved equal

Hand dryer- vandal proof, heavy duty, mounting through wall:

- Fastaire
- World Dryer
- Approved equal

Plumbing

Provide water pressure regulator.

Provide cleanouts.

Water heaters to be installed in maintenance bay, if required. Water heaters are required if it is a concession layout.

All plumbing to be installed in maintenance bay.

Hand dryer to be recessed in the wall with motor mounted in maintenance bay.

Provide two floor drains on each side and ensure drainage in each facility for wash down capability. Floor drains shall have passive trap primers with concrete slope toward the drain.

Wall hydrants:

- JR Smith
- Woodford
- Approved equal

Flushometers, concealed:

- Sloan Royal
- Zurn Aquaflush
- Approved equal

Tempering/mixing valves:

- Symmons TempControl series
- Leonard FM150
- Approved equal

Backflow prevention devices shall be the same size as the piping they serve:

- Wilkens
- Watts
- Approved equal

Graffiti Resistant Coating

Graffiti resistant coating shall be non-sacrificial. Apply paint coating(s) as specified.

Paint application(s) must be inspected and approved by the owner’s representative before any further work is initiated. A minimum of two coats of paint shall be applied, as specified.

Recommended products:

- Dunn-Edwards: Ultrashield, Aliphatic Polyurethane Enamel Clear IP631
- Sherwin Williams anti-graffiti coating
- Approved equal

Notes:

The following information shall be included in the plans/specifications:

☑ Apply paint coating(s) as specified. Paint application(s) must be inspected and approved by the owner’s representative, before any further work is initiated. A minimum of two coats of paint shall be applied, as specified.

- A minimum of two coats of clear graffiti resistant coating shall be applied.
- A minimum of a five-gallon bucket for each color and graffiti resistant coating at each building shall be provided at turnover.

PLAYGROUNDS AND SAFETY SURFACING

Safety

All playground equipment and surfacing shall meet or exceed the safety provisions and requirements specified in the latest versions of:

- Consumer Product Safety Council (CPSC) Handbook for Public Playground Safety
- ASTM F1487, Standard Consumer Safety Performance Specification for Playground Equipment for Public Use
- ADA Final Accessibility Guidelines for Play Areas as published by the Architectural and Transportation Barriers Compliance Board
- ASTM F1292, Standard Specification for Impact Attenuation of Surfacing Material
- ASTM F355, Standard Test Method for Impact Attenuation of Playing Surface Systems and Materials
- ASTM F2049, Standard Safety Performance Specification for Fences/Barriers

The play area shall have cushioned flooring in conformance with NRPA playground safety and ADA requirements, and shall bear the IPEMA certification seal.

General Requirements

Crime Prevention Through Environmental Design (CPTED) is a part of every trail and park design in the City of North Las Vegas. CPTED is a multi-disciplinary approach to deterring criminal behavior through

environmental design. CPTED strategies rely upon the ability to influence offender decisions that precede criminal acts.

Fabric shade structures with lighting over the playground are recommended to the greatest extent possible in compliance with CPTED standards and ASTM F1487, latest edition. Shade is not required over swing sets. If a shade structure is provided, roofs on playground equipment should not be included.

- The grade across a playground is to be less than two percent.
- Provide a one-foot buffer of playground surfacing around all playground fall zones to allow for adjustment of playground equipment during construction, where applicable.
- Wrought iron security fencing is to be provided when playgrounds are near streets or as otherwise directed by the Parks and Recreation Department. If fencing is required, provide a non-climbable fence with a self-closing gate and ADA latch that latches to the outside around the playground to meet ASTM F2049, latest edition.
- Separate water features from playgrounds.
- If turf is installed near the playground there shall be a three-foot minimum buffer from playground surfacing.

Playground equipment

1. Provide separate toddler (2-5 years old) and children's (5-12 years old) tot lot structures with play surfacing.
2. Provide separate toddler and children's swing areas with play surfacing.
3. Design equipment to have multiple play elements accessible to all users.
4. Metal slides are unacceptable
5. Provide 3-D drawings of the playground equipment layout, including swings.

Age appropriate signage shall be installed so that it is readily visible and be freestanding out of the use zone. Playground manufacturer signs shall be used for each age group and shall meet ASTM requirements. Include detail in construction documents for review during design phase. Signage shall include, but is not limited to:

- intended age range for product
- supervision recommended
- warning message regarding removal of helmets, drawstrings, or accessories around the neck
- hot play surfaces/surfacing warning
- manufacturer's identification

Recommended manufacturers:

- Miracle
- Kompan
- Approved equal

Playground Surfacing

Playground surfacing thickness must meet fall heights requirements per ASTM and as determined by the playground surfacing manufacturer.

All playground surfacing shall have a sub base consisting of a four-inch-thick 95 percent minimum compacted type II base material with two-inch-thick concrete slurry, 2,500 psi minimum.

Poured in Place Poured in place playground surfacing shall be a two-layer system consisting of a cushioned base and a wearing course or a one - layer system. Specify colors and patterns on plan sheets.

Provide a top coat as a sealer

- Flex grout
- Playground pavement
- Approved equal

Two-layer system: The wearing (color) course shall be ½-inch thick minimum EPDM rubber granules bonded with an aliphatic binder. The cushion layer should be a mixture of black recycled SBR rubber buffing mix to meet CPSC and ASTM standards.

Recommended products

- Tot Turf
- FlexGround
- Approved equal

One- layer system: bonded wood chips comprised of wire-free, cleaned recycled rubber and polyurethane binder to meet CPSC and ASTM standards.

Recommended products

- GT Imact
- Tot Turf bonded rubber
- Approved equal

The following information shall be included in the plans/ specifications:

- A playground audit will be required by a NRPA certified playground safety inspector (CPSI)
- Only manufacturer-certified installers shall be used for playground installations
- Allergen free
- Provide documentation that all materials are free from lead or other heavy metals
- Warranty all materials per manufacturer recommendations from date of substantial completion
- Warranty installation for a minimum of one year from date of substantial completion
- Playground surfacing thickness to meet fall heights requirements per ASTM and as determined by the playground surfacing manufacturer
- Installation company must be licensed in the state of Nevada and Clark County
- Provide physical samples of surfacing

DOG PARKS

Each dog area provided should be a minimum of one acre. Two or three separate areas should be provided to allow for rotation of use and maintenance. One should be designated for small dogs (dogs under 25 pounds, puppies, old and handicapped dogs) and one for all dogs. The all dog area should be around 2/3 of the total fenced acreage since they require more area to run and reportedly are more often taken to such facilities than smaller dogs. Ideally, a third area will be designated to allow for rotation and maintenance.

The dog park, from the parking to the fenced entrances to the restrooms, should be separated from any play equipment or other child play areas. Dogs will get loose on occasion and should not be attracted to adjacent running children. Also, the area around the dog run should not have activities that create much motion that will excite and distract the dogs or increase their barking (no jogging paths, sporting facilities, even adjacent walking paths can create barking activity).

A separate, gated area must be provided for patrons to leash/ unleash their dogs before entering either side of a dog area (this entrance may be shared, depending on design). Gates used by dog handlers shall comply with the ADA-ABA accessibility requirements. Within each entrance area, a quick coupler connection is to be provided for cleanup.

An additional double gate must be provided for maintenance access. Fencing around the perimeter and between areas must be chain-link with bottom rail; 4 foot high for small dogs, 5 foot high for all dogs. Rounded corners are preferred. A concrete mow strip is to be provided where grass occurs on both or either sides of the fence.

Each dog area is to include:

- Concrete Entrance Pads. Provide a 20-foot radius of concrete sidewalk inside each main entrance, so that the adjacent turf can survive the heavy traffic.
- Walking Paths. Extend concrete sidewalks into sufficient areas to meet the ADA Title II requirement to provide an equal experience and opportunities for dog handlers in wheelchairs. 5 Feet minimum wide sidewalks.
- Landscaping. Where turf adjoins fences that dogs will likely run, create a DG pathway adjacent to the fence. Plant selection should concentrate on toughness with a variety of scents. Turf and other areas must slope a minimum of 1% to drain. Standing water is such a facility quickly becomes a disaster area.
- DG Ground Cover. An infield mix usually works the best for the main coverage area, at least 4 inches deep. This mix is a small granular rock and sand material that does not get muddy when wet and is small enough to not bother the dog's feet; 2mm Ballfield Mix by Kalamazoo Materials Inc., Tucson, AZ 520.575.9601, or equal.
- Amenities:
 - Bulletin Board. For public posting of lost pets, available adoptions, vaccination clinics, etc. ADA accessible height, located under the shade structure(s).
 - Marking Post. Provide a wooden post inside the main entrance in each area, with sand around it. The concrete walk surface must be close enough to be considered ADA accessible (assume a 6 foot leash reach from the hard surface).
 - Dog Waste Bag Dispensers. Locate inside each entrance, and scattered throughout the fenced areas. At least one in each area must be ADA accessible. Provide one per acre, or fewer if park layout allows. Reference Section 12 93 00 Site Furnishings for model number.
 - Trash Receptacles. Locate throughout the fenced areas, near dispensers. Separate receptacles for trash and feces. Provide one of each per acre, or fewer if park layout allows. Reference Section 12 93 00 Site Furnishings for model number.

Note: According to the ADA Outdoor Developed Areas regulations, all trash receptacles must be ADA accessible since they see it as a health issue. There is an exception in the regulations "Where compliance

would substantially alter the nature of the setting or the purpose of the facility”. A maze of concrete sidewalks throughout a dog run can be argued as substantially altering the setting. Our approach is to provide at least one accessible receptacle in each area for each type provided (trash and/or feces), and to not make all receptacles accessible.

- Shaded Seating. Located inside each fenced area and outside the main entrances, with accessible benches and companion spaces per the ADA Outdoor Developed Areas regulations. The shade structures may be fabric or hard shell. Picnic tables may be used for seating but tables may encourage users to bring food into the dog area, which can cause problems. The seating located outside the main entrances is intended for spectators and people (children) who came with a dog handler but are safer waiting outside the dog area. If there are budget constraints, this outside seating area may be shaded only using trees. An accessible path needs to connect all of the shaded seating to the parking. Additional seating may be provided elsewhere in the dog areas, as long as 50% of the seating in each area is accessible.
- Drinking Fountain(s). Dog height combination MDF City standard drinking fountains (3 total spouts, one at dog height, one at handicap height, one at normal height), inside each fenced area. Positioned where they will not block entrances or sidewalks, on a concrete pad that is on the accessible path.
- Restrooms. Located within a reasonable distance. Locate 2 to 4 tie posts outside the restrooms, ADA accessible height.
- Lighting. Provide user level lighting in the area of the shade structures, entrances, and drinking fountain for evening use, utilizing the City standard user lighting controls. Locate the controls adjacent to the entry for usage upon entry, but inside the fenced area so users are not forced to leave their dog unattended to extend the lighting time. Provide one foot-candle of lighting for night security along all walking paths in the dog areas.

SPLASH PADS

General

- The inclusion of spray (splash) pads and other water features is on a limited case-by-case basis and must be approved by the City of North Las Vegas Parks and Recreation Department.
- All vertical concrete or masonry surfaces within 100 feet of the play features shall be treated with a non-slip waterproof sealer prior to startup.
- All materials must meet NSF Standard 50 for swimming pool locations.
- All fittings, bolts, nuts, washers and miscellaneous hardware shall be stainless steel, silicone bronze, brass, or plastic.
- Hanger strut material will be a plastic composite or corrosion resistant material.
- Play surface material is to be approved by the City of North Las Vegas Parks and Recreation Department.
- A dedicated water meter or totalizer shall be provided at each water feature for water consumption tracking.
- 1-inch quick coupler valve with swivel and key is to be installed in-ground with a lockable cover

near the water feature for garden hose connections.

Design Criteria Concrete Surfaces

- The concrete play area pad shall be a minimum of four-inch thick, 4,500 psi concrete with #5 rebar four feet on center with a light broom finish to receive play surface material.
- Bare concrete surfaces shall have no peaks and valleys, to prevent ponding
- Any new concrete surfaces for EPDM applications must have a brushed (rough) finish and be allowed to cure in accordance with EPDM manufacturer recommendations.
- A key or V-groove must be installed into the concrete at all perimeters, around drains, nozzles and any other structures. All such V-grooves must be caulked with a polyurethane rubberized caulk for expansion, to prevent water seepage through cracks.
- All nozzles and structures penetrating the concrete must have a “cup” allowance to be caulked and/or sealed, about one-inch deep, below the rest of the concrete surface.
- The concrete surfaces must be prepared in accordance with manufacturers’ recommendations.
- The concrete surfaces must be pre-sealed with a roller upon rubber installation, for advanced adhesion.
- A concrete collar shall extend five to ten feet beyond the wet area, beyond perimeter drains, as determined by the city. It is preferred that a trench drain separate the concrete from the play surface material.

Resilient Surface

- Resilient surface shall be angular EPDM, a mixture of various sizes and colors, such as Rubaroc, Flexground, or approved equal.
- EPDM rubber surfaces color mixture(s) – 60 percent predominant color (such as blue, red, green, etc. – “bright colors”) with four other contrasting colors (such as brown, tan, eggshell white and black – “desert colors”), 10 percent each and two of the 10 percent colors to have small rubber granules (unless all colors are already a mixture of various sizes), unless otherwise approved.
- Contractor must provide, upon completion of a new installation, five gallons of the EPDM material premixed colors for future repairs (of each color combination used).
- All new EPDM surfaces shall be allowed to fully cure for five days, prior to the application of a finish coat of aliphatic sealer, at a spread rate of 80 square feet per gallon or per manufacturer’s recommendations.
- The rubber surface must extend a minimum of five feet, beyond any nozzles, to allow for water over-spillage, before reaching the perimeter gutter drains, unless designed with a semi-wall, directional nozzles or other obstacles that would prevent such water migration to adjacent surfaces.

Electric and Controls

- Electronic controls and valves are to be located in a separate pump equipment facility.
- The proximity switches or bollards for interactive starting of the water play features shall be of

- low voltage, not to exceed 24 VAC or VDC nominal.
- Wires connecting the process logic control (PLC) to the feature valves are to be continuous (no splices or junction boxes).
 - Electrical equipment for all pumps is to be incorporated in a single motor control center (MCC) type cabinet for power distribution. Include adjustable ampere rating for each overload for individual pump starter controls, as well as three-phase protection for each pump motor (for voltage imbalance, phase reversal, phase loss, etc.)
 - A separate ground fault circuit interrupter (GFCI) control shall be provided, to be wired in conjunction with a flood switch for flood protection of pumps and controls, if applicable.
 - A cellular Ethernet data modem shall be installed adjacent to the designated installation of the chemical controller.
 - The activator or proximity sensor must be installed on a bollard or on a wall, at the standard three-feet high. Unless part of a design, a pushbutton momentary switch shall be installed. No foot or "in-ground" activators are allowed.
 - The PLC or controller shall ignore all subsequent activations until the water feature cycle is complete (it shall not restart the cycle sequence with every push of the button when the water feature is in the middle of the cycle).

Spray Heads

- Spray head/nozzle shall be manufactured from stainless steel, brass, or of a high-impact UV resistant, non-corrosive material tamper and vandal proof.
- A pressure reducing valve shall be used on the water feature discharge side when required. The pressure reducing valve shall be epoxy coated with a stainless steel trim kit.

Drains and Drainage

- The slope to the drain must be greater than 1.5 percent. No ponding areas allowed.
- Drains shall be trench type unless noted otherwise. A perimeter trench drain is preferred. Grates are to be non-metallic.
- All drains must be frameless, or the frame edge must be lower than the top of the concrete. A perimeter trench drain is preferred. Grates are to be non-metallic.
- Additional channel drains shall be installed through the center of the water play surface area. The concrete below such drains shall have V-grooves that are caulked and sealed to allow for concrete expansion, as well as to serve as alternate mini drains, preventing ponding.
- Drain grates must allow water penetration from the sides.
- Perimeter frameless channel/gutter drain grates shall be sectional/modular, interlocking and secured to the gutters every 12 inches, alternatively in one direction, for removal and reinstallation in one direction without the need to remove all anchor clips. Unless otherwise noted, the color of such grates shall be tan, captain tan, desert tan, or similar. Any hardware to secure drain grates shall be stainless steel with plastic 18 anchors.

Pumps

- A booster pump system will be provided where necessary to maintain water feature manufacturers' recommended flow rates.
- All pumps (circulation and water feature) will be flood suction type, with designated pump pits below the normal water level of the storage tank.
- All pump pits shall have a gutter-type drainage system within three feet of each pump strainer to prevent runoff from reaching the strainer baskets. If gravity drainage cannot be installed, a sump pump system shall be installed with redundant pumps.
- The length of piping for the pumps must be a minimum of ten times the diameter of the pipe before the pump and five times diameter of the pipe after the pump. No fittings or valves are to be located within these dimensions to facilitate laminar flow of the water.
- An approved lint/hair strainer shall be installed on the suction side of each pre-filtered water pump. This strainer shall be installed away from the pump and not bolted to the pump. One additional strainer basket shall be provided for each strainer unit. The strainer must be isolated by placing a butterfly valve, sized to match the suction piping, on the suction side of each strainer. Strainer baskets shall be made of stainless steel, commercial grade, whenever available.
- The pump and filter will be sized to meet the guidelines of NAC444.
- A separate pump and filter system shall be installed to supply water to the water feature valves through the manifolds. Filters are required to be high rate sand type (such as EPD, Siemens, Pentair Commercial or approved equal).
- All pump installations shall have a Schedule 80 stainless steel or PVC butterfly check valve installed at the discharge of the pump.
- Pumps should be Variable Frequency Drive (VFD) compatible, capable of constant flow frequency modulation and include full flow bypass loops for maintenance.

Connections

- A rubber vibration eliminator consisting of companion flanges (stainless steel or PVC Schedule 80) with stainless steel bolt kits and a butterfly valve shall be installed on the discharge of each pump.
- All reducing-type couplings on the suction side of the pumps shall be concentric, for a symmetrical distribution of laminated water to the eye of the pump impeller. All such reducing couplings shall be installed by means of companion flanges with stainless steel bolt kits with gaskets approved by the City of North Las Vegas.
- Pressure gauges shall be installed at the suction and discharge of each pump, as well as one pressure gauge after the throttling valve on the discharge of each pump. All pressure gauges shall be stainless steel and liquid filled unless the gauge is part of a pressure differential panel for backwash or other system.

Wet Well or Underground Water Storage and Chemical Treatment

- The water storage "wet well" must be of sufficient size to maintain pool quality water for the water feature per current turnover rate for water features standards set by NAC444.
- A separate recirculation pump and filter system must be provided to filter and chemically treat the water within the water storage containment.
- Wet well trap door shall be corrosion resistant aluminum with stainless steel hinge and

hardware kit.

- Automatic mechanical ventilation shall be provided to remove trapped chloramines or chemical fumes from underground storage tanks.
- The auto-fill for the wet well shall be located in the pool equipment room with a dead level pipe to the wet well.
- The fill line shall be provided a minimum of a two-inch air gap, with dedicated piping into the wet well, in lieu of a back flow prevention device for the dedicated domestic water supply.
- A mechanical/analog flow meter and a digital signet flow meter and monitor shall be provided either as a stand-alone items or part of the backwash system.

Fittings

- Clear schedule 80 PVC pipe must be provided for a minimum length of ten times the pipe diameter before a flow sensor and five times the pipe diameter after the flow sensor, for visual inspection.
- Unions must be provided on the upstream and downstream side of all valves. Use full port type ball valve for pipes up to two inches in diameter. For pipe size exceeding two inches in diameter, use flanged butterfly valves with a stainless steel bolt kit.

Flow Calculations

- The calculations must identify specifically where and at what point during construction the downstream flow and pressure are to be determined.
- All flow calculations and pressure requirements for the splash pad elements must be reviewed and approved by the Public Works, Parks and Recreation Department to ensure that flows and pressures can be met.

Filters

- The drain pit shall be sized to meet the capacity of the largest filter backwash flow rate and volume. All backwash drain lines shall have a minimum of two-inch air gap above the flood level of the drain pit (no direct connection to sewer lines). Each backwash drain line shall have a minimum two-foot section of clear PVC Schedule 80 close to each filter for visual inspection of the water and debris being backwashed.
- All filters shall be equipped with an automatic venting system such as ARI auto-vents with rolling seals or approved equal.
- If the filters are in negative pressure when off, the air vents will be pressure relief/vacuum type.

Non-Recirculated

- Water feature electronic controls and valves are to be in a separate CMU-type building or within the plumbing chase at the park location (in a dry location and not within a vault).
- A dedicated water meter shall be provided for water consumption tracking.
- A back flow prevention RPPA-type device is required on the water supply.

- Expansion tanks may be required to mitigate water hammer and pressure fluctuations. Often, the domestic water supply is shared with restroom facilities.
- If needed, a pump system will be provided in order to maintain water feature manufacturer recommended flow rates.
- A master valve/pressure reducing valve Clay-Val or approved equal type shall be used when necessary on water feature supply side when required. The pressure-reducing valve shall be companion flanged brass or bronze with a stainless steel trim kit and reaction speed adjustments.
- A sand separator is required on the waste line of the water play feature before it is dumped into the sewer.
- An accumulator, expansion tank and/or a Sioux Chief or approved equal style hammer arrestor must be sized for the flow rate.
- Wires connecting the PLC to the feature valves are to be continuous (no splices or junction boxes). 22
- A dedicated two-inch domestic water mainline with backflow preventer is not to be shared with other park amenities.
- Mechanical area must have a solid concrete floor with a pitched metal roof. Working area of the room shall be a minimum of seven feet in height.

Warranty

- A minimum one year on all electric, electronic, plumbing, walls, and structures.
- Resilient rubber surface or EPDM must include a five-year replacement warranty
- Minimal maintenance: the rubber surface should only require annual light pressure and chemical washing for removal of scale, dirt and grime.

SPORT COURTS AND FIELDS

The City of North Las Vegas strives to create exceptional outdoor recreation and sports opportunities for different user groups. Numerous considerations need to be determined when designing new fields or facilities. Each project shall have established design requirements based on the facility's use, user group(s), open and/or league play, and surfacing. This section shall provide information on field, court, and facility requirements based on the sport and outdoor recreation use. Please note that not all activities have been included in this section. Other field and court types may be designed at parks and along trails with approval from the city. The additional uses are subject to supplementary requirements as determined by the Parks and Recreation Department.

General Design Considerations

- All facilities shall have positive drainage on and away from the field/court/facility and shall be one percent minimum to 1.8 percent maximum slope, unless otherwise noted.
- Fields to be lighted with Musco Light Structure Green, or equal, with GPRS connection to central computer control. Lighting to be designed either by Musco representative or a State of Nevada,

licensed electrical engineer.

- All fencing areas shall be designed to have at least one maintenance gate that provides access for large vehicles for light pole maintenance.
- One accessible route shall be provided to each type of sports field/court/ facility. However, it is preferred to have accessible routes to all.

XVIII Accessibility.

- Provide an eight-foot minimum decomposed granite landscape strip between all court surfacing and turf areas.
- Sports rules and wayfinding signage shall be designed and placed at all field and court entrance gates.

BASEBALL AND SOFTBALL FIELDS

If fencing dimensions permit, fields shall be adjustable to 60', 65' and 70' basepaths and mounds.

- Baseball fields shall have skinned infields, with 2mm minus decomposed granite, Valentine Red, as provided by Kalamazoo Materials. Skinned infields shall have an irrigation system to dampen down the decomposed granite between games. The system shall utilize 3-valves, activated by push buttons. The first valve controls three heads behind home plate; the second valve controls one head behind the pitchers rubber, while the third valve controls an arc of heads around the outside edge of the infield. The control buttons are on timers.
- Outfield turf shall be Bullseye Hybrid Bermuda sod.
- Bases include one home plate base plus three bases, and one pitching rubber. Hollywood bases should be the standard for use on all fields; breakaway bases must be used on all little league fields. Basepaths shall be 2mm minus decomposed granite, Valentine Red.
- Four rows of bleachers shall be provided at both sides with fabric shade covers over bleachers.
- All fields shall be designed to include an area for the scorer's table behind each backstop as well as each dugout. This area shall include lockable electrical outlets and USB ports.
- All fields shall be designed for electronic scoreboards located in the outfield, which includes underground power supply

Base Field Distance	Minimum Outfield Fencing Distance	Pitching Mound Distance	Additional Information
60'	250'	46'	Little league fields shall use approved breakaway bases
65'	250'	46' – 50'	Little league fields shall use approved breakaway bases
70'	275'	50'	Rectangular-shaped pitching cutout; double first base; jock boxes installed at home plate batter's box, right and left of the plate
90'	300'	60'	

Field Layout

- Dugouts shall be located on both sides of the backstop and be a minimum of eight feet wide by

36 feet long.

- Overhead foul ball protection and shade shall be provided over the dugout,
- A batter's rack shall be located in each dugout.
- All dugouts shall be surrounded by fencing.
- Pitcher's warmup areas shall be designed at all fields adjacent to each dugout.
- Warmup areas shall be 15 feet wide. Length shall be a minimum of 55 feet long for 60-foot fields, 65 feet for 70- to 80-foot fields, and 70- to 90-foot fields.
- The warmup area shall be fenced and will have direct access to the adjacent dugout through a gate.
- When possible, back of home plate shall face north-northeast with the first baseline running west to east.
- When two fields are required, it is recommended to orient the fields north-northeast and north-northwest.
- When four fields are required, it is recommended to orient the fields north-northeast, north-northwest, south-southeast, and south-southwest.
- Fields shall have a minimum 60-foot separation distance (first and third base fencing line) from other baseball fields.
- All fields shall have a ten-foot-wide outfield warning track.

Fencing

- All fields shall be fenced and lockable.
- Foul line fencing shall be a minimum ten feet tall; 11 gauge galvanized chain link; and shall have a 12-foot-wide vehicular access with six-foot swing gates.
- Outfield fencing shall be minimum six feet tall; 11 gauge galvanized chain link with yellow polycap fencing guard on the top rail.
- Grind all bolts to within 1/8-inch of nut.
- Wind screens shall be on outfield fencing. Provide a darkened batter's-eye on the center fencing.
- Backstop fencing dimensions shall be 25-foot high by 21-foot wide at the center; 25-foot high by 27-foot wide adjacent to center; followed by 20-foot high by 27-foot wide on the outside of the backstop.
 - Nine gauge galvanized chain link, two inch square shall be located at the 27-foot wide fencing and above ten feet on the 21-foot wide fencing
 - Six gauge vinyl-coated chain link, one inch square shall be located at the 21-foot wide fencing from the ground to ten feet high
 - Two extra horizontal rails shall be located at the one-foot height and two-foot height on the 21-foot wide fencing and 25-foot high by 27-foot wide fencing
 - Foul poles shall be bright yellow.

BASKETBALL COURTS

The quantity of courts and their colors shall be determined by the city.

Layout

- Each court shall be 84 feet long by 50 feet wide on a six-inch thick post tension slab.
- A five-foot minimum perimeter paved buffer shall surround the entire court and separate adjacent courts.
- Full courts shall have a minimum of four goals; half-courts a minimum of 2 goals.
 - The full court shall have two goals at ten-foot heights
 - Each half-court shall have two goals of the same height. One of the half courts shall be eight-foot heights and the other shall be nine-foot heights.
 - Goal posts shall be gooseneck support posts; four and one- half inch outside diameter minimum galvanized steel pipe; and one continuous piece
 - Provide at least one bench and one trash receptacle per court.
- Acceptable manufacturers for goal posts, web nylon netting, steel backboards, and double rimmed goal rings:
 - L.A. Steelcraft
 - Approved equal

Fencing

The following information shall be used in addition to other stated fencing requirements. Fencing shall be required on a case-by-case basis dependent on adjacent uses. If required, at a minimum fencing shall meet the following:

- Ten-foot high, nine gauge galvanized chain link
- Grind all bolts to within 1/8-inch of nut
- Eight-inch wide by six-inch deep mow curb shall be required under all fencing that is not located on concrete

Surfacing and Striping

- All courts shall be designed to have acrylic, non-skid sport court surfacing.
 - Colors to be determined by the city
 - Basketball court striping shall be two inches wide and shall include three point lines
- Acceptable manufacturers:
 - Plexipave Systems
 - Approved equal

Lighting

Lighting shall have a timer and warning device. Provide access for lighting maintenance.

MULTI-USE FIELDS

The quantity of fields and surface type shall be determined by the city. Goals, netting, and other equipment shall be determined by field use and approved by the city.

Layout

- Fields shall have a north to south orientation. Approval is required by the city prior to alternative configurations.

- Fields shall be 360 feet long by 225 feet wide with an additional 15-foot buffer zone.
- Fields shall be constructed of grass or artificial turf.
 - If artificial turf is designed, no permanent field lines shall be constructed. Only design for temporary painted fields
- Each field shall be designed to include an area for the scorer's table. This area shall include a concrete pad, and lockable electrical outlets and USB ports.

Fencing

The following information shall be used in addition to stated fencing requirements. Fencing shall be required on a case by case basis dependent on adjacent uses. If required, at a minimum fencing shall meet the following:

- Fencing shall be minimum eight-foot tall, 11 gauge chain link
- Goal line fencing shall be a minimum 15 feet tall, nine gauge galvanized chain link. Additional requirements may apply.
- Grind all bolts to within 1/8 inches of nut
- Eight-inch wide by six-inch deep mow curb shall be required under all fencing that is not located on concrete.
- If the entire field requires fencing:
 - All fields shall have two, 4-foot wide minimum pedestrian access gates, and at least one 12-foot access with two 6-foot gates for vehicular maintenance. All gates shall be lockable.
 - Adjacent fields may share perimeter fencing and reduce fencing in between each field as determined by the city.

Seating

Spectator seating areas shall be located outside of the use zone and inside the fencing. Seating requirements shall be determined by the city and may include but not limited to bleachers, benches, and grass.

Horseshoe Courts

When horseshoe courts are part of a design, a minimum of two courts shall be required. At least one court shall meet current accessibility standards, which may require alternate designs, dimensions, and amenities.

▣ Typical court dimensions shall be 46 feet length from front of rubber backboard to front of rubber backboard.

○ Minimum six-foot clear zone shall be provided between each court and a minimum ten-foot buffer shall be designed around the entire court area

○ Ten-foot extended platforms may be required at each throwing area to accommodate users at all skill levels

○ Provide a three-foot high concrete backstop with one-inch thick rubber backing at each pit

- o The one-inch diameter, 3'-6" solid steel horseshoe stake shall be reinforced in the ground by a minimum eight-inch wide by 16-inch deep concrete footer
- o Pit area shall have ten-inch plaster sand
- ☑ Shade through shade structures and/or trees shall be a part of the design. At least one bench shall be located at each end of the court.

TENNIS COURTS

The quantity of courts and their colors shall be determined by the city. When tennis courts are part of a design, a minimum of two courts shall be required.

Layout

- Courts shall be oriented north to south with a spectator area on the east or west sides.
- Each single court and use zone shall be 120 feet long by 60 feet (120 feet by 120 feet for two courts) on a six-inch thick post tension slab.
- Spectator area shall be a minimum of 20 feet wide.
- Acceptable post and net manufacturers:
 - o Douglas
 - o Midwest Sports
 - o Approved equal

Surfacing and Striping

- All courts shall be designed to have acrylic, non-skid sport court surfacing
 - o Colors to be determined by the city
- Acceptable manufacturers:
 - o Plexipave Systems
 - o Approved equal

Fencing

The following information shall be used in addition to stated fencing requirements. Fencing is required around all tennis courts and shall meet the following:

- Ten-foot high perimeter, nine gauge galvanized chain link
- Four-foot fencing separating adjacent courts
 - o Court fencing next to spectator area shall be reduced to four feet. The spectator area shall have ten-foot high perimeter fencing.
- Provide 8-foot windscreen with slits or wind windows along all ten-foot fencing.
- Each court and each spectator area shall have a minimum of one lockable four-foot wide pedestrian gate.
- Provide multiple lockable 12-foot wide, double gates for court groupings to provide maintenance vehicles access to the courts without having to turn around or back up. Single access entry is not allowed.

- Grind all bolts to within 1/8 inches of nut.
- Eight-inch wide by six-inch deep mow curb shall be required under all fencing that is not located on concrete.

Seating, Shade, and Trash Receptacles

- Court seating shall have a minimum of two benches located between adjoining courts that are covered by a metal shade structure.
- Spectator seating shall have a minimum of one backless bench and one picnic table for every two courts. Tables and benches shall be located under a metal shade structure and shall have one trash receptacle.

PICKLEBALL COURTS

The quantity of courts and their colors shall be determined by the city. When pickleball courts are part of a design, a minimum of two courts shall be required.

Layout

- Courts shall be oriented north to south with a spectator area on the east or west sides.
- Each single court shall be 64 feet long by 34 feet wide.
- Courts shall be constructed on a six-inch thick post-tension slab.
- Spectator area shall be a minimum of 20 feet wide.
- Acceptable post and net manufacturers:
 - Douglas
 - Midwest Sports
 - Approved equal

Surfacing and Striping

- All courts shall be designed to have acrylic, non-skid sport court surfacing
 - Colors to be determined by the city
- Acceptable manufacturers:
 - Plexipave Systems
 - Approved equal

Fencing

The following information shall be used in addition to stated fencing requirements. Fencing is required around all pickleball courts and shall meet the following:

- Eight-foot high perimeter, nine gauge galvanized chain link
- Four-foot fencing separating adjacent courts
 - Court fencing next to spectator area shall be reduced to four feet. The spectator area shall have ten-foot high perimeter fencing.
- Provide windscreens with slits or wind windows along all eight-foot fencing
- Provide multiple lockable 12-foot wide, double gates for court groupings to provide

maintenance vehicles access to the courts without having to turn around or back up. Single access entry/exit is not allowed.

- Grind all bolts to within 1/8 inches of nut
- Eight-inch wide by six-inch deep mow curb shall be required under all fencing that is not located on concrete

Seating, Shade and Trash Receptacles

- Court seating shall have a minimum of two benches located between adjoining courts that are covered by a metal shade structure
- Spectator seating shall have a minimum of two backless benches and one picnic table for every four courts. Tables and benches shall be located under a metal shade structure and shall have one trash receptacle.

VOLLEYBALL COURTS

The quantity of courts and their colors shall be determined by the city. When volleyball courts are part of a design, a minimum of two courts shall be required.

Layout

- Court dimensions shall be 30 feet wide by 60 feet long with an additional ten-foot buffer surrounding the court.
 - A 36-foot wide net shall be centered with three-foot overhang
- Shading in the form of prefabricated shade structures and/or trees should be a part of the design near all volleyball courts.
- Posts shall be galvanized steel pole with caps and galvanized eye bolts and washers.
 - Post shall be powder coat finished

Sand Courts

- Sand in the volleyball court to be 2' deep silica sand 70 blend from Simplot mine in Overton, NV
- Surround the court and buffer with an 18-inch high by 13-inch wide concrete curb for sand containment
- Sand courts shall be incorporated into the irrigation system through a dedicated control valve with cooling sprinklers

BOCCE BALL COURTS

The quantity of courts and their colors shall be determined by the city. When bocce ball courts are part of a design, a minimum of two courts shall be required.

- Inside court dimensions shall be 13 feet wide by 90 feet long
- At the edge of the court there shall a nine and one-quarter inch tall concrete pavement edge or curb with anchored two-inch thick by ten-inch tall wood boards

- Courts shall be surrounded by ten-foot minimum concrete sidewalk buffer.
 - Adjacent courts may reduce buffers to five feet
- Shading in the form of prefabricated shade structures or trees shall be located at each end of the court
- One bench shall be located at each end of each court

SKATE PARKS

The inclusion of skate parks or other related amenities shall be determined by the city.

- Shall be located away from playgrounds and homes.
- Shall be located in a prominent location and accessible by police and other emergency vehicles.
- Park elements shall be designed to minimize noise when in use.
- Ten-foot high powder coated, shepherd's hook fencing shall be required to surround the entire area with a four-foot wide lockable pedestrian gate and 12-foot wide access with two lockable six-foot gates for maintenance.
- The pedestrian gate shall be auto closing.
- Spectator seating may be required and shall be provided outside of the fencing.
- Shading in the form of prefabricated shade structures or trees shall be located adjacent to the facility.

OUTDOOR FITNESS EQUIPMENT

Outdoor fitness equipment may be required along trails and at parks. Fitness equipment shall meet or exceed the safety provisions and requirements specified in the latest version of ASTM F3101 for the equipment, the spacing of equipment, and surfacing requirements.

- All equipment shall be approved by the city.
- The equipment shall be signed to state it is for ages 13 years old and above.
- The equipment stations shall be located in stabilized decomposed granite or safety surfacing with and mow curb separating station use zone with adjacent surfaces.

IRRIGATION

All parks within the City of North Las Vegas shall be designed to feature the most efficient irrigation design possible.

FIELD EQUIPMENT

Automatic Controller

- A. Controller(s) shall be the Calsense model CS3000 irrigation controller as indicated on the drawings, and shall be installed per manufacturer's specifications, as shown on the drawings, and as specified herein.
- B. The irrigation controller shall have a 10-year, limited warranty.

- C. The irrigation controller shall have a large 5.7 inch backlit, ¼ VGA, LCD, sunlight readable display where information can be viewed on the same screen, and with a scrolling side menu design that makes programming intuitive and easy to follow.
- D. The controller shall be available in multiple station counts including 8, 16, 24, 32, 40 or 48 stations. If less than 48 stations are purchased initially, additional stations can be added at any time in the field using 8-station kits.
- E. The controller shall support up to 128-stations when using 2-Wire. This can be either 128, 2-Wire stations or a combination of up to 48 conventional-wired stations plus 80, 2-Wire stations.
- F. Controller software upgrades shall occur via the internet transparently and at no charge.
- G. The controller shall have unlimited programs known as Station Groups which can water individually or concurrently to maximize irrigation system capacity and reduce watering time.
- H. The controller shall have the ability to assign landscape details as plant material, head type, soil type and exposure to each Station Group to simplify programming of stations with similar characteristics. Each group shall include a variety of other settings including irrigation schedule, percent adjust factor, line-fill times and on-at-a time rules.
- I. The controller shall support up to four mainlines simultaneously for managing flow.
- J. The controller shall support up to 12 points of connection shared among controllers.
- K. The controller shall support up to 3 flow sensors and 3 master valves in a by-pass configuration so as to accurately measure and read the overall range of station flow rates from the lowest flowing station in GPM to the highest flowing station in GPM, using the 2-Wire option and the 2-Wire, POC decoders for all 3 flow devices and master valves.
- L. The controller shall automatically calculate cycle and soak scheduling to water each station for a fixed cycle time and allow the water to soak in between cycles, maximizing infiltration and minimizing runoff.
- M. The controller shall have a water budget feature that displays monthly water volume allotments in either HCF or gallons for each of the 12 calendar months labeled as January thru December. This monthly guideline shall be calculated three ways, either directly entered, calculated by the controller using a yearly budget and dividing that out to the 12 months proportionately using built-in historical ET, or by calculating the monthly numbers using total square footage and a user selected percent of historical ET.
- N. The water budget shall be available per POC controlled and programmed for either every month or every other month pre-programmed as date ranges. If the expected water use for the period exceeds the water volume budget, the user shall be notified

with an alarm before the period ends so changes to the program can be made. The controller shall not terminate irrigation automatically in this process, or if selected as an option, the controller shall proactively and automatically decrease the scheduled irrigation for each station group using the percent reduction programmed, when approaching the set water budget limit with notification of said action.

- O. The controller shall have a wide range of water reports and diagnostics available directly at the controller and shall include:
- A summary of all usage for each irrigation mainline
 - Usage for each point of connection connected to the mainline
 - Station-by-station usage
 - A complete station-by-station history which includes the date and start time of each cycle, programmed minutes, programmed inches, number of cycles, actual flow rate, expected flow rate, and any alerts or issues that occurred during irrigation.
 - Unscheduled water usage and non-controller water usage including quick coupler use and bleeding valves manually
- P. The irrigation controller shall have three separate mainline break settings available for proper flow detection of catastrophic issues without interfering with standard irrigation practices and shall be programmed for 1.) 'during irrigation', 2.) 'master valve override' functions, and 3) 'all other times'
- Q. The controller shall have flow management capability as a standard feature whereas the controller shall learn each station's expected GPM flow rate automatically at night over several irrigations, and use the mainline GPM capacity programmed, to operate up to six (6) valves at the same time to shorten the water window.
- R. The controller shall have the ability to accommodate multiple types of irrigation schedules including irrigating even days, odd days, prescribed days of the week, and interval scheduling ranging from every other day up to every four weeks.
- S. Several controllers, up to twelve shall be able to share one or multiple points of connection with multiple flow sensors and master valves. This option shall allow several controllers without the use of a central control computer to share the irrigation programs and flow information for:
1. Monitoring of system flows.
 2. Shortening water windows by maximizing the number of valves on without exceeding system flow capacity.
 3. Turning OFF valves with excessive flow rates due to broken lateral lines.
 4. Tracking water usage and comparing to a water budget.

5. Eliminating relays when sharing pumps and master valves.

- T. When more than one controller is sharing one or multiple points of connection and the controllers are communicating to each other through hardwire or radio, the data shall be distributed as changes occur making the data available from any controller on the *FLOWSENSE™* chain so that the user shall be able to view and program a controller's information from any other controller in the group.
- U. The controller shall provide permanent memory stores of all controller programming and setup data, including date and time, in non-erasable memory.
- V. The controller shall have the ability to create and program an unlimited number of manual programs which allow the user to schedule stations to run for a preset time, up to 6 – times per day, for hydro-seeding, new planting and fertilization scheduling.
- W. Electrical alerts, such as short circuits and no currents, shall be standard to help the user troubleshoot field wiring and solenoid problems.
- X. The irrigation controller shall provide an optional lights feature to be used to operate up to four light, gate or water feature relays.

Wall Mount Installation

- A. The wall-mounted gray box shall be a completely assembled unit, pre-mounted with the designated controller. The box shall be constructed of weather- and vandal-resistant stainless steel.
- B. The wall mount unit shall come complete with transient and lightning protection board and factory-labeled terminals.
- C. The transient protection board shall be pre-mounted in the wall mount unit and shall support field replaceable modules which include terminal strips for the connection of irrigation field wires, 2-Wire cable, and weather monitoring devices such as an ET gage, Tipping Rain Bucket, and Wind gage.
- D. The wall mount unit shall feature a security-tight locking mechanism, louvered vents, with splash guards, and bee/wasp screens.
- E. All wall mount units shall come with a 10-year limited warranty and shall be fully UL-approved.

Pedestal Enclosure

- A. The enclosure shall be of a vandal and weather resistant nature manufactured entirely of 304-grade stainless steel, and the top shall be 12 gauge and the body 14 gauge. The main housing shall be louvered upper and lower body to allow for cross flow ventilation. A stainless steel backboard shall be provided for the purpose of mounting electronic and various other types of equipment. The stainless steel backboard shall be mounted on four stainless steel bolts that will allow for easy removal of the backboard.

- B. The 38-inch height with flip top shall provide easy access for programming from a standing position under normal installations.
- C. The pre-assembled vandal resistant enclosure factory pre-assembled and supplied by controller manufacturer shall come complete with 24 VAC lightning and surge protection and all terminals shall be factory labeled. The pre-assembled enclosure shall come provided with an On/Off switch to isolate the controller along with a GFI receptacle. Specific radio antenna(s) shall be pre-mounted and connected on enclosure. The enclosure shall include 2-7/8", 1-1/2" thick, 6-pin cylinder, die-cast steel padlock with unique shackles design.
- D. Factory pre-assembled enclosure with controller shall carry a full UL listing.
- E. Controller manufacturer shall offer a double-wide, pre-assembled vandal resistant enclosure, 38-inch height with flip top for two controller placements side by side. All necessary wiring between the two controllers in order to share central communications and/or flow and weather data shall be pre-wired by manufacturer for easy installation.
- F. The factory pre-assembled enclosures shall carry a ten (10) year limited warranty.

Grounding

- A. Grounding shall consist of one 5/8-inch x 8-foot copper rod installed per irrigation controller and where multiple controllers *are not* connected to the same ground rod.
- B. The top of each rod shall be installed inside a 10-inch round valve box, with the rod installed as close as practical to the controller. If a pedestal enclosure is used, the ground rod may be installed through the pedestal base. Under no circumstances shall the rods be shortened.
- C. A #6 AWG solid copper wire shall be used to connect from the ground lug of the transient protection board to the copper rod. Brass clamps specifically designed to secure the copper wire to the grounding rod shall be used. There shall be no kinks or sharp bends in the wire.
- D. Each wire may be wrapped around the rod and brazed in place as an alternative to clamping. Braze the wire to the rod for at least one circumference of the rod.

2-Wire Path & Decoders

- A. The 2-Wire option shall provide support for up to one-hundred and twenty-eight (128); 2-Wire stations connected to a single controller and shall provide support for up to 6 points of connection (POC's).
- B. The 2-Wire cable shall either be Paige P7354D or Regency's Hunter® Decoder cable with a maximum length of 7,000 ft.

- C. A ground rod, 5/8 inch x 8-ft solid copper shall be required every 300-feet along the 2-Wire path as well as a single ground rod at the end of the cable run.
- D. The station decoder shall be a 2-station decoder and shall be able to operate up to 2-solenoids using unique colored wires for each.
- E. A single controller shall be able to operate up to 70, 2-station decoders and it shall be intended that all wire runs between valves and 2-Wire decoders shall be direct pulls and have no splices except at the decoder location.
- F. All electrical connections must be waterproof and moisture-resistant and shall be done with 3M™ Scotchcast™ 3570G Connector Sealing Packs.
- G. The 2-Wire decoders shall use #14 AWG direct burial wires to connect to remote control valves and the maximum wire run between the decoder and the valve shall be 100-feet.
- H. The POC decoder shall operate a single master valve and flow meter (model FM). A single controller shall be able to operate up to six POC decoders with a maximum of 12-POC's in a chain, controllers using *FLOWSENSE™* technology.
- I. The maximum wire run between the POC decoder and flow meter shall be 20-feet while the maximum wire run between the decoder and the master valve shall be 100-feet.

Weather Monitoring

- A. The manufacturer of the central control system shall provide real-time ET and rain data using multiple, state-of-the-art, high resolution numerical weather data provided by NOAA, all without subscription charges. Unlike other services which use only ground-level weather stations, the NOAA-modeled data shall allow weather to be triangulated to each customer's unique latitude, longitude and elevation, ensuring accuracy even within localized microclimates. ET shall be calculated using the latest FAO Penman-Monteith method which shall use solar radiation, temperature, wind speed, relative humidity and other input parameters.
- B. The controller shall be able to interface with an on-site ET gage able to measure daily localized, evapo-transpiration and log the amount of inches lost each day without the use of a central computer.
- C. The ET measuring device shall be powered by the selected field controller. ET is measured directly in 0.01" increments and pulses from the gage are sent directly to the field controller.
- D. The controller shall be able to store and display daily, on-site ET in a 28-day table which is updated every 24 hours.
 - a. E The user shall be able to view over 100 selections of built-in historical ET tables or program monthly historical ET data for a given area directly, to

be used as a backup for that night's calculation in case the ET gage malfunctioned or the real-time value sent normally through the Internet failed.

- E. The user shall be able to cap the amount of daily ET used by the controller for that night's calculation by selecting a percent of historical ET for the given area to be used instead of the actual ET received.
- F. The irrigation controller shall have the capability to calculate station run times using the average of the last 7 days of ET instead of using a single ET value to calculate the next scheduled, station run times.
- G. The controller shall be able to interface directly with a Tipping Rain Bucket and shall accurately measure rainfall in 0.01" increments by means of a tipping and emptying device mounted below the center of the collection dish.
- H. The rain-measuring device shall be wired using the 25-feet of 2-conductor cable supplied with the Tipping Rain Bucket to the selected field controller. The controller shall have a weather option able to interface with the device. The cable shall be installed in conduit and the connections are to be made at a terminal strip inside the enclosure. Maximum length of cable run shall be 1000 feet using Paige P7171D communication cable when necessary. 18-gauge multi-conductor irrigation wire in conduit may be used for runs under 100-feet. Runs shall be direct pulls without splices.
- I. The irrigation controller shall provide the following programming parameters for rain:
 - i. Stop Irrigation after x.xx inches
 - ii. Maximum Rain in One Hour is x.xx inches
 - iii. Maximum Rain in 24 Hours is x.xx inches
- J. Wind speed shall be monitored by the irrigation controller with the weather option interface and the wind gage installed. The controller shall pause irrigation once the wind speed exceeds a user-set limit. As wind subsides, the controller shall resume irrigation where it left off. Winds from 0-to 135-MPH shall be accurately read. Data from one wind gage shall be shared amongst a group of controllers making up a *FLOWSENSE™* chain.
- K. The wind gage device shall be wired using the 60-feet of 2-conductor cable supplied with the device to the selected field controller. The cable shall be installed in conduit and the connections are to be made at a terminal strip inside the enclosure. Maximum length of cable run shall be 1000 feet using Paige P7171D communication cable when necessary. 18-gauge multi-conductor irrigation wire in conduit may be used for runs under 100-feet. Runs shall be direct pulls without splices.

Flow Monitoring

- A. The flow sensor used shall be supplied by the same manufacturer as the irrigation controller.
- B. The flow sensor shall be wired back to the irrigation controller using two #14 AWG wires, one red, and one black in 1" PVC conduit to connect to the irrigation controller. The maximum wire run between flow meter and controller shall be 2000 ft. The flow meter shall send low voltage digital pulses back to the controller and therefore all electrical connections must be waterproof and be resistant to any moisture entry.
- C. It is intended that all wire runs between the controller and flow meter shall be direct pulls and have no splices. If wire splices are unavoidable, they must be installed in a valve box with Spears DS-100 connectors with Spears sealant or 3M Scotchlok No. 3570 connector sealing pack used.
- D. Each flow sensor shall have the following characteristics:
 - 1. Housing to be a Sch 80 polyvinyl chloride tee or bronze tee
 - 2. Have a pulsing output that operates at 9VDC and a pulse rate that is proportionate to the GPM
 - 3. Fully compatible with the internal interface at each field controller
 - 4. Powered by the controller
 - 5. Replaceable metering insert
 - 6. Shall feature a six-bladed design with a proprietary, non-magnetic sensing mechanism
- E. The irrigation controller shall include native support for Bermad 900-M Reed Switch and Netafim Pulse Reed Switch series hydrometers. Allowable hydrometer sizes shall range from 1.5" to 10". Reed Switches that are supported include 1-pulse per 1-gallon and 1-pulse per 10-gallon switches. Currently only one hydrometer mentioned shall be able to interface with the controller.

Central Control Communication Options

- A. The field controller(s) shall be capable of utilizing a single mode or a combination of communication modes such as 3.5G cellular radio, Ethernet, wireless Ethernet, 450-470MHz Local Radio, point-to-point Spread Spectrum radio, and hardwire communication cable for central control of irrigation via cloud-based, Command Center Online web software.
- B. The controller shall be able to utilize a wireless, 3.5G cellular radio in remote areas where an Ethernet or WiFi connection is not possible for direct communication back to a desktop, tablet, or laptop computer via the Internet. Service plans for single and multiple controllers utilizing a 3.5G cellular modem shall be available through the manufacturer as 1-year or 5-year plan.

- C. The controller shall be able to utilize an Ethernet communication, CAT5 or CAT6 cable path as part of a district's or campus network system. An Ethernet (RJ45) connection shall be supplied at the controller location, with the network set to have access to this connection. IP reservations with DHCP are preferred along with the hard coded MAC address from the Ethernet device supplied. The secondary preference shall be a static IP address with additional programming requirements. The controller shall utilize an existing WiFi, wireless Ethernet network on a school campus or facility city project. IP reservations with DHCP are preferred along with the hard coded MAC address from the Ethernet device supplied.
- D. The controller shall be able to utilize a short-range, Spread-Spectrum radio to communicate with other controllers in line-of-sight proximity providing a reliable communication link instead of a hardwire communication path when sharing data. The spread-spectrum radio option does not require FCC licensing, and offers a secure error correcting frequency hopping radio link immune to outside interference.

Command Center Online Web Software

- A. The central control software shall be a cloud-based package designed to provide complete irrigation control through a web application, without the purchase of proprietary software loaded on a dedicated, desktop computer.
- B. The fully-featured web application shall provide communication using a variety of internet-connected options including Ethernet, Wireless Ethernet (WiFi), and 3.5G Cellular Radio.
- C. The web application shall allow the user to monitor and program controllers, as well as run various water usage reports from any internet-connected device including PC's, tablets, and smart phones. Weather data collected from an ET Gage, Tipping Rain Bucket, or *WEATHERSENSE* can be shared to any controller on the system.
- D. Engineered for easy and reliable access, all that is needed to get started using the software shall be a user name and password to obtain data from controllers in the field. Each customer's service shall be unique and password protected so data is secure.
- E. User accounts shall be issued and managed by an administrator account so that only authorized users can access controller information.
- F. The cloud-based software shall include the ability to turn stations On and Off remotely using any internet-connected device including PC's and tablets, and a smart phone app. User shall be able to turn on up to six valves simultaneously and view real-time flow information, details if a mainline break occurs, and real-time weather data when using on-site weather devices such as daily ET and rainfall in inches.
- G. The web software shall allow a customer to create their own custom dashboard as the home page, providing a snapshot of the most important water and labor management graphs and reports depicting easily the most current status of each controller at each specific project location.
- H. System reports shall include complete records of the details for every irrigation cycle, water usage versus water budget amounts, the gallons and percentages of water savings, and what

events and changes have occurred at the controller. System administrators shall have management reports listing sites and user for their company.

- I. System requirements shall be a broadband internet connection such as DSL, cable, or mobile broadband.
- J. Supported web browsers shall include:
 - i. Microsoft Windows Internet Explorer® 8.0 or higher
 - ii. Google® Chrome™ 34 or later
 - iii. Mozilla Firefox™ 28 or higher
 - iv. Apple® Safari™ 5.1.7 or higher

Warranty, Service & Training

- A. The manufacturer shall provide after-sale support that is a *no charge* service whereas on-going training and education shall be provided by factory direct personnel to the end user(s) at the field controller(s) and using the cloud-based, web software for central control of irrigation.
- B. The central control manufacturer shall warrant to the purchaser of its manufactured products against defects in material and workmanship for a period of ten (10) years from the date of original purchase by the owner.
- C. All peripheral, accessory, and RF equipment such as radio and 3.5G cellular radio modems, ET gages, flow sensors, and rain buckets (but not limited to) and used in conjunction with central irrigation controllers, shall have distinct warranties of their own and should be noted separately from this warranty.

Recommended Companies

Drinking Fountains -	Most Dependable Fountains #410 or Acorn Aqua ABC1500B or Murdock 4410 - ADA accessible, Surface Mount, with shutoff valve, with Jug Filler at sport fields /court, Pet fountain at Dog Parks.
Picnic Tables -	Quick Crete - 8', ADA accessible, Q-LBT-96 PT or Outdoor Creations Model 100S. Smooth Finish with Anti-Graffiti sealer, integral color.
Individual Shelters -	Classic Recreation Systems, Inc., 16' x 16' Mesa Model 4 post, or Poligon SQR 16MR. 10'-0" min Clr entry.
Group Shelters -	Classic Recreation or Poligon or approved equal. 10' min. clr. entry.
Fabric Shade Shelters-	Parasol by Poligon, Sunports, Shade Systems or approved equal.
Individual Grills-	GameTime - Deluxe Waist-Hi Stove, #60 or Miracle 1104 or Kay Park SB-1635. 280 sq inches grilling area, minimum 2 adjustable levels, 3.5" diameter post. 360 degree rotation.
Group BBQ Grills -	Kay Park SB 3628U, Miracle 1104-8 or approved equivalent. 1008 sq. in. min. grilling surface.
Park Benches -	Outdoor Creations Model 409, Tan, or approved equivalent.
Litter Receptacles -	Webcoat TR32 with DOME 32 or Fusion Coatings FSC-F1021 and FSC-F3015 - 32 gallon, in-ground mount, plastic liner and plastic dome top.
Large Litter Receptacles	In ground where directed, Mini Cans, Sybertech Waste Reduction Limited.
Pet Waste Dispensers -	Dogipot Pet Container #1001. Aluminum, Green or approved equal.
Bicycle Racks -	Fusion Coatings LBR5P, Gametime 7703. 3 loop steel pipe Powder or Platisol Coated, or approved equivalent.
Playground Equip. -	GameTime- "Powerscape Plus Series", Miracle Recreation "Kid's Choice Series", Playworld System "Playmakers Series", or approved equal.
Safety Surface -	Robertson Industries Tot Turf or Spectra Turf Spectra Pour, or approved equal.
Fitness Stations -	GameTime Parcourse, or Miracle 10 station Fitness Course.
Water play sculptures -	Vortex , Water Play, or approved equal.
Water play features -	Vortex , Water Play, or approved equal.

Baseball/softball Fields-	<p>Bases-Tomark or equal, Hollywood Original Jack Corbett with in ground sleeves.</p> <p>Jox boxes for both right and left side batter boxes, buried at 1/2" below grade of infield surface.</p> <p>Pitching rubber, Hollywood Style- 4 sided sized accordingly.</p> <p>Home plate Hollywood Style- w/ wood core</p> <p>Foul Poles- Tomark Pro20, 20', 4.5" O.D., Steel.</p> <p>Home Run Fence Cover - Tomark Sports - Polycap</p> <p>Player's Benches- Gametime 8' & 15' w/backs, #2128 & #2125.</p> <p>Bleachers -Kay Park 5 row, 8" Rise Aluminum planking w/ galvanized steel frame, steel rails with 4" O.C. vertical pickets, no chainlink fencing material.or, equivalent Miracle Recreation Product, or approved equal.</p>
Basketball Posts -	GameTime - Cantilevered post w/ 4' extension, #460.
Basketball Goals -	GameTime - Ultimate Goal, #873.
Basketball Backboards -	GameTime - Fan Shaped Cast Aluminum, #854.
Basketball Nets -	DuraNet - #Duranet2
Tennis Court Nets -	GameTime - Aluminized steel net, #341.
Tennis Court Posts -	GameTime - 4 ½" Steel, #542, w/center tie-down and strap hardware, #105167.
Soccer Goals -	8' x 24' of welded 3" x 4" High Strength Steel Tubes capped so there are no openings
Volleyball Posts -	Gametime - "Powerscape" # 8664.

Lighting Requirements:

General Requirements

The City of North Las Vegas has adopted a policy to utilize light emitting diode (LED) lighting wherever practicable.

The following should be referenced regarding the specialized nature of each organization:

Crime Prevention Through Environmental Design (CPTED)

American Association of State Highway and Transportation Officials (AASHTO)

National Electric Code (NEC)

Illuminating Engineering Society of North America (IESNA)

All electrical must comply with NEC requirements and City of North Las Vegas standards.

Arc Flash analysis including specific hazard category.

Plan Preparation Requirements:

- A State of Nevada licensed Electrical Engineer shall prepare lighting and electrical plans.
- Refer to the Municipal Code for light trespass limitations at property lines. Shields shall be used as necessary.
- The maintenance (light-loss) factors, IES candela test-filename, initial lamp-lumen ratings and specific lamp manufacturer's lamp ordering nomenclature, used in calculating the presented luminance levels must be shown on the plan.
- Photometric plans showing light levels in footcandles on the grids specified in the Lighting Standards Table below shall be submitted for review and approval by the Director of Parks and Recreation or his Designee.
- A third party field test will be required at the contractor's expense prior to final acceptance.
- Products in The City of North Las Vegas Parks and Recreation Lighting Equipment List shall be specified.
- Security lights shall be mounted on Sports Lighting Poles wherever appropriate.

IESNA Standards

Class I	For competition play in large capacity arenas and stadiums	IESNA MANUAL
Class II	For competition play with fewer than 5,000 spectators	
Class III	For competition play primarily for players, with due consideration for spectators	
Class IV	For social and recreational play only, with secondary consideration for spectators	

Sports lighting Illumination Recommendations (Partial)* References

Sport/Area Type	Lighted Area	Class of Play	Horizontal Fc avg.	Uniformity Max: Min	References
Baseball and Softball	Infield	I	150	1.7:1 or less	IESNA MANUAL
	Outfield		100		
	Infield	II	100	1.5:1 or less	
	Outfield		70		
	Infield	III	50	3:1 or less	
	Outfield		30		
	Infield	IV	30	4:1 or less	
	Outfield		20		
Basketball		III	30	3:1 or less	
		IV	20		
Tennis		I	150	1.7:1 or less	
		II	100	2.5:1 or less	
		III	75	3:1 or less	
		IV	50	4:1 or less	
Volleyball		III	30	3:1 or less	
		IV	20	4:1 or less	
Soccer		II	150	2:5 to 1 or less	
		III	100	3:1 or less	
		IV	50	4:1 or less	

General Area Lighting – from IESNA

Pedestrian Ways	Avg/min where special pedestrian security is not essential should not exceed 4:1, except for residential sidewalks and roadside bikeways in residential areas where a 10:1 is acceptable. Where increased pedestrian security is desired, do not exceed 5:1 for any walkway or bikeway.
Commercial Areas	Business areas with many pedestrians during night hours. Vert. = 2.2 fc avg. at 6ft

	AFG for special pedestrian security
Intermediate Areas	Frequent moderately heavy nighttime pedestrian activity. Vert. = 1.1 fc avg at 6ft AFG for special pedestrian security
Residential Areas	Residential or small commercial and residential mix. Few pedestrian at night. Vertical = 0.5 fc avg at 6ft AFG for special pedestrian security
Walkway/ Bike ways and Stairways	Vert. = 0.5 fc at 6ft AFG for special pedestrian security
Pedestrian Tunnels	Vert. = 5.4 fc at 6ft AFG for special pedestrian security
Basic	

TRAIL LIGHTING

Luminaire

Trail lighting in the City of North Las Vegas is to be light emitting diode (LED) lighting wherever practicable.

Manufacturer shall be Cree Beta, Cooper Galean, or approved equal.

A warranty clause with a minimum five-year warranty shall be provided for the lighting.

Product is to be low profile modular design

Diecast, extruded-aluminum housing assembly

UL wet listed

Lighting level options shall include:

- Integral Backlight cutoff shield
- Integral dimming (80 percent high level and 15 percent low level – 2 minute duration)
- International dark sky association compliance
- IES BUG ratings available
- Energy calculations, max. per fixture, for full and dimmed conditions must be provided for approval.

Submittals must include a statement that fixtures provide illumination of an average of 0.5 maintainable foot candles at +/- 90-feet on center. Closer spacing will not be accepted.

All paved trails must be lighted where practicable. Lighting requirements for remote trails and trails in areas where lighting is not practicable will be determined by the Public Works, Parks and Recreation Department.

Lighting levels along trails is to be an average of 0.5 maintainable foot candles. A minimum of one foot candle is required at steep grades and at all traffic crossings.

Bollard-type lighting is not recommended or approved for park applications unless specifically authorized by the Parks and Recreation Department.

Poles

Poles must be a minimum of 16 feet in height unless otherwise specified. Five inch x five-inch or larger square pole designed for area wind loads (100-mph). Poles to have a metal base plate to cover anchor

bolts and a min/max four-inch x six-inch hand hole tack welded directly behind hand hole on back of pole at four corners.

Poles to be either bronze or black and determined by the City of North Las Vegas.

Anchor base (base plate) conforming to ASTM A36.

Pole shaft is to be fabricated from hot rolled commercial quality carbon steel of one-piece construction with a minimum yield strength of 55,000 psi.

Removable pole cap for poles receiving drilling patterns for side-mount luminaire arm assemblies. For top mount luminaire and/or bracket consult the manufacturer.

To prevent removable pole caps from coming off silicone will be added to pole caps. Install a vandal-proof screw on one side to prevent cap from popping off. Anchor bolts conforming to ASTM F1554 Grade 55, provided with two hex nuts and two flat washers, with "L" bend on one end and galvanized a minimum of 12" on the threaded end.

Galvanized high strength carbon steel structural fasteners

Galvanized or zinc-plated carbon steel or stainless steel non-structural fasteners. Reference manufacturers' design criteria specification for all design conditions

The hand hole cover plate is to be secured by tack welding on four sides following acceptance or a locking mechanism where there is no turf.

Pole foundations must be placed a minimum three feet from the edge of a trail.

Electrical Pull Boxes

Vandal-proof boxes must be provided as necessary. Pull boxes must be located to reduce access by others. In-ground junction boxes should be avoided where possible.

Supply box shall be provided. Grouting and adding slurry shall be provided when applicable.

Each underground conductor is to be fused with 10 amp/600v fuse and the fuse located in the hand hole in the pole.

AU conductor terminations must be done as stated in the UL listed methods and products.

Circuit: 240 volts with P.E. control and relay for entire circuit.

Underground box covers must be non-metallic.

Boxes in secured areas shall be covered with boulders where applicable.

Electrical equipment should have a three-foot concrete base pad above grade.

Foundation

NOTE: Light fixtures installed in Nevada Department of Transportation (NDOT) right-of-way must be provided with a breakaway base to comply with NDOT standards.

Foundation size must be matched with pole and wind loads. The top of foundation is to be four to six inches above grade and grounded per City of North Las Vegas guidelines.

Poles placed within turf areas must provide a 12-inch radius full circle of concrete for turf maintenance. Concrete poles adjacent to hardscape areas must be provided with a 12-inch radius half circle of concrete for turf maintenance.

Circuit

The standard electrical circuit is to 240 volts with P.E. control and relays for the entire circuit. Each pole underground conductor is to be fused and the fuse located in the hand hole in the pole.

Each lighting system is to be controlled by a photo cell on time clock off with an override toggle switch mechanical time clock override.

All night light photocell with manual override switch.

CAUTION:

All lighting timers and any other "user" controls are to be installed outside of and independent of the electrical panel.

No electrical equipment controls to be installed to areas subject to any water source.

Walks/Trails:

All walkway and trail lighting shall be lit from dusk until dawn. Controlled by photocell only. Manual maintenance bypass shall be provided.

Park, Parking Lot and Security:

All park area, parking lots and security lights shall be lit from dusk until dawn. Controlled by photocell only. Manual maintenance bypass shall be provided.

Sports Court Lighting

Community-friendly facilities are a major concern when designing sports lighting in the City of North Las Vegas. All lighting is to include "house side" shields or other measure to minimize the impact of lighting on neighboring residential areas.

All court lighting shall be user controlled by push button timer with a lighted warning device to allow timer reset. Courts may be lit from dusk until park closing time. Controlled by photocell, computer and user push button. Manual maintenance bypass shall be provided. Fenced courts shall allow boom truck access for lighting maintenance.

Musco Lighting green systems or other systems that provide minimal light spill are preferred for all field lighting. Include Musco control-link system or approved equal.

Install electrical service, panels, and lighting controls outdoor to avoid non-compliance of the NEC working clearance. Article 110-26.

Underground box covers must be non-metallic.

Light pole hand hole ground stud is to be welded directly in the rear inside of the pole and include a #8 green pigtail approximately 12 inches long.

Sport Field Lighting

Musco Lighting green systems or other systems that provide minimal light spill are preferred for all field lighting. Include Musco control-link system or approved equal. All sports fields shall be controlled by computer. Manual maintenance bypass shall be provided.

All multi-use, baseball, and softball fields shall be designed to only be accessible to City of North Las Vegas personnel. Timers and warning device controllers shall not be available for field users.

Restroom Lighting

All lights to be LED.

Interior and exterior of restroom is to be lit with photocell, mechanical timer, and override. Interior and exterior lighting to be on a separate control system. All lighting is to be vandal resistant (detention grade with tamper proof screws), recessed when possible, and caged for vandal protection. Lighting and conduit is to be installed at height that would be out of easy reach. Conduit shall be contained within frame/structure whenever possible.

Interior lights are to be four-foot-long fixtures.

Exterior lighting to be located on each side of restroom, and at each ingress/egress minimum.

Gazebos and Playground Shade Structures:

Dual light levels are required. All gazebos and playground shade structures shall be lit at activity levels from dusk until park closing time, from closing time to dawn provide security light levels. Controlled by photocell and computer. Manual maintenance bypass shall be provided.

Miscellaneous Lighting

Standard lighting for monument signs, restrooms buildings, etc. shall be vandal proof.

Well lights shall have a rock guard per the manufacturer.

Maintenance Bays

Lighting in maintenance bay is to include four 2-bulb fluorescent lights or approved equivalent LED.

Four duplex GFI outlets are to be provided.

LANDSCAPING AND PLANT MATERIALS

Landscaping is an integral city asset that increases in value and appeal over time. Design and maintenance are important factors in determining a landscape's success. This section is intended to assist with designing landscapes that promote aesthetics while supporting maintenance requirements. When developing parks, trails, and other facilities, it is important to design landscapes that adapt to surrounding environments and provide longevity. Conservation through landscape materials selection and design is also a key component to providing exceptional, long-lasting facilities while sustaining maintenance costs.

A landscaping plan shall be submitted in conjunction with any required site plan prior to the construction of a park, and must be approved by the Director of Parks and Recreation prior to construction.

Landscaping plans shall be properly dimensioned and clearly drawn to a scale of one inch equals thirty (30) feet or less, and shall include the following information:

- Location of existing and proposed structures, driveways, paved areas, etc. on the subject property;
- Location of washes or other natural prominent features;
- Location, types and sizes of all landscaping and automatic irrigation systems;
- Street and utility easements;
- Any other pertinent information which may be required.

General Design Considerations

- Minimize the disturbed footprint adjacent to native areas and revegetate all disturbed conditions.
- Slope protection is to be taken into consideration. Any disturbed slopes should be revegetated with erosion protective plantings and surfacing.
- All plant material must be placed so as not to conflict with above and below ground utilities, lighting, and easements. Designers shall coordinate with other disciplines to reduce conflicts.
- Plant material and placement shall be designed to follow Crime Prevention Through Environmental Design (CPTED) strategies, which includes, but is not limited to:
 - Selecting plant material that provides visibility and does not create hiding places.
 - Locating plants to define walking spaces, control access and define property lines.
- Landscaping shall meet city municipal and Development Code requirements unless otherwise stated in this document.
- Landscaping designed within utility corridors and easements will require approval from the owner and/or utility agency.
- Landscape medians and landscape strips/buffers adjacent to roads shall be six-foot minimum width.
- When designing adjacent to a roadway or parking lot:
- Select plants that tolerate radiant heat and winds

- Provide a minimum six-foot- wide landscape zone free of hardscape
- Provide a swale that does not impede tree trunks
- Only use tree grates in high pedestrian traffic locations
- Abide by required site visibility zones. Do not plant shrubs that will grow past 24- inch mature height. At a minimum, plant tree trunks outside the visibility limit by 12 inches.
- Special considerations shall be made when designing landscapes adjacent to playgrounds and dog parks. Noxious and thorny plants shall not be located near playgrounds, splash pads, and dog parks.

Plant Material

Plant material shall be desert adaptive and drought tolerant. Designs are encouraged to follow the approved Southern Nevada Regional Planning Coalition’s Regional Plant List and all plant material shall be subject to review by Park Planning staff for approval.

When selecting plant material, consider the following:

- Adaptability and relationship to the North Las Vegas environment and time of year
- Color, form and pattern
- Ability to provide shade
- Soil type, slope, and retention
- Hardiness
- Resistance to fire and pathogens
- Invasive and illegally harvested plants shall not be used

Trees - General

- Unless otherwise noted, all trees shall be 24- inch box minimum, spacing to be typical mature width of tree on center. Groupings are encouraged.
- Large, deciduous, standard trunk trees are recommended around shaded picnic areas, dog parks, near benches, at entry points, and spectator seating areas around active sport areas such as baseball fields, volleyball courts, basketball courts, skate parks, multi-purpose fields, water parks, playground areas, trails, etc.
- A six-foot mowing berth shall be provided between trees and vertical surfaces to allow for maintenance machinery.
- Except at dog parks, provide a six- foot diameter, four-inch deep bark mulch ring around trees in turf areas with mulch two inches away from the trunk.
- Minimum tree quantity requirements shall be determined by:
 - Parks: 25 trees per every acre unless otherwise directed in park specific master plans and guidelines.
 - Trails and streets: one tree for every 25 linear feet of trail unless otherwise directed in city Development Code, trail-specific master plans, and guidelines.
- Selection and placement of trees shall be placed for optimal shading of buildings, trails, and

impervious surfaces.

- Plantings with thorns, seed pods, excessive fruit, etc. shall not be planted in close proximity to trails, hardscapes, play areas, water play areas, turf, and other areas with increased pedestrian traffic.
- All tree trunks located within ten feet of a sidewalk or hardscape shall be protected with root guards. Install root guards adjacent to the edge of a hardscape or sidewalk surface at a vertical depth of 48 inches and width of five feet each side of the trunk center (for a total of ten feet). If structural soils are installed, root guards are not required.
- Multi-trunk trees shall be a minimum of ten feet from the sidewalks and trail edges. Standard tree trunks shall be a minimum of six feet from the sidewalk and trail edges.
- All trees shall be placed to not impair required lighting and utilities.
- No trees, based on mature canopy spread, shall be placed within ten feet of light poles.
- No trees, based on mature canopy spread, shall be designed or constructed on top of underground utilities or below overhead utilities without written approval of utility owner(s).
- ☐ Small mature height trees may be allowed under overhead utilities if approved by the utility company.
- Trees shall be located in the center line of medians.
 - If the median is less than 15 feet wide, trees shall be standard trunk.
 - Trees shall not be located within nine feet from the end of the median
 - Trees shall be placed according to mature canopy spread
- Provide a minimum eight-foot clear zone from all tree trunks adjacent to accessible parking.
- Provide a minimum six-foot clear zone from tree trunks to adjacent bus shelters.

Trees - Protection

Tree protection is required on all plans that contain existing trees. The tree protection design and/or notes on plans/specifications shall include:

- Within the Tree Protection Zone, the following shall not occur:
 - Construction
 - Disturbance/alterations of existing grades
 - Storage of materials or equipment
 - No vehicles, equipment or persons shall travel or park within the tree protection limits
- If a vehicular route cannot be avoided near or adjacent to existing trees, a minimum of 12 inches of bark mulch at 15 feet wide shall be provided.
- All trees adjacent to and within the limits of construction, access, and staging areas shall be protected by placing ten feet outside of the tree's drip line, a four-foot-high orange "snow" fencing with steel "T" posts around the entire tree. Trees shall be grouped where possible.
- At the end of the work, any damage to the park including trees, turf, irrigation, or other facilities must be repaired to match the existing condition of the park at the contractor's expense.

- A steel traffic plate or two layers of double thickness plywood shall be placed over any irrigation or utility valve boxes in the vicinity of the access route.
- Trees that have been designated as preserved trees within their protective barriers shall receive vertical mulching in accordance to techniques as described in the Nevada Cooperative Extension Publication.

Shrubs

- All shrubs shall be a minimum five gallon size and shall be provided at one shrub per 80 square feet of landscape area.
- Shrubs shall not be located within a three-foot clear zone from edge of adjacent paving, hardscapes, trails, and turf areas so that plants do not overhang onto the adjacent areas by the plants' mature plant width.
- Shrub spacing shall be designed to mature species width. Groupings are recommended.
- Cactus and other thorny shrubs shall maintain a six-foot clear zone from edge of adjacent paving, hardscapes, trails, and turf areas.
- Shrubs shall not be located on slopes exceeding 4:1 (25 percent).
- The following shrubs are discouraged for city-maintained projects
 - Acacia redolens
 - Baccharis varieties

Ground Cover

- All ground cover is to be a minimum of one gallon size. Groupings are encouraged. Quantity shall be one ground cover minimum per 80 square feet of landscape area.
- Ground cover shall be located with a three-foot clear zone from edge of mature plant size to adjacent paving, hardscapes, trails, and turf areas so that plants do not overhang onto adjacent areas.
- Ground cover spacing shall be designed to mature species width.
- Ground cover shall not be located on slopes exceeding 3:1 (33 percent).

Turf

- Turf shall be minimally used and located in areas that require turf to function (e.g., sports fields, dog parks and passive play adjacent to playgrounds).
- All irrigated turf areas shall not exceed a slope of 3:1(33 percent).
- Following an approved irrigation audit certification, sod or hydroseeding may be installed.
- The turf establishment period is a minimum of 90 days for sod and 120 days for hydroseeding.
- Open space play areas shall be fescue.
- Sports fields and dog parks shall be hybrid Bermuda.
- All turf that is installed during dormant season shall be overseeded with perennial rye.

- All turf areas adjacent to hardscapes shall have a two-foot minimum decomposed granite strip or landscape strip with eight inches wide by six inches deep reinforced mow curb separating the turf from the landscape area in order to minimize irrigation overspray onto impervious surfaces.
- Turf shall be located a minimum of three feet away from all playground and splash pad safety surfacing.

Mulch, Rock, and Boulders

- All planting areas and non-paved areas shall receive decomposed granite (dg) mulch or rock restoration unless stated in this document, project requirements, or project specific master plans.
- Finish grades of decomposed granite shall be one inch below adjacent hardscape and paved surface.
- Decomposed granite mulch shall be gold color or match existing color, 1/4-inch minus size, two minimum depth, and have a one-inch recess adjacent to hardscape unless otherwise directed by the project location and associated manuals/master plans.
 - Red colors shall not be used, especially in dog parks.
- Boulders shall be designed in all projects. Size, quantity, and color shall be determined the city's project design group. Boulders shall be placed in groupings with plant material intermixed.

Desert Revegetation and Restoration

Desert revegetation is a landscaping method that uses a combination of native soil, seeds, salvaged plants, rock mulch and/or the application of desert varnish to restore disturbed areas to resemble the natural desert environment.

Revegetation may consist of any combination of rock restoration, desert varnish, plant salvaging, and seeding.

Revegetation

The Mojave Desert plant palette consists of plant material such as Joshua trees, Mojave yucca, creosote bush, white bursage and various cacti species depending on location and elevation. Each plant adapts to its specific elevation and soil type as it develops. For this reason, it is critical for the native revegetation contractor to salvage native plants from the project site or secure alternative salvage sites with similar elevation and soil type as the project site.

The finished native revegetation project results in a self-sustaining, non-irrigated environment.

Critical to the long-term success of a revegetation project is proper execution of the maintenance program after installation. Proper watering schedules and overall growth monitoring during the maintenance period is imperative for successful transition of the plant into its ultimate non-irrigated native environment.

- Salvaged plants should be located in an onsite or designated nursery during construction.
- The revegetation contractor shall guarantee survival for each species installed with a designated

percentage at the end of a one- year maintenance period.

- Contractors should be able to demonstrate experience in Mojave Desert plant palette revegetation

Plant Material:

The following plant materials shall be used in public parks:

**Preferred Trees - Parks 60% - 100% of species
- D.G. Areas**

Common Name	Botanical Name	Design Dia.	Height
Mulga	Acacia aneura	18'	18'
Shoestring Acacia	Acacia stenophylla	30'	40'
Pindo Palm	Butia capitata	15'	20'
Mediterranean Fan Palm	Chamaerops humilis	15'	15'
Texas Ebony	Ebanopsis ebano	20'	20'
Swamp Gum	Eucalyptus microtheca	25'	40'
Modesto Ash	Fraxinus 'Modesto'	30'	50'
Raywood Ash	Fraxinus 'Raywood'	25'	30'
Fan-tex Ash	Fraxinus 'Rio Grande'	30'	50'
Arizona Ash	Fraxinus velutina	30'	45'
Swan Hill Fruitless Olive	Olea 'Swan Hill'	30'	30'
Wilson Fruitless Olive	Olea 'Wilsonii'	30'	30'
Blue Palo Verde	Parkinsonia floridum	30'	30'
Foothill Palo Verde	Parkinsonia microphylla	20'	20'
Mondell Pine	Pinus eldarica	20'	45'
Chilean Mesquite	Prosopis chilensis	30'	35'
Honey Mesquite	Prosopis torreyana	30'	25'
Mexican Elderberry	Sambucus nigra spp. Cerulea	25'	15'
Texas Mountain Laurel	Sophora secundiflora	15'	15'
Joshua Tree	Yucca brevifolia	15'	20'
Soap Tree	Yucca elata	10'	15'

**Alternate Trees - Parks 0% - 40% of species
- D.G. Areas**

Common Name	Botanical Name	Design Dia.	Height
Desert Willow	Chilopsis linearis	30'	25'
California Date Palm	Phoenix dactylifera	18'	40'
Aleppo Pine	Pinus halepensis	30'	50'
Holly Oak	Quercus ilex	25'	40'
Southern Live Oak	Quercus virginiana (varieties)	30'	45'
African Sumac	Rhus lancea	30'	30'
California Fan Palm	Washingtonia filifera	12'	50'
Mexican Fan Palm	Washingtonia robusta	12'	60'

**Experimental Trees - 0% - 20% of species
Parks - D.G. Areas**

Common Name	Botanical Name	Design Dia.	Height
Bottle Tree	Brachychiton populenus	20'	40'
Chinese Pistache	Pistachia chinensis	25'	35'
Sawtooth Zelkova	Zelkova serrata	30'	40'

Preferred Trees - Parks 60% -100% of species
- Turf Areas

Common Name	Botanical Name	Design Dia.	Height
Shoestring Acacia	Acacia stenophylla	30'	40'
Italian Cypress	Cupressus sempervirens	5'	50'
Swamp Gum	Eucalyptus microtheca	25'	40'
Raywood Ash	Fraxinus 'Raywood'	25'	30'
Fan Tex Ash	Fraxinus 'Rio Grande'	30'	50'
Arizona Ash	Fraxinus velutina	30'	45'
Honey Locust	Gleditsia spp.	25'	30'
Golden Rain Tree	Koelreuteria paniculata	20'	25'
Swan Hill Fruitless Olive	Olea europaea 'Swan Hill'	30'	30'
Wilson Fruitless Olive	Olea europaea 'Wilsonii'	30'	30'
Mondell Pine	Pinus eldarica	20'	45'
Alleppo Pine	Pinus halepensis	30'	50'
Chinese Pistache	Pistachia chinensis	25'	35'
Holly Oak	Quercus ilex	25'	40'
Southern Live Oak	Quercus virginiana	30'	45'
African Sumac	Rhus lancea	30'	30'
Black Locust	Robinia pseudoacacia	30'	40'
Chaste Tree	Vitex agnus-castus	20'	25'

**Alternate Trees - Parks 0%-40% of species
- Turf Areas**

Common Name	Botanical Name	Design Dia.	Height
Sweet Acacia	Acacia smallii	25'	25'
Strawberry Tree	Arbutus unedo	15'	20'
Bottle Tree	Brachychiton populenus	20'	40'
Chitalpa	Chitalpa tashkentensis	25'	25'
Stone Pine	Pinus pinea	40'	50'
Bradford Pear	Pyrus 'Bradford'	20'	35'
Texas Red Oak	Quercus buckleyii	25'	30'
Valley Oak	Quercus lobata	40'	40'
Chinquapin Oak	Quercus muhlenbergia	30'	30'
Chinese Elm, Lacebark Elm	Ulmus parvifolia	30'	40'
Sawleaf Zelkova	Zelkova serrata	30'	40'

**Experimental Trees - 0% - 20% of species
Parks - Turf Areas**

Common Name	Botanical Name	Design Dia.	Height
Western Hackberry	Celtis reticulata	15'	20'
Southern Magnolia	Magnolia grandiflora	20'	30'
Cork Oak	Quercus suber	30'	40'
California Pepper	Schinus molle	25'	35'
Chinese Pagoda Tree	Sophora japonica	20'	30'

Preferred Trees - Medians - Hot, Dry, Urban

Common Name	Botanical Name	Design Dia.	Height
Shoestring Acacia	<i>Acacia stenophylla</i>	30'	40'
Yellow Bird of Paradise	<i>Caesalpinia gilliesii</i>	10'	10'
Red Bird of Paradise	<i>Caesalpinia pulcherrima</i>	10'	10'
Mediterranean Fan Palm	<i>Chamaerops humilis</i>	15'	15'
Swamp Gum	<i>Eucalyptus microtheca</i>	25'	40'
Raywood Ash	<i>Fraxinus 'Raywood'</i>	25'	30'
Fan Tex Ash	<i>Fraxinus 'Rio Grande'</i>	30'	50'
California Date Palm	<i>Phoenix dactylifera</i>	18'	40'
Texas Mountain Laurel	<i>Sophora secundiflora</i>	15'	15'
California Fan Palm	<i>Washingtonia filifera</i>	12'	50'
Mexican Fan Palm	<i>Washingtonia robusta</i>	12'	60'

Preferred Trees - Natural Areas

Common Name	Botanical Name	Design Dia.	Height
White Thorn Acacia	<i>Acacia constricta</i>	15'	10'
Cat's Claw Acacia	<i>Acacia greggii</i>	20'	15'
Twisted Acacia	<i>Acacia schaffneri</i>	20'	20'
Sweet Acacia	<i>Acacia smallii</i>	25'	25'
Texas Ebony	<i>Ebanopsis ebano</i>	20'	20'
Blue Palo Verde	<i>Parkinsonia floridum</i>	30'	30'
Foothill Palo Verde	<i>Parkinsonia microphyllum</i>	20'	20'
Chilean Mesquite	<i>Prosopis chilensis</i>	30'	35'
Honey Mesquite	<i>Prosopis juliflora</i>	30'	25'
Screwbean Mesquite	<i>Prosopis pubescens</i>	20'	15'
Joshua Tree	<i>Yucca brevifolium</i>	15'	20'
Soap Tree	<i>Yucca elata</i>	10'	15'

Desert-Adapted Shrubs

Botanical Name	Common Name	Type of Shrub	H. x W.
Acacia redolens 'Desert Carpet'	Creeping Acacia	Evergreen	2'x12'
Baccharis hybrid 'Starn Thompson'	Thompson Baccharis	Evergreen	3'x5'
Callistemon 'Little John'	Dwarf Bottlebrush	Evergreen	3'x3'
Caesalpinia gilliesii	Yellow Bird of Paradise	Deciduous	5'x5'
Caesalpinia pulcherrima	Red Bird of Paradise	Deciduous	4'x4'
Calliandra californica	Baja Fairy Duster	Deciduous	5'x4'
Calliandra eriophylla	Fairy Duster	Deciduous	3'x4'
Campis radicans	Trumpet Creeper Vine	Deciduous	10'x10'
Cordia boissieri	Texas Olive	Evergreen	10'x10'
Cordia parviflora	Little Leaf Cordia	Deciduous	4'x8'
Chrysactinia mexicana	Damianita	Evergreen	
Dalea capitata 'Sierra Gold'	Sierra Gold Dalea	Evergreen	18"x3'
Dalea greggii	Trailing Indigo Bush	Semi-Evergreen	3'x4'
Dalea species		Deciduous	
Dalea frutescens 'Sierra Negra'	Black Dalea	Deciduous	4'x5'
Dalea pulchra	Bush Purple Dalea	Deciduous	4'x5'
Ericameria laricifolia 'Texas Canyon'	Texas Canyon Turpentine Bush	Evergreen	2'x3'
Fraxinus greggii	Gregg Ash	Deciduous	10'x8'
Hymenoxys acaulis	Angelita Daisy	Evergreen	12"x12"
Lagerstroemia indica	Crape Myrtle	Deciduous	12'x6'
Lantana camara	Bush Lantana	Deciduous	2'x3'
Lantana montevidensis	Trailing Lantana	Deciduous	2'x3'
Leucophyllum candidum 'Silver Cloud'	Silver ranger	Semi-Evergreen	4'x4'
Leucophyllum candidum 'Thunder Cloud'	Thunder Cloud Ranger	Semi-Evergreen	3'x3'
Leucophyllum frutescens 'Compacta'	Compact Texas Ranger	Semi-Evergreen	5'x5'
Leucophyllum frutescens 'Green Cloud'	Green Cloud Ranger	Semi-Evergreen	8'x6'
Leucophyllum frutescens 'White Cloud'	White CloudTexas Ranger	Semi-Evergreen	6'x6'
Leucophyllum laviegatum	Chihuahuan Sage	Semi-Evergreen	6'x6'
Leucophyllum langmaniae 'Rio Bravo'	Rio Bravo Sage	Semi-Evergreen	5'x5'
Leucophyllum pruinsum 'Sierra Bouquet'	Sierra Bouquet Sage	Semi-Evergreen	6'x6'
Leucophyllum zygophyllum	Blue Ranger	Evergreen	3'x3'
Myoporum parvifolium	Australian Racer	Deciduous	6"x10'

Myrtus communis 'Compacta'	Compact Myrtle	Evergreen	3'x3'
Nerium oleander Varieties	Oleander	Evergreen	Varies
Punica granatum 'Nana'	Pomegranate	Deciduous	4'x3'
Pyracantha hybrids	Hybrid Pyracantha	Evergreen	8'x8'
Rhus ovata	Sugar Bush	Evergreen	10'x10'
Rosa banksiae	Lady Bank's Rose	Deciduous	20'x15'
Rosmarinus officinalis	Upright Rosemary	Evergreen	4'x4'
Rosmarinus officinalis 'Huntington Carpet'	Prostrate Rosemary	Evergreen	18"x3'
Rosmarinus officinalis 'Prostratus'	Spreading Rosemary	Evergreen	2'x4'
Salvia clevelandii	Chaparral Salvia	Evergreen	3'x5'
Salvia greggii	Autumn Sage	Evergreen	2'x2'
Senna species		Evergreen	Varies
Simmondsia chinensis	Jobba	Evergreen	6'x6'
Tecoma stans 'Angusta'	Yellow Bells	Deciduous	6'x6'
Teucrium cha.		Evergreen	2'x2'
Teucrium Prostratum		Evergreen	6"x18"
Vauquelinia californica	Arizona Rosewood	Evergreen	15'x15'
Verbena ridgida	Sandpaper Verbena	Deciduous	6" x 18"
Xylosma congestum	Shiny Xylosma	Evergreen	10'x10'

Cactus and Grasses

Botanical Name	Common Name	H. x W.
Agave parviflora	Agave	12"x18"
Agave parryi	Parry's Agave	3'x2'
Agave victoriae-reginae	Victoria Agave	6"x12"
Carnegiea gigantea	Saguaro	20'x10'
Cortaderia selloana 'Compacta'	Dwarf Pampas Grass	10'x10'
Dasyliirion arcotriche	Green Desert Spoon	6'x6'
Dasyliirion wheeleri	Desert Spoon	5'x6'
Echinocactus grusonii	Golden Barrel Cactus	2'x2'
Echinocereus engelmanni	Strawberry Hedgehog	18"x12"
Ferocactus acanthodes	Barrel Cactus	3'x2'
Ferocactus wislizenii	Fish Hook	3'x2'
Festuca ovina 'Glauca'	Blue Fescue	4-10" x 4-10"
Fouquieria splendens	Ocotillo	15'x8'
Hesperaloe funifera	Giant Hesperaloe	6' x 6'
Hesperaloe parviflora	Red Hesperaloe	2'x3'
Hesperaloe parviflora 'Yellow'	Yellow Hesperaloe	2'x6'
Muhlenbergia capillaris 'Regal Mist'	Regal Mist	3'x3'
Muhlenbergia lindheimeri 'Autumn Glow'	Autumn Glow	4'x4'
Muhlenbergia rigens	Dear Grass	3'x3'
Muhlenbergia rigens 'Nashville'	Nashville Dear Grass	3'x3'
Nolina bigelovii	Bigelow Bear Grass	4'x4'
Nolina microcarpa	Bear Grass	
Opuntia species	Prickly Pear Species	varies
Pennisetum setaceum 'Rubrum'	Red Fountain Grass	4'x4'
Stipa gigantea	Giant Feather Grass	2'x2'
Stipa tenuissima	Mexican Feather Grass	18"x18"
Yucca brevifolia	Joshua Tree	15'x10'
Yucca elata	Soap Tree	10'x8'
Yucca recurvifolia	Weeping Yucca	3'x3'
Yucca shidigera	Mojave Yucca	8'x6'
Yucca baccata	Banana Yucca	6' x 10'

Microclimate Shrubs

Botanical Name	Common Name	Remarks	H. x W.
<i>Abelia grandiflora</i> 'Edward Goucher'	Abelia	Evergreen	4'x4'
<i>Buxus</i> species	Boxwood	Evergreen	3'x2'
<i>Cotoneaster congestus</i>	Rockspray	Deciduous	2'x6'
<i>Dodonaea viscosa</i> Varieties	Hopseed	Evergreen	6' x 6'
<i>Dietes bicolor</i>	Fortnight Lily	Evergreen	2'x2'
<i>Eremophila</i> species	Varies	Semi-Deciduous	Varies
<i>Euonymus</i> spp.	Euonymus	Evergreen	varies
<i>Hedera</i> varieties	Ivy varieties	Evergreen	varies
<i>Hemerocallis</i> hybrid	Day Lily	Deciduous	2' x 2'
<i>Ilex vomitoria</i> 'Compacta'	Compact Yaupon	Evergreen	4'x4'
<i>Ilex vomitoria</i> 'Nana	Dwarf Yaupon	Evergreen	2'x2'
<i>Juniperus</i> species	Groundcover Juniper	Evergreen	varies
<i>Ligustrum japonicum</i> 'Texanum'	Texas Privet	Evergreen	8'x6'
<i>Liriope gigantea</i>	Giant Lily Turf	Evergreen	2'x2'
<i>Macfadyena unguis-castus</i>	Cat's Claw Vine	Evergreen	25'x15'
<i>Nandina domestica</i>	Heavenly Bamboo	Evergreen	5'x4'
<i>Nandina domestica</i> 'Compacta'	Dwarf Heavenly Bamboo	Evergreen	4'x2'
<i>Pittosporum</i> spp.	Mock Orange	Evergreen	Varies
<i>Raphiolepis</i> spp.	Indian Hawthorn	Evergreen	Varies
<i>Trachelospermum jasminoides</i>	Star Jasmine	Evergreen	1' x 2'
<i>Tulbaghia violacea</i>	Society Garlic	Evergreen	18"x18"

Native Shrubs

Botanical Name	Common Name	Remarks	H. x W.
Calliandra eriophylla	Fairy Duster	Deciduous	3'x4'
Encelia farinosa	Brittlebush	Semi-Evergreen	3'x4'
Ephedra spp.	Mormon Tea	Evergreen	3'x3'
Fallugia paradoxa	Apache Plume	Deciduous	
Fouquieria splendens	Ocotillo	Deciduous	10'x8'
Larrea tridentata	Creosote Bush	Evergreen	6'x6'
Penstemon species	Penstemon	Evergreen	2' x 1'
Sphaeralcea ambigua	Globe Mallow		2'x2'
Yucca brevifolia	Joshua Tree	Evergreen	15'x15'
Yucca shidigera	Mojave Yucca	Evergreen	8'x6'

EXHIBIT "I"

Schedule of Monthly Maintenance Operations Report

Contractor Name: _____

SECTION 1:

Lot#: _____ Site Name: _____

Date: From: _____ To: _____

Crew Leader: _____ Contact Phone#: _____

Staffing#: _____ Names: _____

SECTION 2: Summary of Work Performed

Synopsis of work performed: _____

Agricultural chemicals or fertilizers applied: _____

List of equipment used on site: _____

Condition of plant materials: _____

Vandalism sustained: _____

Irrigation Repaired: _____

EXHIBIT "K"
LOT #1 – CITY FACILITIES

Map	Facility	Location	Days per Week
1	North Las Vegas City Hall	2250 Las Vegas Blvd. North	4
2	Civic Center Complex Old City Hall	Civic Center Drive from Constitution Way north to Justice Facility	2
3	North Las Vegas Justice Facility	2332 Las Vegas Blvd. North	2
4	Fire Station# 51	2626 E. Carey and Daleey	1
5	NRC	1638 N. Bruce at Stanley	1
6	Utilities Department Building	2829 Fort Sumter and Brooks	2
7	Kiel Ranch Street Landscape & Trash Pickup	Carey Ave and Kiel Way	1
8	Fire Station # 50	105 E. Cheyenne	1
9	Fire Station # 52	4110 Losee Rd and Frehner	1
10	NLV Fire Administration Building	4040 Losee Rd. and Alexander Frehner building	2
11	Alexander Library	1755 W. Alexander Rd. and Martin Luther King	2
12	Fire Station # 53	2804 W. Gowan between Fuselier and Simmons	1
13	SMRC	4025 Allen Lane at Alexander	2
14	Northwest Area Command	3755 W. Washburn at Allen Lane	2
15	Fire Station # 55	5725 Allen Lane and Ann Rd	1
16	Fire Station # 56	3475 W. Elkhorn Rd. west of Aliante Pkwy	1
17	Aliante Library	2400W. Deer Springs Way and Aliante Blvd	2
18	Fire Station # 54	5438 Camino Al Norte south of Ann Road	1
19	Fire Station # 57	3120 E. Azure east of Losee	1
20	Skyview Recreation Center	3050 E. Centennial at Statz	2
21	PD: Northeast Area Command	6445 Palmer at Centennial	2

LOT #2 – PUBLIC AREA SOUTH

Map	Facility	Location	Days per Week
1	Bruce Street Entry Monument	NE corner Bruce and Owens	1
2	Pecos/ Owens Entry Monument		1
3	Pine Island	North side of Lake Mead eastbound at White Street	1
4	Cheyenne – Peaking Basin: West landscape.	West side of Cheyenne-Peaking Basin	1
5	Cheyenne-Peaking Basin: East Landscape	East side of Cheyenne-Peaking Basin	1
6	Lake Mead Blvd. Streetscape “A”:	South side of Lake Mead just west of Bruce	2
7	Lake Mead Blvd. Streetscape “B”:	South side of Lake Mead Blvd. from Civic Center East to Belmont Street.	2
8	Brooks Avenue Streetscape:	50 East Brooks Avenue, north side of Brooks at Parks Maintenance yard.	1
9	Carlton Square Reservoir Streetscape:	East side of Coleman Street from Colton Ave. south to property line.	1
10	Carlton Square Reservoir Streetscape:	3300 Coleman Street, south side of Colton Avenue	1
11, 12	Del Prado Highlands Streetscape	East side of MLK from Watercreek Drive south to Broad Arrow Drive, and north and south side of Gowan Road from MLK to Rose Canyon Drive	1
13	Windsor Park Streetscape	West side of Martin Luther King from Cartier Ave. north to Prentiss Walker Pool	1
14	N 5 th Street Medians and Parkway	(back of curb to sidewalk) Owens to Cheyenne, both sides and medians.	1
15	Gold Crest Park Landscape:	Southeast corner of Valley and Craig	1
16	Casa Linda Street Landscape	North side of Alexander from LDS church to Allen	1
17	Gold Crest Street Landscape	North side Alexander from Valley to San Mateo	1
18	Sun Valley Well	Valley south of Alexander	1
19	2711 E. Craig	East side of Las Vegas Valley wash adjacent to business complex, south of Craig/ East of Berg	1
20	2400/ 2500 Block of North Donna	Planters on west side of Donna in front of Quannah McCall	1
21	Tonopah School Zone	McDaniel St. Bruce Street	1

LOT #3 – STREET MEDIANS: Night Work Only (9pm – 5am)

Map	Facility	Location	DAYS PER WEEK
1	Lake Mead Median Islands	Lake Mead from LV Blvd to Civic Center	1
2, 3, 4	Civic Center Median Islands	Civic Center from Owens to Cheyenne Ave	1
5	Las Vegas Blvd. Street Landscape	Las Vegas Blvd. from Pecos - Owens	1
6	Carey Ave Streetscape	Carey Ave from Rancho to Clayton	1
7	Martin Luther King Streetscape	Martin Luther King from Carey Ave to Craig Rd.	1
8	Craig Road Median Landscaping	Median Island from Decatur to Berg	1
9	Broadstone/Azure Median/Street	Median streetscape from Centennial to past Azure/Walgreens	1
10	Lake Mead Median at Walmart	Median islands Lake Mead Walmart development to Rancho	1
11	Deer Springs Square	North 5th Deer Springs to South Centennial	1
12	Deer Springs Square	North 5th Deer Springs to N to Overpass	1
13	Deer Springs Square	Median islands and south planters east of Dorrell east on N 5th	1
14	Losee Road Street/Median	Median Island from Lone Mountain to Washburn Ave South approximately 1200' LF	1

LOT #4 – PUBLIC AREAS NORTH

MAP	LOCATION		DAYS PER WEEK
1	Lower Las Vegas Wash Detention Basin	Washburn and Scott Robinson	1
2	Camino Al Norte pump station	Next to FD 54 ON Camino Al Norte	1
3	Camino Al Norte medians	Ann Road south to Fire Station 54.	1
4	Tropical Parkway Landscaping	Both sides of Tropical Parkway from Clayton Street to Revere	1
5	Whitestone Drive Landscape	West side of Whitestone Drive from Ann Road north to Tropical Parkway	1
6	Clayton Street Landscape	East side of Clayton from Deer Springs to Ann Road	1
7	Ann Road/ Eldorado HOA2	North side Ann Road from Whitestone to Clayton	2
8	Eldorado HOA2	Both sides of Camino Eldorado from Song Bird north to Centennial, then to Clayton, including east side of Clayton to the first street north.	2
9	Ann Road Streetscapes:	South side of Ann Road from Whitestone east to Clayton	2
10	Centennial Parkway Streetscape	South side from Camino Eldorado east to Revere	2
11	Eldorado HOA2/3	West side of Revere Street from Tropical Parkway North to Centennial Parkway	2
12	Rancho Del Norte Streetscape	Both sides and median of Scott Robinson Blvd. from Lone Mountain north to Washburn Road	2
13	Rancho Del Norte Tree Wells	North side of Lone Mountain Rd. from Clayton St. east to Scott Robinson	1
14	Rancho Del Norte Tree Wells	East side of Clayton St. from Lone Mountain Rd. north to Washburn	1
15	Rancho Del Norte Tree Wells	South side of Washburn from block wall to block wall	1
16	Deer Springs Streetscape	South side of Deer Springs from Gentle Brook to Clayton	2
17	Centennial Streetscape	North side of Centennial from Clayton to Seastrand Park Boundary.	2

EXHIBIT L

Additional Work Labor Cost Sheet

Company Name: _____

Install Plants

Price per Planting

Item No.	PLANT SPECIES	PRICING FOR 1 GALLON	PRICING FOR 5GALLON
1.	Baccharis x "Starn Thomoson"		
2.	Lantana Montevicensis		
3.	Dalea Grearii		
4.	Dalea caoitate 'Sierra Gold'		
5.	Rosmarinus officinalis "Prostratus"		
6.	Chrysactinia Mexicana		
7.	Lantana "Radiation"		
8.	Hesoeraloe oarviflora		
9.	Dasyilirion wheeleri or acrotriche		
10.	Echinocactus Grusioni		
11.	Agave oarvvi		
12.	Agave. murohevi		

Install Trees

Price per Planting

5 Gallon	
15 Gallon	
24" Box	
36".Box	
Irrigation main line Repair (Labor only) City will provide parts	Hourly Rate:
Rockscape/ Turf Install/Removal	'Hourly Rate:
Infrastructure Repair (Labor only)	Hourly Rate:

EXHIBIT L (Continued)
Additional Work Labor Cost Sheet

Company Name:

Graffiti Removal or Painting (Labor only) City will provide parts	Hourly Rate:
Additional Work Requested	Hourly Rate: Equipment Rate:
Hardscape Pressure Washing	Hourly Rate:
Non-Working Hours Call out Laborer:	Hourly Rate:
Supervisor	Hourly Rate:
Working Hours Call Back Rate Laborer:	Hourly Rate:
Supervisor:	Hourly Rate:
Emergency additional Labor Hourly Rate:	
Emergency Laborer	Emergency Laborer per hour rate: \$
Emergency Supervisor	Emergency Supervisor per hour rate:\$

EXHIBIT M
Citywide Median Island & Streetscape Maintenance Map

