**STAFF REPORT FOR THE PLANNING COMMISSION MEETING OF APRIL 27, 2016.**

**FILE NO.: VAR-16-022 & SUP 16-021** **AGENDA ITEM: F-3(A) & F-3(B)**

**STAFF AUTHOR**: Hope Sullivan, AICP
Planning Manager

**REQUEST:**

**(A) VAR-16-022** - To consider a request from Bella Lago, LLC (property owner Bella Lago, LLC) for a Variance to allow the reduction of required open space per unit for residential development in a non-residential zoning district on property zoned General Commercial (GC).

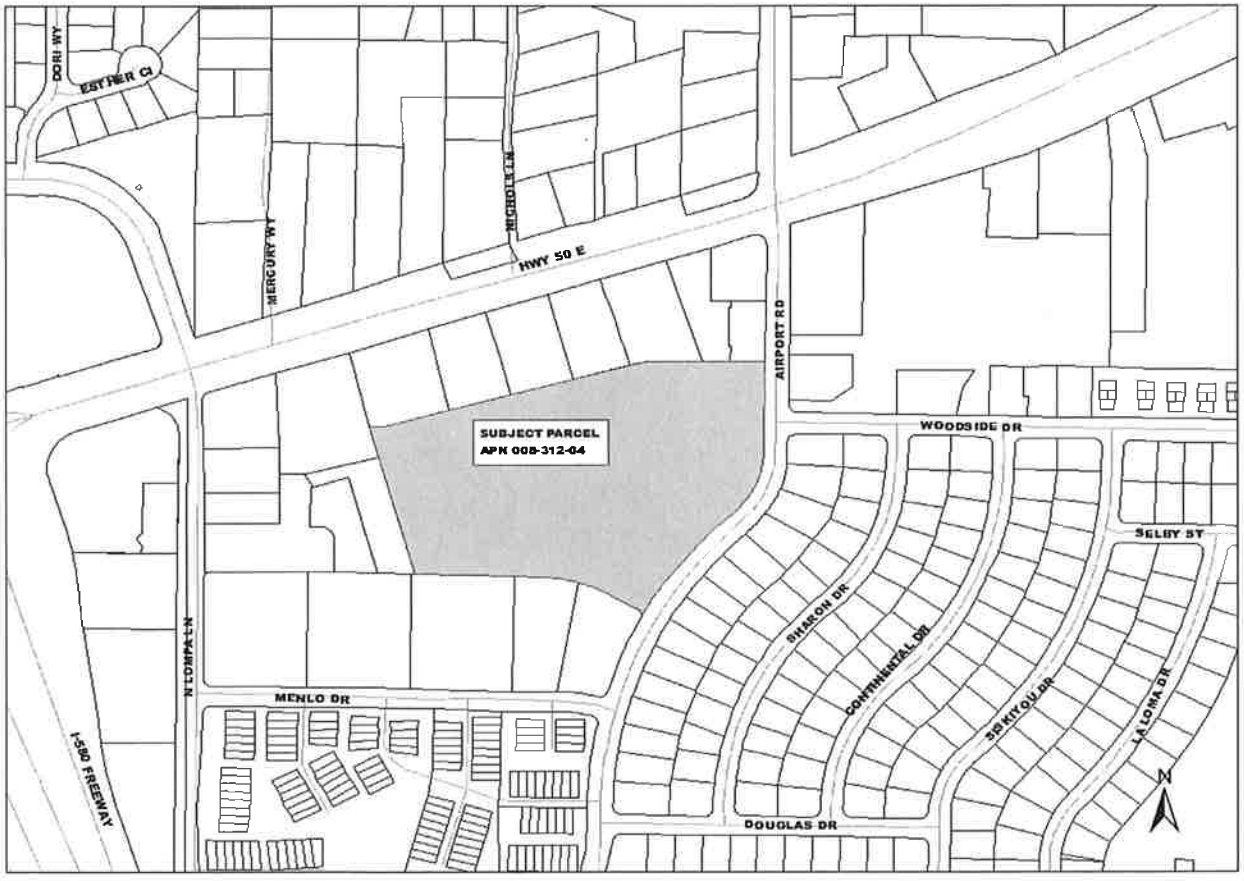
**(B) SUP-16-021** - To consider a request from Bella Lago, LLC (property owner Bella Lago, LLC) for a Special Use Permit to allow the addition of 64 multifamily apartments within the existing 175-unit Bella Lago Apartment complex on property zoned General Commercial (GC).

**APPLICANT:** Rubicon Design Group, LLC

**OWNER:** Bella Lago, LLC

**LOCATION:** 1600 Airport Road

**APN:** 008-312-04



**RECOMMENDED MOTION:**

**(A) VAR-16-022** - "I move to approve VAR-16-022, a Variance request to allow the reduction of required open space per unit for residential development in a non-residential zoning district so as to allow a total amount of open space of approximately 40,792 square feet (.94 acres) where 59,750 square feet (1.37 acres) is required on property located at 1600 Airport Road, APN 008-312-04, based on the findings and subject to the recommended conditions of approval in the staff report."

**(B) SUP-16-021** - "I move to approve SUP-16-021, a Special Use Permit request to allow the addition of 64 multifamily apartments within the existing 175-unit Bella Lago Apartment complex on property zoned General Commercial (GC), located at 1600 Airport Road, APN 008-312-04, based on the findings and subject to the recommended conditions of approval in the staff report."

**VARIANCE**
**RECOMMENDED CONDITIONS OF APPROVAL**

1. All development shall be substantially in accordance with the preliminary landscape plan and the Bella Lago Special Use Permit and Variance Application package, both submitted to the Carson City Planning Division on March 25, 2016.

2. All on and off-site improvements shall conform to City standards and requirements including all the requirements of the Hillside Development Ordinance.

3. The use for which this permit is approved shall commence within twelve (12) months of the date of final approval. A single, one (1) year extension must be requested in writing to the Planning and Community Development Department thirty (30) days prior to the one (1) year expiration date. Should this permit not be initiated within one (1) year and no extension granted, the permit shall become null and void.

4. The applicant must sign and return the Notice of Decision within ten (10) days of receipt of notification. If the Notice of Decision is not signed and returned within ten (10) days, then the item may be rescheduled for the next Planning Commission meeting for further consideration.

5. The new clubhouse shall be constructed in Phase I, and the clubhouse building shall receive its Certificate of Occupancy prior to any of the other proposed buildings receiving a Certificate of Occupancy.

6. All areas intended to serve as common open space shall be improved with landscaping consistent with the open space requirements identified in Section 1.18.6 of the Development Standards. At the time of building permit application, a revised landscape plan demonstrating compliance with Section 1.18.6 is required to be submitted.

**SPECIAL USE PERMIT**
**RECOMMENDED CONDITIONS OF APPROVAL**

1. All development shall be substantially in accordance with the preliminary landscape plan and the Bella Lago Special Use Permit and Variance Application package, both submitted to the Carson City Planning Division on March 25, 2016.

2. All on and off-site improvements shall conform to City standards and requirements.

3. The use for which this permit is approved shall commence within twelve (12) months of the date of final approval. A single, one (1) year extension must be requested in writing to the Planning and Community Development Department thirty (30) days prior to the one (1) year expiration date. Should this permit not be initiated within one (1) year and no extension granted, the permit shall become null and void.

4. The applicant must sign and return the Notice of Decision within ten (10) days of receipt of notification. If the Notice of Decision is not signed and returned within ten (10) days, then the item may be rescheduled for the next Planning Commission meeting for further consideration.

5. All areas intended to serve as common open space shall be improved with landscaping consistent with the open space requirements identified in Section 1.18.6 of the Development Standards. At the time of building permit application, a revised landscape plan demonstrating compliance with Section 1.18.6 is required to be submitted.

6. All trash and recycling containers on the site shall be screened with trash enclosures meeting the requirements of Section 1.2.6 of the Development Standards.

7. A bike rack shall be installed on site in accordance with Section 1.2.2 of the Development Standards.

8. The applicant shall submit information on any new exterior lighting that is proposed for installation with this facility. Exterior lighting shall comply with Carson City Development Standards, Division 1.3.

9. The applicant shall provide landscaping for the property in compliance with Carson City Development Standards, Division 3 – Landscaping.

10. The construction plans must demonstrate turning radii for the fire access lanes around the new buildings of a minimum of 30 feet inside and 50 feet outside.

11. All projects and improvements must be performed in accordance with Nevada State Revised Statute (NRS) 623 & 624 and Carson City Municipal Code (CCMC) 15.05.020.

12. All Repairs, Replacement, and Alterations must have proper building permits and comply with International Building Codes, Uniform Plumbing Code, Uniform Mechanical Code or International Mechanical code, Fuel Gas Code, Electrical Code, Adopted International Energy Conservation Code, and Northern Nevada Amendments.

13. All Contractors are required to carry State and local licenses.

14. The project will need to meet all applicable codes found in Title 12.06 and Appendix 18 Division 15.5 of the Carson City Municipal Code (CCMC) and all applicable codes found in Chapters 7 and 10 of the 2012 Uniform Plumbing Code (UPC).

15. A storm drain maintenance agreement will be required to be submitted prior to issuance of a building permit.

16. The applicant will be required to obtain a NV Construction Stormwater General Permit from NDEP prior to issuance of a building permit.

17. Pedestrian access must be provided via a pedestrian ramp from the apartment complex to the sidewalk along the project frontage.

18. The sidewalk along the frontage must be widened to 5 feet prior to a Certificate of Occupancy being issued on the 1st building.

19. Airport Road will be required to be stripped to have a bike lane on the west side of the street along the frontage of the apartment complex, with "No Parking Bike Lane" signs placed along the frontage. This improvement shall be completed prior to a Certificate of Occupancy being issued on the 1st building.

20. Prior to issuance of any development permits, the construction plans shall demonstrate compliance with Carson City Standard Detail C-5.5.1.

21. Project must comply with the 2012 IFC and Northern Nevada Fire Amendments.

22. The apartment buildings must have fire sprinklers.

23. Depending on the final design, a manual fire alarm system may be required.

24. Additional fire hydrants will be required; final location to be approved by CCFD. The number of additional hydrants will depend on the square footage and construction type of the buildings.

**LEGAL REQUIREMENTS:** CCMC 18.02.080 (Special Use Permits), CCMC 18.02.085 (Variances), CCMC 18.04.135 General Commercial (GC), CCMC DS 1.18 Residential Development Standards in Non-Residential Districts

**MASTER PLAN DESIGNATION:** Mixed-Use Commercial (MUC)

**PRESENT ZONING:** General Commercial (GC)

**KEY ISSUES:** Will the proposed Multi-Family Apartments be compatible with the surrounding neighborhood and be in keeping with the standards of the Carson City Municipal Code?

**SURROUNDING ZONING AND LAND USE INFORMATION:**

- EAST: Single Family 6,000 (SF6)/Single Family Residential
- WEST: General Commercial (GC)/Apartments, Office, Commercial, Vacant
- NORTH: General Commercial (GC)/Commercial, Vacant
- SOUTH: Multi-Family Apartment/Apartments

**ENVIRONMENTAL INFORMATION:**

- FLOOD ZONE: X Zone (areas of minimal flooding)
- EARTHQUAKE FAULT: Zone I (severe earthquake potential)

- SLOPE/DRAINAGE: Site is primarily flat

**SITE DEVELOPMENT INFORMATION:**

- LOT SIZE: 9.34 acres
- EXISTING DEVELOPMENT; 175 studio and one-bedroom apartments
- PROPOSED DEVELOPMENT: Retain existing buildings and parking, add 64 apartments (56 two bedroom, 8 three bedroom) in eight buildings, 125 new parking spaces, and a 2000 square foot club house / gym.
- PROPOSED PARKING: Retain existing 272 spaces, add 125 new parking spaces for a total of 397 spaces (1.6 per unit).
- SETBACKS:

| | **Front** | **Side** | **Rear** |
|---|---|---|---|
| **Required** | 20 feet | 10 feet | 20 feet |
| **Proposed** | 65 feet | 45 feet | 60 feet |

- VARIANCES REQUESTED: Requesting a Variance from the required 35,850 square feet of common open space plus 23,900 square feet of either private or common opens space (total: 59,750 square feet of open space).

| | PROVIDED | REQUIRED |
|---|---|---|
| Common Open Space | 42,792 sqft (includes 2000 square club house / gym) | 35,850 sqft |
| Additional Common or Private Open Space | 3200 sqft (32 patios) | 23,900 sqft |
| **Total** | **45,992 sqft** | **59,750 sqft** |

**PREVIOUS REVIEWS:**

MPR-14-011 – Major Project Review for 80 units.

**HISTORY:**

The applicant participated in a Major Project Review (MPR-15-029) with City staff for this project on April 1, 2014 to identify any design concerns and to determine specific requirements for the Special Use Permit application. The Major Project Review letter is attached to this staff report for reference.

**DISCUSSION:**

The applicant is proposing to add 64 additional apartments, 125 new parking spaces, and a 2000 square foot clubhouse / gym to an existing 175 unit multi-family apartment project in the General Commercial zoning district. Fifty-six of the apartments are proposed to be two bedroom units, and the remaining 8 are proposed to be three bedroom units.

Staff has determined that the appropriate mechanism to process the request for multi-family dwellings in the General Commercial zoning district is by Special Use Permit. Additionally, as the proposed development will not provide the required open space, staff has determined that the applicant must seek a variance.

A Special Use Permit is required per the Carson City Municipal Code, Section 18.04.135 – General Commercial, which states that multi-family dwellings are allowed as a conditional use. Carson City Development Standards Section 1.18.6 identifies the requirement of 150 square feet per dwelling unit of common open space, and 100 square feet of additional open space provided for each unit as private open space or common open space. No more than 100 square feet per unit of private open space may be counted towards the total open space requirement. Although the architectural design is conceptual at this point, each of the 32 ground floor units is currently proposed to have a 130 square foot patio. As plans are finalized, provided the design retains the patio feature, that will contribute 3200 square feet toward the private open space (requirement: 100 square feet per unit.) Note the existing 175 apartment units have exclusively common open space, and do not have private open space. The applicant is currently having the site surveyed, so a baseline of current open space on site has not been identified.

Site Planning

Section 1.2 of the Development Standards addresses Site Design. As noted, "these standards are intended to promote quality development, visual compatibility, safety and consistency through an integration of site design elements...."

The subject property is a 9.34 acre property located at 1600 Airport Road. The site is currently improved with nine two story buildings housing 175 studio and one bedroom apartments. The site has two access points on Airport Road. The existing site is served by 272 on-site parking spaces. The center of the site is an open area with grass, trees, and tennis courts. Trash receptacles (dumpsters) are located in various areas around the site.

The applicant proposes to construct eight buildings to house 64 two and three bedroom apartments in the center portion of the property. The apartments will be served by 125 additional parking spaces. The applicant further proposes to construct a 2000 square foot clubhouse / gym to serve the apartment residents. The clubhouse / gym is proposed to be located along the Airport Road frontage of the property.

Section 1.2.1 of the Development Standards states "Primary entries and/or facades of buildings should be oriented towards the street or main parking areas." Staff finds this objective is met as the existing buildings, to be retained, are on the periphery of the site, and the proposed buildings are on the interior. Therefore, the proposed plan will not modify the relationship between the buildings and the streets.

Section 1.2.2 of the Development Standards addresses provisions for bike racks in a convenient location close to the building entrances, and the clustering of buildings to create pedestrian plazas or courts. Bike racks are not currently proposed as part of this project. Staff would suggest the inclusion of bike racks, particularly given the proposed bike lane on the west side of Airport Road along the frontage of the apartment complex. The applicant has proposed walking paths in the open space around the proposed buildings. Staff finds the path system to be consistent with the stated objective.

Section 1.2.6 of the Development Standards addresses trash enclosures, and notes that "outside areas used for the storage of trash, refuse or recycled materials shall be completely enclosed by a gate and a six foot masonry block wall, and be designed to integrate with the site design." The site plan does not specify the location of trash enclosures. Currently, dumpsters are located throughout the site, and are not stored in an enclosure. Staff would suggest that to create consistency with Section 1.2.6, refuse sites be identified, and trash enclosures be constructed for

the storage of trash, refuse or recycled materials.

Architecture

Architectural design is at a conceptual stage. The site currently has nine buildings housing 175 studio and one bedroom apartment units. Existing buildings are brick, two stories with a pitch roof.

The applicant proposes to construct eight apartment buildings housing 64 two and three bedroom units, and a 2000 square foot club house. Proposed apartment buildings will be two stories, and utilize stucco siding and pitch roofs utilizing asphalt shingles. Building colors will be an earth tone with a complementary accent color on the trim. Mechanical equipment will be ground mounted.

Section 1.1 of the Carson City Development Standards addresses Architectural Design. Policy 1.1.1 states "The architectural style, massing and proportion of a building should be compatible with and complement its surroundings and environment."

Based on the submitted conceptual plans, staff finds that the proposed buildings will be compatible with the existing buildings on site in terms of general style and massing.

Landscaping

Division 3 of the Development Standards addresses Landscaping. These standards apply to multi-family residential projects with three or more units.

The applicant has provided a preliminary landscape plan, demonstrating proposed landscaping surrounding the proposed buildings, and the retention of existing landscaping. Staff would note that with the exception of the frontage along Airport Road, the existing landscaped areas have not been well maintained. Areas between existing buildings often are devoid of any landscaping, and are frequently bare dirt.

Given that the proposed project will result in a loss of open space and landscaped area, including the removal of ornamental trees, staff recommends that the landscape plan be expanded to include all landscaped and open space areas, resulting in an upgrade of the entire site.

Access, Parking and Traffic

The site is currently accessed by two driveways on Airport Road. The proposed development would retain those points of access. To avoid conflicts between pedestrians and vehicles accessing the site, staff is recommending the inclusion of a pedestrian ramp at each driveway so that pedestrians will have a designated location to walk from the parking area to the sidewalk on Airport Road.

Per the Carson City Development Standards, Section 2.2 – Number of Parking Space Required, multi-family residential dwellings require two spaces per unit, or the Director may consider an alternative parking standard from an accredited source, such as the Institute of Traffic Engineers (ITE). The existing parking ratio on site is 1.55 spaces per unit. The application proposes the addition of 125 parking spaces (1.95 per new unit), thus improving the parking ratio to 1.66

spaces per unit. This parking ratio is compliant with peak parking demand of 1.21 spaces per unit identified for multifamily projects in the ITE manual.

A traffic study analyzing traffic impacts from the proposed use was completed and submitted with the application. The analysis indicates the 64 new units will generate 426 average weekday trips, with 33 trips occurring during the AM peak hours, and 40 trips occurring during the PM peak hour. The report concludes that the traffic generated by the Bella Lago Apartment development will have little impact on the adjacent street network.

Residential Development Standards in Non-Residential Districts

Residential uses proposed in a commercial zoning district are subject to specific criteria outlined in the Carson City Development Standards, Section 1.18 – Residential Development Standards in Non-Residential Districts. The development standards and how the proposed project meets them are addressed below.

***1.18 Residential Development Standards in Non-Residential Districts.***

*The following standards are intended to establish minimum standards and Special Use Permit review criteria for residential development within the Neighborhood Business (NB), Retail Commercial (RC), General Commercial (GC), Residential Office (RO) and General Office (GO) zoning districts.*

1. *Permitted uses. Residential uses are only allowed as permitted by Chapter 18.04, Use Districts, as a primary or conditional use in the applicable zoning districts.*

   The proposed multi-family use is a conditional use allowed with the approval of a Special Use Permit in the General Commercial (GC) zoning district as discussed at the beginning of this staff report.

2. *Maximum permitted density. There is no maximum residential density within non-residential zoning districts subject to meeting the height, setback, parking and open space requirements of Chapter 18.04.*

   The project's proposed residential density is approximately 25.6 dwelling units per acre. The Master Plan designation for the subject property is Mixed-Use Commercial. This designation encourages up to 25 percent higher density residential uses but also does not specify a maximum permitted density. For reference, the High Density Residential designation in the Master Plan allows up to 36 dwelling units per acre. As discussed, the applicant is seeking a variance to the open space requirement, and proposes to provide 40,792 square feet of open space where 59,750 square feet is required.

3. *Maximum building height shall be the maximum height established by the zoning district in which the project is located.*

   The maximum building height in the General Commercial (GC) zoning district is 45 feet. The proposed project's buildings are two stories, and will be significantly less than 45 feet.

4. *Setbacks. Minimum setbacks shall be those established by the zoning district in which the project is located, subject to the following:*

a. *In the NB, RC, GO and GO zoning districts, a minimum setback of 20 feet is required adjacent to a residential zoning district, with an additional 10 feet for each story above one story if adjacent to a single-family zoning district.*

The project is adjacent to the multifamily apartments along the southern property line. The existing apartment buildings are in excess of 50 feet from the southern property line. This is the only portion of the property adjacent to a residential use. Also, as noted, the existing apartment buildings are along the periphery of the site, and the proposed buildings are on the interior.

b. *A minimum setback of 10 feet is required from the right-of-way of an arterial street as identified in the adopted Transportation Master Plan, excluding the Downtown Mixed-Use area.*

Airport Road is not identified in the Transportation Master Plan as an arterial street.

5. *Required parking. Two spaces per dwelling unit, and in compliance with the Development Standards Division 2, Parking and Loading.*

Development Standards Division 2 authorizes the director to consider an acceptable alternative to the parking standards when the alternative standard is from an accredited source, such as the ITE. The application proposes the addition of 125 parking spaces, thus improving the parking ratio from 1.55 spaces per unit to 1.66 spaces per unit. This parking ratio is compliant with the peak parking demand of 1.21 spaces per unit identified for multifamily projects in the ITE manual.

6. *Open Space.*

a. *A minimum of 150 square feet per dwelling unit of common open space must be provided. For projects of 10 or more units, areas of common open space may only include contiguous landscaped areas within no dimension less than 15 feet, and a minimum of 100 square feet per unit of the common open space area must be designed for recreation, which may include but not be limited to picnic areas, sports courts, a softscape covered with turf, sand or similar materials acceptable for use by young children, including play equipment and trees, within no dimension less than 25 feet.*

Based on a total of 239 units, a total of 59,750 square feet of common open space is required, with a minimum of 23,900 square feet being designated for recreation. The applicant is proposing to provide 40,792 square feet of common open space. In addition to the open space, the applicant is proposing a 2000 square foot club house / gym, which will also serve as a recreational amenity. As preliminarily designed, the plans do not demonstrate compliance with the qualitative aspect of the open space area providing functional recreation areas. To address this, staff has recommended a condition that as part of the improvement plans, the applicant identify specific improvements to demonstrate compliance with the qualitative open space requirements.

b. *A minimum of 100 square feet of additional open space must be provided for each unit either as private open space or common open space.*

As part of the conceptual architectural design, the applicant is proposing that the 32 ground floor units have 130 square foot patios. Based on this, the applicant is providing 3200 square feet of the required private open space.

c. *Front and street side yard setback areas may not be included toward meeting the open space requirements.*

The front and street side setbacks have not been included in the common open space calculation.

7. *Landscaping. Landscaping shall comply with the Carson City Development Standards Division 3, Landscaping.*

The applicant has provided a comprehensive landscape plan as a part of this application. The landscape plan is focused on the area where the new buildings are proposed, and not existing landscaped areas that have not been maintained. Given the project involves a developed site, staff recommends that the landscape plan address the entire site. Staff has recommended a condition of approval that the project comply with the Carson City Development Standards, Division 3 Landscaping.

8. *Special Use Permit review standards. Where a residential use is a conditional use within a given zoning district, the Planning Commission shall make two of the following findings in the affirmative in the review of the Special Use Permit in addition to the required findings of Section 18.02.080 of the Carson City Municipal Code.*

a. *The development is not situated on a primary commercial arterial street frontage.*

This finding can be met. This portion of Airport Road is not a primary commercial arterial street. There are single family homes on the east side of Airport Road, across the street from the site, and multi-family residential uses to the south.

b. *The development is integrated into a mixed-use development that includes commercial development.*

c. *The applicant has provided evidence that the site is not a viable location for commercial uses.*

This finding can be met. The site is currently developed as multi-family residential apartment. The existing development is proposed to be retained. The proposed additional units will be on the entire of the site. The land use on this site has been established as residential, and is being proposed to be retained.

d. *The site is designated Mixed-Use Commercial, Mixed-Use Residential or Mixed-Use Employment on the Master Plan Land Use Map and the project meets all applicable mixed-use criteria and standards.*

Staff finds that the proposed project meets the applicable development standards required. With the recommended conditions of approval and findings provided by the applicant, staff is in support of this Special Use Permit application. Staff recommends that the Planning Commission approve SUP-16-021 based on the required findings as noted on the following pages.

**PUBLIC COMMENTS:** Public notices were mailed to 45 adjacent property owners within 300 feet of the subject site on April 7, 2016. As of the writing of this report, no letters from property owners in the vicinity of the proposed project have been received. Any comments that are received after this report is completed will be submitted to the Planning Commission prior to or at the meeting on April 27, 2016, depending on the date of submission of the comments to the Planning Division.

**OTHER CITY DEPARTMENTS OR OUTSIDE AGENCY COMMENTS:** The following comments were received by various city departments. Recommendations have been incorporated into the recommended conditions of approval, where applicable.

**Building Division:**

1. All projects and improvements must be performed in accordance with Nevada Revised Statutes (NRS) 623 and 624 and Carson City Municipal Code (CCMC) 15.05.020.

2. All repairs, replacements and alterations must comply with International Building Codes, Uniform Plumbing Code, Uniform Mechanical Code or International Mechanical Code, Fuel Gas Code, Electrical Code, Adopted International Energy Conservation Code, and Northern Nevada Amendments.

3. All contractors are required to carry State and local licenses.

**Fire Department:**

1. Project must comply with the 2012 IFC and Northern Nevada Fire Amendments.

2. The apartment buildings must have fire sprinklers.

3. Depending on the final design, a manual fire alarm system may be required.

4. Additional fire hydrants will be required; final location to be approved by CCFD. The number of additional hydrants will depend on the square footage and construction type of the buildings.

5. Additional requirements may be identified for the office building depending on the final use as a clubhouse.

6. The construction plans must demonstrate turning radii for the fire access lanes around the new buildings of a minimum of 30 feet inside and 50 feet outside.

**Engineering Division:**

The Engineering Division has no preference or objection to the special use request and we suggest the following 5 conditions of approval:

1. The applicant will be required to submit a storm drain maintenance agreement prior to issuance of a building permit.

2. The applicant will be required to obtain a NV Construction Stormwater General Permit from NDEP prior to issuance of a building permit.
3. Pedestrian access must be provided from the apartment complex to the sidewalk along the project frontage.

4. The sidewalk along the frontage must be widened to 5'.

5. Airport Rd will be required to be stripped to have a bike lane on the west side of the street along the frontage of the apartment complex, with "No Parking Bike Lane" signs placed along the frontage.

The Engineering Division has reviewed the conditions of approval within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 18.02.080, Conditional Uses.

**CCMC 18.02.080 (2a) - Adequate Plans**
Drawings are adequate for this SUP.

**CCMC 18.02.080 (5a) - Master Plan**
The request necessitates the addition of a bike lane along the frontage of the apartment complex per the Unified Pathways Master Plan.

**CCMC 18.02.080 (5c)- Traffic/Pedestrians**
The request necessitates the addition of pedestrian walkways to give access to the sidewalk along the frontage to prevent conflicts with pedestrian and traffic movements. Also, the parking stalls may need to be reconfigured in order to have proper spacing per Carson City Standard Detail C-5.5.1.

**CCMC 18.02.080 (5d) - Public Services**
The property is currently connected to city sewer, water, and storm drain. It appears to Carson City Development Engineering that the storm drain continues south from the property, contrary to the drainage study that was submitted. Also, the drainage study that was submitted, while sufficient for this analysis, does not address the impact to the shared storm drain before it connects to the City system near Douglas Drive, does not address peak flows, and does not address the 100 year flow path. The drainage study should be adjusted accordingly for the building permit application submittal.

**Health and Human Services:**

No comments

**Environmental Control Authority:**

1. The project will need to meet all applicable codes found in Title 12.06 and Appendix 18 division 15.5 of the CCMC and all applicable codes found in Chapters 7 and 10 of the 2012 Uniform Plumbing code (UPC).

**Parks and Recreation Department:**

No comments.

**School District:**

No comments.

**VARIANCE FINDINGS:** Staff recommends approval of the Variance request based on the findings below and in the information contained in the attached reports and documents subject to the recommended conditions of approval, and further substantiated by the applicant's written justification. In making findings for approval, the Planning Commission must consider:

***a. That because of special circumstances applicable to the subject property, including shape, size, topography or location of surrounding, the strict application of the zoning ordinance would deprive the subject property of privileges enjoyed by other properties in the vicinity or under identical zone classification;***

The proposed apartment complex currently exists, and has very little on-site open space and recreational amenities. The landscaped areas between buildings have not been maintained and primarily consist of bare ground. The tennis courts have not been maintained, and are not usable due to cracks. The existing 175 units do not have any private open space.

The applicant is working within the framework of the existing apartment complex, retaining existing buildings and parking areas. The lack of a "clean slate" has limited flexibility of design.

The open space requirement is both quantitative and qualitative. From a quantitative perspective, the applicant is seeking a variance to provide 40,792 square feet of common open space where 59,750 square feet of open space is required. Note the 40,792 square foot number does not include the 3200 square feet of private patio space suggested (credit of 100 square feet per ground floor unit, although patios are proposed to be 130 square feet.), nor does it include the proposed 2000 square foot clubhouse / gym.

The redevelopment of this site provides a unique opportunity to introduce quality open space and recreational amenities in a residential development where they are largely in disrepair due to a lack of maintenance.

The clubhouse / gym will provide a recreational amenity that can be utilized regardless of the weather. Staff would recommend that this building be constructed first, and no other building should receive a certificate of occupancy until the club house / gym has received its certificate of occupancy. This will insure that this amenity is provided.

Additionally, staff recommends that the landscape plan be expanded to include existing open space areas that have not been maintained. In addition to improving these areas with landscaping, staff recommends that other amenities including a play structure and picnic tables be included to as to meet the qualitative requirements of the open space requirement.

***b. That the granting of the application is necessary for the preservation and enjoyment of substantial property rights of the applicant;***

Given that the applicant is working within the confines of an existing development, the degree of flexibility of design is limited. Staff finds the additional development of this site, although it will not meet existing quantitative open space requirements, will improve the qualitative provision of open space and recreational amenities on site. To ensure these amenities are realized, staff is recommending that the landscape plan be modified to include improvements on the entire site and not just where the new construction is proposed, that the landscape plan include recreational amenities such as a play structure and picnic tables, and that the club house / gym be completed prior to any other proposed buildings receiving a certificate of occupancy.

***c. That the granting of the application will not, under the circumstances of the particular case, adversely affect to a material degree the health or safety of person residing or working in the neighborhood of the subject property and will not be materially detrimental to the public welfare or materially injurious to property or improvements in the neighborhood of the subject property.***

As conditioned, staff finds that the granting of the variance will create an opportunity to improve the open space and recreational amenities available to all residents of Bella Lago.

**SPECIFAL USE PERMIT FINDINGS:** Staff's recommendation is based upon the findings as required by CCMC Section 18.02.080 (Special Use Permits) enumerated below and substantiated in the public record for the project.

***1. Will be consistent with the master plan elements.***

The subject property is designated Mixed Use Commercial. This designation is intended to encourage a more compact, mixed use pattern of development along the city's major gateway corridors. This district generally provides a mix of commercial, retail, and office uses in combination with high-density residential. The increase in residential density on the subject property is consistent with this intent, and places residents near the commercial services on Highway 50.

***2. Will not be detrimental to the use, peaceful enjoyment, economic value, or development of surrounding properties or the general neighborhood; and will cause no objectionable noise, vibrations, fumes, odors, dust, glare or physical activity.***

The site is currently developed. The existing apartment buildings are on the periphery of the site. Proposed development is on the interior. The proposal will yield an improved parking ratio, going from 1.55 spaces per unit to 1.66 spaces per unit. The upgrading of the site will improve the enjoyment of the property for existing and future residents.

Given the siting of the physical improvements proposed and consistency of use, the use will not be detrimental to surrounding properties or the general neighborhood.

***3. Will have little or no detrimental effect on vehicular or pedestrian traffic.***

The proposed project will generate an increase in both vehicular and pedestrian traffic. The traffic study submitted for this project anticipates that the new units will generate 426 average weekday trips with 33 trips occurring during the AM peak hour and 40 trips occurring during the PM peak hour. The traffic analysis concludes that the additional traffic generated will have little impact on the adjacent street network.

***4. Will not overburden existing public services and facilities, including schools, police and fire protection, water, sanitary sewer, public roads, storm drainage, and other public improvements.***

The project is not anticipated to overburden existing public services and facilities. The water, sanitary sewer, public roads and storm drainage in the vicinity is adequate to serve the proposed development. It is also not anticipated that the addition of this project will overburden police or fire protection services.

***5. Meets the definition and specific standards set forth elsewhere in this title for such particular use and meets the purpose statement of that district.***

Multi-family residential development is a conditional use in accordance with Title 18.04.135 General Commercial Conditional Uses and requires a Special Use Permit. With the approval of this Special Use Permit and recommended conditions of approval, the project will meet the definition and specific standards required to support this use in the General Commercial zoning district.

***6. Will not be detrimental to the public health, safety, convenience and welfare.***

The proposed project is for multi-family dwellings within the General Commercial zoning district. This multi-family apartment housing will function in the same manner as other multi-family residential uses in the area. It is not anticipated to be detrimental to the public health, safety, convenience and welfare.

***7. Will not result in material damage or prejudice to other property in the vicinity.***

The proposed project adds 64 multi-family residential units to an existing apartment complex. The existing buildings are on the periphery of the site, while the proposed buildings are on the interior. The proposed project will improve the parking ratio and the open space and recreational amenities on site. Given this, the proposed use will not result in material damage or prejudice to other property in the vicinity.

Attachments:

- Site Photos
- City Department Comments
- Major Project Review Letter (MPR-14-011)
- Updated Site Plan showing adequate turning radii

Interim Mixed-Use Criteria Worksheet
Application (SUP-16-021 &VAR 16-022)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© 2015 Pi

March 28, 2016

See below for comments on SUP-16-021:

1. All projects and improvements must be performed in accordance with Nevada State Revised Statute (NRS) 623 & 624 and Carson City Municipal Code (CCMC) 15.05.020.
2. All Repairs, Replacement, and Alterations must have proper building permits and comply with International Building Codes, Uniform Plumbing Code, Uniform Mechanical Code or International Mechanical code, Fuel Gas Code, Electrical Code, Adopted International Energy Conservation Code, and Northern Nevada Amendments.
3. All Contractors are required to carry State and local license.

Shawn Keating
Chief Building Official
Carson City Community Development
108 E. Proctor Street
Carson City, NV 89701

Main 775-887-2310

March 23, 2016

Major Project Review Committee

Re: # SUP 16-021

Dear Kathe,

After initial plan review the Carson City Environmental Control Authority (ECA), a Division of Carson City Public Works Department (CCPW), has the following requirements per the Carson City Municipal Code (CCMC) and the Uniform Plumbing Code (UPC) for the SUP 16 – 021 (Bella Lago) request:

1. ECA has no specific comments other than project will need to meet all applicable codes found in Title 12.06 and Appendix 18 Division 15.5 of the Carson City Municipal Code (CCMC) and all applicable codes found in Chapters 7 and 10 of the 2012 Uniform Plumbing Code (UPC).

Please notify Mark Irwin if you have any questions regarding these comments, I can be reached at 775-283-7380.

Sincerely;

Mark Irwin
Environmental Control Officer 3

c: Kelly Hale, Environmental Control Supervisor

**Engineering Division Planning**
**Commission Report File**
**Number SUP 16-021 and**
**VAR 16-022**

**TO:** Planning Commission

**FROM** Stephen Pottéy, P.E.

**DATE:** April 7, 2016 **MEETING DATE:** April 27, 2016

**SUBJECT TITLE:**

Action to consider a special use permit for additional units at an apartment complex at 1600 Airport Rd, apn 008-312-04.

**RECOMMENDATION:**

The Engineering Division has no preference or objection to the special use request and we suggest the following 5 conditions of approval:

1. The applicant will be required to submit a storm drain maintenance agreement prior to issuance of a building permit.
2. The applicant will be required to obtain a NV Construction Stormwater General Permit from NDEP prior to issuance of a building permit.
3. Pedestrian access must be provided from the apartment complex to the sidewalk along the project frontage.
4. The sidewalk along the frontage must be widened to 5'.
5. Airport Rd will be required to be stripped to have a bike lane on the west side of the street along the frontage of the apartment complex, with "No Parking Bike Lane" signs placed along the frontage.

**DISCUSSION:**

The Engineering Division has reviewed the conditions of approval within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 18.02.080, Conditional Uses.

CCMC 18.02.080 (2a) - Adequate Plans
Drawings are adequate for this SUP.

**CCMC 18.02.080 (5a) - Master Plan**
The request necessitates the addition of a bike lane along the frontage of the apartment complex per the Unified Pathways Master Plan.

**CCMC 18.02.080 (5c)- Traffic/Pedestrians**
The request necessitates the addition of pedestrian walkways to give access to the sidewalk along the frontage to prevent conflicts with pedestrian and traffic movements. Also, the parking stalls may need to be reconfigured in order to have proper spacing per Carson City Standard Detail C-5.5.1.

April 8, 2106

Comments for SUP-16-021:

1. Project must comply with the 2012 IFC and Northern Nevada Fire Amendments.
2. The apartment buildings must have fire sprinklers.
3. Depending on the final design, a manual fire alarm system may be required.
4. Additional fire hydrants will be required; final location to be approved by CCFD. The number of additional hydrants will depend on the square footage and construction type of the buildings.
5. Additional requirements may be identified for the office building depending on the final use as a clubhouse.

Hope was going to add something regarding the updated drawing Lumos sent for the turning radius in the parking lot.

***Dave Ruben***
Fire Marshal
Carson City Fire Department
777 S. Stewart Street
Carson City, NV 89701

Direct 775-283-7153
Main 775-887-2210
FAX 775-887-2209

## Hope Sullivan

**From:** Dave Ruben
**Sent:** Tuesday, April 12, 2016 9:36 AM
**To:** Hope Sullivan
**Subject:** RE: SUP 16-021

Let's use this as its clearer: The construction plans must demonstrate turning radii for the fire access lanes around the new buildings of a minimum of 30' inside and 50' outside.

---

**From:** Hope Sullivan
**Sent:** Tuesday, April 12, 2016 9:01 AM
**To:** Dave Ruben
**Subject:** RE: SUP 16-021

Dave:
On the turning radius – ok to use your condition from MPR, and it can say:

"The construction plans must demonstrate turning radii for the parking lot into the new buildings of a minimum of 40 feet."

Let me know!!!

Hope

---

**From:** Dave Ruben
**Sent:** Friday, April 08, 2016 4:24 PM
**To:** Kathe Green; Susan Dorr Pansky; Hope Sullivan
**Subject:** SUP 16-021

Comments for 16-021:

1. Project must comply with the 2012 IFC and Northern Nevada Fire Amendments.
2. The apartment buildings must have fire sprinklers.
3. Depending on the final design, a manual fire alarm system may be required.
4. Additional fire hydrants will be required; final location to be approved by CCFD. The number of additional hydrants will depend on the square footage and construction type of the buildings.
5. Additional requirements may be identified for the office building depending on the final use as a clubhouse.

Hope was going to add something regarding the updated drawing Lumos sent for the turning radius in the parking lot.

***Dave Ruben***
Fire Marshal
Carson City Fire Department
777 S. Stewart Street
Carson City, NV 89701

Direct 775-283-7153
Main 775-887-2210

April 12, 2016

**SUP-16-018**
Health and Human Services has no concerns with the application as submitted.

**SUP-16-019**
Health and Human Services has no concerns with the application as submitted.

**SUP 16-021**
Health and Human Services has no concerns with the application as submitted.

**VAR-16-022**
Health and Human Services has no concerns with the application as submitted.

**TSM-16-023**
Health and Human Services has no concerns with the application as submitted.

**VAR-16-024**
Health and Human Services has no concerns with the application as submitted.

Dustin Boothe, MPH, REHS
Carson City Health and Human Services
900 E. Long St.
Carson City, NV 89706
(775) 887-2190 ext. 7220

dboothe@carson.org

# Carson City Planning Division
**108 E. Proctor Street**
**Carson City, Nevada 89701**
**(775) 887-2180-Hearing Impaired:711**
www.carson.org
www.carson.org/planning


May 5, 2014

Mr. Ben Farahi
Bella Lago, LLC
3702 S. Virgina St., Suite G2
Reno, NV 89502

Mr. Derek Wilson and Mr. Mike Railey
Rubicon Design Group, LLC
100 California Ave., Suite 202
Reno, NV 89509

**Major Project Review: MPR-14-011**

**Project Description: Bella Lago Apartments, proposed addition of 80 units**

**Review Date: April 1, 2014**

## Major Project Review Comments

The Major Project Review (MPR) Committee has reviewed the proposed plans for the Bella Lago Apartments addition. The following requirements and comments are provided for your use in preparing final plans and submittals for the project. Please be advised that the comments presented in this letter are based on the plans submitted with the Major Project Review application, and may not include all the requirements or conditions which may be placed on the project at the time of submittal of planning applications for approval (if applicable) or final plans for building permits. It is hoped, however, that this review will expedite the completion of your project.

Some of the requirements noted below may have already been shown or otherwise indicated in the plans and need only be submitted in the final improvement plan form. Final on- and off-site improvement plans shall be submitted to the Building Division, (108 E. Proctor Street). These plans must contain all appropriate requirements of Development Engineering, Health, Utilities, Fire, and Planning Divisions/Departments.

Planning applications (if applicable), such as Master Plan Amendments, Zoning Changes, Special Use Permits, Variances, Lot Line Adjustments, Parcel Maps, etc. shall be submitted to the Planning Division (108 E. Proctor Street) for review and approval.

## SITE INFORMATION:

Address: 1600 Airport Road

APN: 008-312-04

Parcel Size: 9.34 acres

Master Plan Designation: Mixed Use Commercial

Zoning: General Commercial

**PLANNING DIVISION**
**Contact Susan Dorr Pansky, Planning Manager**

Special Use Permit - CCMC 18.02.080; Variance - CCMC 18.02.085

Based on staff's review of the submittal as well as previous conversations and meetings with the applicant, the project requires both a Special Use Permit and a Variance.

1. The project requires a Special Use Permit because the applicant proposes to expand the legal non-conforming multi-family apartment use in a General Commercial zoning district (CCMC 18.04.030).

2. The project requires a variance because the applicant is proposing a reduction in both the parking and open space required (Development Standards, Division 1.17).

    a. Proposed parking for the site is 1.7 parking spaces per unit. This is less than the two parking spaces per unit required by Carson City Development Standards, but is more than the 1.6 spaces per unit currently provided on site. Based on the ITE documentation provided by the applicant, staff is able to support the proposed reduction.

    b. Staff requires additional information and calculations on the proposed open space reduction from the required 38,250 square feet based on the proposed site plan to 25,463 square feet. In order to properly evaluate the request and provide the applicant with information on whether staff would support the request, the following is required:

        1. Conceptual landscape plan showing the proposed amenities that the applicant has indicated would be superior to amenities required by current code.

        2. Recalculation of proposed open space to include areas over 25 feet wide in the total and identify only the patios/balconies as private open space.

Setbacks - CCMC 18.04.195 (Non-Residential) and Development Standards 1.18.4 (Residential Development Standards in Non-Residential Districts)

| | Front | Rear | Side | Street Side |
|---|---|---|---|---|
| Required*: | 0 | 0 | 0 | 0 |
| Proposed: | N/A | N/A | N/A | N/A |

* *In General Commercial zoning districts, a minimum setback of 20 feet is required adjacent to a residential zoning district, with an additional 10 feet for each store above one story if adjacent to a single-family zoning district.*

*A minimum setback of 10 feet is required from the right-of-way of an arterial street as identified in the adopted Transportation Master Plan, excluding the Downtown Mixed-Use area.*

All additional development proposed will occur as interior infill at the project site. Setbacks are already established with the existing buildings on the site, therefore proposed setbacks are in compliance with zoning district requirements.

Height - CCMC 18.04.195 (Non-Residential) and Development Standards 1.18.3 (Residential Development Standards in Non-Residential Districts)

The proposed building height was not provided as a part of the MPR application, therefore staff cannot provide a determination on compliance with height restrictions. The maximum building height is in General Commercial zoning districts is 45 feet.

Signs - Carson City Development Standards, Division 4

Based on the information provided by the applicant, no additional signage is proposed. Should additional signage be proposed, the following requirements shall apply:

1. A Sign Permit will be required prior to the placement or erection of any sign, or to install or alter any electrical wiring or fixture. See the Planning Division for information and standards. A Sign Permit application may be obtained from the Building Division. (Development Standards, Division 4.4.1)

2. Permitted Signage for Multi-Family Residential Uses:

    a. One sign denoting the name of the multi-family residential use either freestanding or attached, not exceeding 32 square feet in area;

    b. One address sign not exceeding four square feet in area for the entire site;

    c. One address sign not exceeding two square feet for each unit within the complex;

    d. The maximum height of a freestanding sign shall be six feet in any residential or office zoning district, 15 feet in any other zoning district;

    e. Illumination of signs shall be by indirect lighting only;

    f. Sign materials shall be compatible with the primary on-site building.

Landscaping - Carson City Development Standards, Division 3

1. A landscape and irrigation plan shall be filed with the City and approved by the Director prior to the approval of a site plan or issuance of a building permit. The plan shall be prepared by a landscape architect registered in the State of Nevada, or other person permitted to prepare landscape plans pursuant to Chapter 623A of the Nevada Revised Statutes (NRS). Landscaping on all commercial/industrial projects must be installed or supervised by an individual at the job location with at least one of the following credentials: Certified Landscape Technician, Licensed Landscape Contractor, Certified Landscape Professional, ISA Certified Arborist, Registered Landscape Architect, a C10 Qualified Employee as recognized by the State Contractor's Board, or an equivalent certification, approved by the Parks & Recreation Department. (Development Standards, Division 3.3)

2. The plans shall include landscape calculations relevant to the application of the standards of Division 3 of the Development Standards and shall include a plant list in a

legend format giving the common and botanical names of each plant with a key number or identifying symbol assigned to each plant, the size of the plant, its spacing and the quantity to be used. (Development Standards, Division 3.3.2)

3. The landscape plans shall include construction details for planting, staking, soil amendments and any special requirements for the project and may be an attachment to the plans. (Development Standards, Division 3.3.3)

4. Identification and description of automatic irrigation components to insure that vegetation is adequately serviced through water conserving features is required. Overhead sprinkler irrigation is only allowed on turf areas or other areas requiring overhead sprinkler irrigation. (Development Standards, Division 3.3.5)

5. Trees and significant shrubs shall be preserved whenever possible and shall be considered part of the required landscape area. Preservation of existing 4-inch caliper (6-8 foot for evergreens) healthy trees will be eligible for a 2:1 credit toward the total tree requirement if approved by the Director, up to a maximum of 25% of the requirement for trees on the site. Provide an overlay on all submitted plans of all existing trees with caliper (deciduous) or height (evergreen) and significant shrubs on the site and clearly mark which will be retained on the site and which are proposed to be removed. (Development Standards, Division 3.4)

6. Tree Protection. All deviations from the Tree Protection Code must be approved by the Planning Division. Construction activities can severely damage or kill trees. See the Tree Retention/Protection, Root Pruning Detail, and Excavation Adjacent to Retained Trees in the Development Standards, Division 3 Appendix for additional requirements and information. (Development Standards, Division 3.4.2)

7. Protective Fencing shall enclose the entire area under the canopy drip line of the tree protection zone throughout the life of the project, or until work within the tree protection zone is completed. The fence shall not be moved during construction phase without prior approval of the qualified site professional utilizing the best management practices. The protective fence may be removed at final grading inspection or at the time final landscaping is installed. Refer to the detail in the Development Standards, Division 3 Appendix for sample fence drawing. (Development Standards, Division 3.4.2)

8. All landscaping shall aesthetically enhance and be compatible with the site area. Landscaping shall be installed to enhance the view of the site from public street(s) and adjacent properties. (Development Standards, Division 3.5.1)

9. A minimum of 20% of the site's impervious surfaces excluding the building coverage must be pervious areas of landscape material. The area within the public right-of-way adjacent to a site must be landscaped and may be counted for 25% of the total required landscaped area. In areas with right-of-ways over 20 feet in depth, the Director may modify or waive the requirement for landscaping of the right-of-way. The requirement may also be waived by the Director if the public agency denies permission for an encroachment permit or lease of the area to be landscaped. (Development Standards, Division 3.5.2)

10. Where landscape areas abut sidewalks, drive-aisles, parking areas or other hardscape surfaces, a minimum three-foot wide landscape buffer area must be provided between any turf areas and the hardscape to capture irrigation overspray and runoff. The buffer area may be drip-irrigated plant materials or non-living landscape materials. (Development Standards, Division 3.6.3)

11. The minimum number of trees shall be one tree per 400 square feet of landscape area. Additional trees are required if the number of trees for parking areas and along right-of-way areas as described in Development Standards, Division 3.7.1.a and 3.7.1.b exceed this minimum. The Director may modify this standard for public uses such as parks. (Development Standards, Division 3.7.1)

    - Included in the minimum required number of trees, a minimum of one shade tree must be planted for every 10 parking spaces or fraction thereof, and distributed throughout the parking area surface to provide even shading within the parking lot. For example, 18 parking spaces shall require two trees. A minimum of one deciduous tree shall be placed in each standard sized parking island.

    - Included in the minimum required number of trees, at least one tree shall be placed along the right-of-way frontage for every 30 lineal feet of right-of-way at a point not more than 20 feet from the right-of-way. The Director may allow for different spacing or locations of trees for projects with outside display such as automobile sales lots.

12. Where more than 10 deciduous trees are provided as a part of the landscape plan, a minimum of 50% of the trees shall be of a different species to ensure diversity. Additional species may be required on larger projects. (Development Standards, Division 3.7.2)

13. Non-planted, non-living materials such as wood chips, bark, decorative rock, mulch, stone or other non-living materials may be used as groundcover, and shall be distributed throughout the site. All landscape areas shall be covered with materials suitable for reducing dust and evaporation and shall be designed to improve the aesthetic appearance of the area. An attractive mix of organic and non-organic materials is encouraged. Products which appear to be dirt shall not be used. (Development Standards, Division 3.8.2)

14. A ratio of at least six shrubs (five gallon size), is required for each tree placed or retained on the site. If a large quantity of turf is proposed for the site, the required shrub count may be reduced after review and approval of the submitted landscaping plans by the Planning Division. (Development Standards, Division 3.8.3)

15. On arterial streets, minimum 10 foot wide landscape areas shall be provided along the frontage of the site adjacent to the street. On all other streets, a minimum of six foot wide landscape area shall be provided along the frontage of the site adjacent to the street. On sites with unique constraints, the Director may approve an alternative dimension if the alternative does not compromise the integrity of the landscape plan. (Development Standards, Division 3.9)

16. Tree selection for projects will be guided by the approved Carson City Tree List for Commercial Projects. Trees planted in the City will be installed according to the City's tree planting standards. The approved tree list and standard planting details are located in the Appendix of the Development Standards, Division 3. (Development Standards, Division 3.10.8)

17. Parking and driveway areas shall include concrete curbs or similar improvements as approved by the Director for protection of landscaping. Vehicle overhangs into landscaped areas shall not exceed two feet. Planter areas shall not be less than 72

square feet in size and shall have a minimum width of six feet. )Development Standards, Division 3.11.1)

18. Snow storage should be incorporated within the design of projects and should be oriented for maximum sun exposure for acceleration of melting. Driveways, drive aisles, sidewalks and landscape areas cannot be used for snow storage. Drainage and run-off from snow storage areas shall be considered in the design. (Development Standards, Division 3.11.3)

19. All non-planted landscape areas shall be covered with materials such as mulch. Products which appear to be dirt shall not be used. A weed barrier fabric is required under all rock and cobble mulches and pre-emergent herbicide is recommended. (Development Standards, Division 3.11.5)

20. Conflicts shall be avoided in design of landscape improvements by considering the size and breadth of mature landscaping. Show existing and proposed overhead and underground power lines, utility poles, light standards and utility easements on submitted landscape plans. Fire hydrants, fire connections, water boxes (three feet clearance required), water and sewer service lines (10 feet clearance required for trees), overhead utilities, signs, roof overhangs, light standards etc., shall be taken into consideration in design of landscaping. Show all proposed and existing signage for the site. (Development Standards, Division 3.11.7)

21. All landscape areas must be maintained by the property owners, including using the most current pruning standards accepted by the ANSI International Society of Arboriculture and/or the National Arborist Association. Any damaged or dead plant(s) must be replaced or repaired by the property owners within 30 days following notification by the Director. If the season of the year makes this repair or replacement within a 30 day period impractical, the person responsible for landscaping shall schedule an appropriate time for the completion of the accomplishment of this work as required and approved by the Director. Property owner shall provide a financial security in a form acceptable to the City, in the amount of 150% of the estimated cost of installation of remaining landscape improvements, which shall be filed with the City guaranteeing installation. The estimated cost of the landscaping improvements not yet completed must be verified by the City. (Development Standards, Division 3.13.1)

22. An acknowledgment by the property owner of the required maintenance for a project must be submitted to the City as a part of landscape and irrigation plan submittals. (Development Standards, Division 3.13.3)

23. Diagrams, text and examples are located in the Appendix of the Development Standards, Division 3 including, but not limited to, general landscape and irrigation notes, irrigation legend detail, typical plant list legend example, tree and shrub planting details, emitter layout and staking, bubbler, tree protection, flushing end cap, drip, spray and coupling valves, rotor/pop-up head, irrigation trench wall section, rock wall, wood and pipe bollards, approved tree, shrub, riparian and Historic District lists, pruning, tree retention/protection, root pruning and excavation adjacent to retained tree details. (Development Standards, Division 3.15)

Architectural Design - Carson City Development Standards, Division 1

1. Proposed structures must meet the architectural standards outlined in the Development Standards, Division 1. (Development Standards, Division 1.1)

2. Variations of building details, form, line, color and materials shall be employed to create visual interest. Variations in wall planes, roof lines and direction are encouraged to prevent monotonous appearance in buildings. Large expanses of walls devoid of any articulation or embellishment shall be avoided. Similarly vertical variation in the roof line is encouraged. Mansard roofs shall wrap around the entire building. (Development Standards, Division 1.1.3)

3. All building elevations shall receive architectural treatment, except in special situations where an elevation is not visible from an adjoining property or street. (Development Standards, Division 1.1.4)

4. Exterior building colors should blend with surrounding development and not cause abrupt changes. Primary building surfaces (excluding trim areas) should be muted or earth-tone in color. Bold colors shall be avoided except when used as accent or trim. (Development Standards, Division 1.1.6)

Lighting - Carson City Development Standards, Division 1

1. All nonresidential uses shall provide lighting within public parking areas and access ways to provide safety and security. All light sources shall be located and installed in such a way as to prevent spillover lighting onto adjoining properties and glare to the sky. (Development Standards, Division 1.3.3)

2. Any lighting facilities shall be so installed as to project light downward and away from adjoining properties and glare to the sky, with the exception of accent lighting, which is limited to a maximum upward angle of 45 degrees. Site lighting trespass onto adjacent locations and the night sky shall be minimized. Covers must be installed on all lighting fixtures and lamps must not extend below the bottom of the cover. All light fixtures, except streetlights, shall be located, aimed or shielded so as to minimize stray light trespassing beyond property boundaries. (Development Standards, Division 1.3.3.1)

3. All light fixtures that are required to be shielded shall be installed in such a manner that the shielding is installed as designed. Fixtures which are International Dark Sky Association approved such as Dark Sky Friendly or equivalent with full cutoff lighting for area and wall pack fixtures are recommended. Sag, convex, drop lenses and luminaries with open bulbs are prohibited. (Development Standards, Division 1.3.3.2)

4. If elevations of buildings are proposed for accent illumination, drawings and a photometric plan shall be provided for all relevant building elevations showing the fixtures, the portions of the elevations to be illuminated, the luminance levels of the elevations and the aiming points. The maximum upward angle is 45 degrees. (Development Standards, Division 1.3.3.3)

5. Light standards, light poles and wall pack lighting adjacent to residential zones shall be limited in height as follows: Fixtures shall not exceed an overall height of 12 feet within 75 feet, 16 feet within 100 feet, 20 feet within 125 feet, 24 feet within 150 feet and 28 feet within 175 feet of property line, or center of street, whichever is closer, when adjacent to residential zones. Additional height may be permitted by the Director provided such lights are a sharp cutoff lighting system. Illumination levels at the property line of a project shall be reduced by the use of house side shields and reflectors, and shall be maintained in such a manner as to confine light rays to the premises of the project. (Development Standards, Division 1.3.3.4)

6. Parking area lights are encouraged to be greater in number, lower in height and lower in light level, as opposed to fewer in number, higher in height and higher in light level. A photometric plan is required on all projects with building size of 50,000 square feet or larger and may also be required at the discretion of the Director. (Development Standards, Division 1.3.3.6)

7. For all projects where the total initial output of the proposed lighting equals or exceed 100,000 lumen, certification that the lighting, as installed, conforms to the approved plans shall be provided by a certified engineer before the certificate of occupancy is issued. Until this certification is submitted and reviewed, approval for use of a certificate of occupancy shall not be issued for the project. (Development Standards, Division 1.3.3.7)

8. Exterior lighting installations shall include timers, dimmers, sensors or photocell controllers that turn the lights off during daylight hours or when lighting is not needed, which will reduce unnecessary lighting, as practical. Businesses are encouraged to turn lighting down or off when businesses are not open. (Development Standards, Division 1.3.3.8)

9. Glare. Reflected glare on nearby buildings, streets or pedestrian areas shall be avoided by incorporating overhangs and awnings, using building materials and colors which are less reflective for exterior walls and roof surfaces, controlling angles of reflection and placing landscaping and screening in appropriate locations. (Development Standards, Division 1.3.3.9)

10. Luminaries which have a maximum output of 500 lumen per fixture, (equivalent to one 40-watt incandescent bulb) regardless of number of bulbs, may be left unshielded provided the fixture has an opaque top to keep light from shining directly up. Luminaries which have a maximum output of 850 lumen per fixture, (equal to one 60 watt incandescent light) regardless of number of bulbs, may be partially shielded, provided the bulb is not visible from off-site, no direct glare is produced, and the fixture has an opaque top to keep light from shining directly up. (Development Standards, Division 1.3.5.1)

11. Accent lighting. Architectural features may be illuminated by up-lighting or light directed to the building, such as wall washing, provided that the light is effectively aimed to or contained by the structure by such methods as caps, decks, canopies, marquees, signs, etc., the lamps are low intensity to produce a subtle lighting effect, and no light trespass is produced. The angle of up-lighting shall not exceed 45 degrees. Luminaries shall not be installed above the height of the parapet or roof. For national flags, statutes, public art, historic buildings or other objects of interest that cannot be illuminated with down-lighting, upward lighting may be used in the form of narrow-cone spotlighting that confines the illumination to the object of interest. (Development Standards, Division 1.3.5.2)

12. All luminaries shall be aimed and adjusted to provide illumination levels and distribution as indicated on submitted plans. All fixtures and lighting systems shall be in good working order, cleaned and maintained in a manner that serves the original design intent of the system. (Development Standards, Division 1.3.5.3)

13. Floodlights that are not full cut-off (light emitted above the fixture) may be used if permanently directed downward, not upward, and aimed at no more than a 45 degree angle, so no light is projected above the horizontal plane, and fitted with external

shielding for top and side to prevent glare and off-site light trespass. Unshielded floodlights are prohibited. (Development Standards, Division 1.3.5.4)

14. Maintenance. All fixtures shall be maintained in good working order, with aiming, angles, wattage and intensity as originally approved. Replacement bulbs shall be the same or less wattage and intensity as originally approved. Fixtures and reflecting surfaces shall be cleaned on a regular schedule to reduce additional unapproved glare. (Development Standards, Division 1.3.5.10)

15. The Director may approve variations to the standards set out in this Division if variations are more appropriate to a particular site, provide an equivalent means of achieving the intent of these lighting standards and are in keeping with the purpose statement of the Development Standards. A letter of request detailing the reason for the variation and changes requested is required to be submitted to the Director. (Development Standards, Division 1.3.5.11)

Roof-Mounted Equipment - Carson City Development Standards, Division 1

1. Roof-mounted equipment (HVAC, etc.) must be screened from view from a public right-of-way or adjacent property through the use of architectural means such as parapet walls and equipment wells. The use of a picket fence or chain link slatted screening is prohibited. Show all roof-mounted equipment on the elevation plan. (Development Standards, Division 1.1.7)

Trash Storage - Carson City Development Standards, Division 1

1. Outdoor areas used for the storage of trash or refuse must be completely enclosed by a solid gate and a six foot masonry block wall and be designed to integrate with the building and site design, including colors and materials. Enclosures shall be screened with appropriate plant materials wherever possible. Provide trash enclosure construction details with the final building permit plans. (Development Standards, Division 1.2.6)

2. Trash enclosures shall be designed to meet or exceed minimum size requirements as determined by the sanitation company and shall be located to provide unobstructed access to refuse vehicles. All trash, refuse or recycled material shall be stored in containers within its walled enclosure. (Development Standards, Division 1.2.6)

Residential Development Standards in Non-Residential Districts – Carson City Development Standards, Division 1.18

The following standards are intended to establish minimum standards and Special Use Permit review criteria for residential development within the Neighborhood Business (NB), Retail Commercial (RC), General Commercial (GC), Residential Office (RO) and General Office (GO) zoning districts.

1. Permitted uses. Residential uses are only allowed as permitted by Chapter 18.04, Use Districts, as a primary or conditional use in the applicable zoning districts. (Development Standards, Division 1.18.1)

2. Maximum permitted density. There is no maximum residential density within non-residential zoning districts subject to meeting the height, setback, parking and open space requirements of this chapter. (Development Standards, Division 1.18.2)

3. Maximum building height shall be the maximum height established by the zoning district

in which the project is located. (Development Standards, Division 1.18.3)

4. Setbacks. Minimum setbacks shall be those established by the zoning district in which the project is located, subject to the following:

   a. In the NB, RC, GC and GO zoning districts, a minimum setback of 20 feet is required adjacent to a residential zoning district, with an additional 10 feet for each story above one story if adjacent to a single-family zoning district. (Development Standards, Division 1.18.4)

   b. A minimum setback of 10 feet is required from the right-of-way of an arterial street as identified in the adopted Transportation Master Plan, excluding the Downtown Mixed-Use area. (Development Standards, Division 1.18.4)

5. Required parking: Two spaces per dwelling unit; and in compliance with the Development Standards Division 2, Parking and Loading. (Development Standards, Division 1.18.5) The site requires 510 parking spaces based on two parking spaces required per dwelling unit.

   The proposed plan provides 1.7 parking spaces per unit, and does not have adequate parking to meet minimum code requirements. However, the applicant has provided accredited documentation from the ITE Parking Generation Manual that two parking spaces per dwelling unit is in excess of actual parking requirements for the site. Staff is able to support the requested reduction based on the documentation provided.

6. Open Space (Development Standards, Division 1.18.6):

   a. A minimum of 150 square feet per dwelling unit of common open space must be provided. For projects of 10 or more units, areas of common open space may include contiguous landscaped areas with no dimension less than 15 feet. A minimum of 100 square feet per unit of the common open space area must be designed for recreation, which may include but not be limited to picnic areas, sports courts, a softscape surface covered with turf, sand or similar materials acceptable for use by young children, including play equipment and trees, with no dimension less than 25 feet.

   b. A minimum of 100 square feet of additional open space must be provided for each unit either as private open space or included in the common open space area.

   c. Front and street side yard setback areas may not be included toward meeting the open space requirements.

   As indicated previously, the applicant desires a reduction in the open space requirement from 38,250 square feet to 25,463 square feet based on the proposed site plan. In order to properly evaluate the request and provide the applicant with information on whether staff would support the request, staff requires additional information and calculations as listed below:

   a. Conceptual landscape plan showing the proposed amenities that the applicant has indicated would be superior to amenities required by current code.

   b. Recalculation of proposed open space to include areas over 25 feet wide in the total and identify only the patios/balconies as private open space.

7. Landscaping. Landscaping shall comply with the Carson City Development Standards Division 3, Landscaping. (Development Standards, Division 1.17.8)

8. Special Use Permit review standards. Where a residential use is a conditional use within a given zoning district, the Planning Commission shall make two of the following findings in the affirmative in the review of the Special Use Permit in addition to the required findings of Section 18.02.080 of the Carson City Municipal Code.

   a. The development is not situated on a primary commercial arterial street frontage.

   b. The development is integrated into a mixed-use development that includes commercial development.

   c. The applicant has provided evidence that the site is not a viable location for commercial uses.

   d. The site is designated Mixed-Use Commercial, Mixed-Use Residential or Mixed-Use Employment on the Master Plan Land Use Map and the project meets all applicable mixed-use criteria and standards.

Growth Management - CCMC 18.12

- Growth Management applies to all residential, commercial and industrial property that is required to be served by city water and/or sewer service within the consolidated municipality of Carson City.

- A Growth Management application is required for all commercial and industrial developments that exceed an average daily water usage of 7,500 gallons per day and may be obtained from the Planning Division. Growth Management applications are reviewed by the Planning Commission acting as the Growth Management Commission.

Due to changing conditions of business and requirements for zoning, master plan and development codes of Carson City, this MPR information will expire and will need to be updated with a new MPR if the developer has not applied for a building permit within one year of the date of the MPR meeting.

As discussed at the MPR meeting, the applicant shall provide the following with any planning application or building permit submittal in relation to the proposed project in addition to the required plans:

- Copy of this MPR letter packet.

**BUILDING DIVISION**
**Contact Kevin Gattis, Chief Building Official**

1. Commercial submittals shall show compliance with the following codes, and adopted amendments:
   - 2012 International Building Code
   - 2009 International Energy Conservation Code
   - 2012 International Fire Code
   - 2012 Uniform Mechanical Code
   - 2012 International Mechanical Code
   - 2012 Uniform Plumbing Code

- 2011 National Electrical Code
- 2009 ICC/ANSI A117.1 (For accessible design)
- 2011 Northern Nevada Amendments
- 2012 Northern Nevada Amendments

2. The project requires application for a Building Permit, issued through the Carson City Building Division. This will necessitate a complete review of the project to verify compliance with all adopted construction codes and municipal ordinances applicable to the scope of the project.

3. As a part of a submittal, provide a separate plan sheet, which clearly shows the ***Accessible Route / Exit Discharge Plan***. The ***Accessible Route / Exit Discharge Plan*** shall have the following minimum information from the accessible entrance of the facility to the public right of way. (*'12 IBC Section 1007, 1104.1 & ICC/ANSI A117.1-2009 Chapter 4 & 5*):
   - Indicate accessible route surface
   - Indicate accessible route slope
   - **Indicate accessible route width** (Minimum width is 36"); however, if the wheelchair is near a drop or change in elevation, a guard will be required. (ICC/ANSI A117.1-2009 Section 403.5 & Table 403.5)
   - Indicate accessible route turn radius
   - Indicate all accessible ramps, with a dimensioned cross section details indicating slope & guardrails (where applicable)
   - Indicate the location and type of the detectable warning surface at curb ramps, island or cut-through medians (*ICC/ANSI A117.1-2009 Sections 406.13, 406.14 & 705*)
   - Indicate all accessible parking, with signage
   - Indicate location of all building and site accessible signage, with an elevation view to verify compliance with required text, height, etc.

   NOTE: The *Accessible Route / Exit Discharge Plan* shall clearly show the accessible route from the accessible entrance of the facility to the accessible parking, public streets and sidewalks – as applicable to the site. (*'12 IBC 1007.2, 1023.6, & 1104.1*)

4. As a part of the submittal, include a complete "Architectural Design Analysis", which shall include a **complete** breakdown of the allowable area and height versus the actual area and height.

5. A Geotechnical Report will be required. The Geotechnical report for the proposed location shall include a complete assessment of the potential consequences of any liquefaction and soil strength loss, including estimation of differential settlement, lateral movement or reduction in foundation soil-bearing capacity, and shall address mitigation measures. (*'2012 IBC 1803.5.12*)

**ENGINEERING AND UTILITIES**
**Contact Rory Hogen, Assistant Engineer**

1. Any engineering work done on this project must be wet stamped and signed by an engineer licensed in Nevada. This will include site, grading, utility and erosion control plans as well as standard details.

2. All construction work must be to Carson City Development Standards (CCDS) and meet the requirements of the Carson City Standard Details.

3. Reclaimed water must be used for dust control.

4. A wet stamped fire flow analysis must be submitted to show that fire flows meet the minimum requirements of the Carson City Fire Department. See Section 15 of CCDS. Please contact Tom Grundy, P.E. at (775) 283-7081 for more fire flow information.
5. If a commercial fire line is required, the system must be designed by an engineer. The double check assembly must be above ground in a hot box, and located as close to the property line (on the private side) as possible. Please see Chapter 445A of Nevada Administrative Code.

6. The domestic water service line will need a reduced pressure backflow preventer as shown in Chapter 445A of the Nevada Administrative Code.

7. The irrigation service will need a reduced pressure backflow preventer if a vacuum breaker system cannot be designed to operate properly.

8. An erosion control plan meeting section 13 of CCDS will be required in the plan set.

9. Please show all existing water and sewer utilities, including mains in the street.

10. New electrical service must be underground.

11. Please show gas and electric connections for this project.

12. A Storm Water Pollution Prevention Permit must be obtained from Nevada Division of Environmental Protection before a permit can be issued if the construction area exceeds one acre.

13. A Technical Drainage Study must be submitted as part of the plan submittal for a permit. Please see section 14.9 of Carson City Development Standards.

14. A water and sewer connection fee form will be required. Please submit with the construction permit application. This should include the form, the calculations used, and any back up information.

15. A wet stamped traffic study will be required for this project. See Section 12 of the Carson City Development Standards.

16. The City has completed an analysis of this section of sewer main, and has concluded the line is undersized for ultimate capacity. In order for Bella Lago Development to add the units, the development would be required to upsize the sewer main from their connection point at the north end downstream to the manhole where the pipe size presently increases to 18" from 12" in diameter. The City would participate in the costs, which would be finalized in a participation agreement stating the shared amounts. During the MPR meeting there was a question about the condition of the present main. Based on discussions with our Operations staff, currently the pipe is not slated for the rehab/replacement program.

17. If the onsite sewer system is anything like the laterals that were replaced in the street in the last few years, it is recommended that this system be upgraded.

These comments are based on a very general site plan and do not indicate a complete review. All pertinent requirements of Nevada State Law, Carson City Code, and Carson City Development Standards will still apply whether mentioned in this letter or not.

## FIRE DEPARTMENT
**Contact Dave Ruben, Captain – Fire Prevention**

1. All comments are based on the conceptual design information only.

2. Turning radius for the parking lot into the new buildings appears too tight. It must be a minimum 40' radius turn.

3. The new apartment buildings will need to have fire sprinklers compliant with NAC 477 and the Carson City Fire Code.

4. Depending on final design, a manual fire alarm may be required. Alarm design must comply with the Carson City Fire Code.

5. Additional fire hydrants will be required, final location to be approved by the Carson City Fire Department. The number of additional hydrants will depend on the square footage and building construction type.

6. Additional requirements may be identified for the office building depending on final use as a clubhouse.

## HEALTH DEPARTMENT
**Contact Dustin Boothe, Environmental Health Specialist**

Plans for the proposed pool must be submitted to the Carson City Building Department and to Carson City Health and Human Services for review. The pool needs to be designed in accordance with Nevada Revised Statutes and Nevada Administrative Code Chapter 444, as well as local building codes.

## PARKS AND RECREATION DEPARTMENT
**Contact Vern Krahn, Parks Planner**

The apartment complex being considered for expansion is located on Airport Road, which is designated by the Unified Pathways Master Plan as a proposed on-street bike lane route. In accordance with the provisions of the Carson City Municipal Code Chapter 13.02, the expansion portion of the project will be the subject of Residential Construction Tax payable at the issuance of a building permit.

The residents of this complex will benefit from a proposed off-street multipurpose trail currently under development that is located a block to the west of the complex. The subject Freeway Multipurpose Pathway will provide will provide for connections to the north and south as well as east and west through its intersection with other existing trails. The trail network will provide off-street access to the parks and open spaces located within the Carson River and Silver Saddle Ranch areas.

## PUBLIC WORKS-TRANSPORTATION
**Contact Patrick Pittenger, Transportation Manager**

I understand that the preliminary site plan is just that, but the proposed buildings, particularly the smaller one to the south, are quite close to the existing paved areas. I would be concerned about circulation/sight distance with the building located that close and there isn't room to shift it to the north. This concern would be addressed if only the two larger buildings proposed in the development were constructed and the smaller building to the south was removed from the site.

**PUBLIC WORKS-ENVIRONMENTAL**
**Contact Mark Irwin, Environmental Control Officer**

No comments.

The aforementioned comments are based on the Major Project Review Committee's review. If you have any questions, please feel free to contact the following members of staff, Monday through Friday 8:00 AM to 4:00 PM.

**Planning Division –**
Susan Dorr Pansky, Planning Manager
(775) 283-7076
Email: spansky@carson.org

**Engineering Division –**
Rory Hogen, Assistant Engineer
(775) 887-2300
Email: rhogen@carson.org

**Building Division –**
Kevin Gattis, Chief Building Official
(775) 887-2310
Email: kgattis@carson.org

**Fire Prevention –**
Dave Ruben, Captain
(775) 283-7153
Email: druben@carson.org

**Health Department –**
Dustin Boothe, Environmental Health Specialist
(775) 887-2190
Email: dboothe@carson.org

**Parks and Recreation Department –**
Vern Krahn, Park Planner
(775) 887-2262
Email: vkrahn@carson.org

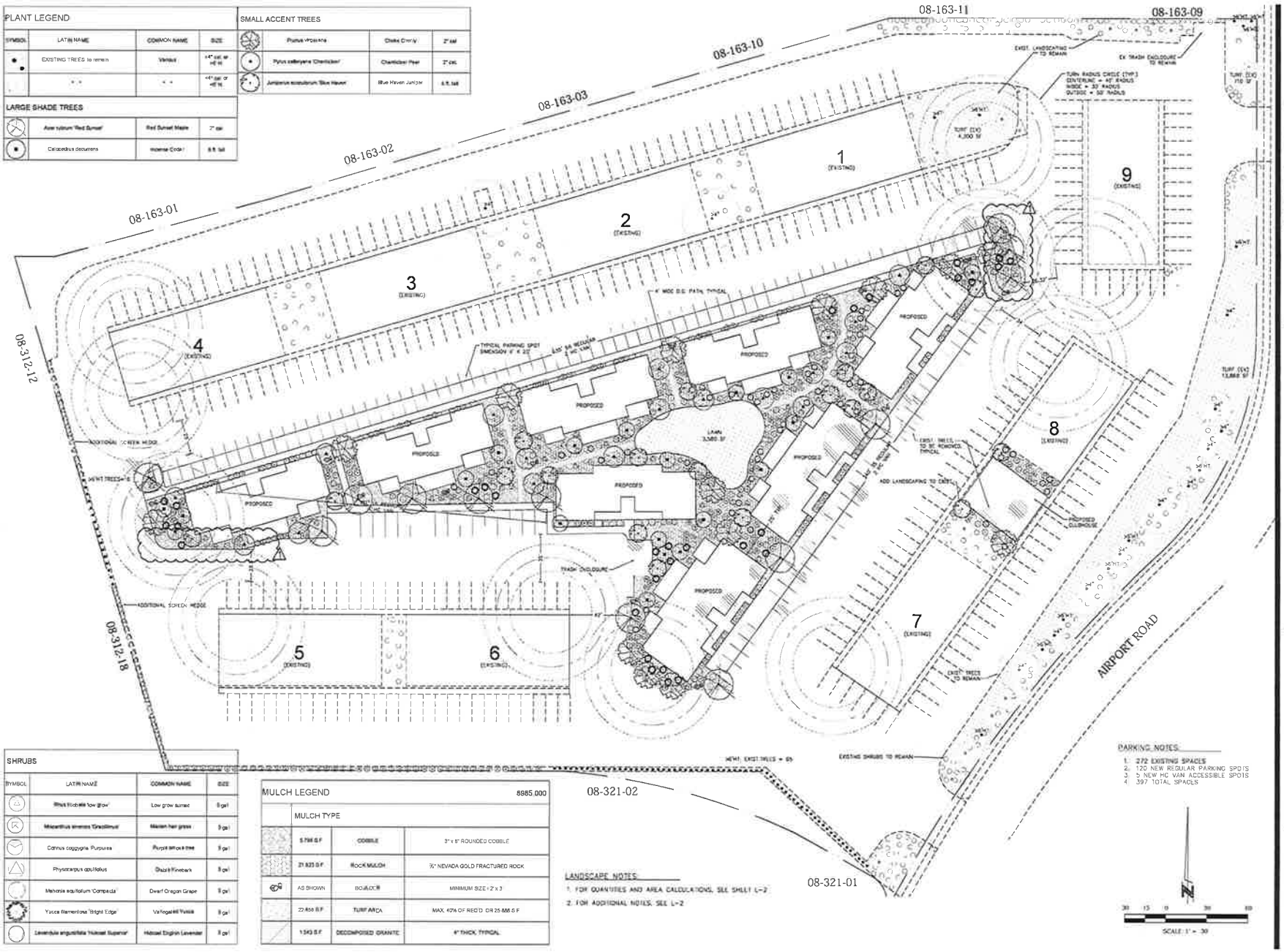
**Transportation –**
Patrick Pittenger, Transportation Manager
(775) 887-2355
Email ppittenger@carson.org

**Environmental Control –**
Mark Irwin, Environmental Control Officer
(775) 283-7380
Email: mirwin@carson.org

Sincerely,
Community Development, Planning Division

Susan Dorr Pansky
Planning Manager

cc: Major Project Review Committee
MPR-14-011




| PLANT LEGEND | | | |
|---|---|---|---|
| SYMBOL | LATIN NAME | COMMON NAME | SIZE |
| | EXISTING TREES to remain | Various | 14" cal. or 40' ht. |
| | " " | " " | <4" cal. or <40' ht. |

| LARGE SHADE TREES | | | |
|---|---|---|---|
| | Acer rubrum 'Red Sunset' | Red Sunset Maple | 2" cal. |
| | Calocedrus decurrens | Incense Cedar | 6 ft. tall |

| SMALL ACCENT TREES | | | |
|---|---|---|---|
| | Prunus virginiana | Chokecherry | 2" cal. |
| | Pyrus calleryana 'Chanticleer' | Chanticleer Pear | 2" cal. |
| | Juniperus scopulorum 'Blue Haven' | Blue Haven Juniper | 6 ft. tall |

| SHRUBS | | | |
|---|---|---|---|
| SYMBOL | LATIN NAME | COMMON NAME | SIZE |
| | Rhus trilobata 'low glow' | Low grow sumac | 5 gal |
| | Miscanthus sinensis 'Gracillimus' | Maiden hair grass | 5 gal |
| | Cornus coggygria 'Purpurea' | Purple smoke tree | 5 gal |
| | Physocarpus opulifolius | Diablo Ninebark | 5 gal |
| | Mahonia aquifolium 'Compacta' | Dwarf Oregon Grape | 5 gal |
| | Yucca filamentosa 'Bright Edge' | Variegated Yucca | 5 gal |
| | Lavendula angustifolia 'Hidcote Superior' | Hidcote English Lavender | 5 gal |

| MULCH LEGEND | | | 5585.000 |
|---|---|---|---|
| | MULCH TYPE | | |
| | 5,798 S.F. | COBBLE | 3" x 5" ROUNDED COBBLE |
| | 21,823 S.F. | ROCK MULCH | 3/4" NEVADA GOLD FRACTURED ROCK |
| | AS SHOWN | BOULDER | MINIMUM SIZE = 2' x 3 |
| | 22,466 S.F. | TURF AREA | MAX. 40% OF REQ'D. OR 25,885 S.F. |
| | 1,343 S.F. | DECOMPOSED GRANITE | 4" THICK, TYPICAL |

LANDSCAPE NOTES:
1. FOR QUANTITIES AND AREA CALCULATIONS, SEE SHEET L-2
2. FOR ADDITIONAL NOTES, SEE L-2

PARKING NOTES:
1. 272 EXISTING SPACES
2. 120 NEW REGULAR PARKING SPOTS
3. 5 NEW HC VAN ACCESSIBLE SPOTS
4. 397 TOTAL SPACES

SCALE: 1" = 30'

LUMOS & ASSOCIATES
800 E. COLLEGE PARKWAY
CARSON CITY, NEVADA 89706
TEL (775) 883-7077
FAX (775) 883-7118
WWW.LUMOSNV.COM
CIVIL ENGINEERING
GEOTECHNICAL ENGINEERING
PLANNING
LANDSCAPE ARCHITECTURE
SURVEYING / GIS
CONSTRUCTION SERVICES
MATERIALS TESTING

BELLA LAGO

# BELLA LAGO APARTMENTS
## 1600 AIRPORT ROAD - 08-312-04
## PRELIMINARY LANDSCAPE PLAN

NEVADA
CARSON CITY

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|
| 1 | 4.7.2016 | MODIFICATION PER PRE-DEVT COMMENTS | CAB |

S.U.P.

L1

| | |
|---|---|
| DATE | 03/15/16 |
| DRAWN BY | MAC |
| DESIGNED BY | MAC |
| CHECKED BY | SG |
| JOB NO. | 8085.E00 |

# Appendix C: Interim Mixed-Use Evaluation Criteria

## PURPOSE:

The implementation of numerous policies contained within the Master Plan hinges on the creation of three mixed-use zoning districts to align with the Mixed-Use Commercial (MUC), Mixed-Use Employment (MUE), and Mixed-Use Residential (MUR) land use categories. Recognizing that mixed-use development proposals have already been and will continue to be submitted within these areas prior to the completion and adoption of the future mixed-use zoning districts, a set of Interim Mixed-Use Evaluation Criteria have been developed to:

- Facilitate higher intensity, mixed-use development in locations designated on the Land Use Plan for mixed-use development, but where mixed-use zoning is not currently in place;
- Encourage the incremental transition of existing uses in locations designated on the Land Use Plan for mixed-use development, recognizing that in some locations, mixed-use development may be perceived as incompatible with existing adjacent uses in the short term;
- Establish a consistent method for reviewing mixed-use development projects until mixed-use zone districts can be established; and
- Ensure that mixed-use development is consistent with the General Mixed-Use policies contained in the Master Plan, as well as with specific MUC, MUE, and MUR policies, as applicable.

The Interim Mixed-Use Evaluation Criteria will continue to be used as a tool to review mixed-use development proposals until mixed-use zone districts can be established.

## MIXED-USE EVALUATION CRITERIA:

### APPLICABILITY

The following Interim Mixed-Use Evaluation Criteria shall apply to all development proposed within the Mixed-Use Residential (MUR), Mixed-Use Commercial (MUC), and Mixed-Use Employment (MUE) land use categories. The application of these Criteria shall be triggered in one of the following ways:

- *Existing Zoning/Special Use Permit*—Development is proposed within a mixed-use land use category where the underlying zoning may permit the types and mix of uses proposed using

the Special Use Permit process as outlined in Section 18.02.80 of the City's Municipal Code. The Interim Mixed-Use Evaluation Criteria are applied in addition to the standard list of Findings outlined in the Code.

Example: If a mixed-use project (commercial/residential) were proposed within the Mixed-Use Commercial land use category on a property that is currently zoned for General Commercial, the residential portion of the project would be considered using the Special Use Permit process under the existing Code. Once the Master Plan is adopted, the project would also be subject to the Interim Mixed-Use Evaluation Criteria as part of the Special Use Permit Process.

- *Re-Zoning/Special Use Permit*—Development is proposed within a mixed-use land use category where the underlying zoning does not permit the types and mix of uses proposed. In this instance, the subject property would need to be re-zoned to the most appropriate zoning district and then followed for the project and combined with a Special Use Permit or Planned Unit Development request to allow the mix of uses desired and to trigger the application of the Interim Mixed-Use Evaluation Criteria.

Example: If a mixed-use project (commercial/residential) were proposed within the Mixed-Use Commercial land use category on a property that is currently zoned for Light Industrial, the residential portion of the project would not be eligible for consideration using the Special Use Permit process under the existing Code. Therefore, the subject property would need to be rezoned to General Commercial prior to beginning the Special Use Permit Process that would allow the residential portion of the project to be considered under the Interim Mixed-Use Evaluation Criteria.

- *Planned Unit Development (PUD)*—Development is proposed within a mixed-use land use category where the underlying zoning does not permit the types and mix of uses proposed. As an alternative to the Re-Zoning/Special Use Permit process outlined above, a Planned Unit Development request could be submitted for the subject property, within which it could be re-zoned to the most appropriate zoning district(s) for the project. As part of the PUD process, the Interim Mixed-Use Evaluation Criteria would be applicable all other conditions of approval outlined in the City's Municipal Code.

## GENERAL INTENT

The Mixed-Use Evaluation Criteria provide an overview of key mixed-use development features that should be addressed by proposed mixed-use developments occurring to ensure they are consistent with Master Plan policies. They are intended to be used in conjunction with the land use specific review criteria that follow this section based on the applicable mixed-use land use designation.

## MIX OF USES

### Background and Intent:

Mixed-use developments should incorporate a variety of uses in a compact, pedestrian-friendly environment. Uses are encouraged to be mixed vertically ("stacked"), but may also be integrated horizontally. Recommended types and proportions of uses vary by mixed-use land use category and will also vary according to a project's location, size, and the surrounding development context. For example, a MUC development located on an individual parcel away from a primary street frontage may reasonably contain a higher percentage of residential development than one that is located with direct access and visibility from the primary street frontage. On some smaller parcels, integrating multiple uses may not be feasible at all, therefore, the consolidation of properties to create larger, mixed-use activity centers is encouraged. These factors should be considered and weighed in conjunction with the evaluation criteria listed below.

### Evaluation Criteria:

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 1. Are the types of uses and percentages of different uses consistent with the relevant Master Plan policies listed below? (MUC 1.6, MUR 1.5, MUE 1.5) | Yes X No ☐ | The use is consistent although there is little opportunity to mix uses on this infill site. |
| 2. Are activity generating uses (e.g., retail/commercial) concentrated along primary street frontages and in other locations where they may be easily accessed and may be readily served by transit in the future? | Yes ☐ No ☐ N/A X | |
| 3. Are large activity generating uses (e.g., retail/commercial) located so as to minimize impacts of loading areas and other facilities on existing neighborhoods? | Yes ☐ No ☐ N/A X | |
| 4. Are residential uses well-integrated with non-residential uses (either horizontally or vertically) and the surrounding development context? | Yes X No ☐ | The use is integrated into the existing neighborhood. |

| | | |
|---|---|---|
| 5. Do the proposed housing types and densities promote activity and support non-residential uses in the development or in close proximity to the development, as applicable? | Yes ☒ No ☐ | The project adds housing close to existing retail. |

**Relevant Master Plan Policies:**

- Chapter 3: 2.1b, 2.3b, GMU 1.1, GMU 1.2, MUC 1.56, MUR 1.5, MUE 1.5
- Chapter 6: 7.2a, 7.2b

## MIX OF HOUSING TYPES

**Background and Intent:**

Each of the mixed-use land use categories allow for the incorporation of a variety of housing as a part of a broader mix of uses. Although a mix of housing types and densities is encouraged within each category, the scale, size, type, and location of each development should play a significant role in determining what makes sense. For example, a 200 acre MUR development on a vacant parcel should generally contain a broader mix of housing types and densities than a 10 acre MUR development working within an established development context. However, the MUR development will likely have higher average densities due to its proximity to a primary street frontage and it's more urban context. Given the range of scenarios that may emerge, the evaluation criteria listed below are intentionally broad to allow for maximum flexibility.

**Evaluation Criteria:**

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 6. Does the development contain a mix of housing types that is compatible with the surrounding neighborhood and planned land use in terms of its scale and intensity? | Yes ☒ No ☐ | |
| 7. Does the development contain a mix of housing types that is appropriate to its scale, location, and land use category? | Yes ☒ No ☐ N/A ☐ | |

**Relevant Master Plan Policies:**

- Chapter 3: 2.2a, 2.2b
- Chapter 6: 8.1a

# DENSITY RANGE

## Background and Intent:

Average densities within mixed-use developments are generally expected to be higher than those typically found within the City today. Recognizing the many factors that influence the ultimate density of a mixed-use development (e.g., location, type), the Master Plan provides a suggested range of floor area ratios (FAR) and dwelling units/acre for each of the mixed-use land use categories. For the purposes of the evaluation criteria listed below, densities that fall below the low end of a density range for a particular land use category will be strongly discouraged in order to promote the Plan's objective of creating a more compact pattern of development. The Plan also acknowledges that there may be instances where densities that exceed the suggested range are appropriate in some locations, such as within a mixed-use activity center, provided other land use policies are followed. These instances will be evaluated on a project-by-project basis.

## Evaluation Criteria:

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 8. Does the development achieve at least the minimum density range for the applicable land use category? | Yes ☒ No ☐ | |
| 9. Does the development exceed the maximum density range for the applicable land use category? | Yes ☐ No ☒ | |
| 10. If yes to #9 above, is the development located within a designated mixed-use activity center? | Yes ☐ N/A No ☐ | |
| 11. If yes to #9 above, is the largest concentration of density concentrated away from primary street frontages and surrounding neighborhoods? | Yes ☐ N/A No ☐ | |

## Relevant Master Plan Policies:

- Chapter 3: MUC 1.3, MUR1.3, MUE 1.3

## CIRCULATION AND ACCESS

### Background and Intent:

Mixed-use developments should be designed using an interconnected network of streets to provide efficient connections between uses and to accommodate vehicular, bicycle, and pedestrian circulation, as well as existing or future transit service. Direct vehicular and pedestrian connections to adjacent neighborhoods, commercial, and civic uses should be provided, as should linkages to existing and planned trail systems.

### Evaluation Criteria:

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 12. Do vehicular and pedestrian ways provide logical and convenient connections between proposed uses and to adjacent existing or proposed uses? | Yes ☒ No ☐ | Pedestrian & vehicle connections are in place. |
| 13. Does the hierarchy of perimeter and internal streets disperse development generated vehicular traffic to a variety of access points, discourage through traffic in adjacent residential neighborhoods and provide neighborhood access to on site uses? | Yes ☒ No ☐ | Roads are unchanged with this project. |
| 14. If the development is located along a primary street frontage, have existing or proposed transit routes and stops been incorporated? | Yes ☐ No ☐ N/A | |

### Relevant Master Plan Policies:

Chapter 3: GMU 1.3, MUC 1.8
Chapter 7: 10.2b, 11.1a, 11.1c

## PARKING LOCATION AND DESIGN

### Background and Intent:

The visual and physical barriers created by surface parking areas should be minimized within mixed-use developments. To promote a more compact, pedestrian-friendly environment, off-street parking for mixed-use developments should be located behind buildings and away from primary street frontages. The use of on-street parking or shared parking to provide a portion of the required parking for mixed-use developments is strongly encouraged, where feasible, to make the most efficient use of each development site. In addition, structured parking is encouraged where viable, provided it is integrated into the design of the overall development.

### Evaluation Criteria:

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 15. Is surface parking distributed between the side and rear of primary buildings and away from primary street frontages? | Yes X No ☐ | |
| 16. Are larger parking lots organized as a series of smaller lots with clear pedestrian connections and landscape buffers as dividers? | Yes X No ☐ N/A ☐ | |
| 17. Is surface parking screened from surrounding neighborhoods and pedestrian walkways? | Yes X No ☐ N/A ☐ | Fences and landscape borders are in place. |
| 18. Is structured parking integrated with adjacent structures in terms of its design and architectural character? | Yes X No ☐ N/A X | |
| 19. Are structured parking facilities "wrapped" with retail or residential uses at the street level to provide a more inviting pedestrian environment? | Yes ☐ No ☐ N/A X | |

### Relevant Master Plan Policies:

- Chapter 3: GMU 1.4, MUC 1.8

## RELATIONSHIP TO SURROUNDING DEVELOPMENT

### Background and Intent:

Many of the areas designated for mixed-use development are located within established areas of the City. As a result, much of the mixed-use development that occurs will occur through a combination of infill and redevelopment. Therefore, establishing a strong physical and visual relationship to adjacent neighborhoods and the community will be an important consideration.

### Evaluation Criteria:

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 20. Are transitions in building massing and height provided to relate to surrounding development patterns? | Yes ☒ No ☐ | The buildings match what is in place now. |
| 21. Is the new development well-integrated into the surrounding neighborhood, rather than "walled off", consistent with the mixed-use policies contained in the Master Plan? | Yes ☒ No ☐ | |
| 22. If applicable, are lower intensity uses (e.g., residential) located along the periphery of the site were it adjoins an existing residential neighborhood to provide a more gradual transition in scale and mass and to minimize potential impacts of non-residential uses (e.g., loading areas, surface parking)? | Yes ☐ No ☐ N/A ☒ | |

### Relevant Master Plan Policies:

- Chapter 3: MUC 1.7, MUR 1.7, MUE 1.6
- Chapter 6: 8.3b

## PUBLIC SPACES, PARKS, OPEN SPACE, AND PATHWAYS

### Background and Intent:

Mixed-use developments should be organized around a central gathering space or series of spaces, such as small urban plazas, pocket parks, or active open space areas. These types of public spaces

serve as urban recreational amenities for residents that may not have access to larger community parks or recreational amenities without getting in their cars and generally promote increased levels of pedestrian activity. Larger mixed-use developments, particularly within the MUR and MUE categories, may also need to incorporate more traditional recreational features, such as parks and trails, depending upon their size and location.

**Evaluation Criteria:**

| CRITERIA | CRITERIA SATISFIED? | COMMENTS |
|---|---|---|
| 23. Does the development provide public spaces to serve residents and the larger community? | Yes ☒ No ☐ | |
| 24. Are public spaces appropriate in terms of their size and active vs. passive features provided given the scale and location of the proposed development? | Yes ☒ No ☐ | |
| 25. Are public spaces easily accessible to pedestrians and the surrounding community, if applicable? | Yes ☒ No ☐ N/A ☐ | |
| 26. Are parks and trails provided consistent with the Parks, Recreation, and Unified Pathways Master Plan? | Yes ☐ No ☐ N/A ☒ | |

**Relevant Master Plan Policies:**

- Chapter 3: MUC 1.6, MUR 1.8, MUE 1.7

***CONCEPTUAL DRAINAGE STUDY***
***TO ACCOMPANY THE SPECIAL USE PERMIT APPLICATION***

***for the***

***Bella Lago Apartments***
***APN 008-312-04***
*Carson City, Nevada*

***Prepared For:***

**Bella Lago LLC**

3652 S. Virgiia St., Suite G7
Reno, NV 89502

***Prepared By:***

**LUMOS & ASSOCIATES, INC.**
800 East College Parkway
Carson City, Nevada 89706
Phone: (775) 883-7077
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March, 2016
Job No. 8985.000

# I. Introduction

## A. Description of Project

This conceptual drainage report presents the finding of the preliminary drainage study for the Special Use Permit Application for APN 008-312-04 located in Section 9, Township 15N, Range 20E of the Mount Diablo Meridian. It identifies the existing and conceptually proposed site conditions, and the potential drainage improvements. This study has been conducted in accordance with the Carson City Municipal Code and Carson City Development Standards.

The proposed project consists of the expansion of the existing Bella Lago Apartment Complex including eight new tenant buildings with 64 new apartments, a 2,000 square foot office/exercise building and associated surface and utility improvements. The approximate 2.2 acre space that the new tenant buildings will occupy is currently occupied by an existing grass field, a tennis court and a rock garden.

## B. Existing Site Conditions

The project site of the Bella Lago Apartments is 9.345 acres and is bounded to the East by Airport Road, to the North by APNs 008-163-01 through 008-163-11, to the South by APNs 008-321-01, 008-321-02 and 008-321-10, and to the East by APNs 008-312-12 and 008-312-12. The property slopes from the Northeast to the Southwest at approximately 1%. There are currently 9 buildings on the project site that cover approximately 65,000 square feet. There is also a 13,000 square foot concrete tennis court. Approximately 4.88 acres, or roughly half, of the project site is asphalt concrete paved.

## C. General Location Map

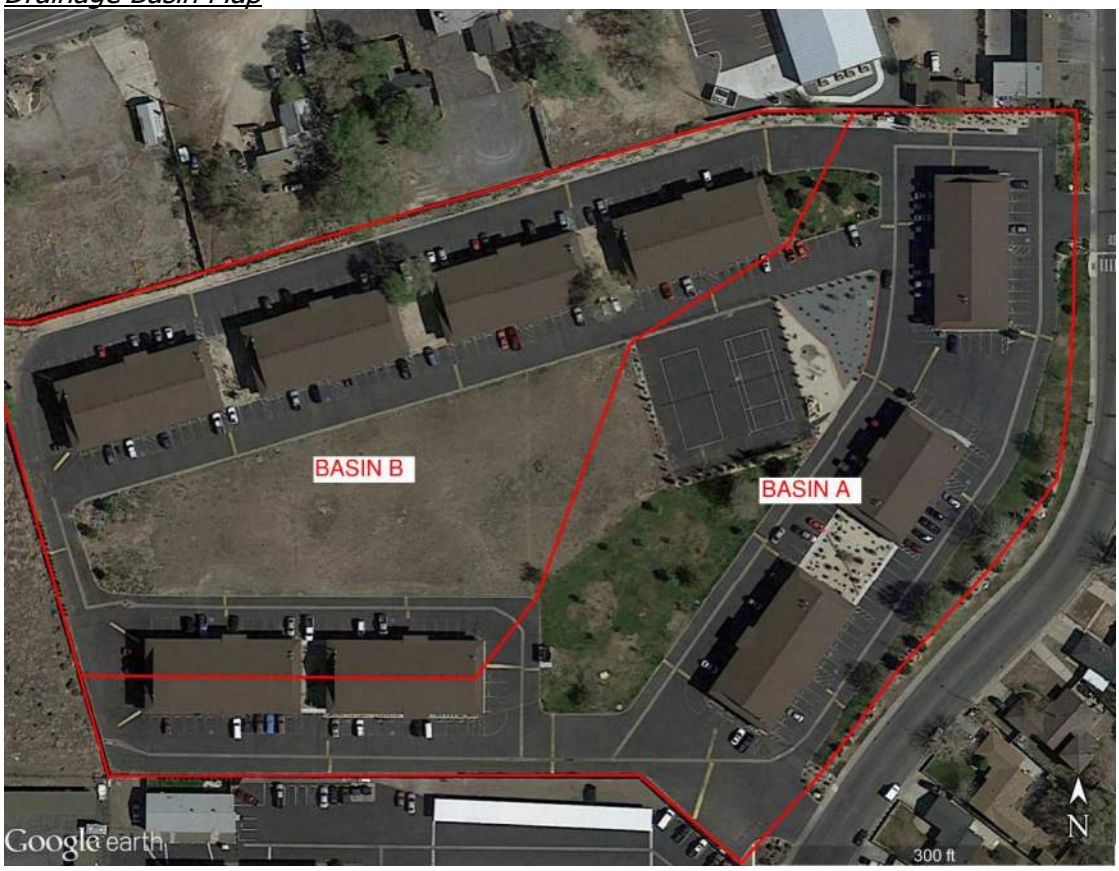
See Appendix A for location map.

## II. Existing and Proposed Hydrology

A. Discuss existing and proposed drainage basin boundaries

There are two drainage basins onsite. The property is split approximately in half with both basins flowing towards the Southwest corner of the property. Basin A is approximately 4.9 acres and Basin B is approximately 4.19. See drainage basin map:

*Drainage Basin Map*




B. Design Storm and 100-Year, 24-Hour Flow Calculations

*Table 1: Flow Calculations*

| Basin | Pre-Development (cfs) | | Post-Development (cfs) | | Increase (cfs) | |
|---|---|---|---|---|---|---|
| | 5-Year | 100-Year | 5-Year | 100-Year | 5-Year | 100-Year |
| Basin A | .276 | .486 | .307 | .540 | .031 | .054 |
| Basin B | .230 | .404 | .261 | .459 | .031 | .055 |
| Total | .506 | .890 | .586 | .999 | .062 | .109 |

C. Existing Drainage Problems

There are several drainage issues on the existing project site. A site visit was conducted shortly after a storm event which made drainage issues apparent. Between the 4 building on the Northern end of the property and the two buildings on the Southern end there is approximately 1200 square feet of open common area. These areas have no apparent drainage system and act as small retention basins. The problem with drainage in these small areas are exacerbated by the fact that the roof spouts from the adjacent buildings are discharged onto them. See photo below for an example of one of these common areas:

*Common area with Stagnant Water*

A second problem that was identified onsite was that some of the valley gutters had either settled or were not installed correctly to allow for proper longitudinal flow. There were several places on the property where there were pools of water inside the valley gutters. This was more prevalent in the valley gutter located on the southernmost portion of the property. See photo for example of runoff pooled in valley gutter:

*Water Pooled in Valley Gutter*

D. Onsite and Downstream Drainage

Onsite runoff is conveyed through a series of valley gutters to two storm drain inlets located in the southwest corner of the property. Water flows away from the buildings and into the valley gutters where it is conveyed to the inlet locations. Once the runoff is collected in the storm drains it is conveyed offsite to the west via a 12" pipe. It is not located on any of the Carson City Utility Maps and there is no clear tie in for it to the West of the project location. However, based upon field investigations with Carson City personnel, it is believed that the 12" pipe connects to a manhole located in the driveway of the Royal Apartments on N. Lompa Ln. From there the runoff is most likely discharged into the storm ditch adjacent to I-580. Further investigation is planned to occur with the technical drainage report.

E. Floodplain

The project site is mostly located in FEMA Zone X, determined to be outside of the 0.2% annual chance floodplain. A small portion of the southwest corner

(approximately 15% of total) is also in Zone X, but considered Other Flood Areas by FEMA, having 0.2% annual chance of flood, areas of 1% chance of flood with average depth of less than 1 foot or with a drainage are of less than 1 square mile, and areas protected by levees from 1% annual chance of flood. The area that is proposed for construction is outside of the Other Flood Areas Zone X and will have no impact on the floodplain.

## III. Proposed Drainage Facilities (on-site and off-site)

A. Routing of flow in and/or around site, downstream, and location of drainage facilities

*On-Site Flow*

Onsite flow will be routed via new and existing curb and gutter and valley gutter into the existing storm drain inlets located in the southwest corner of the project location. From there the runoff flows to the west and connects to a manhole located in the driveway of the Royal Apatments located on N. Lompa Ln. From there it is believed that the runoff flows to the west and into the drainage ditch along I-580. Onsite landscaping will be designed to retain and infiltrate a portion of the runoff to mitigate offsite flows to match pre-project flows.

*Off-Site Flow*

Off-site flow patterns and flows will not be impacted by the proposed project. No modifications to the existing offsite facilities are currently proposed as part of this project.

B. Mitigation Measures

Best Management Practices techniques should be implemented to manage the quantity and improve the quality of storm water runoff, minimize local erosion and potential discharges to adjacent properties.

C. Floodplain Modifications

The Bella Lago Apartments improvements will not require any modification of the floodplain.

D. Exhibit

A copy of the SUP map showing proposed buildings and the FEMA Firmette for the project location are provided in Appendix C.

## IV. Conclusions

The Bella Lago Apartments improvements will be designed in accordance with Carson City Municipal Code and Carson City Development Standards. The project will not have a detrimental effect on surrounding properties in terms of stromwater. The

increase in storm water runoff will be marginal and not affect the downstream storm water system.

# Appendix A

# Bella Lago Apartments

General Location Map

# Appendix B

**Bella Lago-Basin A**
**Drainage Calculation**
**Rational Method**
**March 2016**

## Basin Post-Development

**5-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

**1) Runoff Coefficient C**

| | Range | Design Value |
|---|---|---|
| Impervious Areas = | .7 - .95 | 0.9 |
| Pervious Areas = | 0.1 - 0.3 | 0.3 |

**2) Total Area (A)**

| Impervious | Pervious | Units |
|---|---|---|
| 190,084 | 23,392 | Sq. Ft. |
| 4.36 | 0.54 | Acres |

**3) Weighted "C" Value**

| | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| AC and Concrete = | 0.9 | 4.36 | 3.93 |
| Landscaped Areas = | 0.3 | 0.54 | 0.161 |
| Total | | 4.90 | 4.09 |
| C (Total/Total Area) = | | 0.83 | |

**4) Time of Concentration (Tc = Lo + Lsc + Lc)**

| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
|---|---|---|
| 15.4 | 0.0 | 4.8 |
| | Time of Concentration (Tc) = | 20.2 |

**5) Peak Flow Rate (Q = CiA)**

| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
|---|---|
| 0.075 | 0.307 |

****NOTE: Tc Minimum = 10 Minutes**

**100-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

**1) Runoff Coefficient C**

| | Range | Design Value |
|---|---|---|
| Impervious Areas = | .7 - .95 | 0.9 |
| Landscaped Areas = | 0.1 - 0.3 | 0.3 |

**2) Total Area (A)**

| Impervious | Pervious | Units |
|---|---|---|
| 190,084 | 23,392 | Sq. Ft. |
| 4.36 | 0.54 | Acres |

**3) Weighted "C" Value**

| | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| AC and Concrete = | 0.9 | 4.36 | 3.93 |
| Landscaped Areas = | 0.3 | 0.54 | 0.161 |
| Total | | 4.90 | 4.09 |
| C (Total/Total Area) = | | 0.83 | |

**4) Time of Concentration (Tc = Lo + Lsc + Lc)**

| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
|---|---|---|
| 15.4 | 0.0 | 4.8 |
| | Time of Concentration (Tc) = | 20.2 |

**5) Peak Flow Rate (Q = CiA)**

| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
|---|---|
| 0.132 | 0.540 |

****NOTE: Tc Minimum = 10 Minutes**

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**Bella Lago-Basin B**
**Drainage Calculation**
**Rational Method**
**March 2016**

LUMOS & ASSOCIATES

## Basin Post-Development

**5-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

| 1) Runoff Coefficient C | Range | Design Value |
|---|---|---|
| Impervious Areas = | .7 - .95 | 0.9 |
| Pervious Areas = | 0.1 - 0.3 | 0.3 |

| 2) Total Area (A) | Impervious | Pervious | Units |
|---|---|---|---|
| | 161,422 | 21,104 | Sq. Ft. |
| | 3.71 | 0.48 | Acres |

| 3) Weighted "C" Value | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| AC and Concrete = | 0.9 | 3.71 | 3.34 |
| Landscaped Areas = | 0.3 | 0.48 | 0.145 |
| Total | | 4.19 | 3.48 |
| C (Total/Total Area) = | | 0.83 | |

| 4) Time of Concentration (Tc = Lo + Lsc + Lc) | | |
|---|---|---|
| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
| 23.8 | 0.0 | 2.4 |
| Time of Concentration (Tc) = | | 26.2 |

| 5) Peak Flow Rate (Q = CiA) | |
|---|---|
| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
| 0.075 | 0.261 |

**NOTE: Tc Minimum = 10 Minutes

**100-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

| 1) Runoff Coefficient C | Range | Design Value |
|---|---|---|
| Impervious Areas = | .7 - .95 | 0.9 |
| Landscaped Areas = | 0.1 - 0.3 | 0.3 |

| 2) Total Area (A) | Impervious | Pervious | Units |
|---|---|---|---|
| | 161,422 | 21,104 | Sq. Ft. |
| | 3.71 | 0.48 | Acres |

| 3) Weighted "C" Value | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| AC and Concrete = | 0.9 | 3.71 | 3.34 |
| Landscaped Areas = | 0.3 | 0.48 | 0.145 |
| Total | | 4.19 | 3.48 |
| C (Total/Total Area) = | | 0.83 | |

| 4) Time of Concentration (Tc = Lo + Lsc + Lc) | | |
|---|---|---|
| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
| 23.8 | 0.0 | 2.4 |
| Time of Concentration (Tc) = | | 26.2 |

| 5) Peak Flow Rate (Q = CiA) | |
|---|---|
| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
| 0.132 | 0.459 |

**NOTE: Tc Minimum = 10 Minutes

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# Bella Lago-Basin A
**Drainage Calculation**
**Rational Method**
**March 2016**

LUMOS & ASSOCIATES

## Basin Pre-Development

**5-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

**1) Runoff Coefficient C**

| | Range | Design Value |
|---|---|---|
| Impervious Areas = | .7 - .95 | 0.9 |
| Pervious Areas = | 0.1 - 0.3 | 0.3 |

**2) Total Area (A)**

| Impervious | Pervious | Units |
|---|---|---|
| 160,488 | 52,988 | Sq. Ft. |
| 3.68 | 1.22 | Acres |

**3) Weighted "C" Value**

| | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| Impervious Areas = | 0.9 | 3.68 | 3.32 |
| Pervious Areas = | 0.3 | 1.22 | 0.365 |
| Total | | 4.90 | 3.68 |
| C (Total/Total Area) = | | 0.75 | |

**4) Time of Concentration (Tc = Lo + Lsc + Lc)**

| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
|---|---|---|
| 15.4 | 0.0 | 4.8 |
| | Time of Concentration (Tc) = | 20.2 |

**5) Peak Flow Rate (Q = CiA)**

| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
|---|---|
| 0.075 | 0.276 |

****NOTE: Tc Minimum = 10 Minutes**

**100-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

**1) Runoff Coefficient C**

| | Range | Design Value |
|---|---|---|
| Impervious Areas | .7 - .95 | 0.90 |
| Pervious Areas = | 0.1 - 0.3 | 0.3 |

**2) Total Area (A)**

| Impervious | Pervious | Units |
|---|---|---|
| 160,488 | 52,988 | Sq. Ft. |
| 3.68 | 1.22 | Acres |

**3) Weighted "C" Value**

| | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| Impervious Areas = | 0.9 | 3.68 | 3.32 |
| Pervious Areas = | 0.3 | 1.22 | 0.365 |
| Total | | 4.90 | 3.68 |
| C (Total/Total Area) = | | 0.75 | |

**4) Time of Concentration (Tc = Lo + Lsc + Lc)**

| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
|---|---|---|
| 15.4 | 0.0 | 4.8 |
| | Time of Concentration (Tc) = | 20.2 |

**5) Peak Flow Rate (Q = CiA)**

| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
|---|---|
| 0.132 | 0.486 |

****NOTE: Tc Minimum = 10 Minutes**

**Bella Lago-Basin B**
**Drainage Calculation**
**Rational Method**
**March 2016**

## Basin Pre-Development

**5-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

| 1) Runoff Coefficient C | Range | Design Value |
|---|---|---|
| Impervious Areas = | .7 - .95 | 0.9 |
| Pervious Areas = | 0.1 - 0.3 | 0.3 |

| 2) Total Area (A) | Impervious | Pervious | Units |
|---|---|---|---|
| | 131,010 | 51,516 | Sq. Ft. |
| | 3.01 | 1.18 | Acres |

| 3) Weighted "C" Value | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| Impervious Areas = | 0.9 | 3.01 | 2.71 |
| Pervious Areas = | 0.3 | 1.18 | 0.355 |
| Total | | 4.19 | 3.06 |
| C (Total/Total Area) = | | 0.73 | |

| 4) Time of Concentration (Tc = Lo + Lsc + Lc) | | |
|---|---|---|
| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
| 23.8 | 0.0 | 2.4 |
| Time of Concentration (Tc) = | | 26.2 |

| 5) Peak Flow Rate (Q = CiA) | |
|---|---|
| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
| 0.075 | 0.230 |

**NOTE: Tc Minimum = 10 Minutes

**100-year, 24-hr Storm Event**
**Formula: Q = C * i * A**

| 1) Runoff Coefficient C | Range | Design Value |
|---|---|---|
| Impervious Areas | .7 - .95 | 0.90 |
| Pervious Areas = | 0.1 - 0.3 | 0.3 |

| 2) Total Area (A) | Impervious | Pervious | Units |
|---|---|---|---|
| | 131,010 | 51,516 | Sq. Ft. |
| | 3.01 | 1.18 | Acres |

| 3) Weighted "C" Value | Design Value | Areas (Acres) | Total |
|---|---|---|---|
| Impervious Areas = | 0.9 | 3.01 | 2.71 |
| Pervious Areas = | 0.3 | 1.18 | 0.355 |
| Total | | 4.19 | 3.06 |
| C (Total/Total Area) = | | 0.73 | |

| 4) Time of Concentration (Tc = Lo + Lsc + Lc) | | |
|---|---|---|
| Overland Flow - Lo (Min) | Shallow Concentrated Flow - Lsc (Min) | Channel Flow Lc (Min) |
| 23.8 | 0.0 | 2.4 |
| Time of Concentration (Tc) = | | 26.2 |

| 5) Peak Flow Rate (Q = CiA) | |
|---|---|
| Intensity @ Tc (in/hr) | Peak Flow Rate (cfs) |
| 0.132 | 0.404 |

**NOTE: Tc Minimum = 10 Minutes

**NOAA Atlas 14, Volume 1, Version 5**
**Location name: Carson City, Nevada, US***
**Latitude: 39.1751°, Longitude: -119.7340°**
**Elevation: 4639 ft***
* source: Google Maps

## POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

# PF tabular

**PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches/hour)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | **1.14** (0.984-1.36) | **1.43** (1.24-1.69) | **1.90** (1.63-2.26) | **2.36** (2.00-2.81) | **3.11** (2.57-3.71) | **3.80** (3.04-4.55) | **4.63** (3.58-5.59) | **5.62** (4.15-6.89) | **7.18** (5.00-8.99) | **8.58** (5.71-10.9) |
| 10-min | **0.870** (0.750-1.03) | **1.08** (0.936-1.28) | **1.45** (1.24-1.72) | **1.80** (1.53-2.13) | **2.37** (1.95-2.82) | **2.90** (2.31-3.46) | **3.52** (2.72-4.25) | **4.27** (3.16-5.24) | **5.46** (3.82-6.85) | **6.53** (4.34-8.33) |
| 15-min | **0.720** (0.620-0.852) | **0.896** (0.776-1.06) | **1.20** (1.03-1.42) | **1.48** (1.26-1.76) | **1.96** (1.61-2.33) | **2.39** (1.91-2.86) | **2.91** (2.24-3.52) | **3.53** (2.62-4.33) | **4.51** (3.15-5.66) | **5.40** (3.59-6.88) |
| 30-min | **0.484** (0.416-0.572) | **0.604** (0.522-0.716) | **0.806** (0.692-0.958) | **1.00** (0.850-1.19) | **1.32** (1.09-1.57) | **1.61** (1.29-1.93) | **1.96** (1.51-2.37) | **2.38** (1.76-2.92) | **3.04** (2.12-3.81) | **3.63** (2.42-4.64) |
| 60-min | **0.299** (0.258-0.354) | **0.373** (0.323-0.443) | **0.499** (0.428-0.592) | **0.619** (0.527-0.735) | **0.816** (0.672-0.970) | **0.997** (0.796-1.19) | **1.21** (0.936-1.46) | **1.47** (1.09-1.80) | **1.88** (1.31-2.36) | **2.25** (1.50-2.87) |
| 2-hr | **0.203** (0.180-0.232) | **0.252** (0.223-0.288) | **0.321** (0.282-0.367) | **0.382** (0.334-0.438) | **0.476** (0.404-0.546) | **0.558** (0.464-0.648) | **0.652** (0.526-0.766) | **0.766** (0.598-0.912) | **0.961** (0.718-1.19) | **1.14** (0.824-1.45) |
| 3-hr | **0.161** (0.144-0.181) | **0.201** (0.180-0.227) | **0.252** (0.225-0.285) | **0.295** (0.260-0.332) | **0.354** (0.308-0.402) | **0.406** (0.347-0.464) | **0.464** (0.387-0.535) | **0.537** (0.439-0.629) | **0.657** (0.521-0.801) | **0.771** (0.595-0.975) |
| 6-hr | **0.112** (0.100-0.125) | **0.139** (0.125-0.156) | **0.173** (0.155-0.194) | **0.200** (0.178-0.224) | **0.237** (0.207-0.266) | **0.265** (0.229-0.301) | **0.294** (0.250-0.337) | **0.328** (0.273-0.380) | **0.377** (0.306-0.445) | **0.421** (0.333-0.505) |
| 12-hr | **0.073** (0.065-0.082) | **0.091** (0.081-0.103) | **0.115** (0.102-0.130) | **0.134** (0.118-0.150) | **0.159** (0.139-0.180) | **0.178** (0.153-0.203) | **0.198** (0.168-0.228) | **0.218** (0.181-0.254) | **0.245** (0.199-0.292) | **0.267** (0.212-0.322) |
| 24-hr | **0.047** (0.043-0.052) | **0.059** (0.054-0.066) | **0.075** (0.068-0.083) | **0.087** (0.079-0.096) | **0.105** (0.094-0.116) | **0.118** (0.106-0.131) | **0.132** (0.118-0.147) | **0.147** (0.129-0.164) | **0.167** (0.145-0.188) | **0.183** (0.157-0.208) |
| 2-day | **0.028** (0.025-0.032) | **0.035** (0.032-0.040) | **0.045** (0.040-0.050) | **0.053** (0.047-0.059) | **0.063** (0.056-0.071) | **0.072** (0.063-0.081) | **0.081** (0.071-0.092) | **0.090** (0.078-0.103) | **0.103** (0.088-0.119) | **0.113** (0.095-0.132) |
| 3-day | **0.021** (0.018-0.023) | **0.026** (0.023-0.029) | **0.033** (0.030-0.037) | **0.039** (0.035-0.044) | **0.047** (0.042-0.053) | **0.054** (0.047-0.061) | **0.061** (0.053-0.069) | **0.068** (0.058-0.078) | **0.078** (0.066-0.090) | **0.086** (0.072-0.101) |
| 4-day | **0.017** (0.015-0.019) | **0.021** (0.019-0.024) | **0.027** (0.024-0.031) | **0.032** (0.029-0.036) | **0.039** (0.034-0.044) | **0.045** (0.039-0.051) | **0.051** (0.044-0.058) | **0.057** (0.049-0.065) | **0.066** (0.055-0.076) | **0.073** (0.060-0.085) |
| 7-day | **0.011** (0.010-0.013) | **0.014** (0.013-0.016) | **0.018** (0.016-0.021) | **0.021** (0.019-0.024) | **0.026** (0.023-0.029) | **0.030** (0.026-0.034) | **0.033** (0.029-0.038) | **0.037** (0.032-0.043) | **0.043** (0.036-0.050) | **0.047** (0.040-0.055) |
| 10-day | **0.009** (0.008-0.010) | **0.011** (0.010-0.012) | **0.014** (0.013-0.016) | **0.017** (0.015-0.019) | **0.020** (0.018-0.023) | **0.023** (0.020-0.026) | **0.025** (0.022-0.029) | **0.028** (0.024-0.032) | **0.032** (0.027-0.037) | **0.035** (0.029-0.041) |
| 20-day | **0.005** (0.005-0.006) | **0.007** (0.006-0.007) | **0.009** (0.008-0.010) | **0.010** (0.009-0.011) | **0.012** (0.011-0.013) | **0.013** (0.012-0.015) | **0.015** (0.013-0.017) | **0.016** (0.014-0.018) | **0.018** (0.016-0.021) | **0.020** (0.017-0.023) |
| 30-day | **0.004** (0.004-0.004) | **0.005** (0.004-0.006) | **0.006** (0.006-0.007) | **0.007** (0.007-0.008) | **0.009** (0.008-0.010) | **0.010** (0.009-0.011) | **0.011** (0.010-0.012) | **0.012** (0.011-0.014) | **0.013** (0.012-0.015) | **0.015** (0.012-0.017) |
| 45-day | **0.003** (0.003-0.003) | **0.004** (0.004-0.004) | **0.005** (0.005-0.006) | **0.006** (0.005-0.006) | **0.007** (0.006-0.008) | **0.008** (0.007-0.008) | **0.008** (0.007-0.009) | **0.009** (0.008-0.010) | **0.010** (0.009-0.011) | **0.010** (0.009-0.012) |
| 60-day | **0.003** (0.002-0.003) | **0.003** (0.003-0.004) | **0.004** (0.004-0.005) | **0.005** (0.004-0.006) | **0.006** (0.005-0.006) | **0.006** (0.006-0.007) | **0.007** (0.006-0.008) | **0.007** (0.007-0.008) | **0.008** (0.007-0.009) | **0.008** (0.007-0.010) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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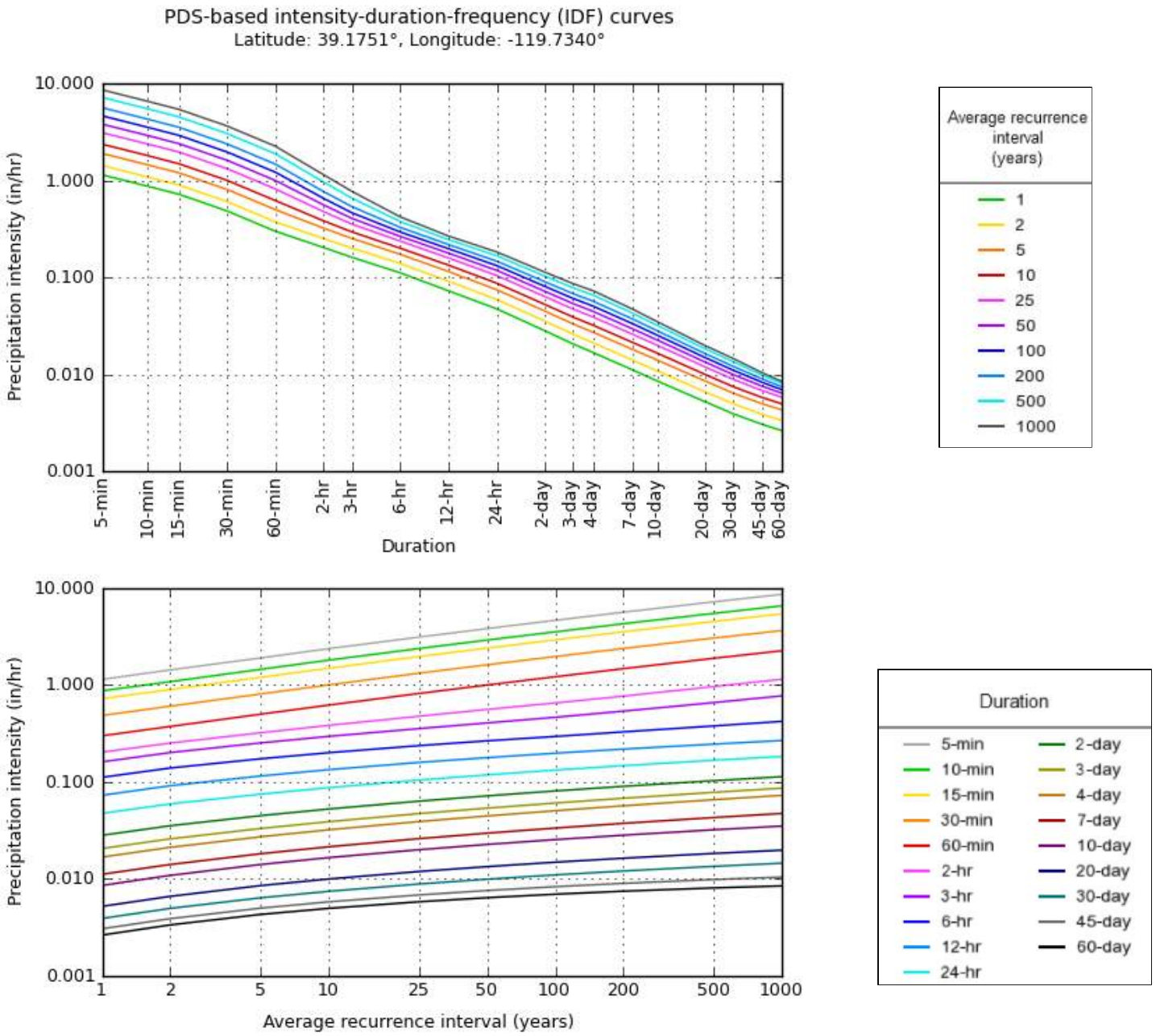
## PF graphical




NOAA Atlas 14, Volume 1, Version 5

Created (GMT): Wed Mar 9 17:41:29 2016

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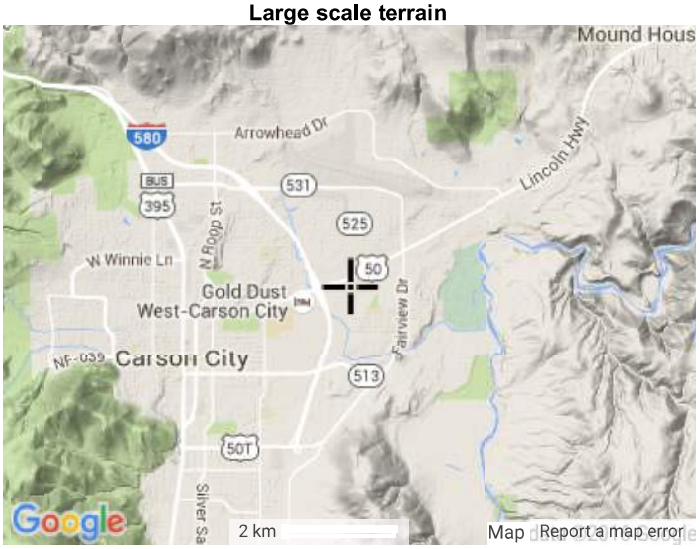
## Maps & aerials

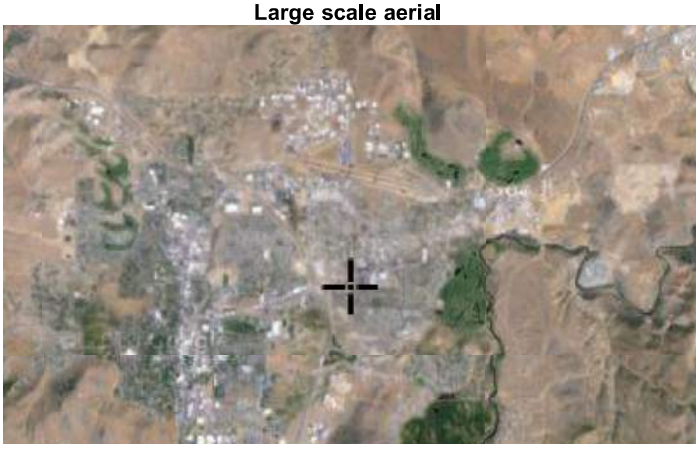
**Small scale terrain**

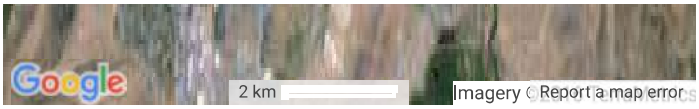

**Large scale terrain**




**Large scale map**


**Large scale aerial**



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

**NOAA Atlas 14, Volume 1, Version 5**
**Location name: Carson City, Nevada, US***
**Latitude: 39.1751°, Longitude: -119.7340°**
**Elevation: 4639 ft***
* source: Google Maps

## POINT PRECIPITATION FREQUENCY ESTIMATES

Sanja Perica, Sarah Dietz, Sarah Heim, Lillian Hiner, Kazungu Maitaria, Deborah Martin, Sandra Pavlovic, Ishani Roy, Carl Trypaluk, Dale Unruh, Fenglin Yan, Michael Yekta, Tan Zhao, Geoffrey Bonnin, Daniel Brewer, Li-Chuan Chen, Tye Parzybok, John Yarchoan

NOAA, National Weather Service, Silver Spring, Maryland

PF_tabular | PF_graphical | Maps_&_aerials

# PF tabular

**PDS-based point precipitation frequency estimates with 90% confidence intervals (in inches)[1]**

| Duration | Average recurrence interval (years) | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | 1 | 2 | 5 | 10 | 25 | 50 | 100 | 200 | 500 | 1000 |
| 5-min | **0.095** (0.082-0.113) | **0.119** (0.103-0.141) | **0.158** (0.136-0.188) | **0.197** (0.167-0.234) | **0.259** (0.214-0.309) | **0.317** (0.253-0.379) | **0.386** (0.298-0.466) | **0.468** (0.346-0.574) | **0.598** (0.417-0.749) | **0.715** (0.476-0.912) |
| 10-min | **0.145** (0.125-0.171) | **0.180** (0.156-0.214) | **0.241** (0.207-0.287) | **0.300** (0.255-0.355) | **0.395** (0.325-0.470) | **0.483** (0.385-0.577) | **0.587** (0.453-0.709) | **0.712** (0.527-0.874) | **0.910** (0.636-1.14) | **1.09** (0.724-1.39) |
| 15-min | **0.180** (0.155-0.213) | **0.224** (0.194-0.266) | **0.299** (0.257-0.355) | **0.371** (0.316-0.441) | **0.490** (0.403-0.582) | **0.598** (0.478-0.715) | **0.728** (0.561-0.879) | **0.882** (0.654-1.08) | **1.13** (0.788-1.41) | **1.35** (0.898-1.72) |
| 30-min | **0.242** (0.208-0.286) | **0.302** (0.261-0.358) | **0.403** (0.346-0.479) | **0.500** (0.425-0.593) | **0.660** (0.543-0.784) | **0.806** (0.644-0.963) | **0.980** (0.756-1.18) | **1.19** (0.880-1.46) | **1.52** (1.06-1.90) | **1.82** (1.21-2.32) |
| 60-min | **0.299** (0.258-0.354) | **0.373** (0.323-0.443) | **0.499** (0.428-0.592) | **0.619** (0.527-0.735) | **0.816** (0.672-0.970) | **0.997** (0.796-1.19) | **1.21** (0.936-1.46) | **1.47** (1.09-1.80) | **1.88** (1.31-2.36) | **2.25** (1.50-2.87) |
| 2-hr | **0.406** (0.360-0.465) | **0.503** (0.446-0.576) | **0.642** (0.565-0.734) | **0.765** (0.667-0.875) | **0.951** (0.807-1.09) | **1.12** (0.927-1.30) | **1.30** (1.05-1.53) | **1.53** (1.20-1.82) | **1.92** (1.44-2.38) | **2.28** (1.65-2.90) |
| 3-hr | **0.484** (0.433-0.545) | **0.603** (0.542-0.683) | **0.758** (0.676-0.855) | **0.885** (0.782-0.996) | **1.06** (0.926-1.21) | **1.22** (1.04-1.39) | **1.39** (1.16-1.61) | **1.61** (1.32-1.89) | **1.97** (1.56-2.40) | **2.32** (1.79-2.93) |
| 6-hr | **0.668** (0.598-0.747) | **0.833** (0.749-0.936) | **1.04** (0.926-1.16) | **1.20** (1.06-1.34) | **1.42** (1.24-1.59) | **1.59** (1.37-1.80) | **1.76** (1.50-2.02) | **1.96** (1.63-2.28) | **2.26** (1.83-2.67) | **2.52** (2.00-3.02) |
| 12-hr | **0.877** (0.781-0.985) | **1.10** (0.981-1.24) | **1.39** (1.23-1.56) | **1.61** (1.42-1.81) | **1.91** (1.67-2.17) | **2.15** (1.85-2.45) | **2.38** (2.02-2.75) | **2.63** (2.19-3.06) | **2.96** (2.40-3.52) | **3.22** (2.55-3.88) |
| 24-hr | **1.14** (1.03-1.26) | **1.42** (1.29-1.58) | **1.79** (1.63-1.98) | **2.09** (1.90-2.31) | **2.51** (2.26-2.77) | **2.84** (2.54-3.13) | **3.18** (2.82-3.53) | **3.53** (3.10-3.94) | **4.01** (3.48-4.51) | **4.39** (3.76-4.98) |
| 2-day | **1.35** (1.22-1.52) | **1.70** (1.53-1.91) | **2.15** (1.94-2.42) | **2.52** (2.26-2.83) | **3.04** (2.71-3.42) | **3.45** (3.05-3.89) | **3.88** (3.40-4.39) | **4.33** (3.75-4.94) | **4.94** (4.22-5.70) | **5.43** (4.57-6.34) |
| 3-day | **1.48** (1.33-1.67) | **1.87** (1.67-2.10) | **2.38** (2.13-2.68) | **2.80** (2.50-3.15) | **3.39** (3.00-3.83) | **3.86** (3.40-4.37) | **4.36** (3.80-4.96) | **4.89** (4.21-5.59) | **5.62** (4.75-6.49) | **6.21** (5.17-7.24) |
| 4-day | **1.61** (1.44-1.82) | **2.03** (1.81-2.29) | **2.61** (2.33-2.95) | **3.08** (2.74-3.48) | **3.75** (3.30-4.24) | **4.28** (3.74-4.86) | **4.85** (4.20-5.52) | **5.45** (4.67-6.23) | **6.30** (5.29-7.27) | **6.98** (5.78-8.14) |
| 7-day | **1.88** (1.67-2.12) | **2.37** (2.11-2.67) | **3.06** (2.72-3.45) | **3.60** (3.21-4.07) | **4.37** (3.87-4.95) | **4.98** (4.37-5.65) | **5.62** (4.88-6.40) | **6.29** (5.42-7.19) | **7.21** (6.12-8.33) | **7.95** (6.65-9.27) |
| 10-day | **2.06** (1.83-2.32) | **2.61** (2.33-2.95) | **3.38** (3.00-3.81) | **3.98** (3.53-4.49) | **4.80** (4.23-5.42) | **5.44** (4.76-6.16) | **6.11** (5.30-6.92) | **6.78** (5.84-7.72) | **7.71** (6.55-8.87) | **8.42** (7.07-9.78) |
| 20-day | **2.51** (2.24-2.80) | **3.18** (2.85-3.56) | **4.10** (3.67-4.57) | **4.79** (4.29-5.35) | **5.73** (5.09-6.39) | **6.43** (5.68-7.19) | **7.15** (6.27-8.03) | **7.86** (6.85-8.86) | **8.79** (7.58-10.0) | **9.50** (8.10-10.9) |
| 30-day | **2.82** (2.54-3.15) | **3.58** (3.22-4.00) | **4.60** (4.14-5.13) | **5.37** (4.82-5.97) | **6.39** (5.70-7.11) | **7.16** (6.34-7.98) | **7.94** (6.99-8.89) | **8.70** (7.60-9.80) | **9.72** (8.39-11.0) | **10.5** (8.97-12.0) |
| 45-day | **3.31** (2.99-3.67) | **4.21** (3.79-4.66) | **5.40** (4.86-5.96) | **6.27** (5.64-6.92) | **7.39** (6.62-8.16) | **8.20** (7.32-9.07) | **8.99** (8.00-9.96) | **9.73** (8.63-10.8) | **10.7** (9.37-11.9) | **11.3** (9.88-12.7) |
| 60-day | **3.80** (3.42-4.22) | **4.84** (4.35-5.37) | **6.20** (5.58-6.86) | **7.17** (6.44-7.92) | **8.37** (7.50-9.25) | **9.22** (8.24-10.2) | **10.0** (8.94-11.1) | **10.8** (9.57-12.0) | **11.6** (10.3-13.0) | **12.2** (10.8-13.7) |

[1] Precipitation frequency (PF) estimates in this table are based on frequency analysis of partial duration series (PDS).

Numbers in parenthesis are PF estimates at lower and upper bounds of the 90% confidence interval. The probability that precipitation frequency estimates (for a given duration and average recurrence interval) will be greater than the upper bound (or less than the lower bound) is 5%. Estimates at upper bounds are not checked against probable maximum precipitation (PMP) estimates and may be higher than currently valid PMP values.

Please refer to NOAA Atlas 14 document for more information.

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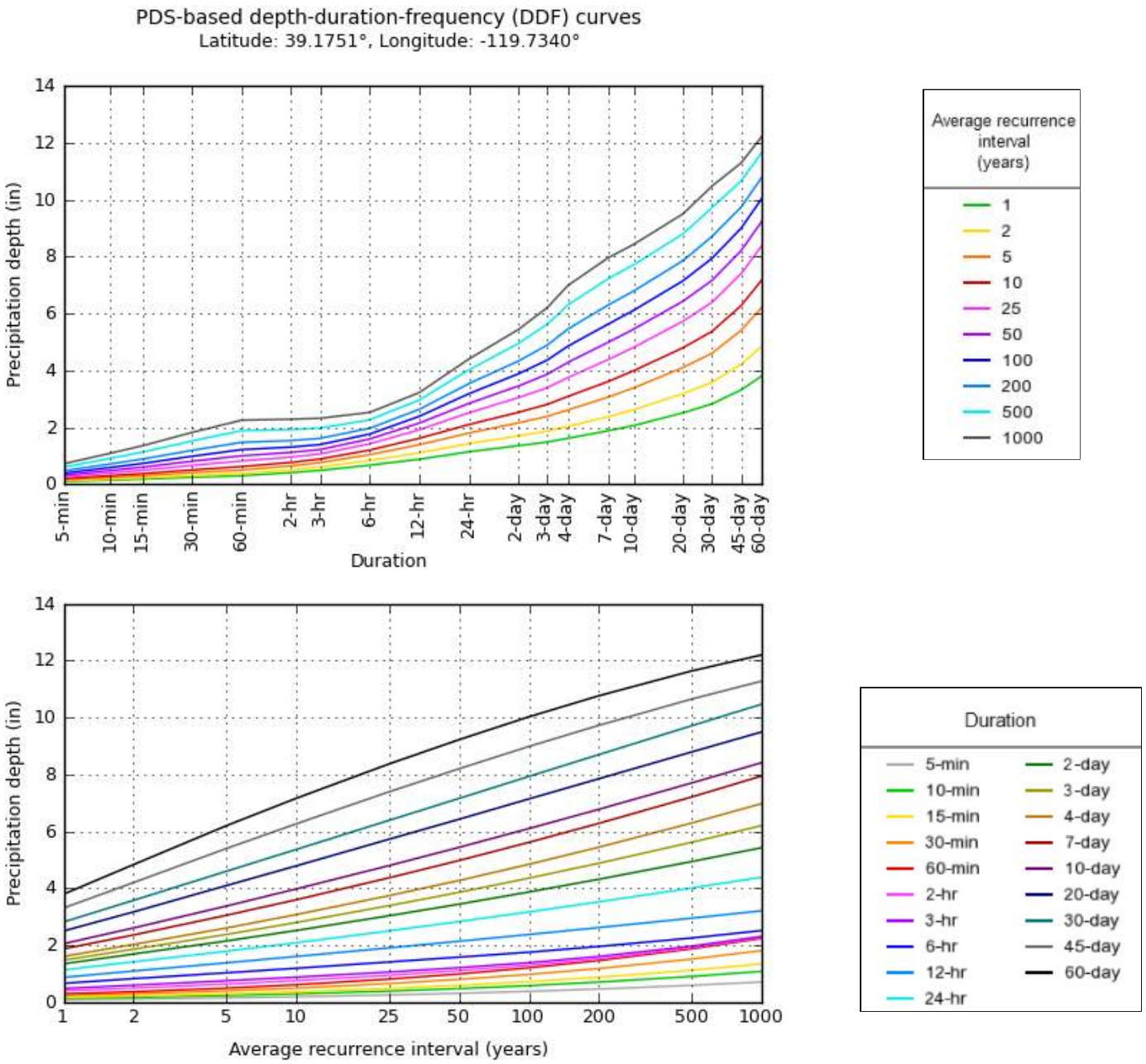
## PF graphical




NOAA Atlas 14, Volume 1, Version 5 Created (GMT): Wed Mar 9 17:40:24 2016

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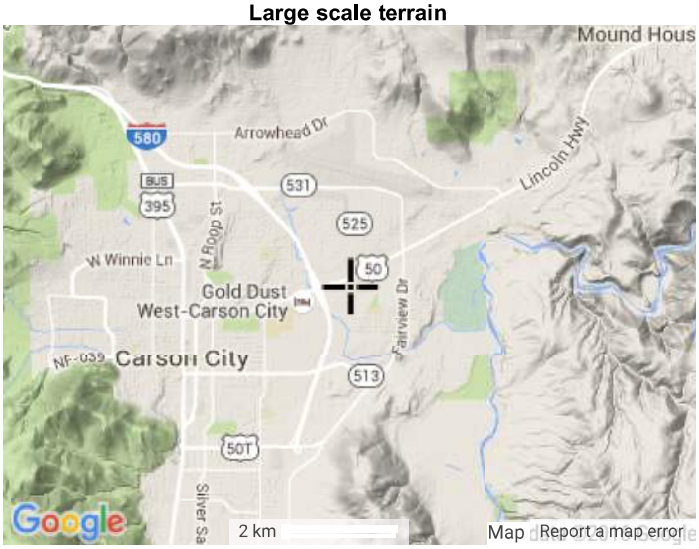
## Maps & aerials

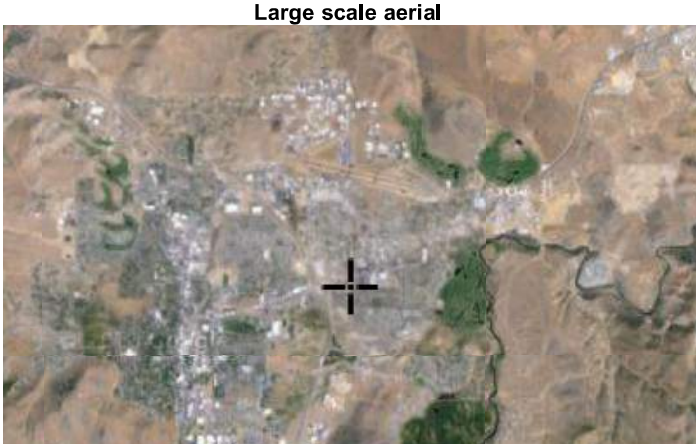
**Small scale terrain**

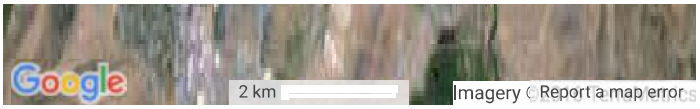

**Large scale terrain**




**Large scale map**


**Large scale aerial**



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National Oceanic and Atmospheric Administration
National Weather Service
National Water Center
1325 East West Highway
Silver Spring, MD 20910
Questions?: HDSC.Questions@noaa.gov

Disclaimer

# Appendix C

## PLANT LEGEND

| SYMBOL | LATIN NAME | COMMON NAME | SIZE |
|---|---|---|---|
| | EXISTING TREES, to remain | Various | >4" cal. or >6' ht. |
| | " " | " " | <4" cal. or <6' ht. |

### LARGE SHADE TREES

| | | | |
|---|---|---|---|
| | Acer rubrum 'Red Sunset' | Red Sunset Maple | 2" cal. |
| | Calocedrus decurrens | Incense Cedar | 6 ft. tall |

### SMALL ACCENT TREES

| | | | |
|---|---|---|---|
| | Prunus virginiana | Choke Cherry | 2" cal |
| | Pyrus calleryana 'Chanticleer' | Chanticleer Pear | 2" cal. |
| | Juniperus scopulorum 'Blue Haven' | Blue Haven Juniper | 6 ft. tall |

### SHRUBS

| SYMBOL | LATIN NAME | COMMON NAME | SIZE |
|---|---|---|---|
| | Rhus trilobata 'low grow' | Low grow sumac | 5 gal. |
| | Miscanthus sinensis 'Gracillimus' | Maiden hair grass | 5 gal. |
| | Cotinus coggygria 'Purpurea' | Purple smoke tree | 5 gal. |
| | Physocarpus opulifolius | Diablo Ninebark | 5 gal. |
| | Mahonia aquifolium 'Compacta' | Dwarf Oregon Grape | 5 gal. |
| | Yucca filamentosa 'Bright Edge' | Variegated Yucca | 5 gal. |
| | Lavendula angustifolia 'Hidcoat Superior' | Hidcoat English Lavender | 5 gal. |

### MULCH LEGEND 8985.000

| | MULCH TYPE | | |
|---|---|---|---|
| | 2,094 S.F. | COBBLE | 3" x 8" ROUNDED COBBLE |
| | 5,977 S.F. | ROCK MULCH | ¾" NEVADA GOLD FRACTURED ROCK |
| | AS SHOWN | BOULDER | MINIMUM SIZE - 2' x 3' |
| | 22,458 S.F. | TURF AREA | MAX. 40% OF REQ'D, OR 25,886 S.F. |
| | 1,545 S.F. | DECOMPOSED GRANITE | 4" THICK, TYPICAL |

LANDSCAPE NOTES:

1. FOR QUANTITIES AND AREA CALCULATIONS, SEE SHEET L-2
2. FOR ADDITIONAL NOTES, SEE L-2

08-163-11
08-163-09
08-163-10
08-163-03
08-163-02
08-163-01
08-312-12
08-312-18
08-321-02
08-321-01
AIRPORT ROAD
EXIST. LANDSCAPING TO REMAIN
TURF (EX) 710 SF
TURF (EX) 4,300 SF
TURF (EX) 13,668 SF
1 (EXISTING)
2 (EXISTING)
3 (EXISTING)
4 (EXISTING)
5 (EXISTING)
6 (EXISTING)
7 (EXISTING)
8 (EXISTING)
9 (EXISTING)
PROPOSED
LAWN 3,580 SF
EXIST. TREES, TO BE REMOVED, TYPICAL
EXIST. TREES TO REMAIN
EXISTING SHRUBS TO REMAIN
>6'HT. TREES=16
>6'HT. EXIST.TREES = 65
>4"
>6'HT.

SCALE: 1" = 30'


LUMOS & ASSOCIATES
800 E. COLLEGE PARKWAY
CARSON CITY, NEVADA 89706
TEL (775) 883-7077
FAX (775) 883-7114
WWW.LUMOSINC.COM


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BELLA LARGO
1600 AIRPORT ROAD - 08-312-04
PRELIMINARY LANDSCAPE PLAN
CARSON CITY NEVADA

REV | DATE | DESCRIPTION | BY

# TENTATIVE MAP

## L1

DATE: 03/16/16
DRAWN BY: MAC
DESIGNED BY: MAC
CHECKED BY: DD
JOB NO.: 8985.000

National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'

250 0 500 1000 FEET

MFT

PROJECT LOCATION

OTHER FLOOD AREAS ZONE X

1% ANNUAL CHANCE FLOOD DISCHARGE CONTAINED IN CULVERT

ZONE AE

CARSON CITY
320001

NFIP

PANEL 0111F

NATIONAL FLOOD INSURANCE PROGRAM

# FIRM
## FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 111 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

| COMMUNITY | NUMBER | PANEL | SUFFIX |
|---|---|---|---|
| CARSON CITY | 320001 | 0111 | F |

Notice to User: The **Map Number** shown below should be used when placing map orders; the **Community Number** shown above should be used on insurance applications for the subject community.

MAP NUMBER
3200010111F

MAP REVISED
FEBRUARY 19, 2014

Federal Emergency Management Agency

This is an official copy of a portion of the above referenced flood map. It was extracted using F-MIT On-Line. This map does not reflect changes or amendments which may have been made subsequent to the date on the title block. For the latest product information about National Flood Insurance Program flood maps check the FEMA Flood Map Store at www.msc.fema.gov

United States Department of Agriculture

NRCS

Natural Resources Conservation Service

A product of the National Cooperative Soil Survey, a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local participants

# Custom Soil Resource Report for Carson City Area, Nevada


March 9, 2016

# Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (http://offices.sc.egov.usda.gov/locator/app?agency=nrcs) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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# Contents

# How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil scientists classified and named the soils in the survey area, they compared the

individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

# Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

# Custom Soil Resource Report
## Soil Map

## MAP LEGEND

**Area of Interest (AOI)**
- Area of Interest (AOI)

**Soils**
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

**Special Point Features**
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

**Water Features**
- Streams and Canals

**Transportation**
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

**Background**
- Aerial Photography

## MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Carson City Area, Nevada
Survey Area Data: Version 9, Aug 28, 2015

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Jun 26, 2013—Jul 28, 2013

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

# Map Unit Legend

| Carson City Area, Nevada (NV629) | | | |
|---|---|---|---|
| **Map Unit Symbol** | **Map Unit Name** | **Acres in AOI** | **Percent of AOI** |
| 71 | Urban land | 9.2 | 100.0% |
| **Totals for Area of Interest** | | **9.2** | **100.0%** |

# Map Unit Descriptions

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named and some minor components that belong to taxonomic classes other than those of the major soils.

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Other minor components, however, have properties and behavioral characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

# Carson City Area, Nevada

## 71—Urban land

### Map Unit Composition

*Urban land:* 100 percent
*Estimates are based on observations, descriptions, and transects of the mapunit.*

### Description of Urban Land

#### Setting

*Landform:* Valleys
*Down-slope shape:* Convex
*Across-slope shape:* Convex

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## PLANT LEGEND

| SYMBOL | LATIN NAME | COMMON NAME | SIZE |
|---|---|---|---|
| | EXISTING TREES, to remain | Various | >4" cal. or >6' ht. |
| | " " | " " | <4" cal. or <6' ht. |

### LARGE SHADE TREES

| | | | |
|---|---|---|---|
| | Acer rubrum 'Red Sunset' | Red Sunset Maple | 2" cal. |
| | Calocedrus decurrens | Incense Cedar | 6 ft. tall |

### SMALL ACCENT TREES

| | | | |
|---|---|---|---|
| | Prunus virginiana | Choke Cherry | 2" cal |
| | Pyrus calleryana 'Chanticleer' | Chanticleer Pear | 2" cal. |
| | Juniperus scopulorum 'Blue Haven' | Blue Haven Juniper | 6 ft. tall |

### SHRUBS

| SYMBOL | LATIN NAME | COMMON NAME | SIZE |
|---|---|---|---|
| | Rhus trilobata 'low grow' | Low grow sumac | 5 gal. |
| | Miscanthus sinensis 'Gracillimus' | Maiden hair grass | 5 gal. |
| | Cotinus coggygria 'Purpurea' | Purple smoke tree | 5 gal. |
| | Physocarpus opulifolius | Diablo Ninebark | 5 gal. |
| | Mahonia aquifolium 'Compacta' | Dwarf Oregon Grape | 5 gal. |
| | Yucca filamentosa 'Bright Edge' | Variegated Yucca | 5 gal. |
| | Lavandula angustifolia 'Hidcoat Superior' | Hidcoat English Lavender | 5 gal. |

### MULCH LEGEND 8985.000

| | MULCH TYPE | | |
|---|---|---|---|
| | 5,796 S.F. | COBBLE | 3" x 8" ROUNDED COBBLE |
| | 21,823 S.F. | ROCK MULCH | ¾" NEVADA GOLD FRACTURED ROCK |
| | AS SHOWN | BOULDER | MINIMUM SIZE - 2' x 3' |
| | 22,458 S.F. | TURF AREA | MAX. 40% OF REQ'D, OR 25,886 S.F. |
| | 1,545 S.F. | DECOMPOSED GRANITE | 4" THICK, TYPICAL |

### LANDSCAPE NOTES:

1. FOR QUANTITIES AND AREA CALCULATIONS, SEE SHEET L-2
2. FOR ADDITIONAL NOTES, SEE L-2

### PARKING NOTES:

1. 272 EXISTING SPACES
2. 120 NEW REGULAR PARKING SPOTS
3. 5 NEW HC VAN ACCESSIBLE SPOTS
4. 397 TOTAL SPACES

SCALE: 1" = 30'


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GEOTECHNICAL ENGINEERING
PLANNING
LANDSCAPE ARCHITECTURE
SURVEYING / GIS
CONSTRUCTION SERVICES
MATERIALS TESTING


BELLA LAGO

# BELLA LAGO APARTMENTS
## 1600 AIRPORT ROAD - 08-312-04
## PRELIMINARY LANDSCAPE PLAN

CARSON CITY NEVADA

REV | DATE | DESCRIPTION | BY

S.U.P.

# L1

DATE: 03/15/16
DRAWN BY: MAC
DESIGNED BY: MAC
CHECKED BY: DD
JOB NO.: 8985.000

## PLANT LEGEND 8985.000

| SYMBOL | LATIN NAME | COMMON NAME | SIZE | QUANTITY |
|---|---|---|---|---|
| | EXISTING TREES, to remain | Various | >4" cal. or >6' ht. | 105 |
| | " " | " " | <4" cal. or <6' ht. | 17 |
| **LARGE SHADE TREES** | | | | |
| | Acer rubrum 'Red Sunset' | Red Sunset Maple | 2" cal. | 13 |
| | Calocedrus decurrens | Incense Cedar | 6 ft. tall | 20 |
| **SMALL ACCENT TREES** | | | | |
| | Prunus virginiana | Choke Cherry | 2" cal | 16 |
| | Pyrus calleryana 'Chanticleer' | Chanticleer Pear | 2" cal. | 18 |
| | Juniperus scopulorum 'Blue Haven' | Blue Haven Juniper | 6 ft. tall | 19 |
| **SHRUBS** | | | | |
| SYMBOL | LATIN NAME | COMMON NAME | SIZE | QUANTITY |
| | Rhus trilobata 'low grow' | Low grow sumac | 5 gal. | 154 |
| | Miscanthus sinensis 'Gracillimus' | Maiden hair grass | 5 gal. | 134 |
| | Cotinus coggygria 'Purpurea' | Purple smoke tree | 5 gal. | 38 |
| | Physocarpus opulifolius | Diablo Ninebark | 5 gal. | 90 |
| | Mahonia aquifolium 'Compacta' | Dwarf Oregon Grape | 5 gal. | 141 |
| | Yucca filamentosa 'Bright Edge' | Variegated Yucca | 5 gal. | 34 |
| | Lavandula angustifolia 'Hidcoat Superior' | Hidcoat English Lavender | 5 gal. | 49 |
| | EXISTING SHRUBS, to remain | Various | -- | 270 |

## LANDSCAPE CALCULATIONS

| PROJECT NAME: BELLA LAGO EXPANSION | | Project # 8985.000 | |
|---|---|---|---|
| CARSON CITY DIVISION 3 | | | |
| LANDSCAPE DEVELOPMENT STANDARD 3 | | | |
| 3.1 EXPANSION COMPLIANCE | | | |
| AREA OF EXIST. BUILDING FOOTPRINT | = | 54,588 | s.f |
| AREA OF NEW BUILDING FOOTPRINT | = | 28,677 | s.f |
| PERCENT OF EXPANSION & COMPLIANCE STANDARD: | = | 34.4% 80% OF REQ'D | |
| 3.4 TREE PRESERVATION & PROTECTION | | | |
| EXIST. TREES >4" CAL. / >6'HT. EVERGREEN TO REMAIN | = | 105 | |
| EXIST. TREES CREDIT (x2) = 210, UP TO 25% MAX. OF REQUIRED, THEREFORE | = | 47 | |
| 3.5 LANDSCAPE STANDARD | | | |
| 3.5.2 REQUIRED LANDSCAPING: 20% OF IMPERVIOUS SURFACE MINUS BUILDING | | | |
| AREA OF IMPERVIOUS SURFACE, MINUS BUILDING FOOTPRINT (EXIST. & NEW) | = | 323,585 | s.f |
| LANDSCAPE AREA REQUIRED, (IMPERVIOUS SURFACE–BUILDING AREA x .20<br>LANDSCAPE AREA @ 80% REQUIRED | =<br>= | 64,717<br>51,774 | s.f<br>s.f |
| LANDSCAPE AREA PROVIDED (EXISTING & NEW) | = | 84,371 | s.f |
| 3.7 TREES REQUIRED | | | |
| 3.7.1 TREES REQUIRED FOR STREET FRONTAGE: (1 Tree/30 L.F.) | | | |
| REQUIRED: L.F. FRONTAGE=746 LF /30 LF | = | 25 | |
| TREES REQUIRED (1/400 SF OF REQUIRED LANDSCAPE) | = | 162 | |
| TREES REQUIRED 1/10 SPACES (INCLUDED IN REQUIRED TREE COUNT) | = | 400 STALLS | ~40 |
| TOTAL TREES REQUIRED | = | 187 | |
| TREES @ 80% REQUIRED | = | 150 | |
| TOTAL TREES SHOWN (INCL. EXISTING <4"CAL. & CREDITS) | = | 150 | |
| 3.8 GROUNDCOVER (INCL. SHRUBS) | | | |
| SHRUBS REQUIRED (6 PER @ 80% REQUIRED TREE) | = | 900 | |
| SHRUBS SHOWN AT 5 GAL (INCL. 270 EXISTING) | = | 900 | |

## OWNER MAINTENANCE AGREEMENT:

ALL LANDSCAPE AREAS MUST BE MAINTAINED BY THE PROPERTY OWNERS, INCLUDING USING THE MOST CURRENT PRUNING STANDARDS ACCEPTED BY THE ANSI INTERNATIONAL SOCIETY OF ARBORICULTURE AND/OR THE NATIONAL ARBORIST ASSOCIATION. ANY DAMAGED OR DEAD PLANT(S) MUST BE REPLACED OR REPAIRED BY THE PROPERTY OWNERS WITHIN 30 DAYS FOLLOWING NOTIFICATION BY THE DIRECTOR. IF THE SEASON OF THE YEAR MAKES THIS REPAIR OR REPLACEMENT WITHIN A 30 DAY PERIOD IMPRACTICAL, THE PERSON RESPONSIBLE FOR LANDSCAPING SHALL SCHEDULE AN APPROPRIATE TIME FOR THE COMPLETION OF THE ACCOMPLISHMENT OF THIS WORK AS REQUIRED AND APPROVED BY THE DIRECTOR. PROPERTY OWNER SHALL PROVIDE A FINANCIAL SECURITY IN A FORM ACCEPTABLE TO THE CITY, IN THE AMOUNT OF 150 PERCENT OF THE ESTIMATED COST OF INSTALLATION OF REMAINING LANDSCAPE IMPROVEMENTS, WHICH SHALL BE FILED WITH THE CITY GUARANTEEING INSTALLATION. THE ESTIMATED COST OF THE LANDSCAPING IMPROVEMENTS NOT YET COMPLETED MUST BE VERIFIED BY THE CITY.

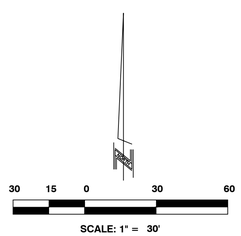
SIGNATURE OF OWNER

DATE

PRINT NAME

## LANDSCAPE NOTES:

1. BOTH THE 3"x8" ROUND RIVER COBBLE AND 2"x6" OX ROCK TO BE CLEANED AND WASHED PRIOR TO DELIVERY TO THE SITE. DIRTY ROCK WILL BE REJECTED AND REMOVED FROM THE SITE AT THE CONTRACTOR'S EXPENSE.
2. ROCK MULCH TYPES TO BE SUBMITTED FOR APPROVAL BY OWNER OR OWNER'S REPRESENTATIVE.
3. FOR SOIL PREPARATION IN BOTH PLANTER BEDS AND LAWN AREAS THE CONTRACTOR SHALL CONDUCT A COMPLETE HORTICULTURAL SOILS TEST WITH A MINIMUM 3 SAMPLES FROM DIFFERENT LOCATIONS ON THE SITE. THE TEST AT A MINIMUM SHALL INCLUDE SOIL TYPE, BORON, EC, SAR, ANY HAZARDS, pH, AND ORGANIC CONTENT. CONTRACTOR TO FOLLOW THE RECOMMENDATIONS OF THE SOIL REPORT FOR INCORPORATION FOR NUMBER OF CUBIC YARDS OF ORGANIC MATERIAL, NITROGEN, PHOSPHATE, POTASH, AND TRACE ELEMENTS. HUMUS TYPE SHALL BE APPROVED BY OWNER OR OWNER'S REPRESENTATIVE.
4. CONTRACTOR SHALL AVOID PLANTING SHRUBS 8 FT FROM EVERGREEN TREES SHOWN.

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BELLA LAGO

# BELLA LAGO APARTMENTS
1600 AIRPORT ROAD - 08-312-04
PRELIMINARY LANDSCAPE PLAN

| REV | DATE | DESCRIPTION | BY |
|---|---|---|---|

S.U.P.

L2

DATE: 03/15/
DRAWN BY: M
DESIGNED BY: M
CHECKED BY:
JOB NO.: 8985.0

LUMOS & ASSOCIATES

March 15, 2016

Mr. Lee Plemel, Director
Carson City Community Development
108 E. Proctor Street
Carson City, NV 89703

**RE: Bella Lago Apartment Complex – Utility Impact Letter**

Dear Lee:

Pursuant to the Carson City SUP requirement, Lumos and Associates has prepared the following water and sewer impact report to support the Special Use Permit submittal. The proposed Bella Lago Apartments addition consists of 64 apartment housing units (56 two bedroom and eight three bedroom). There will also be landscape irrigation included with the project.

**WATER**

The development will be served by public water. Existing public water mains are located on Airport Road. The proposed project will lateral off of the water main loop inside the project area that is also used for fire protection purposes. Conversations with Carson City Public Works personnel have indicated that as long as the fire flow requirements for the site are reasonable there will be no negative impacts to the water system as a result of this project. The proposed structures are similar in size to the existing and no increase in fire flow is anticipated.

Domestic water service will be provided to the apartment structure with water delivered to each individual apartment internal to the building. Water service to the new buildings will be an extension of the current private water system on the property. The maintenance of the private service laterals will be that of the property owner. A separate irrigation service is planned for the apartment facility.

Water usage calculations have been performed based on the Carson City code definition of Water Equivalent Residential Customer (WERC) from section 12.01.010 of Title 12 of the Carson City Municipal Code. A single WERC is equivalent to 550 gallons per day. Per Carson City municipal code each apartment unit is equivalent to 0.5 WERC (275 gallons per day). Based upon the usage of 275 gallons per day per unit the total estimated water usage for the development of 64 apartment units equates to 17,600 gallons per day (12.2 gpm averaged over 24 hours). The inclusion of an additional 12.22 gpm of infill demand upon the system is not anticipated to cause a noticeable impact compared to the overall demands on the system, even in peak periods.

In summary, we feel that the Bella Lago Apartment project has no appreciable impact on the performance of the water system.

## FIRE FLOW ANALYSIS

Coordination with the Carson City Fire Department will need to be conducted in order to determine the fire flow required for the improvements. It is likely that the new construction will need to be sprinkled and will reduce the fire flow requirement. Field measurements will need to be conducted for the fire hydrants on the property to ensure that there is adequate available flow. A field test was performed on a hydrant in the same pressure zone on Lompa Lane in July of 2014. At that time the hydrant had an available flow of 2,400 gpm at 20 psi residual. If this is indicative of the flow at the project site, the flow could satisfy a requirement of 4,800 gpm with a 50% reduction due to the sprinkler system.

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## SANITARY SEWER CAPACITY

The proposed Bella Lago apartments will connect to the City's sewer system for collection and treatment. The apartment is proposing a gravity system that will include expanded use of the existing connections to the existing gravity main in Airport Road.

The existing sewer main in Airport Road is a 15-inch reinforced concrete pipe main. Sewer flows north to south on Airport Road with the 15-inch collection main connecting to an existing 18-inch sewer main further south on Airport Road.

Based on data obtained from the Carson City Sewer Master Plan, loading for a single-family residential unit is 216 gallons per day (gpd). The loading of 216 gpd is within the reasonable factor recommended by the 10 States Standards (which recommends 100 gpd per person) when considering a 2.16 residents per household. The daily sewer loading for the 64 proposed units is 13,824 gallons per day. Factored over 24 hours this averages out to 9.6 gpm. Utilizing a peaking factor of 4.2 per 10 State Standards the estimated peak outflow from the development is calculated to be 40.32 gpm.

Field investigations were done to estimate the existing flows within the Airport Road sewer mains which will ultimately service the Bella Lago Apartments.

- The existing 15-inch main on Airport Road that will service the proposed apartments has an existing slope of 0.36% with a corresponding maximum flow capacity of 2,055.63 gpm.
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- Even with the increased flow of the proposed apartments added to the main there is still nearly 1,322.59 gpm of capacity remaining in the existing pipe.

In summary, we feel that the proposed Bella Lago Apartments project has a nominal impact on the existing flow capacity for the sewer mains within the direct area of the proposed development.

If you have any questions, do not hesitate to give me a call at 883-7077.

Sincerely,

Rebecca Bernier, P.E.
Senior Engineer

LUMOS & ASSOCIATES

March 15, 2016

Mr. Lee Plemel, Director
Carson City Community Development
108 E. Proctor Street
Carson City, NV 89703

**RE: Bella Lago Apartment Complex – Utility Impact Letter**

Dear Lee:

Pursuant to the Carson City SUP requirement, Lumos and Associates has prepared the following water and sewer impact report to support the Special Use Permit submittal. The proposed Bella Lago Apartments addition consists of 64 apartment housing units (56 two bedroom and eight three bedroom). There will also be landscape irrigation included with the project.

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