STAFF REPORT

Report To: Board of Supervisors **Meeting Date:** December 20, 2018

Staff Contact: Heather Ferris, Associate Planner

Agenda Title: For Possible Action: To introduce, on first reading, Bill No. _____, an ordinance approving a change of zoning for a 119.1 acre site from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres, for property located southeast of US Highway 50 and north east of Deer Run Road, within the V&T Specific Plan Area, APN's 008-521-54, -55, 89, 90, 008-522-16, -17, -18, 008-531-59, and -60. (Heather Ferris, hferris@carson.org)

Staff Summary: The subject properties have a zoning designation of General Industrial and a Master Plan land use designation of Mixed-Use Residential. On March 15, 2018 the Board of Supervisors approved a Master Plan Amendment changing the Master Plan designation of the subject site from Industrial to Mixed Use Residential. The requested zoning map amendment will make the zoning consistent with the Master Plan designation of Mixed-Use Residential and is sought in conjunction with a Tentative Subdivision Map (TSM-18-154).

Agenda Action: Ordinance - First Reading **Time Requested:** 30 minutes

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Proposed Motion
I move to introduce, on first reading, Bill No. __.

Board's Strategic Goal
Quality of Life

Previous Action
At its meeting of November 28, 2018, the Planning Commission conducted a public hearing on the subject request, and voted to recommend that the Board of Supervisors amend the Zoning Map as requested. The vote of the Planning Commission was 5-0, 2 absent.

Background/Issues & Analysis
The Board of Supervisors is authorized to amend the Zoning Map. The Planning Commission makes a recommendation to the Board.

Of note, during the Planning Commission public hearing five members of the public spoke. Four were employees of neighboring businesses primarily concerned with the compatibility of the residential development in close proximity to the existing industrial businesses to the north and west of the project site. The other speaker was a resident living near the project site who stated concerns regarding proximity of new residences near existing industrial uses as well as proximity to the City's existing rifle and pistol range, and increased traffic on Morgan Mill Road.

Additional information is contained in the attached staff report to the Planning Commission.

Applicable Statute, Code, Policy, Rule or Regulation

CCMC 18.02.075 (Zoning Map Amendments and Zoning Code Amendments); NRS Chaper 244; Article 2 of the Carson City Charter.

Financial Information

Is there a fiscal impact? ☐ Yes ☒ No

If yes, account name/number:

Is it currently budgeted? ☐ Yes ☒ No

Explanation of Fiscal Impact:

Alternatives

Deny the request based on an inability to make the required findings, noting what finding can not be made.

Board Action Taken:

Motion: _____ 1) _____ Aye/Nay

2) _____ _____

_____

_____

_____

_____

(Vote Recorded By)

SUMMARY – An ordinance amending the Carson City zoning map.

BILL NO. _____
ORDINANCE NO. 2018-__

AN ORDINANCE TO CHANGE THE ZONING FROM GENERAL INDUSTRIAL TO SINGLE FAMILY 6,000, MULTI-FAMILY APARTMENT, GENERAL COMMERCIAL, AND PUBLIC REGIONAL ON PROPERTIES LOCATED SOUTHEAST OF US HIGHWAY 50 AND NORTHEAST OF DEER RUN ROAD, APNS 008-521-54; -55; -89; -90; 008-522-16; -17; -18; 008-531-59; AND -60.

The Board of Supervisors of Carson City do ordain:

SECTION I:

An application for a Zoning Map Amendment on Assessor's Parcel Number 008-521-54, -55, -89, -90, 008-522-16, -17, -18, 008-531-59, and -60, property located at southeast of US Highway 50 and northeast of Deer Run Road, Carson City, Nevada, was duly submitted by the Carson City Planning Division in accordance with Section 18.02.075, et seq. of the Carson City Municipal Code (CCMC). The request will result in the zoning designation of the subject parcels APNS 008-521-54, -55, -89, -90, 008-522-16, -17, -18, 008-531-59, and -60 changing from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres. After proper noticing pursuant to NRS 278 and CCMC Title 18, on November 28, 2018, the Planning Commission, during a public hearing, reviewed the Planning Division staff report, took public comment and voted 5 ayes, 0 nays, 2 absent, to recommend to the Board of Supervisors approval of the Zoning Map Amendment.

SECTION II:

Based on the findings that the Zoning Map Amendment would be in substantial compliance with the goals, policies and action programs of the Master Plan, that the Amendment will provide for land uses compatible with existing adjacent land uses and will not have detrimental impacts to other properties in the vicinity; that the Amendment will not negatively impact existing or planned public services or facilities and will not adversely impact the public health, safety and welfare; and that the request satisfied all other requirements for findings of fact enumerated in CCMC Section 18.02.075(5), the zoning map of Carson City is amended changing the zoning of Assessor's Parcel Number 008-521-54, -55, -89, -90, 008-522-16, -17, -18, 008-531-59, and -60 from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General

Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres, as depicted on Attachment A.

PROPOSED this ___ day of _____, 2018.

PROPOSED BY Supervisor _____

PASSED on the _____ day of _____, 2018.

VOTE: AYES: _____

_____

_____

_____

_____

NAYS: _____

_____

ABSENT: _____

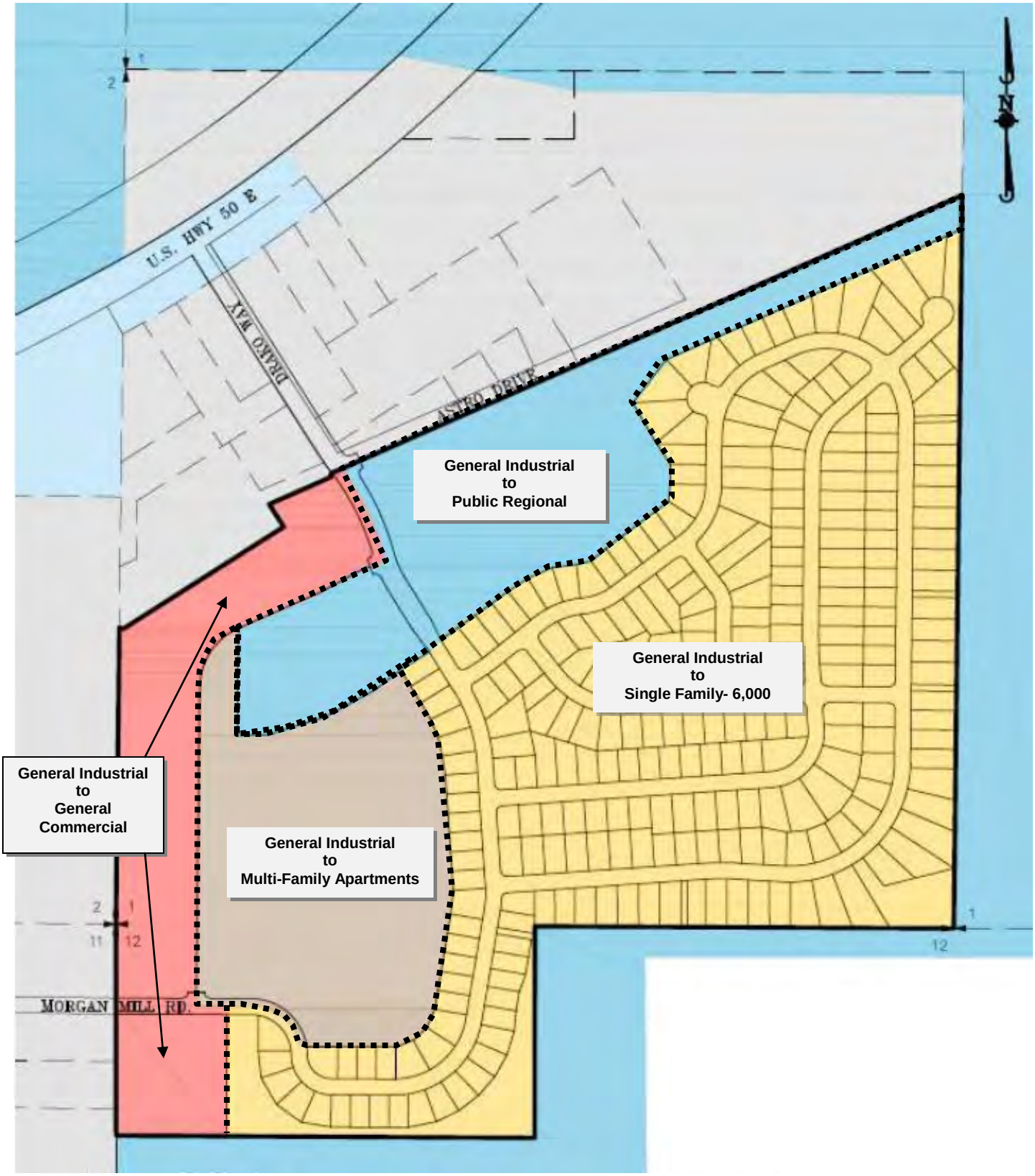
_____
ROBERT L. CROWELL, Mayor

ATTEST:

_____
SUSAN MERRIWETHER, Clerk-Recorder

This ordinance shall be in force and effect from and after the ____ of _____, 2018.

Attachment A



STAFF REPORT FOR THE PLANNING COMMISSION MEETING OF NOVEMBER 28, 2018

FILE NO: ZMA-18-155 & TSM-18-154 **AGENDA ITEM: E.5 & E.6**

STAFF CONTACT: Heather Ferris, Associate Planner

AGENDA TITLE: For Possible Action: To make a recommendation to the Board of Supervisors regarding a Zoning Map Amendment for a 119.1 acre site from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres, for property located southeast of US Highway 50 and north east of Deer Run Road, within the V&T Specific Plan Area, APN's 008-521-54, -55, 89, 90, 008-522-16, -17, -18, 008-531-59, and -60. (Heather Ferris, hferris@carson.org)

For Possible Action: To make a recommendation to the Board of Supervisors regarding a Tentative Subdivision Map application to create 270 single family residential lots, 9 common area parcels, 3 remainder parcels, and approximately 13.36 acres of right-of-way within a 119.1 acre project area; located southeast of US Highway 50 and north east of Deer Run Road, within the V&T Specific Plan Area, APN's 008-521-54, -55, 89, 90, 008-522-16, -17, -18, 008-531-59, and -60. (Heather Ferris, hferris@carson.org)

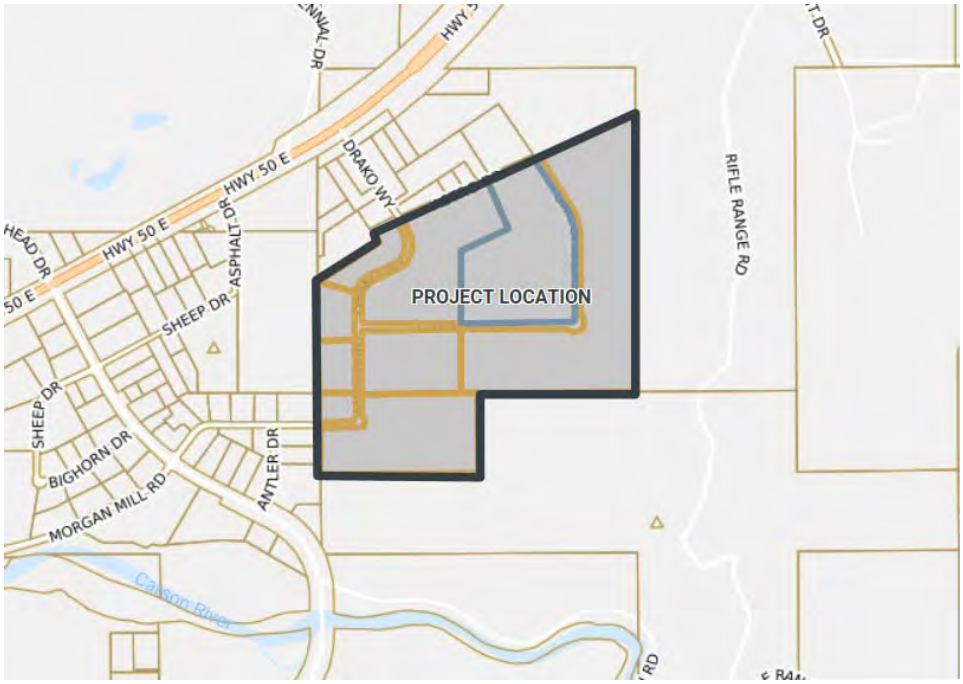
STAFF SUMMARY: On March 15, 2018 the Board of Supervisors approved a Master Plan Amendment changing the Master Plan designation of the subject site from Industrial to Mixed-Use Residential. The requested zoning map amendment will make the zoning consistent with the Master Plan designation of Mixed-Use Residential and is sought in conjunction with a Tentative Subdivision Map.

RECOMMENDED MOTIONS:

"I move to recommend to the Board of Supervisors approval of ZMA-18-155, a Zoning Map Amendment for a 119.1 acre site from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres, for property located southeast of US Highway 50 and northeast of Deer Run Road within the V&T Specific Plan Area, based on the ability to make the required findings as stated in the staff report."

"I move to recommend to the Board of Supervisors approval of TSM-18-154, a Tentative Subdivision Map known as the Plateau Development, consisting of 270 single family residential lots, 9 common area parcels, 3 remainder parcels, and approximately 13.36 acres of right-of-way within a 119.1 acre project area; located southeast of US Highway 50 and northeast of Deer Run Road, within the V&T Specific Plan Area, subject to the conditions of approval and based on the findings as stated in the staff report."

VICINITY MAP:



RECOMMENDED CONDITIONS OF APPROVAL (TSM-18-154)
The following are general conditions of approval:

1. This Tentative Subdivision Map is approved only if the the zoning map amendment (ZMA-18-155) is approved by the Board of Supervisors.

The following are conditions of approval required per CCMC 18.02.105.5:

2. All final maps shall be in substantial accord with the approved tentative map.

3. Prior to submittal of any final map, the Development Engineering Department shall approve all on-site and off-site improvements. The applicant shall provide construction plans to the Development Engineering Department for all required on-site and off-site improvements, prior to any submittals for approval of a final map. The plan must adhere to the recommendations contained in the project soils and geotechnical report.

4. Lots not planned for immediate development shall be left undisturbed and mass grading and clearing of natural vegetation shall not be allowed. Any and all grading shall comply with City standards. A grading permit from the Nevada Division of Environmental Protection shall be obtained prior to any grading. Noncompliance with this provision shall cause a cease and desist order to halt all grading work.

5. All lot areas and lot widths shall meet the zoning requirements approved as part of this tentative map with the submittal of any final map.

6. With the submittal of any final maps, the applicant shall provide evidence to the Planning and Community Development Department from the Health and Fire Departments indicating the agencies' concerns or requirements have been satisfied. Said correspondence shall be included in the submittal package for any final maps and shall include approval by the Fire Department of all hydrant locations.

7. The following note shall be placed on all final maps stating:

   "These parcels are subject to Carson City's Growth Management Ordinance and all property owners shall comply with provisions of said ordinance."

8. Placement of all utilities, including AT&T Cablevision, shall be underground within the subdivision. Any existing overhead facilities shall be relocated prior to the submittal of a final map.

9. The applicant must sign and return the Notice of Decision for conditions for approval within ten (10) days of receipt of notification after the Board of Supervisors meeting. 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.

10. Hours of construction will be limited to 7:00 a.m. to 7:00 p.m., Monday through Friday, and 7:00 a.m. to 5:00 p.m. on Saturday and Sunday. If the hours of construction are not adhered to, the Carson City Building Department will issue a warning for the first violation, and upon a second violation, will have the ability to cause work at the site to cease immediately.

11. The applicant shall adhere to all City standards and requirements for water and sewer systems, grading and drainage, and street improvements.

12. The applicant shall obtain a dust control permit from the Nevada Division of Environmental Protection. The site grading must incorporate proper dust control and erosion control measures.

13. A detailed storm drainage analysis, water system analysis, and sewer system analysis shall be submitted to the Development Engineering Department prior to approval of a final map.

14. Prior to the recordation of the final map for any phase of the project, the improvements associated with the project must either be constructed and approved by Carson City, or the specific performance of said work secured, by providing the City with a proper surety in the amount of one hundred fifty percent (150%) of the engineer's estimate. In either case, upon acceptance of the improvements by the City, the developer shall provide the City with a proper surety in the amount of ten percent (10%) of the engineer's estimate to secure the developer's obligation to repair defects in workmanship and materials which appear in the work within one (1) year of acceptance by the City. Improvements associated with the Conditional Letter of Map Revision must be constructed and may not be secured for in lieu of construction.

15. A "will serve" letter from the water and wastewater utilities shall be provided to the Nevada Health Division prior to approval of a final map.

16. The District Attorney shall approve any CC&R's prior to recordation of the first final map.

Specific Conditions to be included in the Design of the Improvement Plans, to be met prior to approval of construction permit:

17. All site improvements must be designed to meet the requirements of the Carson City Development Standards and Standard Details, including but not limited to the following:

a. Proposed street sections that meet the minimum width for a section that limits parking on one or both sides, per Carson City Standard Details, must be signed with “No Parking” signs.

b. The proposed sidewalk width must be increased to the City Standard 5 foot wide sidewalk.

c. Utility main locations must be updated to meet the standard detail for typical locations.

d. The site improvement design engineer must coordinate the storm drain, wastewater, and water main analyses with Public Works in order to account for potential development to the northeast. These analyses must address main, pumping, and storage requirements for the development to meet required capacities and pressure, and must address the ability to increase capacity for future developments. The water main analysis must also address the effects of pressure reducing valve assemblies that may be required to maintain separate pressure zones in the water system. It is anticipated that system improvements including additional booster capacity will be required at the developer’s expense.

e. With the site improvement plans, the traffic impact study must be revised to include the following:

    (i) Volume/counts must be taken when school is in session, the report notes an August month, please provide date of when the counts were collected.

    (ii) NDOT counts for U.S. 50 and Deer Run Road must be used in place of Traffic Work’s counts.

    (iii) The growth factor must match CAMPO’s 1% annual growth.

    (iv) The design LOS for the new signal at Drake Way (if approved by NDOT) must be designed to a LOS C or better.

    (v) Intersection Level of Service tables must be revised to provide:

        a. All approaches and overall for US 50/Deer Run Road intersection.

        b. All existing approaches and overall for US 50/Drako Way intersection.

        c. The overall for Deer Run Road/Morgan Mill Road intersection

f. The sewer impact report references the old d/D standard of 0.75. The new standard of 0.5 must be utilized for small mains in the sewer main analysis for the improvement plans.

g. The developer must update the City’s water model per CCDS 15.3.1. The City will provide boundary conditions and system curves based on fire flows, and will provide version information. The developer must supply a model to be incorporated into the City’s model.

h. Water mains with 15 or more services must be looped.

i. Per CCMC 12.09.070 & 12.09.080 (4), the developer must provide base flood elevation data. In the event that this data reveals X-shaded or A flood hazard zones that will be altered by the subdivision improvements,

the subdivision must receive a CLOMR determination from FEMA and provide funds to process the LOMR per 12.09.070(d).

18. The developer must incorporate "*Best Management Practices*" into construction documents and specifications to reduce the spread of noxious weeds.

19. The developer shall enter into an agreement with the City to address the following:
    a. Upsizing the sewer main in Airport Road from US 50 to Douglas Drive, which is at capacity; and
    b. Construction of an appropriate roadway treatment to maintain the pavement performance of Airport Road between US 50 and Woodside Drive where the sewer main must be upgraded.

20. The developer must analyze the Morgan Mill Lift Station and upgrade the lift station to meet flow and emergency storage capacity requirements if so determined by the analysis. Metering of incoming flows may be required to confirm current conditions. In the event that additional capacity is not provided for future development, the lift station and controls improvements must be designed to be able to easily be updated.

21. The water main and storm drain must be stubbed to the north as shown. The sewer main must also be stubbed to the north.

22. The storm drain infrastructure must extend to the Carson River. This may be an open channel; however this must be designed to prevent erosion and maintenance access must be provided.

23. Natural drainages that enter the subdivision must be tied into the underground storm drain system at the subdivision, as shown, and access must be provided for maintenance.

24. The detention basin location must be analyzed by a geotechnical engineer.

25. The developer must obtain NDOT and Carson City approval of the HWY 50 intersection improvements prior to issuing a site improvement permit. The approved intersection must bring intersection LOS into compliance with Code.

26. The site improvements must meet the requests made in the NDEP Limited Phase II Environmental Site Assessment Report and Remedial Action Plan memo dated November 30, 2017. If a revised RAP is submitted to NDEP and used for the development, the site improvements must meet any applicable requests by NDEP for that RAP. Additionally, the developer must hire a certified environmental manager to supervise the remediation required by the RAP including excavation in landfill areas and disposal.

27. The water main alignment may not be altered to loop the water main to Hwy 50 unless approved by the City Engineer. If the water main is looped to the main in Hwy 50, where the water main passes through the old landfill, the soil must be excavated and replaced with imported soil within a distance equal to the minimum separation required between a water main and a sewer main, both horizontally and vertically.

28. Local streets must have a minimum asphalt thickness of 4 inches or per the geotechnical engineer's recommendations, whichever is greater.

29. Hydrants must be provided per Appendix B and Appendix C of the IFC (adopted edition) and shown on plans.

30. The developer must provide pedestrian access points to the adjacent City property and show the access points on the site improvement plans for review and approval by the Parks, Recreation and Open Space Department.

31. The developer must incorporate bike lanes into the development's street system network that connects to US Highway 50 (East) and Deer Run Road.

32. All site clearing/grubbing, grading, and construction activities, including construction worker parking, must occur on the project site, unless permissible to private property owners. No construction activities shall occur on City property. The applicant shall provide protective fencing along the property line to delineate public lands from private property during construction.

33. The developer must use a pollinator friendly dryland seed mix for any permanent erosion control and re-vegetation within any open space/ common areas within the development.

34. If it is determined that the development's water system is required to connect to existing water tanks on the City's land (east of the development), the applicant must coordinate the water line alignment with the Parks, Recreation, and Open Space Department and Development Engineering. The applicant must re-vegetate the disturbed area (except the water line's service road) to its previous condition. The dryland seed mix and treatment application specifications including temporary irrigation, weed control, and protective fencing shall be reviewed and approved by the Parks Recreation and Open Space Department.

Conditions to be Addressed with the Final Map

35. Prior to the recordation of the first Final Map, the applicant shall provide the Community Development Department with a disclosure statement or similar instrument for review and approval. The document shall be recorded and provide for disclosures of the following:
    a. The development's proximity to existing industrial properties and the inconvenience or discomfort that may arise from living in close proximity to such operations;
    b. The pre-existence of the City's Landfill, Rifle and Pistol Range, and adjacent Disc Golf Course Complex.

36. The developer must provide a public access easement for all pedestrian access corridors, off-street recreational trails and both fire access roads within the proposed development. The easement will be recorded on the final map or through a covenant, deed restriction, or similar legal instrument to ensure public access to City lands in perpetuity.

37. A Homeowners Association/Maintenance Association or similar entity must be established for the following:
    a. Ownership and maintenance, in perpetuity, of all open space, common areas, landscaping, and off-street trails within the development; and
    b. Maintenance of all on-site drainage basins and any Low Impact Design, in perpetuity.

38. The developer shall dedicated two unobstructed fire protection access easements not less than twenty (20) feet wide from the public street to the subdivision or development boundary as determined by the Fire Chief. One access shall be located at the end of the cul-de-sac between lots 58 and 59, and the other shall be located between lots 34 and 35. The emergency access must be designed and constructed to comply with the requirements of Division 12, Emergency Access Streets. Gates must be marked with "No Parking-Fire Lane" signage per Carson City Fire Code.

39. The developer shall provide a vegetation management plan for review and approval by the Fire Department.

40. Defensible space requirements and an easement stating the purpose and development limitations shall be delineated on the Final Map to ensure that all on-site development incorporates the required defensible space on site.

41. At the time of Final Map submittal, the applicant must demonstrate that the project complies with all identified conditions, as well as with the terms of any associated Development Agreement.

42. The final mylar will be presented to the State Engineer for approval and signature.

LEGAL REQUIREMENTS: CCMC 18.02.050 (Review); 18.02.075 (Zoning Map Amendments); CCMC 17.05 (Tentative Maps); CCMC 17.07 (Findings); NRS 278.330

MASTER PLAN DESIGNATION: Eastern Portal—Virginia & Truckee Railroad Gateway Specific Plan Area; Mixed-Use Residential

ZONING DISTRICT: General Industrial (GI).

PROPOSED ZONING DISTRICT: Single Family 6,000 (SF-6), Multi-Family Apartments (MFA), General Commercial (GC), and Public Regional (PR)

KEY ISSUES: Is the Zoning Map Amendment and Tentative Map consistent with the Specific Plan? Does the proposal meet the Tentative Map requirements and other applicable requirements?

SURROUNDING MASTER PLAN
NORTH: Mixed-Use Commercial
SOUTH: Public/Quasi-Public
WEST: Public/Quasi-Public and Industrial
EAST: Open Space

SURROUNDING ZONING AND LAND USE INFORMATION
NORTH: General Industrial / Mix of commercial and industrial Uses
SOUTH: Public Regional/ Open Space
WEST: General Industrial/ Mix of commercial and industrial uses/public facilities
EAST: Public Regional/ Open Space

ENVIRONMENTAL INFORMATION:
FLOOD ZONE: Zone X (Areas of Minimal Flooding)
SLOPE/DRAINAGE: Hillside
SEISMIC ZONE: Zone II (Moderate)
Fault: Beyond 500 feet

SITE DEVELOPMENT INFORMATION:

SUBJECT SITE AREA:	119.1 Acres
EXISTING LAND USE:	Vacant
TOTAL RESIDENTIAL LOTS:	270 single family lots
PROPOSED LOT SIZES:	Minimum Lot Size 6000 square feet
PROPOSED SETBACKS:	Setback requirements for the SF6, MFA, and GC zoning district will apply.
PARKING REQUIRED:	Two spaces per dwelling unit
PROJECT PHASING:	The proposed Tentative Map includes 5 phases. **Phase 1** will include 57 SF6 residential lots, necessary local streets, on- and off-site infrastructure improvements, remediation of the Old Carson City Landfill, and recreation improvements. **Phase 2** will include 51 SF6 residential lots, local streets as necessary and associated infrastructure improvements. **Phase 3** will include 53 SF6 residential lots, local streets as necessary and associated infrastructure improvements. **Phase 4** will include 53 SF6 residential lots, local streets as necessary and associated infrastructure improvements. **Phase 5** will include 56 SF6 residential lots, local streets as necessary and associated infrastructure improvements.

SITE HISTORY:

- D-02/03-2; D-02/03-3; D-02/03-4: Drainage Easements
- AB-02/03-1: (October 17, 2002) Approval to abandon a portion of a public right-of-way along Morgan Mill Road and Drako Way.
- MPA-18-007: (March 15, 2018) Adoption of a Master Plan Map Amendment changing the land use designation to Mixed-Use Residential.
- CSM-18-035: (March 20, 2018) Review of a conceptual map for 339 single family lots on 81 acres, an 11 acre multi-family development, 3 acres of General Commercial, and 17 acres of open space

BACKGROUND:

The subject property is located within the Eastern Portal—Virginia & Truckee Railroad Gateway Specific Plan Area (V&T SPA). The purpose of the V&T SPA is:

- *To provide for cohesive development within the area.*
- *To create a "gateway" into Carson City.*
- *To protect economic development opportunities along the highway corridor, particularly in conjunction with the development of the V&T Railroad.*
- *To protect visual resources associated with the V&T Railroad route and terminal location.*
- *To encourage public/private partnerships to facilitate economic development and public purposes.*
- *To encourage public/private cooperation in creating public access, trails and recreational opportunities.*

In March of 2018 the Board of Supervisors approved a Master Plan Amendment for the subject property from Industrial to Mixed-Use Residential, consistent with Policy 1.5 of the V&T SPA. Policy 1.5 calls for the land use designation of the subject property to be changed to either Mixed Use Commercial or Mixed Use Residential, once the old landfill identified on-site has been removed or Nevada Department of Environmental Protection (NDEP) has approved engineering controls that will need to be in place upon development of the property. The

applicant has been working with NDEP on a Remedial Action Plan for the site and received approval with additional requirements, prior to the approval of the Master Plan Amendment.

DISCUSSION:
The applicant is requesting both a zoning map amendment as well as approval of a Tentative Subdivision Map.

Zoning Map Amendment: The property is currently zoned General Industrial. As discussed above, in March 2018 the Board of Supervisors approved a Master Plan Amendment from Industrial to Mixed-Use Residential, consistent with the V&T SPA. Master Plan Policy MUR 1.5 of the Master Plan outlines the required mix of uses for a Mixed-Use Residential project. Mixed-Use Residential neighborhoods are intended to be comprised of predominately residential uses. Complementary uses, such as retail, office, and live-work units, should represent between 10 and 30 percent of the total land area.

The total project area is 119.1 acres. The zoning map amendment proposes a mix of zoning districts consistent with the requirements of the Mixed-Use Residential land use designation. As proposed, the zoning would consist of 68.3 acres (57%) of Single Family 6,000; 18.0 acres (15%) of Multi-family Apartment; 13.9 acres (11.6%) of General Commercial; and 18.9 acres (15.8%) of Public Regional zoning. This mix of zoning districts will allow for a mix of housing types as well as complementary commercial uses. Additionally, consistent with Master Plan Policy MUR 1.8 the Public Regional zoning district, combined with the proposed common area parcels within the single family residential development, will allow for open space and recreational trails to be incorporated into the development.

It should be noted; the stated purpose of the Public Regional zoning district is for "*Federal, state and city facilities and uses whose main purpose is to sustain wide regional needs.*" Although this portion of the project will not be owned or operated by a public entity, staff believes that the 18.9 acre site (the old landfill) would be appropriately zoned with Public Regional zoning. Carson City Municipal Code does not contain a zoning district that would be an exact fit for this site. Because the site contains the old landfill which will be remediated with this project and will need to be protected from future development, the Public Regional zoning may be considered an appropriate fit. The zoning district allows for Open Space which this site will provide. Additionally, the site will contain trails connecting to public lands to the south and east, which will be beneficial to the public at large. Moreover, any future use of this portion of the project site would be subject to a Special Use Permit which will help to protect remediation work that is to be completed on the old landfill site.

The proposed location of the commercial zoning provides for logical transitions and buffers between the existing mix of industrial and commercial uses that are located to the north and west of the subject property and the proposed residential portion of the development. Additionally, the location of the Multi-Family Apartment zoning will provide for a logical transition between the commercial portion of this development and the proposed single family residences. Open space and common area parcels are located throughout the development and also provide buffers and transitions between the existing industrial and commercial uses and the proposed single family residential development.

Tentative Subdivision Map: The applicant has made application for a Tentative Subdivision Map concurrent with the zoning map amendment. The map proposes the creation of 270 single family residential lots, 3 remainder parcels (two of which will be zoned General Commercial and one zoned Multi-Family Apartments), and 9 common area parcels. There is no proposed development at this time for the remainder lots; however, assumptions regarding the potential uses were made for the purposes of the traffic study. As discussed above, the proposed zoning

for the remainder parcels will allow for the appropriate mix of uses consistent with the Mixed-Use Residential land use designation.

The proposed residential lots will meet the requirements of parcel size, density, height, and setbacks, as outlined in Carson City Municipal Code 18.04.190 for the SF6 zoning district. The residential density is 3.95 units/acre (270 units/68.3 acres of single family residential development). The lot sizes will range from 6,000 square feet to 17,950 square feet with the average lot size being just over 8,000 square feet. CCMC Division 2 requires a minimum of two off-street parking spaces be provided for each single family dwelling unit. Specific floor plans are not provided, nor are they required as part of this application; however it is expected that each single family unit will have at least a two car garage. At the time that building permits are reviewed, staff will ensure each lot provides for the minimum required on-site parking for each lot.

The project site is accessed from Hwy. 50 with Drako Way being the main project entrance. Improvements to Drako will include landscaping, sidewalks on both sides of the road, and bike lanes. The internal roadways for the project will replace the existing rights-of-way for Drako Way, Carabou Drive, and Unicorn Drive, which will effectively be abandoned with the recording of the final map. A 20 foot wide fire access road is provided to the adjacent open space at the southeast corner of the project site. Pedestrian access and connectivity will be provided throughout the project via sidewalks as well as recreational trails. The applicant is proposing a Landscape Maintenance District for the maintenance of trails, weed abatement and landscaping along right-of-way, and weed abatement and landscaping of common area parcels. Due to financial and staffing impacts on the City, staff is recommending against the Landscape Maintenance District and instead recommends the use of a Home Owners Association or similar entity for this type of maintenance.

A Traffic Impact Study was prepared for this project. The study concluded that a new traffic signal would be needed at Hwy 50 and Drako way. This intersection currently operates at a Level of Service (LOS) E during PM peak hour. The signalized intersection would improve operations at this intersection to an LOS A during AM and PM peak hours. Staff has incorporated conditions of approval to ensure this improvement is completed with this project. The other intersections within the development are anticipated to operate at acceptable levels of service at project build-out.

As noted above, the applicant has been working with NDEP on a Site Assessment Report and Remedial Action Plan. The Remedial Action Plan had been approved with additional requests outlined in NDEP's November 30, 2017 letter. As required in the November 30, 2017 NDEP letter, a draft Storm Water Management Plan (SWMP) was submitted to NDEP in April 2018. The draft SWMP was deemed to meet NDEP's requirements and a Final SWMP will be submitted following Tentative Map approval. The remediation of the site will include the construction of a road within the landfill site, removing any exposed landfill waste and contaminated soil, and capping the extent of the landfill with a soil cap. The site will also be re-vegetated with native vegetation and recreational trails will be installed. Consistent with the draft SWMP, the old landfill will be left undisturbed with the exception of the recreational trails and the roadway.

PUBLIC COMMENTS:
Public notices were mailed to 43 property owners within 1,250 feet of the subject site on November 9, 2018. As of the writing of this report, no comments 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, depending on the date of submission of the comments to the Planning Division.

OTHER CITY DEPARTMENT OR OUTSIDE AGENCY COMMENTS:
The following comments were received from City departments. Recommendations have been incorporated into the recommended conditions of approval, where applicable.

Engineering Division:

The Engineering Division has no preference or objection to the tentative map request and the zoning map amendment. To make the findings for the subdivision tentative map, the following conditions of approval must be met:

- All site improvements must be designed to meet the requirements of the Carson City Development Standards and Standard Details, including but not limited to the following:
    - Proposed street sections that meet the minimum width for a section that limits parking on one or both sides, per Carson City Standard Details, must be signed with "No Parking" signs.
    - The proposed sidewalk width must be increased to the City Standard 5 foot wide sidewalk.
    - Utility main locations must be updated to meet the standard detail for typical locations.
    - The site improvement design engineer must coordinate the storm drain, wastewater, and water main analyses with Public Works in order to account for potential development to the northeast. These analyses must address main, pumping, and storage requirements for the development to meet required capacities and pressure, and must address the ability to increase capacity for future developments. The water main analysis must also address the effects of pressure reducing valve assemblies that may be required to maintain separate pressure zones in the water system. It is anticipated that system improvements including additional booster capacity will be required at the developer's expense.
    - With the site improvement plans, the traffic impact study must be revised to include the following:
        - Volume/counts need to be taken when school is in session, the report notes an August month, please provide date of when the counts were collected
        - NDOT counts for U.S. 50 and Deer Run Road need to be used in place of Traffic Work's counts
        - The growth factor needs to match CAMPO's 1% annual growth
        - The design LOS for the new signal at Drake Way (if approved by NDOT) needs to be designed to a LOS C or better.
        - Intersection Level of Service tables need to be revised to provide:
            - All approaches and overall for US 50/Deer Run Road intersection
            - All existing approaches and overall for US 50/Drako Way intersection
            - The overall for Deer Run Road/Morgan Mill Road intersection
    - The sewer impact report references the old d/D standard of 0.75. The new standard of 0.5 must be utilized for small mains in the sewer main analysis for the improvement plans.
    - The developer must update the City's water model per CCDS 15.3.1. The City

will provide boundary conditions and system curves based on fire flows, and will provide version information. The developer must supply a model to be incorporated into the City's model.

- Water mains with 15 or more services must be looped.
- Per CCMC 12.09.070 & 12.09.080 (4), the developer must provide base flood elevation data. In the event that this data reveals X-shaded or A flood hazard zones that will be altered by the subdivision improvements, the subdivision must receive a CLOMR determination from FEMA and provide funds to process the LOMR per 12.09.070(d).

- The developer will be required to enter a developer's agreement with the City to upsize the sewer main in Airport Road from US 50 to Douglas Drive, which is at capacity.
- Since this project will expedite the need for the sewer main replacement in Airport Road, and since the pavement was recently improved between US 50 and Woodside Drive, the developer will be required to enter into a developer's agreement with the City to construct an appropriate roadway treatment to maintain the pavement performance of Airport Road between US 50 and Woodside Drive where the sewer main must be upgraded.
- The developer will need to analyze the Morgan Mill Lift Station and will be required to upgrade the lift station to meet flow and emergency storage capacity requirements if so determined by the analysis. Metering of incoming flows may be required to confirm current conditions. In the event that additional capacity is not provided for future development, the lift station and controls improvements must be designed to be able to easily be updated add a pump(s) to increase capacity.
- The water main and storm drain must be stubbed to the north as shown, and the sewer main must also be stubbed to the north.
- The storm drain infrastructure must extend to the Carson River. This may be an open channel; however this must be designed to prevent erosion and maintenance access must be provided.
- Natural drainages that enter the subdivision need to be tied into the underground storm drain system at the subdivision, as shown, and access must be provided for maintenance.
- The detention basin location must be analyzed by a geotechnical engineer.
- NDOT and Carson City approval of the HWY 50 intersection must be obtained prior to issuing a site improvement permit. The approved intersection must bring intersection LOS into compliance with Code.
- The site improvements must meet the requests made in the NDEP Limited Phase II Environmental Site Assessment Report and Remedial Action Plan memo dated November 30, 2017. If a revised RAP is submitted to NDEP and used for the development, the site improvements must meet any applicable requests by NDEP for that RAP. Additionally, the developer must hire a certified environmental manager to supervise the remediation required by the RAP including excavation in landfill areas and disposal.
- The water main alignment may not be altered to loop the water main to Hwy 50 unless approved by the City Engineer. If the water main is looped to the main in Hwy 50, where the water main passes through the old landfill, the soil must be excavated and replaced with imported soil within a distance equal to the minimum separation required between a water main and a sewer main, both horizontally and vertically.

- Local streets will be required to have a minimum asphalt thickness of 4 inches or per the geotechnical engineer's recommendations, whichever is larger.

Parks, Recreation and Open Space (PROS):

TSM-18-154 and ZMA-18-155 / Drako Way - Plateau Development

- A public access easement will be required for all pedestrian access corridors, off-street recreational trails and both fire access roads within the proposed development. The easement will be recorded on the final map or through a covenant, deed restriction, or similar legal instrument to ensure public access to City lands in perpetuity.
- The development will be subject to Residential Construction Tax (RCT), compliant with Nevada Revised Statutes and Carson City Municipal Code.
- All open space, common areas, landscaping, pedestrian access corridors, and off-street recreational trails within the development shall be owned and privately maintained by a Home Owners Association (HOA)/Maintenance Association or similar instrument in perpetuity.
- The applicant will be required to incorporate "Best Management Practices" into their construction documents and specifications to reduce the spread of noxious weeds. The Parks, Recreation & Open Space Department is willing to assist the applicant with this aspect of their project.
- The applicant will provide a disclosure in sale documents or similar instruments acknowledging the pre-existence of the City's Land Fill, Rifle and Pistol Range, and adjacent Disc Golf Course Complex.
- The design layout for the subdivision shall provide pedestrian access points to the adjacent City property. Due to the undulating topography and steep slopes, pedestrian access points shall be reviewed and approved by the Parks, Recreation and Open Space Department.
- The applicant needs to address incorporating bike lanes into the development's street system network that connects to U.S Highway 50 (East) and Deer Run Road.
- All site clearing/grubbing, grading, and construction activities, including construction worker's parking must occur on the applicants' property, unless permissible to private property owners. No construction activities shall occur on City property. The applicant shall provide protective fencing along the property line to delineate public lands from private property during construction.
- The applicant will be required to use a pollinator friendly dryland seed mix for any permanent erosion control and re-vegetation within any open space/ common areas within the development. The Parks, Recreation & Open Space Department is willing to provide the applicant with this seed mix and treatment application specifications for the project.
- If it is determined that the development's water system is required to connect to existing water tanks on the City's land (east of the development), the applicant shall be required to coordinate the water line alignment with the Parks, Recreation, and Open Space Department and Development Engineering and re-vegetate the disturbed area (except the water line's service road) to its previous condition. The dryland seed mix and treatment application specifications including temporary irrigation, weed control, and protective fencing shall be reviewed and approved by the Parks, Recreation and Open Space Department.

Fire Department:

TSM-18-154:

- Project must comply with the Carson City Fire Code and amendments as adopted.
- Project is in the identified wildland urban interface area of Carson City and must comply with the currently adopted edition of the International Wildland Urban Interface Code and amendments.
- Hydrants must be provided per Appendix B and Appendix C of the IFC (adopted edition) and shown on plans.
- The 17 acre open space plot must be maintained by the HOA and recorded.
- The project will require a vegetation management plan be submitted for review prior to submittal of Final Map for review.
- Defensible space requirements shall be delineated on the Final Map, and an easement stating the purpose and development limitations shall be placed on the final map to ensure that all on-site development incorporates the required defensible space on site.
- Per Title 18 Development Standards, Division 12.6, unobstructed fire protection equipment access easements not less than twenty feet (20') wide will be dedicated from the public street to the subdivision or development boundary as determined by the Fire Chief.
- Per Title 18 Development Standards, Division 12.11.13, permanent emergency access will be designed and constructed to comply with the requirements of Division 12, Emergency Access Streets. Gates will be marked with "No Parking-Fire Lane" signage per the Carson City Fire Code.
- The fire access easement points will be the end of the cul-de-sac between lots 58 and 59, and the drainage easement access road between lots 35-34 as shown on the Tentative Map.

The Fire Department has no comments on ZMA-18-155.

Environmental Control: No Comments.

Assessor: No Comments.

ZONING MAP AMENDMENT FINDINGS: Per the provisions of CCMC Section 18.02.075.5.b, the Commission, in forwarding a recommendation to the Board for approval of a Zoning Map Amendment, shall make the following findings of fact:

1. That the proposed amendment is in substantial compliance with and supports the goals and policies of the master plan.

As previously noted, the project site is located within the V&T SPA which states that the subject area will be re-designated from Industrial to Mixed Use Commercial or Mixed Use Residential upon approved engineering controls in accordance with NDEP Standard. NDEP had approved the Remedial Action Plan with comments in November 2017 and the Board approved the Master Plan Amendment from Industrial to Mixed-Use Residential in March 2018. The zoning map amendment proposes a mix of zoning districts consistent with the requirements of the Mixed-Use Residential land use designation. As proposed, the zoning would consist of 68.3 acres (57%) of Single Family 6,000; 18.0 acres (15%) of Multi-family Apartment zoning; 13.9 acres (11.6%) of

General Commercial zoning; and 18.9 acres (15.8%) of Public Regional zoning. This mix of zoning districts will allow for a mix of housing types as well as complementary commercial uses. Additionally, consistent with Master Plan Policy MUR 1.8 the portion of the project proposed for Public Regional zoning, in combination with the other common area parcels, will allow for open space and recreational trails to be incorporated into the development.

2. That the proposed amendment will provide for land uses compatible with existing adjacent land uses and will not have detrimental impacts to other properties in the vicinity.

The existing surrounding uses include a mix of commercial and industrial uses to the north and east and public land and open space to the east and south. While the current use of the properties immediately north of the project site are a mix of vacant land, as well as commercial and industrial uses, the properties have a Mixed-Use Commercial land use designation consistent with the V&T SPA. It is anticipated, at some point in the future, the properties in this area will develop into a mix of commercial and residential uses. Moreover, the proposed location of the commercial zoning and open spaces provide for transitions and buffers between the existing mix of industrial and commercial uses that are located to the north and west of the subject property and the proposed residential portion of the development. The location of the Multi-Family Apartment zoning will also provide for a logical transition between the commercial portion of this development and the proposed single family residences. Open space and common area parcels are located throughout the development to help buffer the development from the existing industrial and commercial uses. Staff finds these transitions and buffers provide for project compatibility with the adjacent land uses. With these buffers in place, the proposed mix of zonings will not have a detrimental impact on the other properties in the vicinity.

3. That the proposed amendment will not negatively impact existing or planned public services or facilities and will not adversely impact the public health, safety and welfare.

The proposed zoning map amendment will not allow for land uses that will negatively impact existing or planned public services or facilities nor will the project adversely impact the public health, safety or welfare. Any new project must complete project impact reports to show what improvements to existing facilities are necessary to meet demands imposed by the project. Any project approved on the subject site that would cause adverse impacts would be required to mitigate those impacts as part of the design of the new development.

TENTATIVE MAP FINDINGS: Staff recommends approval of the Tentative Subdivision Map based on the findings below and in the information contained in the attached reports and documents, pursuant to CCMC 17.05 (Tentative Maps); 17.07 (Findings) and NRS 278.349, subject to the recommended conditions of approval, and further substantiated by the applicant's written justification. In making findings for approval, the Planning Commission and Board of Supervisors must consider:

1. Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.

The development is required to comply with all applicable environmental and health laws and regulations concerning water and air pollution and the disposal of solid waste. The existing infrastructure is required to be upgraded as part of this project in order to supply the water and sanitary sewer needs of the subdivision. The City has sufficient water and sewer plant capacity to meet the demand imposed by this subdivision.

2. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.

The City has sufficient system capacity and water to meet the required water allocation for the subdivision. As noted in finding 1 above, the development will be required to upgrade water infrastructure in order to supply water to the subdivision. Staff has incorporated conditions of approval to ensure these infrastructure improvements are completed as part of this project.

3. The availability and accessibility of utilities.

The project will be required to extend storm drain, water, and sewer utilities, as well as make necessary improvements to the infrastructure. Other utilities such as energy, gas, phone, and cable, are in the area and will be extended to serve the project. Staff has incorporated conditions of approval to ensure the necessary improvements are completed as part of this project.

4. The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.

The Carson City School District provides educational services for Carson City. In an email dated November 13, 2018 the School District recognized that they currently have a capacity issue, however they are working on those issues district-wide. The primary concern with this particular project is transportation resulting in longer bus routes. The District is hopeful to have these issues resolved before the project is built.

The Carson City Parks, Recreation and Open Space Department will provide recreational and park services to the project area. Residential development was not contemplated in this area at the time the Park and Recreation Master Plan was developed and therefore, recreational opportunities were not planned for in this area of the City. The Parks, Recreation and Open Space Department recognizes that there may be a need in the future to review recreational needs, opportunities, and use characteristic for parks and recreational components in this part of the City in order to accommodate future residents. The development is incorporating opportunities for increased recreational properties and facilities with this project. The project includes common area lots as well as open space parcels that will provide for additional trails and access to the adjacent public lands. As conditioned, the common areas, open space parcel, trails, and landscaping will be required to be owned and maintained by a Home Owners Association or other similar entity. The developer will be required to pay, at the time of building permit, the Residential Construction Tax for each residence, for the purpose of funding parks.

The Carson City Sheriff's Office and Carson City Fire Department provides public safety services to the City. The development is required to provide for adequate on-site circulation for emergency vehicles. The proposed project is not anticipated to overburden police or fire protection services.

The Traffic Impact Study that was prepared for the project concluded that the intersection of Hwy 50 and Drako Way is currently operation at LOS E during PM peak hour and will require a traffic signal which will bring the intersection up to a LOS A during both AM and PM peak hours. Conditions of approval have been incorporated to ensure that this improvement is completed with this project. The other intersections studied are anticipated to operate at acceptable levels of service at project build-out.

5. Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.

As discussed above, the project is located adjacent to public lands on the south and east. The project proposes the incorporation of recreational trails as well as multiple points for pedestrian access to the adjacent public lands.

6. Conformity with the zoning ordinance and land use element of the City's Master Plan.

As previously noted, the project site is located within the V&T SPA which states that the subject area will be re-designated from Industrial to Mixed Use Commercial or Mixed Use Residential upon approved engineering controls in accordance with NDEP Standard. NDEP had approved the Remedial action Plan with comments in November 2017 and the Board approved the Master Plan Amendment from Industrial to Mixed-Use Residential in March 2018. Concurrent with the Tentative Subdivision Map application, the applicant has applied for a zoning map amendment. The zoning map amendment proposes a mix of zoning districts consistent with the requirements of the Mixed-Use Residential land use designation (Policy MUR 1.5). As proposed, the zoning would consist of 68.3 acres (57%) of Single Family 6,000; 18.0 acres (15%) of Multi-family Apartment; 13.9 acres (11.6%) of General Commercial; and 18.9 acres (15.8%) of Public Regional zoning. This mix of zoning districts will allow for a mix of housing types as well as complementary commercial uses. Consistent with Master Plan Policy MUR 1.8 the Public Regional zoning district will allow for open space and recreational trails to be incorporated into the development. The proposed Tentative Subdivision Map is consistent with and dependent upon the proposed mix of zonings. If the requested zoning map amendment is not approved, this finding will not be met.

7. General conformity with the City's Master plan for streets and highways.

Subject to compliance with the proposed conditions of approval, the proposed subdivision conforms to the City's Master Plan for streets and highways.

8. The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.

The Traffic Impact Study that was prepared for the project concluded that the intersection of Hwy 50 and Drako Way is currently operating at LOS E during PM peak hour and will require a traffic signal which will bring the intersection up to a LOS A during both AM and PM peak hours. Conditions of approval have been incorporated to ensure that this improvement is completed with this project. The other intersections studied are anticipated to operate at acceptable levels of service at project build-out.

9. The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.

The site is located on a historic landfill and there is no FEMA base flood elevation. The landfill must be mitigated per NDEP requirements and the developer must provide base flood elevation data and/or get FEMA CLOMR approval as described in the conditions of approval. The project has been designed to accommodate peak flow events. A complete geotechnical investigation was submitted as part of the application. Conditions of approval have been incorporated as necessary.

10. The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.

The proposed tentative map has been routed to the Nevada Department of Environmental Protection and the Nevada Division of Water Resources. The final mylar map of the proposed project will be presented to the State Engineer for approval and signed through his office prior to development. This requirement has been incorporated into the proposed conditions of approval.

11. The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.

This map has been reviewed by the Fire Department and Development Engineering. With the required infrastructure improvements there will be sufficient fire water flows to serve the project. The project site is located within the Wildland Urban Interface (WUI). All development is required to comply with the WUI Code, provide a vegetation management plan, provide hydrants as required, and provide an unobstructed fire protection equipment access easements. Moreover, because this development is located in the WUI staff is recommending a condition of approval to help to mitigate impacts by requiring the developer to ensure that defensible space is provided for on-site by requiring the defensible space to be delineated on the Final Map and requiring an easement for the purposes of providing on-site defensible space. This is particularly important for the perimeter single family residential lots along the southern and eastern project boundaries.

12. Recreation and trail easements.

Trails are proposed throughout the proposed open space area located on the old Carson City Landfill property. Due to financial and staffing impacts on the City, staff is recommending against the Landscape Maintenance District. Instead, staff has incorporated recommended conditions of approval requiring the use of a Home Owners Association or similar entity to own and maintain trails, landscaping along right-of-way and common area parcels, and conduct weed abatement.

Attachments

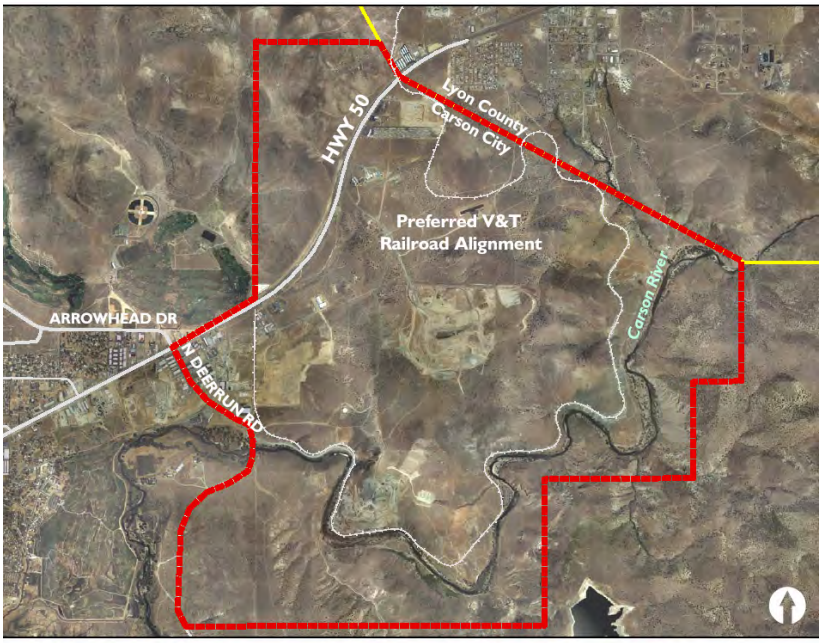
Eastern Portal—Virginia & Truckee Railroad Gateway Specific Plan Area
City and State Comments
Draft Ordinance
Zoning Map Amendment and Tentative Map Applications (ZMA-18-155 and TSM-18-155)

EASTERN PORTAL—VIRGINIA & TRUCKEE RAILROAD GATEWAY SPECIFIC PLAN AREA (V&T-SPA)

The purpose of the Eastern Portal—Virginia & Truckee Railroad Gateway Specific Plan Area (V&T-SPA) is:

- *To provide for cohesive development within the area.*
- *To create a "gateway" into Carson City.*
- *To protect economic development opportunities along the highway corridor, particularly in conjunction with development of the V&T Railroad.*
- *To protect visual resources associated with the V&T Railroad route and terminal location.*
- *To encourage public/private partnerships to facilitate economic development and public purpose uses.*
- *To encourage public/private cooperation in creating public access, trails and recreational opportunities.*

LOCATION AND APPLICABILITY



The Eastern Portal—Virginia & Truckee Railroad Gateway Specific Plan Area is located along Highway 50 east at the Lyon County line, as defined on the

map above. The policies and guidelines contained herein shall be applicable to all properties contained within the Specific Plan Area boundary.

Background

The V&T Railroad is planned for construction from Virginia City, crossing Highway 50 East and entering Carson City at the Lyon County border, past private lands and BLM lands on the south side of Highway 50 East, and continuing along the Carson River corridor to the Deer Run Road vicinity. Plans are presently under way to finalize the right-of-way acquisition for the route into Carson City and to find a location for a train depot.

The V&T Railroad is anticipated to be a tourist attraction and a benefit to the local economy. The visual experience of the train ride will be a key element in the success of the V&T. The Carson River corridor within Carson City is arguably the most dramatic visual experience along the entire V&T route. The vistas overlooking Carson City from the Eastern Portal gateway into Carson City also offers magnificent views of Carson City and the Sierra Nevada mountains beyond.

The route will also interface with private lands near the Lyon County-Carson City border and in the Carson River-Deer Run Road vicinity. The private lands at the Lyon County border are mostly undeveloped, primarily due to the lack of public water and sewer infrastructure to the area at the present time. However, water has recently been made available to serve the area with the construction of a water tank south of Highway 50 East, and plans are being developed by the City for the extension of sewer lines to serve the area. The provision of water and sewer to the area will quickly make it more attractive for development.

Therefore, Carson City finds it important to protect the visual resources—and the V&T riders' experience—along the V&T Railroad corridor. The following policies are recommended to facilitate this protection and to maximize the long-term economic benefits of the V&T Railroad to Carson City and the region.

(V&T-SPA) Land Use Policies

V&T SPA—1.1 Development Quality

Protect the scenic quality of the V&T experience with consideration given for the views from the train route as well as the terminal location by developing and adopting specific design standards for commercial development and public-use development within the V&T-SPA to protect the scenic quality of the V&T route.

V&T SPA—1.2 Zoning

Rezone the private lands in Carson City along Highway 50 East from General Industrial to a commercial designation consistent with the Master Plan Land Use Map.

V&T SPA—1.3 View Corridors

Identify critical views of the landfill area from V&T route and adjacent commercial areas and mitigate visual impacts by plantings, screening or other methods around the landfill.

V&T SPA—1.4 Compatibility with Adjacent Uses

- Prohibit new uses on public lands within the V&T-SPA that would conflict with the V&T and related commercial-tourism in the vicinity, such as uses that generate excessive noise, dust or odors, excluding the continued operation of the landfill; and
- Consider limiting the use of public lands as part of any proposed disposal of the BLM property into Carson City ownership through a federal lands bill.

V&T SPA—1.5 Drako Way Vicinity Land Use Change

The land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment, shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property.

(V&T-SPA) Parks and Open Space Policies

V&T SPA—2.1 Trail Facilities

The Parks and Recreation will continue to work with the V&T Commission and V&T consultants in locating appropriate trail facilities along the Carson River corridor consistent with the V&T operation plans and the Unified Pathways Master Plan.

(V&T-SPA) Cultural and Environmental Resources Policies

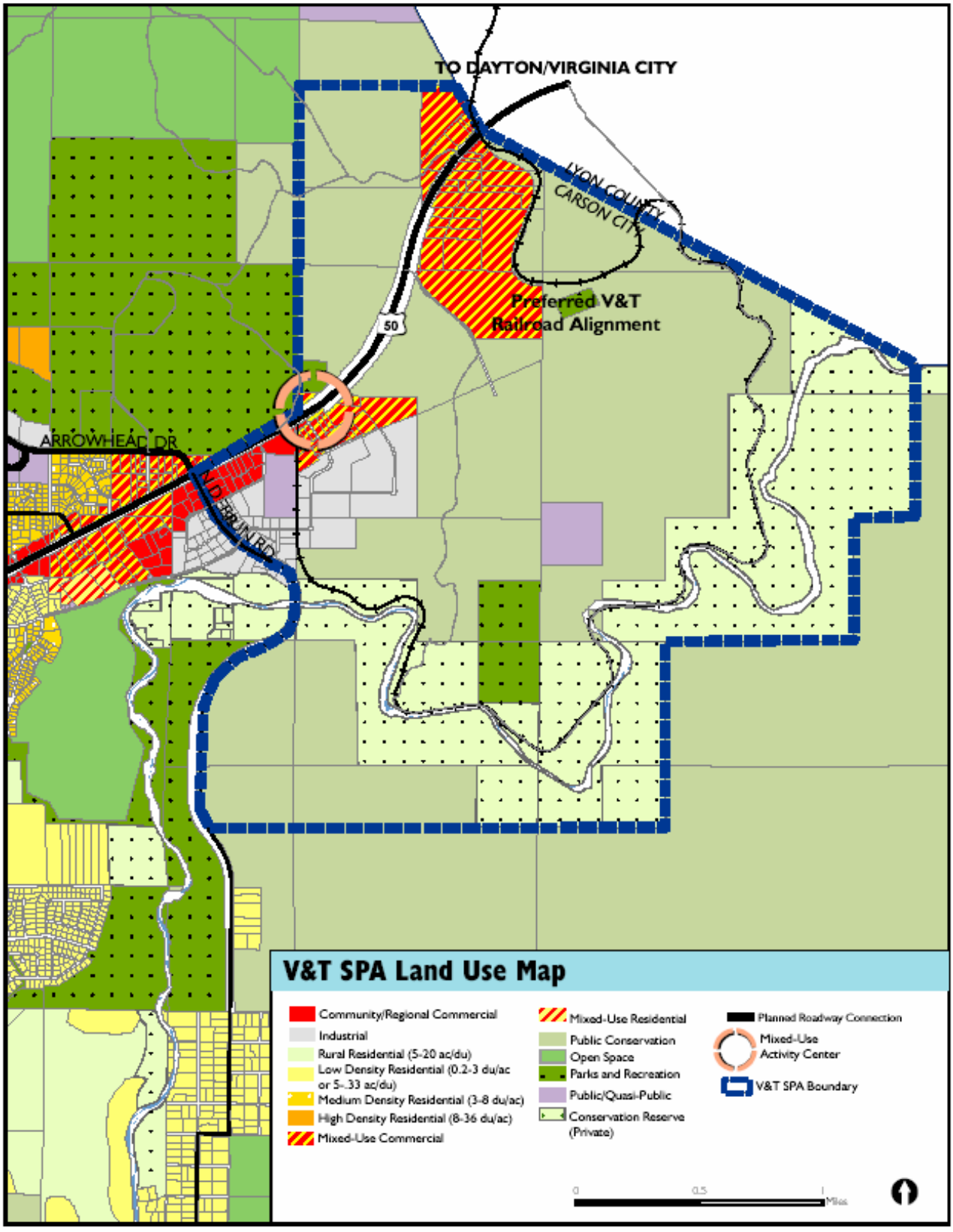
V&T SPA—3.1 Carson River Corridor

Encourage continued cleanup and patrol of the Carson River corridor to protect the scenic resource through partnerships with public and private agencies.

(V&T-SPA) Coordination Policies

V&T SPA—4.1 Coordination

Encourage continued collaboration with Lyon County and Storey County to minimize land use conflicts along the V&T corridor.


TO DAYTON/VIRGINIA CITY
LYON COUNTY
CARSON CITY
Preferred V&T
Railroad Alignment
50
ARROWHEAD DR
OLD FRUIT RD
V&T SPA Land Use Map
Community/Regional Commercial
Industrial
Rural Residential (5-20 ac/du)
Low Density Residential (0.2-3 du/ac or 5-.33 ac/du)
Medium Density Residential (3-8 du/ac)
High Density Residential (8-36 du/ac)
Mixed-Use Commercial
Mixed-Use Residential
Public Conservation
Open Space
Parks and Recreation
Public/Quasi-Public
Conservation Reserve (Private)
Planned Roadway Connection
Mixed-Use Activity Center
V&T SPA Boundary
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Engineering Division
Planning Commission Report
File Number TPUD-18-154 and ZMA-18-155

TO: Hope Sullivan - Planning Department

FROM Stephen Pottéy – Development Engineering Department

DATE: November 20, 2018

SUBJECT:

Action to consider an application for Tentative Subdivision Map for TSM-018-154 and ZMA-18-155 Plateau Development, Carabou Dr and Unicorn Dr, apns 008-521-54, -55, -89, -90, 005-522-16, -17, -18, 008-531-59, -60.

RECOMMENDATION:

The Engineering Division has no preference or objection to the tentative map request and the zoning map amendment. To make the findings for the subdivision tentative map, the following conditions of approval must be met:

- All site improvements must be designed to meet the requirements of the Carson City Development Standards and Standard Details, including but not limited to the following:
    - Proposed street sections that meet the minimum width for a section that limits parking on one or both sides, per Carson City Standard Details, must be signed with “No Parking” signs.
    - The proposed sidewalk width must be increased to the City Standard 5 foot wide sidewalk.
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    - With the site improvement plans, the traffic impact study must be revised to include the following:

- Volume/counts need to be taken when school is in session, the report notes an August month, please provide date of when the counts were collected
- NDOT counts for U.S. 50 and Deer Run Road need to be used in place of Traffic Work's counts
- The growth factor needs to match CAMPO's 1% annual growth
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- Intersection Level of Service tables need to be revised to provide:
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- Natural drainages that enter the subdivision need to be tied into the underground storm drain system at the subdivision, as shown, and access must be provided for maintenance.
- The detention basin location must be analyzed by a geotechnical engineer.
- NDOT and Carson City approval of the HWY 50 intersection must be obtained prior to issuing a site improvement permit. The approved intersection must bring intersection LOS into compliance with Code.
- The site improvements must meet the requests made in the NDEP Limited Phase II Environmental Site Assessment Report and Remedial Action Plan memo dated November 30, 2017. If a revised RAP is submitted to NDEP and used for the development, the site improvements must meet any applicable requests by NDEP for that RAP. Additionally, the developer must hire a certified environmental manager to supervise the remediation required by the RAP including excavation in landfill areas and disposal.
- The water main alignment may not be altered to loop the water main to Hwy 50 unless approved by the City Engineer. If the water main is looped to the main in Hwy 50, where the water main passes through the old landfill, the soil must be excavated and replaced with imported soil within a distance equal to the minimum separation required between a water main and a sewer main, both horizontally and vertically.
- Local streets will be required to have a minimum asphalt thickness of 4 inches or per the geotechnical engineers recommendations, whichever is larger.

TENTATIVE MAP FINDINGS:

The following Tentative Map Findings by the Engineering Division are based on approval of the above conditions of approval:

1. *Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.*
   The existing infrastructure must be upgraded with this project to supply the water and sanitary sewer needs of the subdivision. The City has sufficient water rights and sewer plant capacity to meet the demand imposed by this subdivision.

2. *The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.*
   The City has sufficient system capacity and water rights to meet the required water allocation for the subdivision. It is anticipated that system improvements including additional booster capacity will be required at the developer's expense.

3. *The availability and accessibility of utilities.*
   The project will be required to extend storm drain, water, and sewer utilities, and make improvements listed in the conditions of approval.

4. *The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.*
   The road network necessary for the subdivision is available and accessible. The intersection of Hwy 50 and Drako will need to be signalized.

5. *Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.*
   Development engineering has no comment on this finding.

6. *Conformity with the zoning ordinance and land use element of the city's master plan.*
   Development engineering has no comment on this finding.

7. *General conformity with the city's master plan for streets and highways.*
   The development is in conformance with the city's master plan for streets and highways.

8. *The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision*.
   The existing infrastructure is sufficient to meet the additional demand imposed by the subdivision with the improvements proposed.

9. *The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.*
   The site has a historic landfill and there is no FEMA base flood elevation, therefore, the landfill must be mitigated per NDEP requirements and the developer must provide base flood elevation data and/or get FEMA CLOMR approval as described in the conditions of approval.

10. *The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.*
    Development engineering has no comment on this finding.

11. *The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.*
    The subdivision has sufficient secondary access, and sufficient fire water flows.

12. *Recreation and trail easements*.
    Development engineering has no comment on this finding.

ZONING MAP AMENDMENT FINDINGS:
The Engineering Division has reviewed the request within our areas of purview relative to adopted standards and practices and to the provisions of CCMC 18.02.075 Zoning map amendments and zoning code amendments. The following discussion is offered.

CCMC 18.02.075 (5.b.1) – Compliance with Master Plan
The zoning map amendment is not in conflict with the intent of master plan elements for water,

sewer, transportation, or storm water. Any project will need to meet Carson City Development Standards.

CCMC 18.02.075 (5.b.2&3) – Compatible Land Use
Development Engineering has no comment on this finding.

CCMC 18.02.075 (5.b.4) – Impact on Public Services, Facilities, Health and Welfare
As with the proposed tentative map, any new project must complete project impact reports to show what improvements to existing facilities are necessary to meet demands imposed by the project. Any project approved in the new zoning area that would cause impacts beyond those allowed by municipal code, would be required by municipal code to mitigate those impacts as part of the design of the new development.

These comments are based on the tentative map plans and reports submitted. All applicable code requirements will apply whether mentioned in this letter or not.

From: Dave Ruben
Sent: Monday, November 19, 2018 8:08 AM
To: Lena Reseck; Hope Sullivan; Heather Ferris
Subject: TSM 18-154 updated comments

Follow Up Flag: Follow up
Flag Status: Flagged

Please use these comments in place of what was originally sent. Thank you.

Comments for TSM 18-154:

1. Project must comply with the Carson City Fire Code and amendments as adopted.
2. Project is in the identified wildland urban interface area of Carson City and must comply with the currently adopted edition of the International Wildland Urban Interface Code and amendments.
3. Hydrants must be provided per Appendix B and Appendix C of the IFC (adopted edition) and shown on plans.
4. The 17 acre open space plot must be maintained by the HOA and recorded.
5. The project will require a vegetation management plan be submitted for review prior to submittal of Final Map for review.
6. Defensible space requirements shall be delineated on the Final Map, and an easement stating the purpose and development limitations shall be placed on the final map to ensure that all on-site development incorporates the required defensible space on site.
7. Per Title 18 Development Standards, Division 12.6, unobstructed fire protection equipment access easements not less than twenty feet (20') wide will be dedicated from the public street to the subdivision or development boundary as determined by the Fire Chief.
8. Per Title 18 Development Standards, Division 12.11.13, permanent emergency access will be designed and constructed to comply with the requirements of Division 12, Emergency Access Streets. Gates will be marked with "No Parking-Fire Lane" signage per the Carson City Fire Code.
9. The fire access easement points will be the end of the cul-de-sac between lots 58 and 59, and the drainage easement access road between lots 35-34 as shown on the Tentative Map.

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

From: Mark Korinek <mkorinek@carson.k12.nv.us>
Sent: Tuesday, November 13, 2018 10:15 AM
To: Heather Ferris; Mark Johnson
Subject: Re: 270 more lots

Follow Up Flag: Follow up
Flag Status: Flagged

Hi Heather,
I believe this is the Plateau project. Yes of course we have concerns when our schools are at capacity and there are no funds to build a school. looks like it may take a while on this one with environmental issues, etc. so hopefully we'll figure something out by then. Transportation would be the biggest concern as that would stretch our routes. Looks like a decent project. thanks

Mark Korinek, C.P.M.
Director of Operation Services
Carson City Schools - Carson City, NV
775.283.2181 office : 775-690-1732 cell
mkorinek@carson.k12.nv.us: www.carsoncityschools.com

" A Solar Energy SPILL is just a NICE DAY !"

From: Heather Ferris <HFerris@carson.org>
Sent: Thursday, November 8, 2018 8:54:32 AM
To: Mark Korinek; Mark Johnson
Subject: RE: 270 more lots

Mark and Mark-

I'm following up to see if the School District has any comments/concerns regarding the proposed project on Drako. If you have questions please feel free to contact me. I can be available to meet with you as well to discuss any concerns you might have.

Heather

Heather Ferris
Associate Planner
Carson City, NV 89701
775-283-7080

From: Hope Sullivan
Sent: Monday, October 22, 2018 8:40 AM
To: 'Mark Korinek'; 'Mark Johnson'
Cc: Heather Ferris
Subject: 270 more lots

Mark and Mark:
We took in a tentative map for 270 single family lots out by Drako Way. You looked at this conceptual map a number of months ago. The site is fairly far out east on the south side of Highway 50.

Associate Planner Heather Ferris (283-7080) will be handling the application. So, feel free to reach out directly to her to review / etc.

Thanks!

Hope Sullivan, AICP
Planning Manager
Carson City, NV 89701
775-283-7922

NEVADA DIVISION OF
ENVIRONMENTAL PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Brian Sandoval, Governor
Bradley Crowell, Director
Greg Lovato, Administrator

November 08, 2018

LEE PLEMEL
Planning Division
108 E. Proctor
Carson City NV 89701

Re: Tentative Map- Plateau Development
270 lots Carson City

Dear Mr. PLEMEL:

The Nevada Division of Environmental Protection has reviewed the above referenced subdivision and recommends approval of said subdivision with respect to water pollution and sewage disposal, provided that Carson City commits to provide sewage service to said subdivision.

Please note that if the developer of this subdivision will disturb more than one acre, he/she is required to obtain coverage under NDEP's Construction Stormwater General Permit NVR100000. A Notice of Intent must be filed electronically and submitted with a $200 fee prior to commencing any earth-disturbing activities at the site. Visit NDEP's Bureau of Water Pollution Control's website at: http://ndep.nv.gov/bwpc/storm_cont03.htm for more information about this permit.

Sincerely,

April Holt

April Holt, E.I.
Technical Services Branch
Bureau of Water Pollution Control

cc:
BUREAU OF CORRECTIVE ACTIONS SUPERFUND PROGRAM MANAGER BCA, 901 S. Stewart St. Ste. 4001 CARSON CITY, NV 89701
DARREN SCHULZ Carson City Public Works Director, 3505 Butti Way Carson City, NV 89701
Engineer: Manhard Consulting, Ltd. 241 Ridge Street, Ste. 400 Reno NV 89501
Developer: DGD Development GP 951 Jacks Valley Road Carson City NV 89705

Control No. 12156

NEVADA DIVISION OF
ENVIRONMENTAL
PROTECTION

STATE OF NEVADA
Department of Conservation & Natural Resources
Brian Sandoval, Governor
Bradley Crowell, Director
Greg Lovato, Administrator

November 30, 2017

Mr. Keith Serpa
Tahoe IV, LLC
P.O. Box 1724
Carson City, NV 89702

Subject: **Limited Phase II Environmental Site Assessment Report and Remedial Action Plan**

Facility: Old Carson City Landfill, Carson City, Nevada
APN: #008-521-89 and 008-521-54
Facility ID # A-000050

Dear Mr. Keith Serpa:

The Nevada Division of Environmental Protection (NDEP) has received and reviewed the *Limited Phase II Environmental Site Assessment Report and Remedial Action Plan* (RAP) for the referenced facility (Site) dated November 20, 2017 and provided by Tracy Johnston, Certified Environmental Manager (CEM), of McGinley and Associates, Inc. (McGinley) on behalf of the Tahoe IV, LLC.

The RAP summarizes the previous assessment activities and the proposed remedial activities. A limited Phase II Environmental Site Assessment (ESA) was performed by Geocon Consultants, Inc. in 2006. The Phase II ESA consisted of excavating 54 exploratory test trenches and one soil boring. Total Petroleum Hydrocarbons (TPH), volatile organic compounds (VOCs), heavy metals and polychlorinated biphenyls (PCBs) were reported in several soil samples; however, only two of the collected soil samples reported contaminant concentrations exceeding Resource Conservation and Recovery Act (RCRA) hazardous waste threshold. The results of statistical analysis indicate that the 95% upper confidence level (UCL) for toxicity characteristic leaching procedure (TCLP) soluble selenium is 0.7 mg/l, below the RCRA hazardous waste threshold for selenium of 1.0 mg/l.

In August of 2017, MGA installed ten soil borings with soil samples collected at each boring location. Soil samples were analyzed for TPH, PCBs, dioxins and furans. Several of the samples exceeded the state reporting limit and/or the EPA Region 9 Regional Screen Levels (RSLs).

The proposed remedial activities include removal and off-site disposal as municipal solid waste of landfill debris and impacted material encountered during excavation activities for the construction of a proposed road and underground utilities. MGA is also proposing installing a minimum of a two-foot cover over the road embankment, shoulder, utility trenches, and all unsurfaced areas with the road excavation/cut and the remaining entire landfill area.

The NDEP concurs with the proposed RAP, provided that MGA accepts the additional requests in the comments below. However if MGA does not agree with the comments, please contact NDEP and provide a revised RAP that will address the concerns NDEP has in the comments below.

- The surface of the existing landfill will be cleared and grubbed before the final cover is installed.
- The surface of the existing landfill will be rough graded to fill any low lying areas to prevent ponding and provide a surface for proper drainage.

- It is not clear on how stormwater will be managed for this site. A stormwater management plan that demonstrates that the proposed cover can manage stormwater run-on and run-off will need to be submitted and approved before the final cover is installed. The stormwater management plan should also include any necessary improvements to prevent stormwater erosion to the final cover.
- After a contractor has been selected, please provide a schedule of construction activities.
- Please include as-builts or record drawings delineating the limits and extents of the landfill and the cover in the final completion report.
- An environmental covenant or other institutional control should be pursued to ensure the ongoing integrity and protectiveness of the remedial action is maintained.

Please submit the requested stormwater management plan within 60 days but no later than **January 29, 2018**. Please submit a final completion report documenting the completion of the remedial activities no later than 60 days after the activities are completed. NDEP requests all report documents be submitted in digital portable document format (pdf; e.g., compact disc, e-mail) concurrent with a hardcopy document. Please be advised that NDEP has a 10 megabyte limit for e-mail attachments.

Please contact Michael Friend with any questions or comments at (775) 687-9371 or mpfriend@ndep.nv.gov.

Sincerely,

Michael Friend, P.E.
Professional Engineer
Remediation and LUST Branch
Bureau of Corrective Actions

cc: Scott Smale, Supervisor Remediation Branch, NDEP Bureau of Corrective Actions Carson City, ssmale@ndep.nv.gov
Todd Croft, Supervisor Remediation Branch, NDEP BCA Las Vegas, tcroft@ndep.nv.gov
Darren Schulz, Carson City, Public Works Director, dschulz@carson.org
David Bruketta, Carson City, Utility Manager, dbruketta@carson.org
Kelly Hale, Supervisor, Carson City Environmental Control, khale@carson.org
Tracy Johnston, McGinley & Associates tjohnston@mcgin.com
Dan McGill, danmcgill@prodigy.net

cc Nicki Aaker, Director Carson City Health And Human Services, 900 E Long Street, Carson City, NV 89706-3129

SUMMARY – An ordinance amending the Carson City zoning map.

BILL NO. _____
ORDINANCE NO. 2018-__

AN ORDINANCE TO CHANGE THE ZONING FROM GENERAL INDUSTRIAL TO SINGLE FAMILY 6,000, MULTI-FAMILY APARTMENT, GENERAL COMMERCIAL, AND PUBLIC REGIONAL ON PROPERTIES LOCATED SOUTHEAST OF US HIGHWAY 50 AND NORTHEAST OF DEER RUN ROAD, APNS 008-521-54; -55; -89; -90; 008-522-16; -17; -18; 008-531-59; AND -60.

The Board of Supervisors of Carson City do ordain:

SECTION I:

An application for a Zoning Map Amendment on Assessor's Parcel Number 008-521-54, -55, -89, -90, 008-522-16, -17, -18, 008-531-59, and -60, property located at southeast of US Highway 50 and northeast of Deer Run Road, Carson City, Nevada, was duly submitted by the Carson City Planning Division in accordance with Section 18.02.075, et seq. of the Carson City Municipal Code (CCMC). The request will result in the zoning designation of the subject parcels APNS 008-521-54, -55, -89, -90, 008-522-16, -17, -18, 008-531-59, and -60 changing from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres. After proper noticing pursuant to NRS 278 and CCMC Title 18, on November 28, 2018, the Planning Commission, during a public hearing, reviewed the Planning Division staff report, took public comment and voted __ ayes, __ nays to recommend to the Board of Supervisors approval of the Zoning Map Amendment.

SECTION II:

Based on the findings that the Zoning Map Amendment would be in substantial compliance with the goals, policies and action programs of the Master Plan, that the Amendment will provide for land uses compatible with existing adjacent land uses and will not have detrimental impacts to other properties in the vicinity; that the Amendment will not negatively impact existing or planned public services or facilities and will not adversely impact the public health, safety and welfare; and that the request satisfied all other requirements for findings of fact enumerated in CCMC Section 18.02.075(5), the zoning map of Carson City is amended changing the zoning of Assessor's Parcel Number 008-521-54, -55, -89, -90, 008-522-16, -17, -18, 008-531-59, and -60 from General Industrial to Single Family 6,000 for approximately 68.3 acres; Multi-family Apartment for approximately 18.0 acres; General

Commercial for approximately 13.9 acres; and Public Regional for approximately 18.9 acres, as depicted on Attachment A.

PROPOSED this ___ day of _____, 2018.

PROPOSED BY Supervisor _____

PASSED on the _____ day of _____, 2018.

VOTE: AYES: _____

_____

_____

_____

_____

NAYS: _____

_____

ABSENT: _____

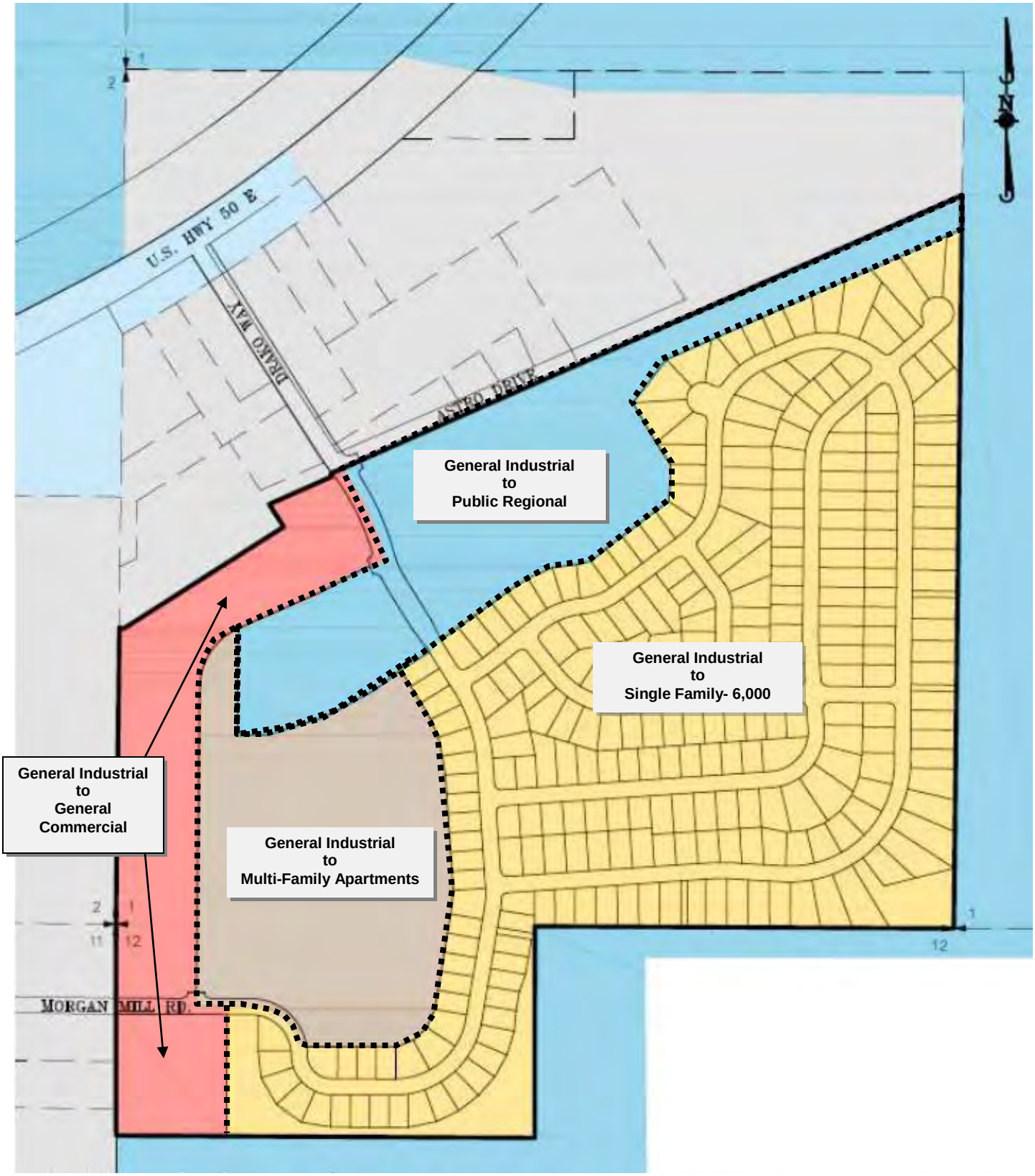
_____
ROBERT L. CROWELL, Mayor

ATTEST:

_____
SUSAN MERRIWETHER, Clerk-Recorder

This ordinance shall be in force and effect from and after the ____ of _____, 2018.

Attachment A



PLATEAU DEVELOPMENT

ZONING MAP AMENDMENT
TENTATIVE SUBDIVISION MAP

October 2018

Prepared For:

Tahoe IV LLC

P.O. Box 1724 Carson City, NV 89702

Prepared By:

Manhard CONSULTING

241 Ridge Street Reno, NV 89501

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- Application & Supplemental Information
- Master Plan Policy Checklist
- Proposal Questionnaire
- Interim Mixed-Use Evaluation Criteria
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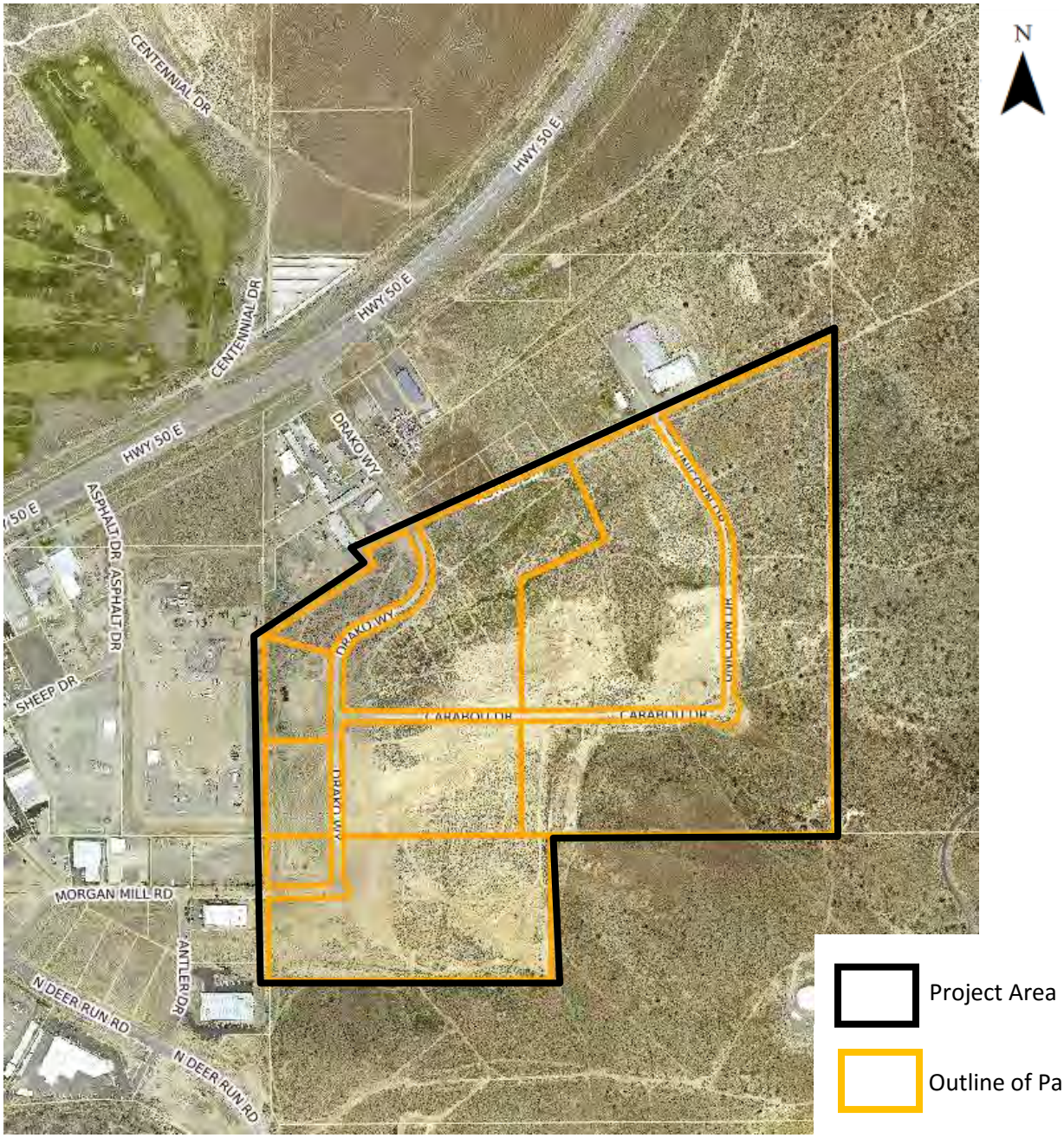
- Project Impact Reports
- Conceptual Drainage Study
- Conceptual Water Study
- Conceptual Sewer Study
- Traffic Study
- Geotechnical Report

PROJECT LOCATION

The project site encompasses 9 parcels (APNs 008-521-54, -55, -89, -90, 005-522-16, -17, -18, 008-531-59, -60) totaling +/- 112.69 acres; the total project area is 119.1 acres because it includes the existing rights-of way of Drako Way, Carabou Drive, and Unicorn Drive. The site is located southeast of US Highway 50 and northeast of Deer Run Road, within the V&T Specific Plan Area. The project site is accessed by Drako Way and Morgan Mill Road.

Figure 1: Project Location



EXISTING CONDITIONS

The +/- 119.1 acre project area is undeveloped and is the site of the Old Carson City Landfill. The site is surrounded by a mix of commercial and industrial uses to the north and west, and open space to the east and south.

Figure 2: Surrounding Property Designations

Direction	Current Zoning	Master Plan	Current Land Use
North	General Industrial	Mixed-Use Commercial	Mix of commercial and industrial uses
East	Public Regional	Open Space	Open Space
South	Public Regional	Public/Quasi-Public	Open Space
West	General Industrial	Public/Quasi-Public Industrial	Mix of commercial and industrial uses Public Facility

Conditions in the Previous Five-Year Time Period

Regional connectivity near the project area has increased in the previous five-year time period. US Highway 50 now connects to USA Parkway to the east (opened in September 2017), providing enhanced access to industrial development such as the Tahoe Reno Industrial Center (TRIC) and Tesla Gigafactory. US Highway 50 also continues to Lake Tahoe to the west and connects to Interstate 580, which leads to Reno to the north. This increase in nearby job opportunities and increased regional connectivity will continue to lead to increased demand for housing development in the region.

Additionally, the opening of US Highway 50 West and Interstate 580, approximately 8.4 miles southwest of the project, represents a significant change in Carson City and will encourage commercial development and job opportunities. The last leg of Interstate 580 opened in August 2017.

The site has been zoned industrial for many years but has remained vacant because there has not been market demand for industrial land. Instead, housing opportunities represent the highest and best use of the site. This is further demonstrated by the shift in the Master Plan designation from Industrial to Mixed-Use Residential. Also, as detailed in the Carson City Master Plan, a mix of residential use types are needed to supply the housing demand. This project has the opportunity to supply a mix of residential use types, along with adjacent commercial land uses to provide for residents' day-to-day needs, and enhanced pedestrian access to adjacent open space.

Figure 3: Site Photographs

Facing south from corner of Drako Way and Carabou Drive

Facing southeast from Drako Way

Figure 3: Site Photographs (continued)

Figure 4: Existing Master Plan Designation

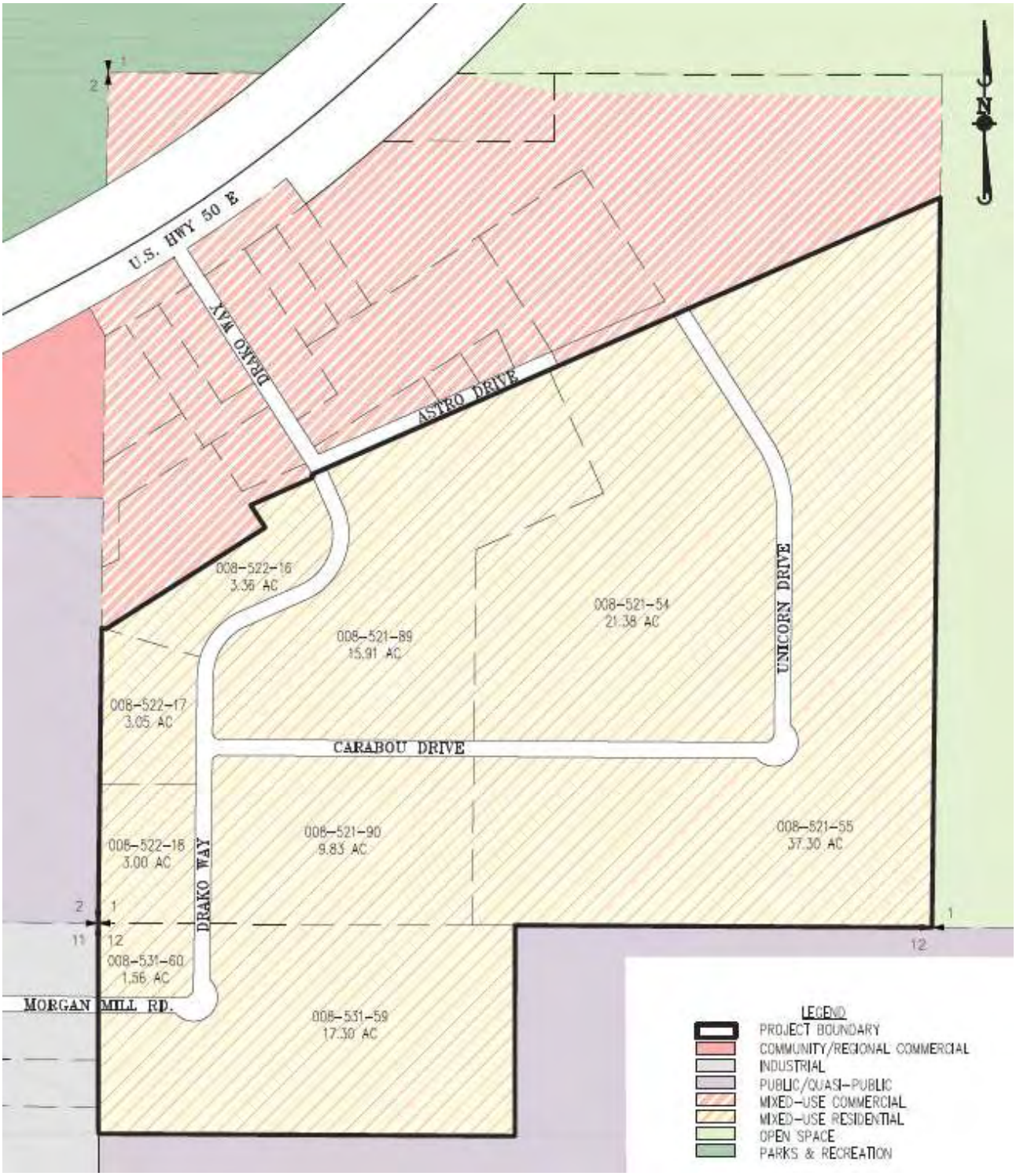
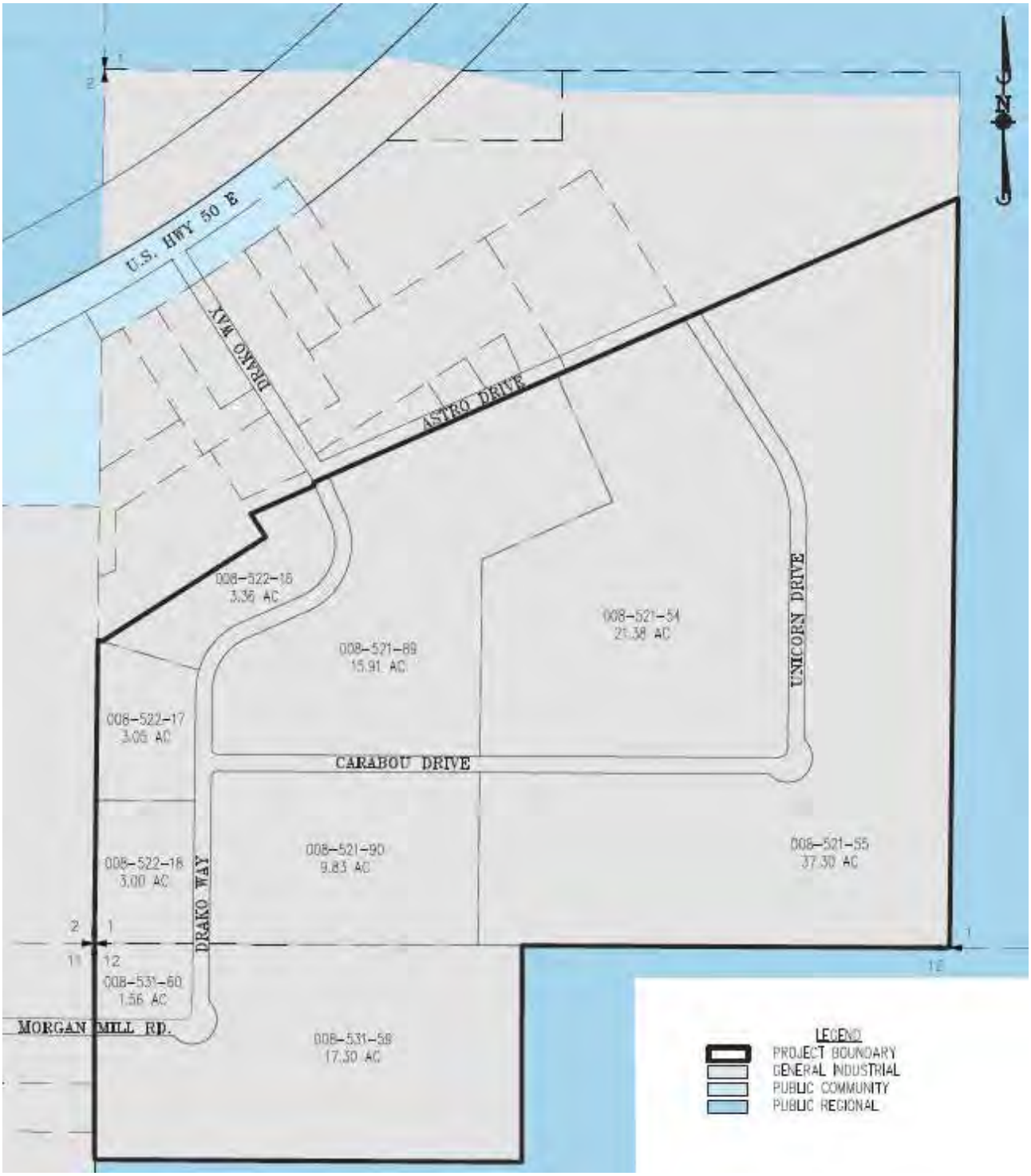


Figure 5: Existing Zoning Designation



APPLICATION REQUEST

The enclosed application is a request for:

ZONING MAP AMENDMENT from General Industrial to Single-family 6,000 (SF6, +/- 68.3 acres), Multifamily Apartment (MFA, +/- 18.0 acres), General Commercial (GC, +/- 13.9 acres), and Public Regional (PR, +/- 18.9 acres)

TENTATIVE SUBDIVISION MAP to create 270 single family residential lots, 9 common area parcels, 3 remainder parcels, and +/- 13.36 acres of right-of-way within a +/- 119.1 acre project area.

PROJECT DESCRIPTION AND JUSTIFICATION

The Plateau mixed-use development is proposed to include 270 single family residential parcels on 68.3 acres (SF6), 18.0 acres of MFA, 13.9 acres of GC, and 18.9 acres of PR use. The ultimate mixed-use development will be in compliance with the Carson City Municipal Code.

The proposed zoning designations of SF6, MFA, GC, and PR (see Figure 8: Proposed Zoning Designation) will allow for a mixed-use development in accordance with the Mixed-use Residential (MUR) Master Plan designation and meets the Interim Mixed-Use Evaluation Criteria. The development will ultimately provide a cohesive mix of housing types, expanded recreational opportunities, commercial services, and employment opportunities so that residents can meet their day-to-day needs within a close proximity.

The residential density is 3.95 units/acre (270 units/68.3 acres of residential development area). Single family residential lots range in size from 6,000 sq. ft. to 17,950 sq. ft. with an average lot size of 8,104 sq. ft. Home designs are not available, however, all future development will comply with the requirements of the Carson City Municipal Code.

The proposed development provides for enhanced recreational opportunity, with +/- 18.9 acres proposed to be designated PR and developed with recreational trails. Additional pedestrian access will be provided from the proposed development to the adjacent Carson City open space through Common Area parcels A through I, as shown on the Tentative Map, and between the different uses within the site.

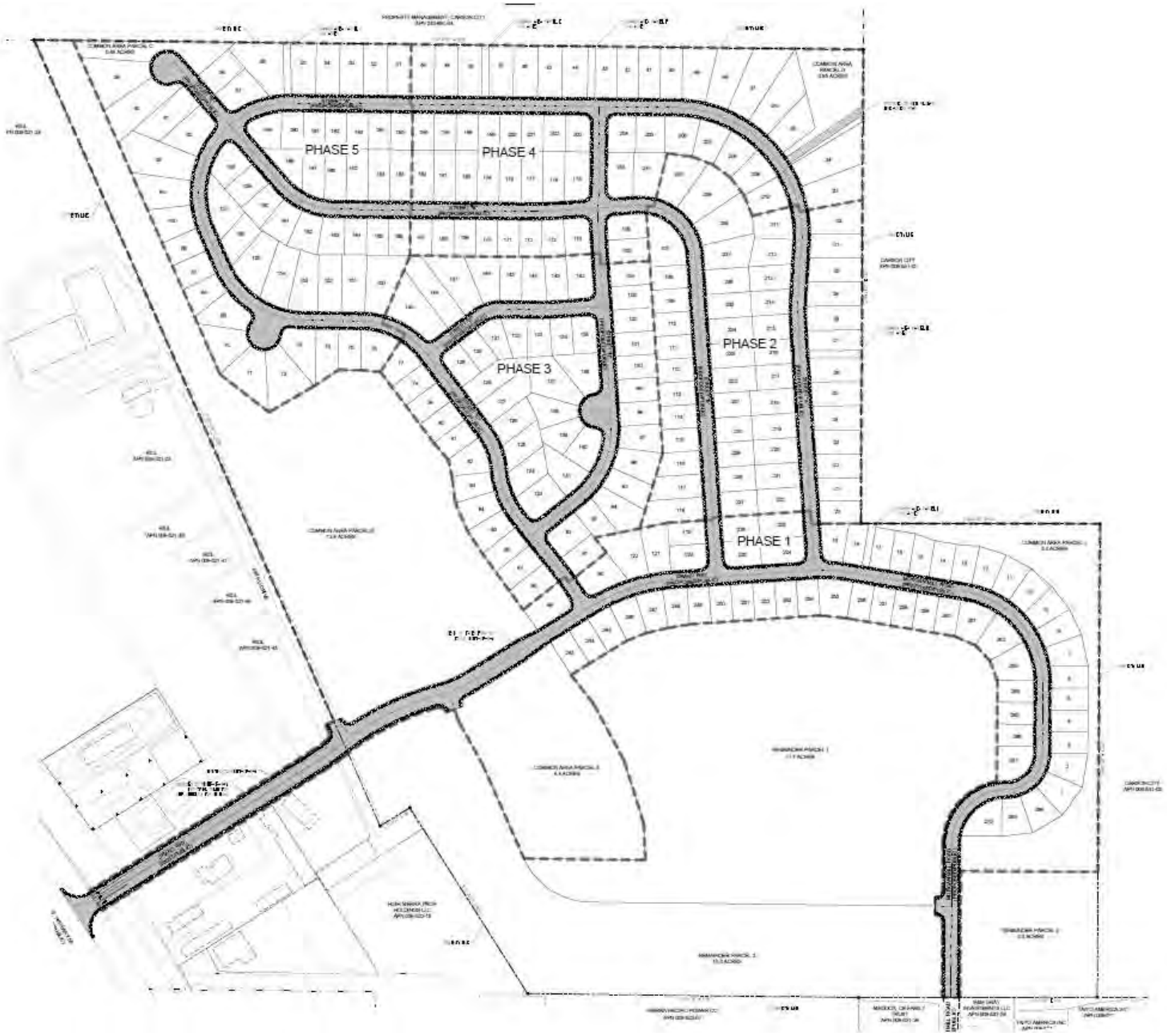
Wildland fire access will be provided from the southeast corner of the development, along a 20’ wide fire access road. The access point will be gated and will be available for fire access in the event of an emergency.

The Common Area parcels are proposed to be maintained by a Landscape Maintenance District (LMD) or similar entity as approved by Carson City. The LMD or similar entity will provide for weed abatement, trail maintenance, and maintenance of landscaping installed in the common area and right-of-way. Carson City will not be responsible for maintaining the common areas.

Figure 6: Project Summary

Project Summary	
Total Project Area	119.1 acres
- **SF6 Proposed Acres**	68.3 acres (270 units); 57%
- **MFA Proposed Acres**	18.0 acres; 15%
- **GC Proposed Acres**	13.9 acres; 12%
- **PR Proposed Acres**	18.9 acres; 16%
Residential Lot Area	50.69 acres
Remainder Parcels	31.0 acres (GC and MFA parcels)
Total Common Area	22.98 acres (PR and common area parcels)
Right-of-Way Area	14.36 acres (not including off-site access road)
Total Number of Residential Lots	270
Smallest Lot	6,000 sq. ft.
Largest Lot	17,950 sq. ft.
Average Lot Size	8,104 sq. ft.
Overall Gross Density	3.95 (270 units/68.3 acres)

Figure 7: Site Plan



PROPOSED ZONING DESIGNATION

This application proposes to amend the zoning designations from GI to a mix of SF6, MFA, GC, and PR to accomplish a mixed-use development in accordance with the MUR Master Plan designation and the proposed use described in the V&T SPA, which indicates that:

> *"the land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property (V&T SPA Policy 1.5)."*

Consistency with the Carson City Master Plan and V&T Specific Plan

The Carson City Master Plan was adopted in 2006 and includes policies related to mixed-use land use categories. The mixed-use policies were established to:

- facilitate higher intensity, mixed-use development in locations designated on the Land Use Plan for mixed-use development;
- allow for the incorporation of a variety of housing as a part of a broader mix of uses;
- allow for projects to be designed with an interconnected network of streets between uses;
- promote a more compact, pedestrian-friendly environment; and
- incorporate recreational features.

The project area has a Mixed-Use Residential (MUR) Master Plan designation, however the existing GI zoning is not in conformance with the existing MUR land use designation. The proposed mix of SF6, MFA, GC, and PR is consistent with the MUR Master Plan designation and reflects the City's desire to establish a more diverse mix of uses within the community and to encourage a more efficient use of the City's limited developable land by encouraging the development of commercial services, employment opportunities, a diversity of housing, and an array of services within a close proximity (General Mixed-Use goal, Carson City Master Plan, Chapter 3, page 3-31).

The proposed zoning for a mixed-use development accomplishes the V&T SPA goals:

- To provide for a cohesive development within the area
- To encourage public/private cooperation in creating public access, trails, and recreational opportunities

The proposed zoning is consistent with the MUR Master Plan designation. Future development will meet the general Mixed-Use Policies and MUR policies contained in the General Plan, including density range, location and scale, mix of uses, mix of housing types, relationship to surrounding development, and parks, open space, and pathways.

Figure 8: Proposed Zoning Designation

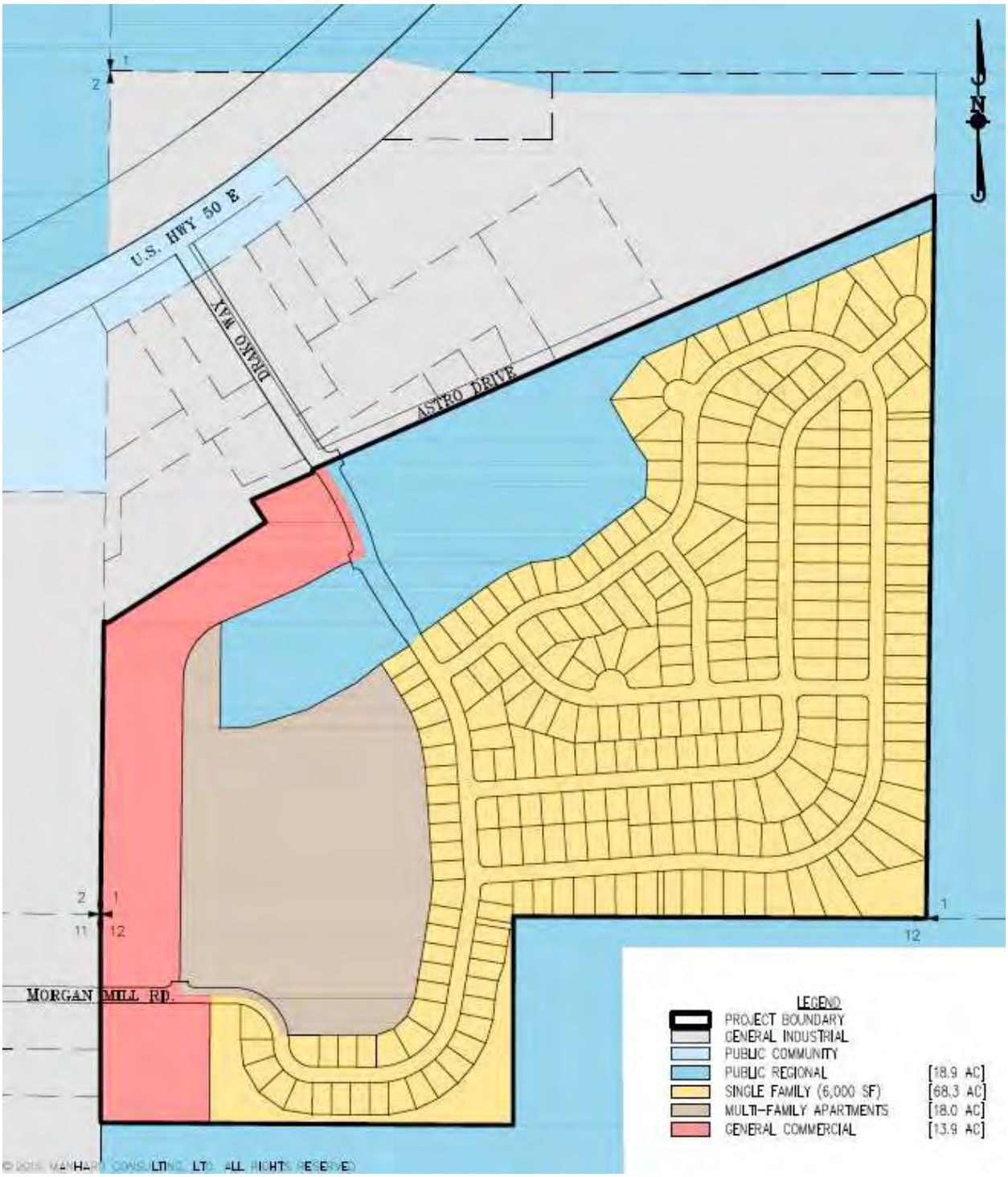


Figure 9: Existing and Proposed Zoning Acreage

ZONING CATEGORY	EXISTING ZONING (+/- ACRES)	PROPOSED ZONING (+/- ACRES)
General Industrial	119.1	0
Single-family 6,000	0	68.3
General Commercial	0	13.9
Multi-Family Apartment	0	18.0
Public Regional	0	18.9
TOTAL ACREAGE	**119.1**	**119.1**

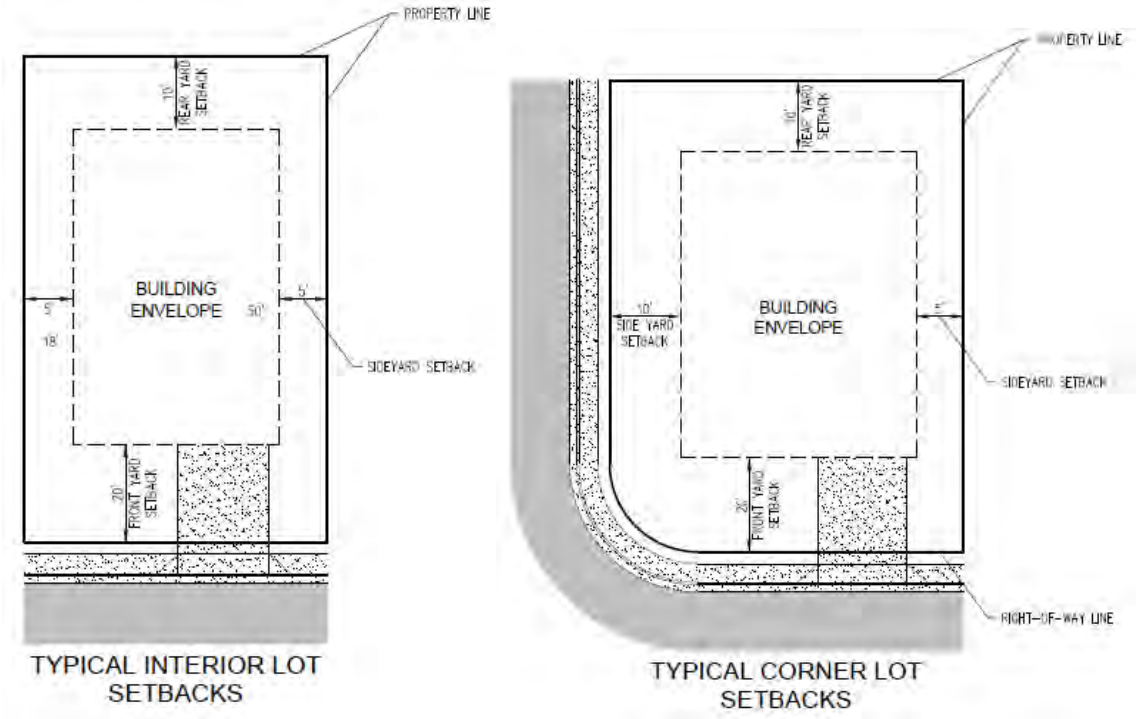
TENTATIVE MAP REVIEW

The Tentative Map includes 270 residential lots, totaling +/-50.68 acres. Three remainder parcels are included on the Tentative Map; one is proposed for multi-family development and zoned MFA (1 parcel = 17.7 acres) and two are proposed for general commercial development and zoned GC (2 parcels = 13.3 acres). There is no specific development associated with the remainder parcels. However, to analyze project impacts, proposed uses have been identified to include 250 multi-family residential units, 12,000 sq. ft. of office space, 12,000 sq. ft. of retail space, and 300 self-storage units. The remainder parcels will be developed in accordance with the Carson City Master Plan and Municipal Code.

Site Development Standards

The proposed residential lots are designed in accordance with SF6 site development standards, including parcel size, density, height, and setbacks, as detailed in CCMC Section 18.04.190. The minimum lot width is 60’ and the maximum height is 26’. Setbacks are 20’ front yard, 5’ side yard, 10’ street side yard, and 10’ rear yard.

Figure 10: Typical Lot Setbacks



Off-street parking will be provided as follows in accordance with CCMC Division 2, Section 2.2:

- A minimum of two (2) off street parking spaces for each single family unit

Specific floorplans are not available at this time, however it is expected that each single family unit will have at least a two car garage and a driveway with two off-street parking spaces.

Figure 11: Parking Calculations

Zoning	# of Units	Spaces Required per Unit	Total Required Spaces	Total Spaces Proposed
SF6	270	2	540	**Minimum: 540***

** This does not include any on-street parking or driveway, or any units that may contain a 3-car garage.*

Hillside Development

As shown in Figure 10: Slope Map, the project site does not meet the requirements for hillside development, since the development site does not average 15% slope. The average slope of the site is 3.94%. Specific parcels that average 15% slope or more are identified on the Tentative Map plan set.

Figure 12: Slope Map

Vehicle and Pedestrian Access

The site is accessed by US Highway 50 with access from Drako Way and from N. Deer Run Road to Morgan Mill Road. Cross sections of a typical local street (50' ROW) and industrial street (65' ROW) are included below. All lots will be accessed by public streets.

Drako Way is the project entrance road and will be landscaped to provide an appealing entrance to the project. Landscaping will be maintained by a LMD or similar entity as approved by Carson City. The entrance road is off-site and the proposed 65' right-of-way and improvements will meet industrial street standards. As detailed on the cross section below, Drako Way will include 5' sidewalks on each side of the

road and bike lanes in accordance with Carson City standards. Drako Way will maintain the existing westerly right-of-way.

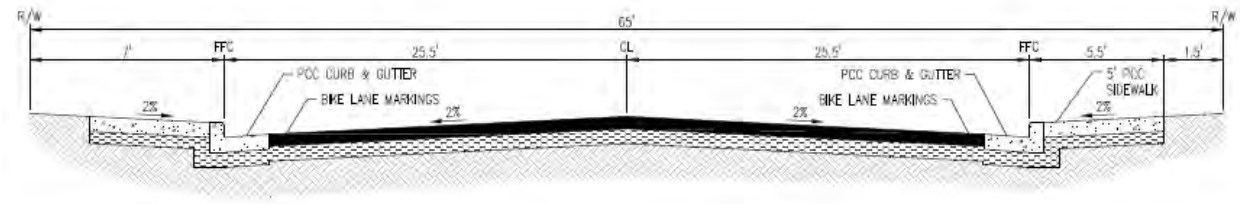
Internal project circulation will be provided by local streets (50' ROW). The proposed street layout is intended to replace the existing rights-of-way (Drako Way, Carabou Drive, Unicorn Drive). It appears that Drako Way, Carabou Drive, and Unicorn Drive were offered for dedication at some point but were not accepted. A Merger and Resubdivision will be offered with the Final Map, to eliminate the previously proposed ROW.

To provide for pedestrian access and connectivity, sidewalks will be provided throughout the development in accordance with the approved Tentative Map. There will be 4' wide sidewalks on both sides of the streets and a 5' wide sidewalk on both sides of Drako Way (project entrance). Sidewalks will be located within the ROW, providing safe pedestrian access throughout the development.

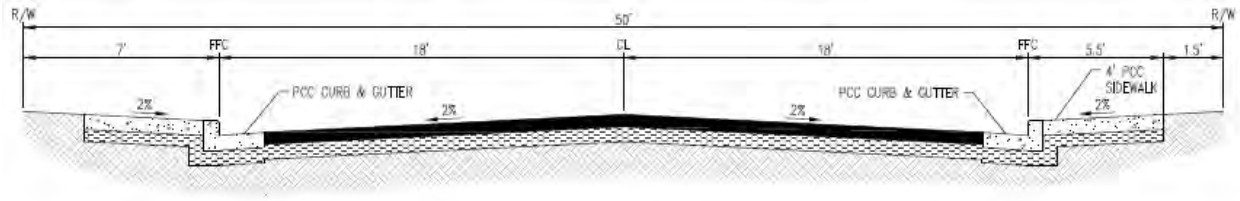
The street network has been designed to provide pedestrian connectivity between the proposed single family residential development and the commercial and multi-family zoned properties. Sidewalks, recreation trails, and open space will be easily accessible from all areas of the development.

The project has been designed to meet Wildland Urban Interface (WUI) standards to prevent wildfire spreading from vegetation to a building. Fire access is provided to the adjacent open space at the southeast corner of the project along a 20' fire access road.

Figure 13: Street Cross Sections



65' RIGHT-OF-WAY STREET (INDUSTRIAL STREET WITH BIKE LANES)



50' RIGHT-OF-WAY STREET

Traffic Improvements

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. The intersection currently operates at Level of Service E during the PM peak hour. The existing volumes on US Highway 50 are high enough to effectively prohibit northbound left-turns from the project unless improvements are made. A signalized intersection would improve operations to acceptable levels of service (LOS A) during the AM and PM peak hours. Improvements will be addressed in coordination with the Nevada Department of Transportation (NDOT) and will meet the requirements of Carson City and NDOT. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

Phasing Plan

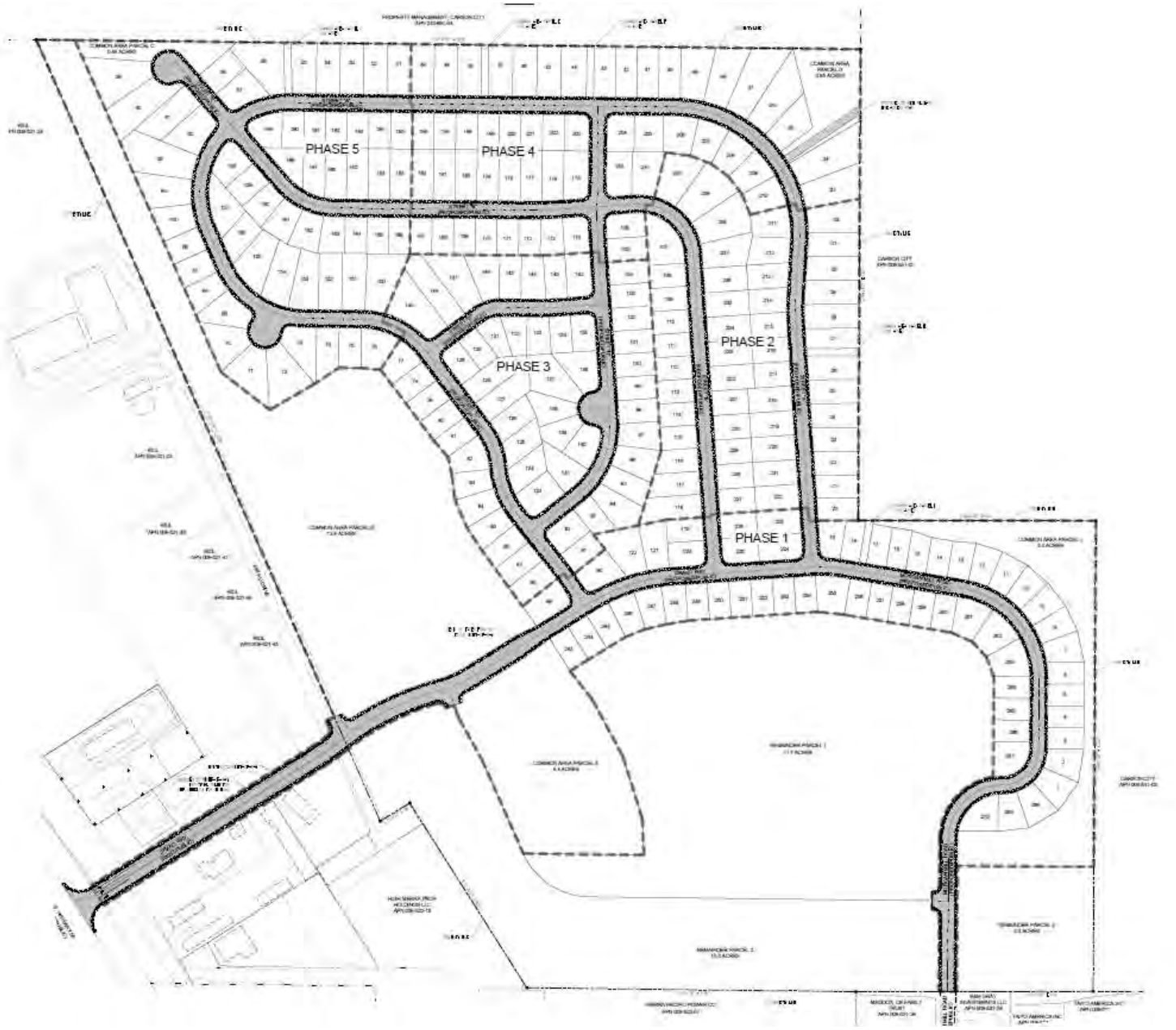
The project phasing plan includes 5 phases, as detailed below.

- Phase 1 will consist of +/- 57 SF6 residential lots, local streets as necessary, off-site infrastructure improvements, including Drako Way and Morgan Mill Road, as needed for the development, and other associated infrastructure improvements. Phase 1 will also include remediation of the Old Carson City Landfill (PR development area), and associated recreation improvements.
- Phase 2 will consist of +/- 51 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.
- Phase 3 will consist of +/- 53 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.
- Phase 4 will consist of +/- 53 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.
- Phase 5 will consist of +/- 56 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.

With approval of the Planning Department, the phasing plan may be modified to accommodate site or market conditions.

The phasing plan meets the Carson City Land Use requirements and NRS 278.360 regarding presentation of final maps. All final maps will be recorded in accordance with NRS 278.

Figure 14: Phasing Plan



Old Carson City Landfill

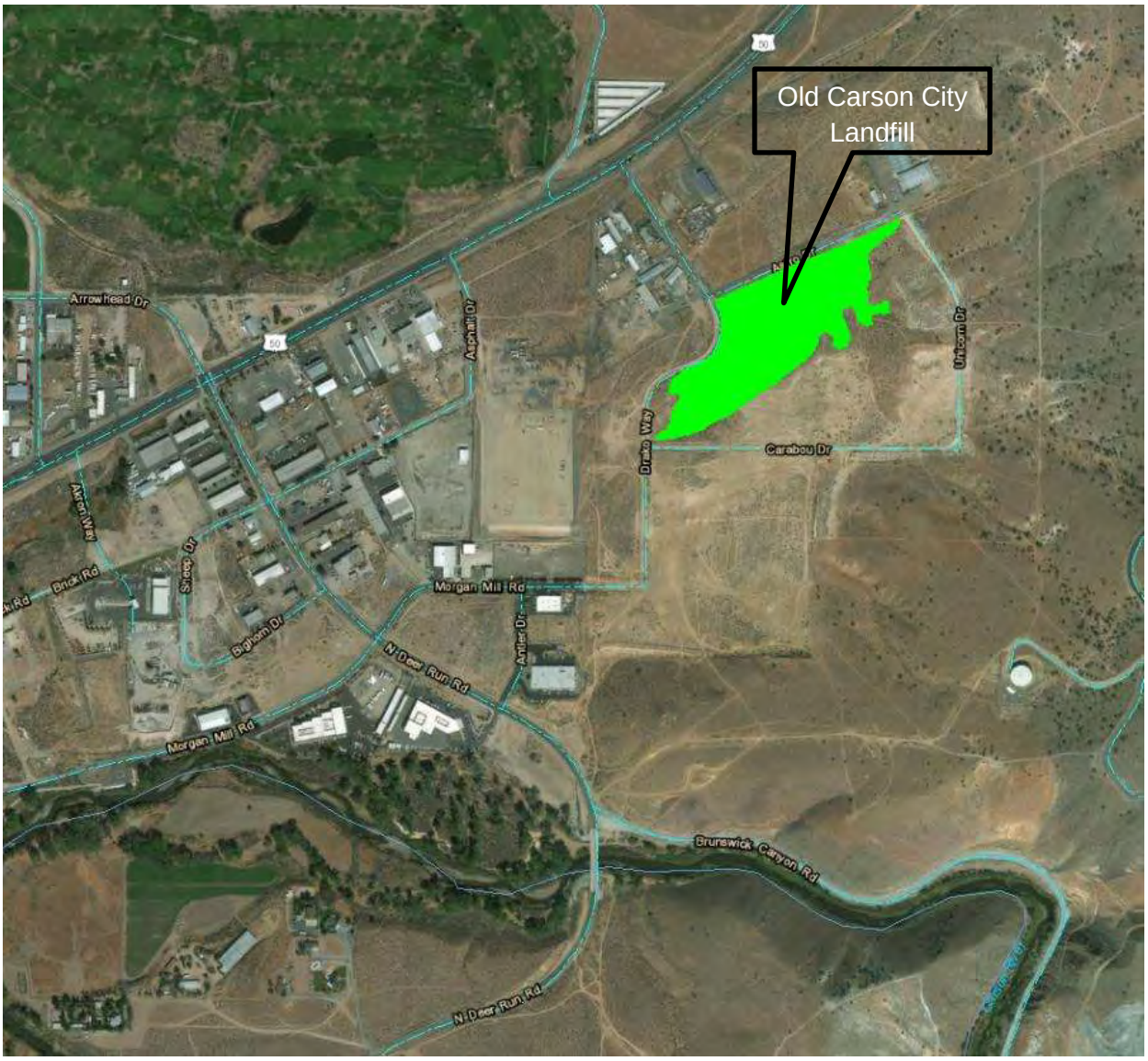
A portion of the site consists of what was once the Old Carson City Landfill, covering +/- 14.5 acres. The landfill was located between Drako Way and Unicorn Drive, extending approximately 800 feet south of Astro Drive. The landfill area is currently zoned GI and is encompassed within the proposed PR zoning. There is a fair amount of land disturbance from off highway vehicle use on the property site.

A remediation plan was submitted to the Nevada Division of Environmental Protection in November 2017 and subsequently approved. A draft Storm Water Management Plan (SWMP) was submitted to NDEP in

April 2018, which was deemed to meet NDEP's requirements. The Final SWMP will be submitted following Tentative Map approval. Remediation will consist of constructing a road within the landfill site, removing any exposed landfill waste and contaminated soil, and capping the entire extents of the landfill with a soil cap. After remediation, the area will be revegetated with native vegetation and recreational trails will be installed. These improvements are proposed to be included with Phase 1 as shown on Figure 14.

The proposed project will leave the old landfill site undisturbed, except for the proposed recreational trails and roadway, in accordance with the Draft SWMP.

Figure 15: Old Carson City Landfill General Location



PROJECT IMPACTS

Project impacts are based on a proposed layout that includes a mix of single family residential, multi-family residential, general commercial, and open space uses. Project impacts related to drainage, sanitary sewer, water, traffic, education, and public safety are detailed below.

Drainage

The subject site consists of 119.1 acres of land and has a Master Plan designation of Mixed-Use Residential and an existing zoning designation of General Industrial. To determine project impacts related to the Zoning Map Amendment, a conceptual land plan has been used that includes a mix of single family residential, multi-family residential, commercial, and common open space.

- 270 Single Family Residential lots on 68.6 acres
- 18.0 acres Multi-Family
- 13.9 acres General Commercial
- 22.98 acres of Common Open Space
    - 18.9 acres is zoned Public Regional for the remediated Old Carson City Landfill

The project is in eastern Carson City, south of U.S. Highway 50 in the area of Drako Way, located in Township 15 North, Range 20 East in portions of Sections 1 and 12. The site is not located in a FEMA flood zone. Drainage to, and through, the site is from a 262-acre catchment that is roughly bounded by Rifle Range Road to the east and Astro Drive to the north. Drainage flows westerly to and through the proposed SFR site to a location just south of the intersection of Morgan Mill Road and Drako Way. Downgradient drainage then continues ~1,000 feet to the Carson River near the intersection of North Deer Run Road and Brunswick Canyon Road. Existing conditions at the site include ~85 acres of previously mass graded site with slopes ranging from 2.5 to 4.5 percent and land cover consisting of bare earth with areas of sagebrush and grass understory in fair to good condition. There is a fair amount of land disturbance from off highway vehicle use on the property site. The subject site includes the Old Carson City Landfill (Facility ID # A-000050). The old landfill has been previously capped and NDEP has required that a stormwater management plan (SWMP) be developed for the old landfill site, which will be developed as parkland under the proposed conditions. A draft SWMP is currently on file with NDEP with a final SWMP due after acceptance of a tentative map.

Onsite and offsite undisturbed areas consist of sagebrush with grass understory in good condition with sparse Pinyon Pine-Juniper on the upper catchment areas. Slopes range from 5 to 20 percent in the upper offsite catchment. Offsite and onsite soils are classified as very high runoff potential with hydrologic soil group type D soils.

Any future development of the subject site will conform to Carson City Municipal Code for stormwater drainage and will incorporate the conditions of the SWMP for the old landfill site park. Increases in peak flow and runoff volume will be mitigated with detention basins designed to the 10-year storm event. In general, the conceptual mix of residential, multi-family commercial, and common open space will decrease the average impervious area from the current zoning for general industrial. The conceptual mix

of uses results in an estimated average impervious area percentage of 39 percent as opposed to the average impervious area percentage of 72 percent for a general industrial area, resulting in a decrease of 45 percent impervious area from the current zoning.

A Conceptual Drainage Report is included with this application.

Sanitary Sewer

Sanitary sewer infrastructure does not currently exist at the subject site. The nearest sanitary sewer is a 15-inch sewer main at the end of the Morgan Mill Road improvements that connects to the Morgan Mill sewer lift station. Sanitary sewer improvements for the Plateau project will conform to Carson City Municipal Code. The following table presents the sanitary sewage loading for the existing general industrial zoning and the conceptual uses of residential, multi-family, commercial, and common open space. Sewage loading is estimated based on the 2017 Sewer System Master Plan Update.

The proposed conditions include the following land uses that constitute the sewershed:

- 270 Single Family Residential lots on 68.3 acres
- 18.0 acres Multi-Family
- 13.9 acres General Commercial

A complete Sewer Report is included with this application.

Figure 16: Sewage Loading Estimates

	Sewage Loading Estimates (gpd)			
	Existing		Proposed	
Zoning	**Ave. Day**	**Peak Hour[1]**	**Ave. Day**	**Peak Hour[1]**
General Industrial	21,298	31,948	N/A	N/A
Single-family (SF6)			39,812	59,718
Multi-Family (MFA)			30,790	46,125
General Commercial (GC)			6,029	9,044
Public Regional			**0**	**0**
Total	21,298	31,948	76,631	114,887

[1] estimated for peaking factor of 1.5 per 2017 Sewer Master Plan Update

Water

Water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. The project is shown as being in the 4880/Basin pressure zone. The East Valley pressure zone directly adjacent to the site. The *2010 Integrated Water Supply and Facility Plan* shows the subject site served from the 4880/Basin pressure zone with a looped 12-inch water main following the layout of Drako Way, Astro, Carabou, and Unicorn Drives and connecting to the existing 8-inch PVC at the intersection of Centennial Drive and Highway 50. It is anticipated that water infrastructure for the

conceptual conditions will mimic that layout. A conceptual water design indicates that a booster station will be required to serve domestic and fire flow to the Plateau Development from the 4880/Basin pressure zone. If a booster station is required, it is expected to be located within the single family portion of the project area, on one of the SF6 lots.

Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. The below table summarizes the water demand estimate for the existing and conceptual uses. It is anticipated that demands will increase with a change from industrial to a residential/commercial mix.

A complete Water Report is included with this application.

Figure 17: Water Demand Estimates

Water Demand Estimates						
	Existing			Proposed		
ZONING	ADD Ac-ft/yr	ADD (gpd)	PDD[1] (gpd)	ADD Ac-ft/yr	ADD (gpd)	MDD[1] (gpd)
General Industrial	119	106,326	206,236			
Single-family Residential 6,000				161	144,089	295,382
Apartments				75	66,956	137,259
Commercial				14	12,150	24,908
Park/Open Space				0	0	0
Total	**119**	**106,326**	**206,236**	**250**	**223,195**	**457,549**
[1] estimated for peaking factor of 2.05 Average Daily Demand (ADD) : Maximum Daily Demand (MDD)						

Traffic

The Traffic Impact Study shows that the project is anticipated to generate 5,002 daily trips, including 344 AM peak hour trips and 473 PM peak hour trips. The following table analyzes the potential traffic impact if the site was built out with the existing General Industrial zoning designation to the proposed SF6/MFA/GC zoning configuration. The Trip Generation shows a 14.2% decrease in trips from 5,833 to 5,002 average daily trips. Trip Generation is based on the 10th Edition Institute of Transportation Engineers Trip Generation Manual.

A complete Traffic Impact Report is included with this application.

Figure 18: Trip Generation Estimates

Land Use	Units	Daily Trip Gen. Rate	Total Daily Trips	AM Trip Gen. Rate	AM Peak Hour	PM Trip Gen. Rate	PM Peak Hour
EXISTING LAND USE							
General Light Industrial 110	112.61 acres	51.80/ac.	**5,833**	-	-	-	-
CONCEPTUAL LAND USES							
Single Family Housing 210	270	9.44/du	2,549	.74/du	200	.99/du	267
Multi-Family Housing 220	250	7.32/du	1,830	.46/du	115	.56/du	140
General Office Building 710	12,000	9.74/ksf	116	1.16/ksf	14	1.15/ksf	14
Shopping Center 820	12,000	37.75/ksf	453	.94/ksf	11	3.81/ksf	46
Mini-Warehouse 151	300	17.96/100 units	54	1.39/100 units	4	1.95/100 units	6
TOTAL			**5,002**		**344**		**473**

Educational Services

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

Public Safety

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The Sheriff's overall average response time City-wide is 4.34 minutes (December 2017). The closest fire station to the project site is located at 2400 East College Parkway (Station 52), approximately 3.3 miles west of the project site, and has a +/-6 minute response time. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 520 dwelling units, will have a greater impact to public safety than development of the site under the

existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

Flood Zone

The project area is not located in a FEMA flood zone. Relevant FEMA flood maps define the area as outside the 0.2% annual chance of flood (Panel 32031C3475G).

Compatibility with Adjacent Land Uses

The proposed Zoning Map Amendment to SF6, MFA, GC, and PR promotes the desired pattern for mixed-use development located in the V&T Specific Plan Area.

The proposed development has been designed to be a cohesive development, so that adjacent land uses are compatible, both internally and externally. There is an existing mix of commercial and industrial uses north of the project site and west of the project site. There is vast open space to the south and west of the project area. Internally, uses have been integrated so that residents have the ability to meet many of their day-to-day needs within close proximity of their home.

Commercial uses are planned to be adjacent to the project boundaries where there are existing commercial and industrial uses so that potential conflicts with residential uses, such as visual and noise impacts, are minimized. Multi-family development is planned to be a transition area between the commercial and single family uses. The single family residential lots are adjacent to the open space, with pedestrian connections to the surrounding area.

To further ensure compatibility, standards established in the Carson City Municipal Code will be applied to single family residential, multi-family residential, and general commercial development. Future development will be designed in accordance with Carson City requirements and the Mixed-Use criterial and evaluation factors required by Carson City and will allow for more efficient development and provide for the least amount of natural resource impairment.

MASTER PLAN POLICY CHECKLIST

The purpose of the Master Plan Policy Checklist is to provide a list of answers that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to this project. The Master Plan Policy Checklist provided with the application is also attached separately. This project complies with the Master Plan and accomplishes the following objectives:

Chapter 3: A Balanced Land Use Pattern

1. The proposed development is located within an area that is served by community water and wastewater facilities, however, water infrastructure does not exist at the subject site. The nearest water line is a

12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. (1.1b)

2. The builder, where feasible, will encourage the use of sustainable building materials and construction techniques to promote energy efficient, sustainable buildings. (1.1e)
3. The project site is not located near Downtown. (1.2a)
4. The proposed development maintains existing access to surrounding public lands from Astro Drive and Rifle Range Road, and provides enhanced pedestrian access from within the development. (1.4a)
5. The proposed development has been designed to minimize disturbances to existing site features by providing approximately 18.9 acres of undisturbed open space. (1.4c)
6. The project site is not adjacent to county boundaries (1.5a)
7. The project site is not adjacent to State or Federal lands. (1.5b)
8. The project area can be adequately served by city services including fire and sheriff services, the school district, Sierra Pacific Power and Southwest Gas. (1.5d)
9. The proposed single-family development, and zoning designations for multi-family and commercial development within the project promote a range of mixed-use, residential, commercial and employment uses at a variety of scales and intensities. (2.1a)
10. The proposed MUR Master Plan designation will promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria. (2.1b, 2.2b, 2.3b, Land Use Districts)
11. The proposed development is located within the Virginia & Truckee Railroad Gateway Specific Plan Area. (2.1c)
12. The proposed ZMA includes appropriate zoning designations so that there are not incompatible uses. Commercial is adjacent to the existing industrial uses, multi-family is adjacent to commercial and single family is adjacent to multi-family and open space. Friction zones are not created. (2.1d)
13. The proposed development encourages a mix of housing densities by providing a variety of lot sizes throughout the project and both single family and multi-family housing opportunities. (2.2a)
14. The builder, where feasible, will encourage energy conservation and minimize the impacts of light pollution within the urban interface. (3.2b)
15. Development will be consistent with the policies contained in the V&T Railroad Gateway Specific Plan chapter of the Carson City Master Plan. (3.2e)
16. The proposed development is designed to minimize the impacts of potential natural disasters by providing multiple access points, including a tertiary emergency vehicle only gated access at the north easterly corner of the project. Homes and outbuildings will be constructed to Carson City Development Code. (3.3b)
17. The proposed development is not within the 100-year floodplain or other hazardous areas and is away from geologic hazards areas. (3.3d, e)
18. Does not create land use conflicts; the proposed MUR designation is anticipated in the V&T SPA and is adjacent to the MUC designation and open space. (Land Use descriptions)
19. The proposed MUR designation is located within the V&T SPA and implements the applicable policies of that SPA. (Land Use Map, Chapter 8).

Chapter 4: Equitable Distribution of Recreational Opportunities

1. The proposed MUR designation allows for the expansion of park and recreation opportunities. (4.2a)
2. Any future development will be consistent with the Open Space Master Plan and Carson River Master Plan. (4.3a)

Chapter 5: Economic Vitality

1. The proposed zoning will help maintain and enhance the primary job base. (5.1)
2. The proposed project provides 13.9 acres of land zoned for General Commercial development. (5.1i)
3. The proposed development provides single family housing models with designated space set aside for multi-family housing to cater to different populations within the City. (5.1j)
4. The project site is not in an area that would be used as a regional retail center. (5.2a)
5. The site is undeveloped so the there is no opportunity to reuse or redevelop underused retail spaces. (5.2b)
6. It is not expected that the proposed zoning designation will support heritage tourism activities, particularly those associated with historic resources, cultural institutions and the State Capitol. (5.4a)
7. The proposed project encourages the protection of natural resources and environmental quality by providing approximately 18.9 acres of undisturbed open space. (5.5f)

Chapter 6: Livable Neighborhoods and Activity Centers

1. The builder, where feasible, will utilize durable, long-lasting building materials. 6.1a)
2. The proposed project aims to promote variety and visual interest in its design through the incorporation of well-articulated building facades, clearly defined entrances and pedestrian connections, landscaping, and other features as consistent with the City's Development Standards. (6.1c)
3. The proposed project will provide appropriate height, density, and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects in accordance with the Carson City Municipal Code. (6.2a, 9.3b, 9.4a)
4. The project is not spot zoned. The proposed zoning designations are compatible with the MUR Master Plan designation and adjacent uses and existing development (9.4b)

Chapter 7: A Connected City

1. The proposed project will promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density), however the project site is not along a major travel corridor to facilitate future transit. (11.2b)
2. It is not expected that the proposed project will promote enhanced roadway connections and networks consistent with the Transportation Master Plan as it is in an area with existing circulation. (11.2c)
3. The proposed project provides for appropriate pathways through the development and to surrounding public lands, consistent with the Unified Pathways Master Plan and the proposed use and density. (12.1a,c)

Chapter 8: Specific Plan Areas

1. The proposed project will be developed in accordance with the V&T-SPA design standards, in accordance with the Carson City Master Plan. (1.1)

2. The proposed ZMA aims to rezone a 13.9 acre area to General Commercial. (1.2)
3. The project site is within the V&T SPA and implements policy V&T SPA-1.5, "The land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment, shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property." The NDEP approval letter is attached that includes approved engineering controls for development of the property. (1.5)
4. The proposed development encourages use of trail facilities in the area by providing multiple pedestrian access points from the single-family portion of the project to the public land on the south and east borders of the project. (2.1)

TENTATIVE SUBDIVISION MAP FINDINGS

In accordance with Carson City Municipal Code Section 17.07.005, this project has been designed to consider the following:

1. Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.

All environmental health laws and regulations regarding water, air pollution, and waste disposal are incorporated into the proposed project.

2. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.

Water is available to the site, with infrastructure improvements. It will be provided by Carson City and conform to the applicable health standards and fulfill quantity requirements for residences.

3. The availability and accessibility of utilities.

Public utilities are currently available to serve the proposed project. Complete water and sewer reports are included with the application that detail existing and proposed service and improvements.

4. The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent

brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The Sheriff's overall average response time City-wide is 4.34 minutes (December 2017). The closest fire station to the project site is located at 2400 East College Parkway (Station 52), approximately 3.3 miles west of the project site, and has a +/-6 minute response time. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 520 dwelling units, will have a greater impact to public safety than development of the site under the existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

The Regional Transportation Commission is responsible for transportation in and around the project area.

Carson City Parks Department will provide recreational and parks services. Enhanced recreational opportunities are provided with this project through the addition of trails and access to adjacent public land.

5. **Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.**

   The project site is adjacent to public lands on the south and east. Pedestrian access has been incorporated at multiple locations throughout the project site.

6. **Conformity with the zoning ordinance and land use element of the city's master plan.**

   The proposed project is in conformance with the MUR Master Plan designation and the Interim Mixed-Use Evaluation Criteria and has been designed to be in conformance with the proposed zoning designations of SF6, MFA, GC, and PR.

7. **General conformity with the city's master plan for streets and highways.**

   The proposed project is in conformance with the Carson City streets and highways master plan. In additional the project is providing off-site improvements at Drako Way.

8. **The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.**

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. The intersection currently operates at Level of Service E during the PM peak hour. The existing volumes on US Highway 50 are high enough to effectively prohibit northbound left-turns from the project unless improvements are made. A signalized intersection would improve operations to acceptable levels of service (LOS A) during the AM and PM peak hours. Improvements will be addressed in coordination with the Nevada Department of Transportation (NDOT) and will meet the requirements of Carson City and NDOT. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

9. The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.

The site does not trigger hillside requirements (3.94% average slope). The parcel is designated by FEMA as Zone X, Area of Minimal Flood Hazard. The site has been designed to accommodate peak flow events. A complete geotechnical investigation is also included as part of this request.

10. The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.

All recommendations and comments provided during the review of this project will be incorporated where applicable.

11. The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.

The availability and accessibility of fire protection to the proposed residential units will be in compliance with Carson City Fire Department recommendations.

12. Recreation and trail easements.

Trails are provided throughout the Old Carson City Landfill property and will be maintained by a LMD or similar entity as approved by Carson City.

ZONING MAP AMENDMENT FINDINGS

In accordance with Carson City Municipal Code Section 18.02.070(10), this project has been designed to meet the following findings:

a. Before a zoning map amendment map be recommended for approval, the applicant shall provide evidence to the commission and board concerning the physical use of land and zoning currently existing in the general vicinity, and which have occurred in the previous five (5) year time period and describe:

1. How the proposal will impact the immediate vicinity;

The proposed Zoning Map Amendment will allow the project area to be in conformance with the MUR Master Plan designation and the V&T Specific Plan, by providing for a mixed-use project that includes SF6, MFA, GC, and PR. In comparison to the existing General Industrial zoning, there will be greater water and sewer impact and impact to the existing roadway. As further described in the project description, improvements are incorporated into the design to minimize impact.

2. How the proposal supports the goals, objectives, and recommendations of the master plan concerning land use and related policies for the neighborhood where the subject project is situated;

As demonstrated in the Master Plan Policy Checklist that is included with this application package, the proposed amendment is in substantial compliance with the following goals, policies, and action programs of the Master Plan:

Chapter 3: A Balanced Land Use Pattern

1. The proposed development is located within an area that is served by community water and wastewater facilities, however, water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. (1.1b)
2. The builder, where feasible, will encourage the use of sustainable building materials and construction techniques to promote energy efficient, sustainable buildings. (1.1e)
3. The project site is not located near Downtown. (1.2a)
4. The proposed development maintains existing access to surrounding public lands from Astro Drive and Rifle Range Road, and provides enhanced pedestrian access from within the development. (1.4a)
5. The proposed development has been designed to minimize disturbances to existing site features by providing approximately 18.9 acres of undisturbed open space. (1.4c)
6. The project site is not adjacent to county boundaries (1.5a)
7. The project site is not adjacent to State or Federal lands. (1.5b)
8. The project area can be adequately served by city services including fire and sheriff services, the school district, Sierra Pacific Power and Southwest Gas. (1.5d)

9. The proposed single-family development, and zoning designations for multi-family and commercial development within the project promote a range of mixed-use, residential, commercial and employment uses at a variety of scales and intensities. (2.1a)
10. The proposed MUR Master Plan designation will promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria. (2.1b, 2.2b, 2.3b, Land Use Districts)
11. The proposed development is located within the Virginia & Truckee Railroad Gateway Specific Plan Area. (2.1c)
12. The proposed ZMA includes appropriate zoning designations so that there are not incompatible uses. Commercial is adjacent to the existing industrial uses, multi-family is adjacent to commercial and single family is adjacent to multi-family and open space. Friction zones are not created. (2.1d)
13. The proposed development encourages a mix of housing densities by providing a variety of lot sizes throughout the project and both single family and multi-family housing opportunities. (2.2a)
14. The builder, where feasible, will encourage energy conservation and minimize the impacts of light pollution within the urban interface. (3.2b)
15. Development will be consistent with the policies contained in the V&T Railroad Gateway Specific Plan chapter of the Carson City Master Plan. (3.2e)
16. The proposed development is designed to minimize the impacts of potential natural disasters by providing multiple access points, including a tertiary emergency vehicle only gated access at the north easterly corner of the project. Homes and outbuildings will be constructed to Carson City Development Code. (3.3b)
17. The proposed development is not within the 100-year floodplain or other hazardous areas and is away from geologic hazards areas. (3.3d, e)
18. Does not create land use conflicts; the proposed MUR designation is anticipated in the V&T SPA and is adjacent to the MUC designation and open space. (Land Use descriptions)
19. The proposed MUR designation is located within the V&T SPA and implements the applicable policies of that SPA. (Land Use Map, Chapter 8).

Chapter 4: Equitable Distribution of Recreational Opportunities

1. The proposed MUR designation allows for the expansion of park and recreation opportunities. (4.2a)
2. Any future development will be consistent with the Open Space Master Plan and Carson River Master Plan. (4.3a)

Chapter 5: Economic Vitality

1. The proposed zoning will help maintain and enhance the primary job base. (5.1)
2. The proposed project provides 13.9 acres of land zoned for General Commercial development. (5.1i)
3. The proposed development provides single family housing models with designated space set aside for multi-family housing to cater to different populations within the City. (5.1j)
4. The project site is not in an area that would be used as a regional retail center. (5.2a)
5. The site is undeveloped so the there is no opportunity to reuse or redevelop underused retail spaces. (5.2b)
6. It is not expected that the proposed zoning designation will support heritage tourism activities,

particularly those associated with historic resources, cultural institutions and the State Capitol. (5.4a)

7. The proposed project encourages the protection of natural resources and environmental quality by providing approximately 18.9 acres of undisturbed open space. (5.5f)

Chapter 6: Livable Neighborhoods and Activity Centers

1. The builder, where feasible, will utilize durable, long-lasting building materials. 6.1a)
2. The proposed project aims to promote variety and visual interest in its design through the incorporation of well-articulated building facades, clearly defined entrances and pedestrian connections, landscaping, and other features as consistent with the City's Development Standards. (6.1c)
3. The proposed project will provide appropriate height, density, and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects in accordance with the Carson City Municipal Code. (6.2a, 9.3b, 9.4a)
4. The project is not spot zoned. The proposed zoning designations are compatible with the MUR Master Plan designation and adjacent uses and existing development (9.4b)

Chapter 7: A Connected City

1. The proposed project will promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density), however the project site is not along a major travel corridor to facilitate future transit. (11.2b)
2. It is not expected that the proposed project will promote enhanced roadway connections and networks consistent with the Transportation Master Plan as it is in an area with existing circulation. (11.2c)
3. The proposed project provides for appropriate pathways through the development and to surrounding public lands, consistent with the Unified Pathways Master Plan and the proposed use and density. (12.1a,c)

Chapter 8: Specific Plan Areas

1. The proposed project will be developed in accordance with the V&T-SPA design standards, in accordance with the Carson City Master Plan. (1.1)
2. The proposed ZMA aims to rezone a 13.9 acre area to General Commercial. (1.2)
3. The project site is within the V&T SPA and implements policy V&T SPA-1.5, "The land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment, shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property." The NDEP approval letter is attached that includes approved engineering controls for development of the property. (1.5)
4. The proposed development encourages use of trail facilities in the area by providing multiple pedestrian access points from the single-family portion of the project to the public land on the south and east borders of the project. (2.1)

3. If the proposed amendment will impact properties within that use districts;

The proposed amendment will not impact any other properties zoned SF6, MFA, GC, or PR. This amendment will only amend the zoning map for the project area (9 parcels) included in this application.

4. Any impacts on public services and facilities.

Complete water, sewer, and hydrology reports are included with this application that detail impacts on public services and proposed improvements.

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 520 dwelling units, will have a greater impact to public safety than development of the site under the existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

The Regional Transportation Commission is responsible for transportation in and around the project area.

Carson City Parks Department will provide recreational and parks services. Enhanced recreational opportunities are provided with this project through the addition of trails and access to adjacent public land.

Carson City Planning Division
108 E. Proctor Street· Carson City NV 89701
Phone: (775) 887-2180 • E-mail: planning@carson.org

FILE # ZMA – 18 -

APPLICANT **PHONE #**
Keith Serpa

MAILING ADDRESS, CITY, STATE, ZIP
P.O.Box 1724 Carson City, NV 89702

EMAIL ADDRESS
kserpa@sbcglobal.net

PROPERTY OWNER **PHONE #**
Tahoe IV LLC [Keith Serpa]

MAILING ADDRESS, CITY, STATE, ZIP
PO Box 1724 Carson City, NV 89702

EMAIL ADDRESS
kserpa@sbcglobal.net

APPLICANT AGENT/REPRESENTATIVE **PHONE #**
Manhard Consulting [Karen Downs] 775-321-6538

MAILING ADDRESS, CITY, STATE, ZIP
241 Ridge Street Ste.400 Reno, NV 89501

EMAIL ADDRESS
kdowns@manhard.com

FOR OFFICE USE ONLY:

ZONING MAP AMENDMENT

FEE: $2,450.00 + noticing fee

SUBMITTAL PACKET

- Application Form
- Written Project Description
- Site Plan
- Proposal Questionnaire With Both Questions and Answers Given, Supporting Documentation
- Applicant's Acknowledgment Statement
- 6 Completed Application Packets (1 Original + 5 Copies)
- Documentation of Taxes Paid-to-Date (1 copy)
- Project Impact Reports (Engineering-4 copies)
- CD containing application data (all to be submitted once application is deemed complete by staff)

Application Reviewed and Received By:

Submittal Deadline: See attached PC application submittal schedule.
Note: Submittals must be of sufficient clarity and detail such that all departments are able to determine if they can support the request. Additional information may be required.

Project's Assessor Parcel Number(s)	Street Address	ZIP Code
008-521-54 & 55; 008-521-89 & 90 008-522-16 17 & 18 008-531-59 & 60		

Project's Master Plan Designation	Project's Current Zoning	Nearest Major Cross Street(s)
Mixed-Use Residential	GI	Carabou Drive & Unicorn Drive

Briefly describe the components of the proposed project: in accordance with Carson City Municipal Code (CCMC), Section 18.02.075. In addition to the brief description of your project and proposed use, provide additional page(s) to show a more detailed summary of your project and proposal.

Zoning Map Amendment from General Industrial to Single-Family 6,000 (SF6, 67.89 acres), Public Regional (PR, 18.9 acres), Multifamily Apartment (MFA, 18.53 acres), and General Commercial (GC, 13.81 acres).

PROPERTY OWNER'S AFFIDAVIT

I, KEITH SERPA, being duly deposed, do hereby affirm that I am the record owner of the subject property, and that I have knowledge of, and I agree to, the filing of this application.

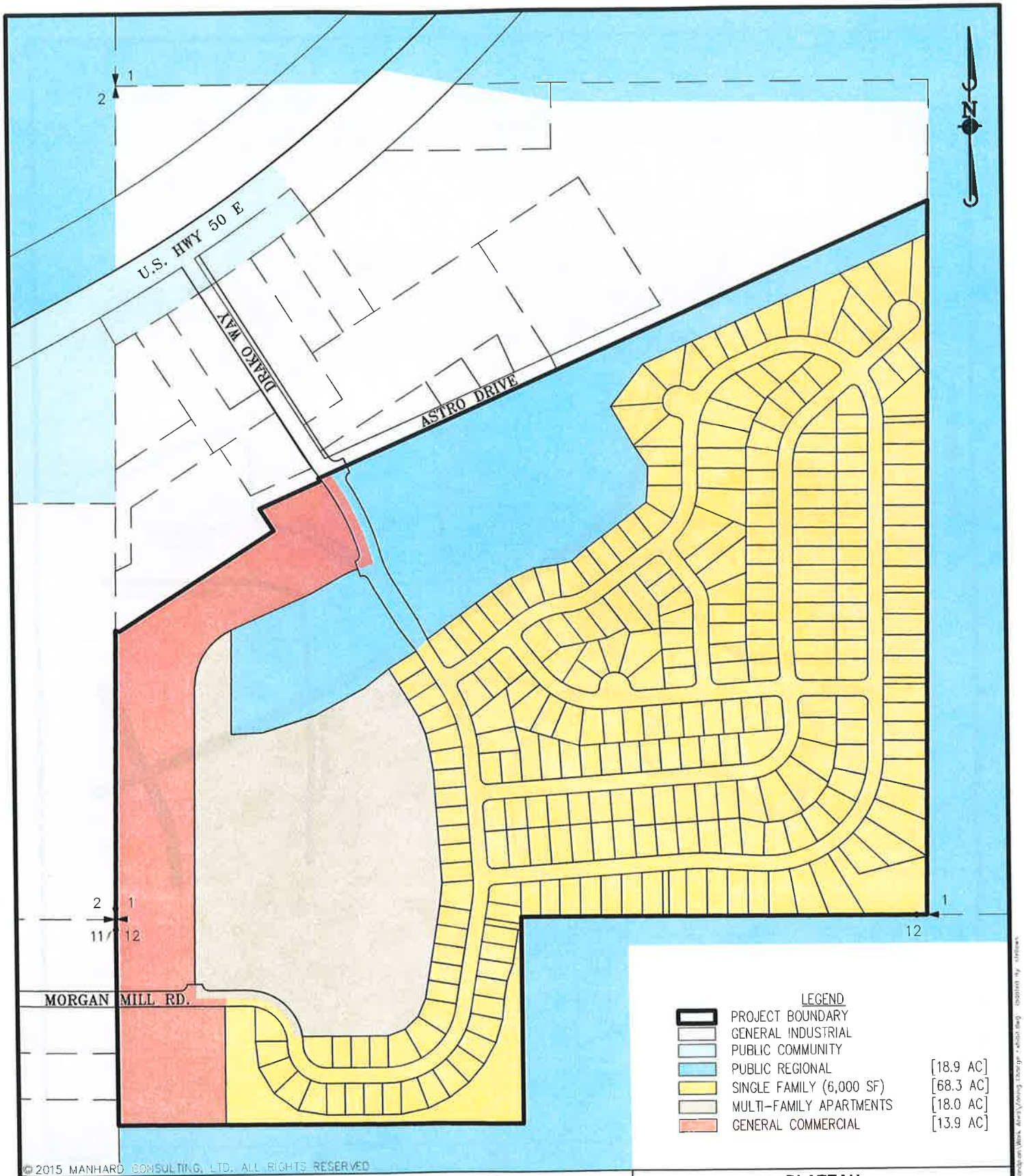
Signature — PO BOX 1724 CARSON CITY NV (Address) — 10/12/18 (Date)

Use additional page(s) if necessary for other names.

On OCTOBER 12, 2018, KEITH SERPA, personally appeared before me, a notary public, personally known (or proved) to me to be the person whose name is subscribed to the foregoing document and who acknowledged to me that he/she executed the foregoing document.

Notary Public

T. PETERSON
NOTARY PUBLIC
STATE OF NEVADA
No. 99-37055-5 My Appt. Exp. June 29, 2019

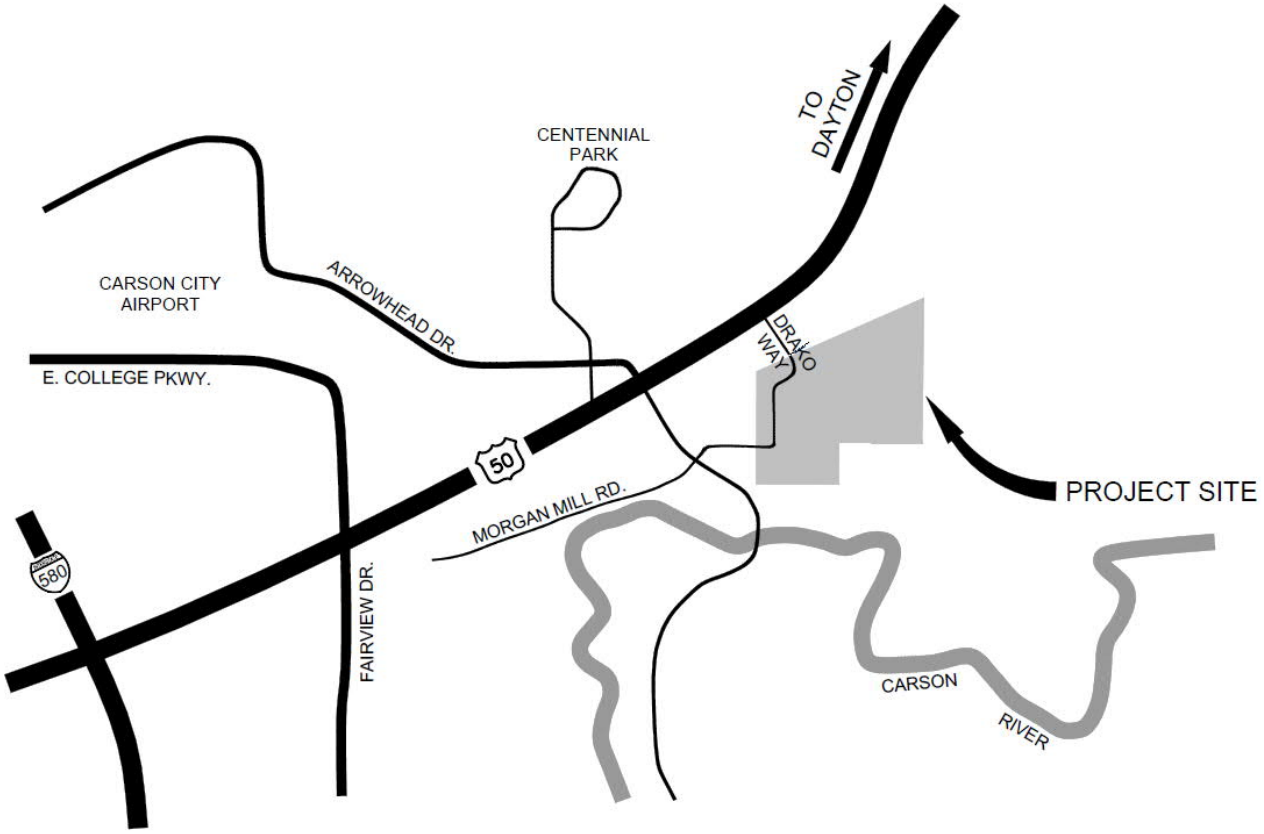


Manhard CONSULTING LTD
9850 Double R Blvd, Suite 101, Reno, NV 89521 tel: (775) 746-3500 fax: (775) 746-3520 www.manhard.com
Civil Engineers • Surveyors • Water Resources Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PLATEAU
CARSON CITY, NEVADA
PROPOSED ZONING DESIGNATION

PROJ. MGR.: CMB
DRAWN BY: SDF
DATE: OCT 2018
SCALE: 1"=400'

SHEET
EXHIBIT 1
TIV.CCNV01



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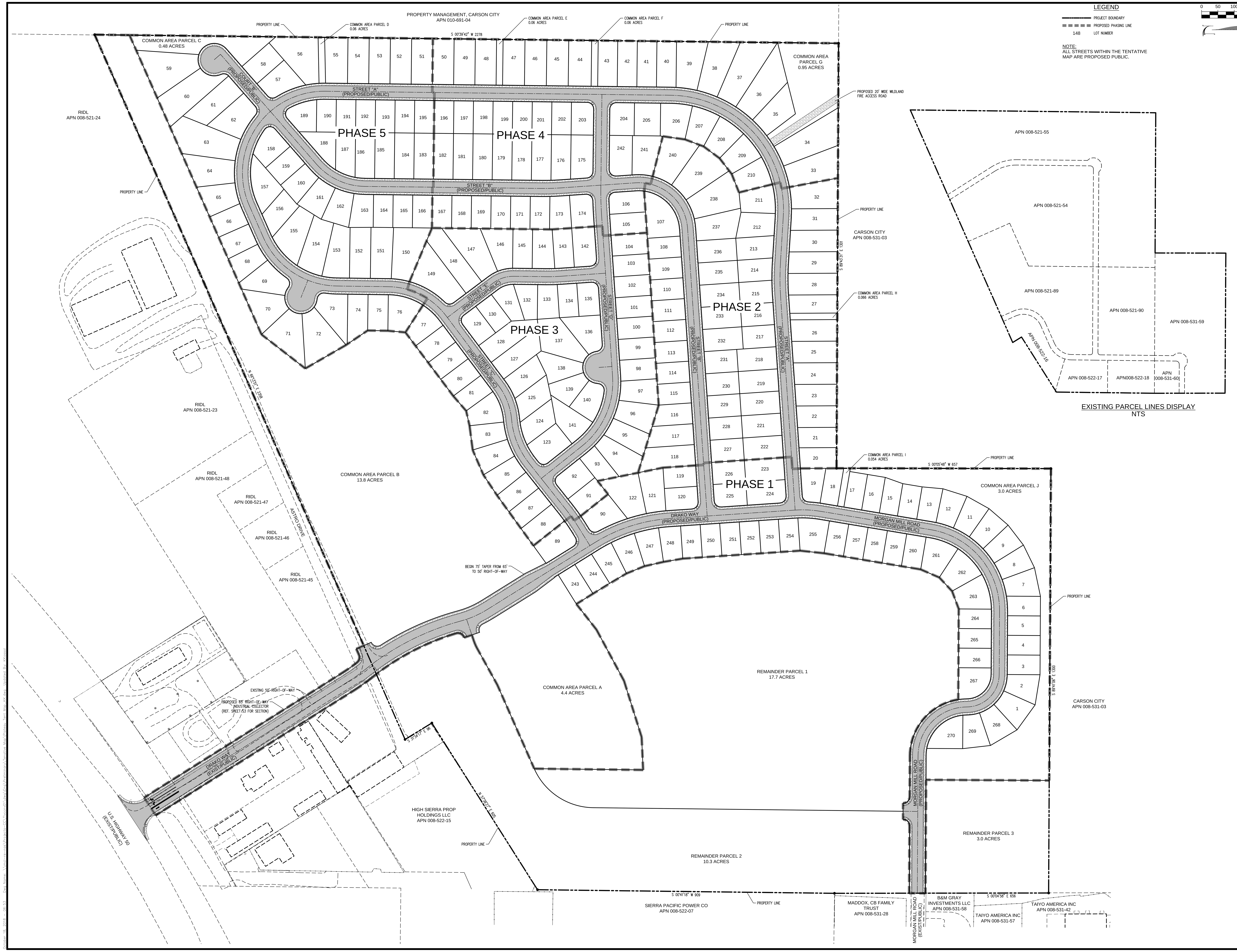
PLATEAU DEVELOPMENT
CARSON CITY, NEVADA
VICINITY MAP

PROJ. MGR.:	KCK
DRAWN BY:	SDF
DATE:	OCT 2018
SCALE:	N.T.S.

SHEET 1 OF 1

TIV.CCNV01



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Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

PLATEAU DEVELOPMENT

CARSON CITY, NEVADA

OVERALL SITE PLAN

PROFESSIONAL ENGINEER - STATE OF NEVADA
KEVIN C. KOSSOL
Exp: 6/30/19
CIVIL
No. 11509

PROJ. MGR.:	KCK
PROJ. ASSOC.:	SDF
DRAWN BY:	KCK
DATE:	OCT. 2018
SCALE:	1"=100'

SHEET
S0 OF 14
TIVCCNV01

PLATEAU ZONING MAP AMENDMENT APPLICATION

SUBMITTED OCTOBER 18, 2018

APPLICATION QUESTIONNAIRE

Please type or print in black ink on separate sheets. Attach to your application. List each question, then respond in your own words.

GENERAL REVIEW OF PERMITS

Source: CCMC 18.02.050 (Review) and 18.02.075 (ZMA). The Board of Supervisors and the Planning Commission in reviewing and judging the merit of a proposal for a variance, special use permit, or a zoning map amendment, shall direct its considerations to, and find that in addition to other standards in this title, the following conditions and standards are met:

1. That the proposed amendment is in substantial compliance with and supports the goals and policies of the Master Plan.

A. In reviewing the attached Carson City Master Plan Policy Checklist, determine which Policies are applicable to the proposal. Explain what features of the proposed development support your selection of Goals and Policies concerning land use and related policies for the neighborhood where the subject project is located.

Chapter 3: A Balanced Land Use Pattern

1. The proposed development is located within an area that is served by community water and wastewater facilities, however, water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. (1.1b)
2. The builder, where feasible, will encourage the use of sustainable building materials and construction techniques to promote energy efficient, sustainable buildings. (1.1e)
3. The project site is not located near Downtown. (1.2a)
4. The proposed development maintains existing access to surrounding public lands from Astro Drive and Rifle Range Road, and provides enhanced pedestrian access from within the development. (1.4a)
5. The proposed development has been designed to minimize disturbances to existing site features by providing approximately 18.9 acres of undisturbed open space. (1.4c)
6. The project site is not adjacent to county boundaries (1.5a)
7. The project site is not adjacent to State or Federal lands. (1.5b)
8. The project area can be adequately served by city services including fire and sheriff services, the school district, Sierra Pacific Power and Southwest Gas. (1.5d)
9. The proposed single-family development, and zoning designations for multi-family and commercial development within the project promote a range of mixed-use, residential, commercial and employment uses at a variety of scales and intensities. (2.1a)
10. The proposed MUR Master Plan designation will promote mixed-use development patterns as

appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria. (2.1b, 2.2b, 2.3b, Land Use Districts)

11. The proposed development is located within the Virginia & Truckee Railroad Gateway Specific Plan Area. (2.1c)
12. The proposed ZMA includes appropriate zoning designations so that there are not incompatible uses. Commercial is adjacent to the existing industrial uses, multi-family is adjacent to commercial and single family is adjacent to multi-family and open space. Friction zones are not created. (2.1d)
13. The proposed development encourages a mix of housing densities by providing a variety of lot sizes throughout the project and both single family and multi-family housing opportunities. (2.2a)
14. The builder, where feasible, will encourage energy conservation and minimize the impacts of light pollution within the urban interface. (3.2b)
15. Development will be consistent with the policies contained in the V&T Railroad Gateway Specific Plan chapter of the Carson City Master Plan. (3.2e)
16. The proposed development is designed to minimize the impacts of potential natural disasters by providing multiple access points, including a tertiary emergency vehicle only gated access at the north easterly corner of the project. Homes and outbuildings will be constructed to Carson City Development Code. (3.3b)
17. The proposed development is not within the 100-year floodplain or other hazardous areas and is away from geologic hazards areas. (3.3d, e)
18. Does not create land use conflicts; the proposed MUR designation is anticipated in the V&T SPA and is adjacent to the MUC designation and open space. (Land Use descriptions)
19. The proposed MUR designation is located within the V&T SPA and implements the applicable policies of that SPA. (Land Use Map, Chapter 8).

Chapter 4: Equitable Distribution of Recreational Opportunities

1. The proposed MUR designation allows for the expansion of park and recreation opportunities. (4.2a)
2. Any future development will be consistent with the Open Space Master Plan and Carson River Master Plan. (4.3a)

Chapter 5: Economic Vitality

1. The proposed zoning will help maintain and enhance the primary job base. (5.1)
2. The proposed project provides 13.9 acres of land zoned for General Commercial development. (5.1i)
3. The proposed development provides single family housing models with designated space set aside for multi-family housing to cater to different populations within the City. (5.1j)
4. The project site is not in an area that would be used as a regional retail center. (5.2a)
5. The site is undeveloped so the there is no opportunity to reuse or redevelop underused retail spaces. (5.2b)

6. It is not expected that the proposed zoning designation will support heritage tourism activities, particularly those associated with historic resources, cultural institutions and the State Capitol. (5.4a)
7. The proposed project encourages the protection of natural resources and environmental quality by providing approximately 18.9 acres of undisturbed open space, proposed to be zoned PR. (5.5f)

Chapter 6: Livable Neighborhoods and Activity Centers

1. The builder, where feasible, will utilize durable, long-lasting building materials. 6.1a)
2. The proposed project aims to promote variety and visual interest in its design through the incorporation of well-articulated building facades, clearly defined entrances and pedestrian connections, landscaping, and other features as consistent with the City's Development Standards. (6.1c)
3. The proposed project will provide appropriate height, density, and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects in accordance with the Carson City Municipal Code. (6.2a, 9.3b, 9.4a)
4. The project is not spot zoned. The proposed zoning designations are compatible with the MUR Master Plan designation and adjacent uses and existing development (9.4b)

Chapter 7: A Connected City

1. The proposed project will promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density), however the project site is not along a major travel corridor to facilitate future transit. (11.2b)
2. It is not expected that the proposed project will promote enhanced roadway connections and networks consistent with the Transportation Master Plan as it is in an area with existing circulation. (11.2c)
3. The proposed project provides for appropriate pathways through the development and to surrounding public lands, consistent with the Unified Pathways Master Plan and the proposed use and density. (12.1a,c)

Chapter 8: Specific Plan Areas

1. The proposed project will be developed in accordance with the V&T-SPA design standards, in accordance with the Carson City Master Plan. (1.1)
2. The proposed ZMA aims to rezone a 13.9 acre area to General Commercial. (1.2)
3. The project site is within the V&T SPA and implements policy V&T SPA-1.5, "The land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment, shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property." The NDEP approval letter is attached that includes approved engineering controls for development of the property. (1.5)
4. The proposed development encourages use of trail facilities in the area by providing multiple pedestrian access points from the single-family portion of the project to the public land on the south and east borders of the project. (2.1)

2. That the proposed amendment will provide for land uses compatible with existing adjacent land uses and will not have detrimental impacts to other properties in the vicinity.

A. Describe the land uses and zoning adjoining your property (for example: North: two houses, Single-Family One Acre zoning; East: restaurant, Retail Commercial zoning, etc.), and how your zoning will be compatible with those uses and not cause detrimental impacts.

North: A mix of Commercial, Industrial and Vacant uses with General Industrial zoning
South: Vacant with Public Regional zoning
East: Vacant with Public Regional zoning
West: A mix of Commercial and Industrial uses with General Industrial zoning

B. Describe land use and zoning changes in the general vicinity which have occurred in the previous five-year period.

Regional connectivity near the project area has increased in the previous five-year time period. US Highway 50 now connects to USA Parkway to the east (opened in September 2017), providing enhanced access to industrial development such as the Tahoe Reno Industrial Center (TRIC) and Tesla Gigafactory. US Highway 50 also continues to Lake Tahoe to the west and connects to Interstate 580, which leads to Reno to the north. This increase in nearby job opportunities and increased regional connectivity will continue to lead to increased demand for housing development in the region.

Additionally, the opening of US Highway 50 West and Interstate 580, approximately 8.4 miles southwest of the project, represents a significant change in Carson City and will encourage commercial development and job opportunities. The last leg of Interstate 580 opened in August 2017.

The site has been zoned industrial for many years but has remained vacant because there has not been market demand for industrial land. Instead, housing opportunities represent the highest and best use of the site. This is further demonstrated by the shift in the Master Plan designation from Industrial to Mixed-Use Residential. Also, as detailed in the Carson City Master Plan, a mix of residential use types are needed to supply the housing demand. This project has the opportunity to supply a mix of residential use types, along with adjacent commercial land uses to provide for residents' day-to-day needs, and enhanced pedestrian access to adjacent open space.

3. That the proposed amendment will not negatively impact existing or planned public services or facilities and will not adversely impact the public health, safety and welfare.

The proposed zone change will impact existing services as shown below in 4A, B, C, D, and E.

5. That sufficient consideration has been exercised by the applicant in adapting the project to existing improvements in the area. Be sure to indicate the source of the information that you are providing (private engineer, development engineering, title report, or other sources). Describe how your proposed Zoning Map Amendment will not adversely impact drainage, sewer, water, traffic, schools, emergency services, roadways and other city services.

A. Is drainage adequate in the area to support the density that may occur with the rezoning? How will drainage be accommodated? How have you arrived at this conclusion?

The subject site includes the Old Carson City Landfill (Facility ID # A-000050). The old landfill has been previously capped and NDEP has required that a stormwater management plan (SWMP) be developed for the old landfill site, which will be developed as parkland under the proposed conditions. A draft SWMP is currently on file with NDEP with a final SWMP due after acceptance of a tentative map.

Any future development of the subject site will conform to Carson City Municipal Code for stormwater drainage and will incorporate the conditions of the SWMP for the old landfill site park. Increases in peak flow and runoff volume will be mitigated with detention basins designed to the 10-year storm event. In general, the conceptual mix of residential, multi-family commercial, and common open space will decrease the average impervious area from the current zoning for general industrial. The conceptual mix of uses results in an estimated average impervious area percentage of 39 percent as opposed to the average impervious area percentage of 72 percent for a general industrial area, resulting in a decrease of 45 percent impervious area from the current zoning.

B. Are the water supplies in the area of your project adequate to meet your needs without degrading supply and quality to others? Is there adequate water pressure? Are the lines in need of replacement? Talk to the Utilities Department for the required information.

Water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. The project is shown as being in the 4880/Basin pressure zone. The East Valley pressure zone directly adjacent to the site. The 2010 Integrated Water Supply and Facility Plan shows the subject site served from the 4880/Basin pressure zone with a looped 12-inch water main following the layout of Drako Way, Astro, Carabou, and Unicorn Drives and connecting to the existing 8-inch PVC at the intersection of Centennial Drive and Highway 50. It is anticipated that water infrastructure for the conceptual conditions will mimic that layout. A conceptual water design indicates that a booster station will be required to serve domestic and fire flow to the Plateau Development from the 4880/Basin pressure zone.

Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. The below table summarizes the water demand estimate for the existing and conceptual uses. It is anticipated that demands will increase with a change from industrial to a residential/commercial mix.

C. Are roadways sufficient in the area to serve the density that may occur from the rezoning? How have you arrived at this conclusion?

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. The intersection currently operates at Level of Service E during the PM peak hour. The existing volumes on US Highway 50 are high enough to effectively prohibit northbound left-turns from the project unless improvements are made. A signalized intersection would improve operations to acceptable levels of service (LOS A) during the AM and PM peak hours. Improvements will be addressed in coordination with the Nevada Department of Transportation (NDOT) and will meet the requirements of Carson City and NDOT. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

The Traffic Impact Study shows that the project is anticipated to generate 5,002 daily trips, including 344 AM peak hour trips and 473 PM peak hour trips. The following table analyzes the potential traffic impact if

the site was built out with the existing General Industrial zoning designation to the proposed SF6/MFA/GC zoning configuration. The Trip Generation shows a 14.2% decrease in trips from 5,833 to 5,002 average daily trips. Trip Generation is based on the 10th Edition Institute of Transportation Engineers Trip Generation Manual.

D. Will the school district be able to serve the student population that may occur from the rezoning? How have you arrived at this conclusion?

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

E. Are adequate means of access available for emergency vehicles to serve the site? What is the approximate response time for emergency vehicles? If your application is approved to rezone the property, will additional means of access be required for increased density? Or will existing access ways be adequate? How have you arrived at this conclusion?

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The Sheriff's overall average response time City-wide is 4.34 minutes (December 2017). The closest fire station to the project site is located at 2400 East College Parkway (Station 52), approximately 3.3 miles west of the project site, and has a +/-6 minute response time. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 519 dwelling units, will have a greater impact to public safety than development of the site under the existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

ACKNOWLEDGMENT OF APPLICATION

Please type the following signed statement at the end of your application questionnaire:

I certify that the foregoing statements are true and correct to the best of my knowledge and belief.

Applicant	KEITH SERPA Print Name	10/12/18 Date

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 ☒ No ☐	The percentage of different uses is consistent with MUR1.5. The percentages are as follows: SF6 +/- 53% MFA +/- 15% GC +/- 11%
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 ☐	Access is proided to commercial uses from Drako Way & Morgan Mill Rd, approximately .2 miles south of Highway 50. The area can be readily served by transit of needed.
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 ☒	Any development will meet the mixed-use criteria. There are no commercial development plans associated with this application.
4. Are residential uses well-integrated with non-residential uses (either horizontally or vertically) and the surrounding development context?	Yes ☒ No ☐	The proposed ZMA provides for well-integrated uses with Genreal Commercial adjacent to existing industrial, MFA adjacent to GC, and SF6 adjacent to MFA and Open Space.

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 proposed development provides access to recreational trails, as well as general commercial zoning in close proximity to the single family and multifamily zoning.

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 ☐	In terms of scale and intensity, the proposed development contains a mix of housing types that is compatible with a mixed-use residential neighborhood. The policy states that no one housing type sould occupy more than 60% of the total land area. The proposed percentages are as follows: SF6 +/- 53% MFA +/- 15%
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 ☐	The proposed development provides a mix of single-family and muli-family housing types which are appropriate for the scale, location and land use of the area. The proposed percentages are as follows: SF6 +/- 53% MFA +/- 15%

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 ☐	For the SF portion, the minimum density required is per MUR 1.3 is 3 dwelling units per acre, and the proposed density is 3.97 du/acre. For the MFA portion, the minimum density required is 3 dwelling units per acre, and the conceptual density is 14.1 du/acre.
9. Does the development exceed the maximum density range for the applicable land use category?	Yes ☐ No ☒	For the SF portion, the maximum permitted density per MUR 1.3 is 36 dwelling units per acre, and the proposed density is 3.97 du/acre. For the MFA portion, the maximum permitted density per MUR 1.3 is 36 dwelling units per acre, and the proposed density is 14.1 du/acre. Maximum permitted density in SF6 is 7.26 dwelling units per acre, and the proposed density is 3.97 du/acre. Maximum permitted density in MFA is 36 dwelling units per acre, and the proposed density is 3.97 dwelling units per acre.
10. If yes to #9 above, is the development located within a designated mixed-use activity center?	Yes ☐ No ☐ N/A ☒	
11. If yes to #9 above, is the largest concentration of density concentrated away from primary street frontages and surrounding neighborhoods?	Yes ☐ No ☐ N/A ☒	

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 ☐	The street network has been designed to provide pedestrian connectivity between the proposed single family residential development and the commercial and multi-family areas. Sidewalks, recreation trails, and open space will be easily accessible from all areas of the development.
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 ☐	Access is provided from Drako Way, Morgan Mill Rd. and new local roads that are proposed with the development.
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 ☒	No development is proposed relevant to this criteria.

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 ☐ No ☐ N/A ☒	No development is proposed relevant to this criteria.
16. Are larger parking lots organized as a series of smaller lots with clear pedestrian connections and landscape buffers as dividers?	Yes ☐ No ☐ N/A ☒	No development is proposed relevant to this criteria.
17. Is surface parking screened from surrounding neighborhoods and pedestrian walkways?	Yes ☐ No ☐ N/A ☒	No development is proposed relevant to this criteria.
18. Is structured parking integrated with adjacent structures in terms of its design and architectural character?	Yes ☐ No ☐ N/A ☒	No development is proposed relevant to this criteria.
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 ☒	No development is proposed relevant to this criteria.

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 ☐ N/A ☒	No development is proposed relevant to this criteria.
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 ☐	Individual pods of development are not walled off, and the proposed development is integreated through the proposed circulation and access to adjacent undevelped land. The proposed development includes appropriate zoning designations between uses by providing well-integrated uses with Genreal Commercial adjacent to existing industrial, MFA adjacent to GC, and SF6 adjacent to MFA and Open Space.
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 ☒	The proposed development is not adjacent to or ajoining an existing residential neighborhood.

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 ☐	Public spaces to serve residents are incorporated with the undisturbed open spaceaccesible by residents. Development of the GC and MFA portions will be in conformance with the mixed use policies.
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 ☐	Public spaces to serve residents are incorporated with the undisturbed open spaceaccesible by residents. Development of the GC and MFA portions will be in conformance with the mixed use policies.
25. Are public spaces easily accessible to pedestrians and the surrounding community, if applicable?	Yes ☒ No ☐ N/A ☐	Public spaces to serve residents are incorporated with the undisturbed open spaceaccesible by residents. Development of the GC and MFA portions will be in conformance with the mixed use policies.
26. Are parks and trails provided consistent with the Parks, Recreation, and Unified Pathways Master Plan?	Yes ☐ No ☐ N/A ☐	The project area was not included in the 2006 Carson City Parks and Recreation master plan's Neighborhood Park Analysis because the property was zoned insudtrial at the time.The Parks and Recreation Commission plans to review the project and provide an opportunity for public input regarding recreational needs, opportunities, and use characteristics for any parks and recreation components.

Relevant Master Plan Policies:

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

CARSON CITY
Capital of Nevada

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Secured Tax Inquiry Detail for Parcel # 008-521-54

Property Location: CARABOU DR & UNICORN DR
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017521
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

No Taxes Owing

Current Year					
08/20/18	23.75		23.75	23.75	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0
Abatement Amount			.21	.26	1.07

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Secured Tax Inquiry Detail for Parcel # 008-521-55

Property Location: UNICORN DR
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017522
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

No Taxes Owing

Current Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
08/20/18	35.00		35.00	35.00	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0
Abatement Amount			.24	.31	1.51

CARSON CITY
Capital of Nevada

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Secured Tax Inquiry Detail for Parcel # 008-521-89

Property Location: DRAKO WY
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017523
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

No Taxes Owing

Current Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
08/20/18	23.03		23.03	23.03	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0
Abatement Amount	1.07	1.91	2.11	2.16	2.91

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Secured Tax Inquiry Detail for Parcel # 008-521-90

Property Location: DRAKO WY / CARABOU DR
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017524
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
Current Year					**No Taxes Owing**
08/20/18	13.91		13.91	13.91	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0
Abatement Amount	9.84	10.35	10.37	10.38	10.86

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Secured Tax Inquiry Detail for Parcel # 008-522-16

Property Location: DRAKO WY
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017525
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

No Taxes Owing

Current Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
08/20/18	18.50		18.50	18.50	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0

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Secured Tax Inquiry Detail for Parcel # 008-522-17

Property Location: DRAKO WY
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017526
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

No Taxes Owing

Current Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
08/20/18	18.50		18.50	18.50	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0

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Secured Tax Inquiry Detail for Parcel # 008-522-18

Property Location: DRAKO WY
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017527
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

Current Year					**No Taxes Owing**
08/20/18	18.15		18.15	18.15	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0

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Secured Tax Inquiry Detail for Parcel # 008-531-59

Property Location: MORGAN MILL RD / DRAKO WY
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017528
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

No Taxes Owing

Current Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due
08/20/18	16.25		16.25	16.25	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0

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Secured Tax Inquiry Detail for Parcel # 008-531-60

Property Location: MORGAN MILL RD / DRAKO WY
Billed to: TAHOE IV LLC
P O BOX 1724
CARSON CITY, NV 89702-0000

Tax Year: 2018-19
Roll #: 017529
District: 2.1
Tax Service:
Land Use Code: 150

Code Table

Outstanding Taxes:

Prior Year	Tax	Penalty/Interest	Total	Amount Paid	Total Due

Current Year					**No Taxes Owing**
08/20/18	16.25		16.25	16.25	.00
10/01/18					
01/07/19					
03/04/19					

Payment Cart | History

Additional Information

	2018-19	2017-18	2016-17	2015-16	2014-15
Tax Rate	3.5700	3.5700	3.5200	3.5200	3.5400
Tax Cap Percent	4.2	2.6	.2	3.2	3.0

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Civil Engineers
Surveyors
Water Resources Engineers
Water & Wastewater Engineers
Construction Managers
Environmental Scientists
Landscape Architects
Planners

PROJECT IMPACT REPORT
PLATEAU
Tentative Map
&
Zoning Map Amendment
October 2018

1 STORM DRAINAGE

1.1 SUMMARY

The subject site consists of 119.1 acres of land and has a Master Plan designation of Mixed-use Residential and a zoning designation of General Industrial. To determine project impacts related to this Zoning Map Amendment, a conceptual land plan has been used that includes a mix of single family residential, multi-family, commercial, and common open space.

- 270 Single Family Residential lots on 68.3 acres
- 18.0 acres Multi-Family
- 13.9 acres General Commercial
- 22.98 acres of Common Open Space
    - 18.9 acres is Common Open Space for the remediated Old Carson Landfill

The project is in eastern Carson City, south of U.S. Highway 50 in the area of Drako Way, located in Township 15 North, Range 20 East in portions of Sections 1 and 12. The site is not located in a FEMA flood zone. Drainage to, and through, the site is from a 262-acre catchment that is roughly bounded by Rifle Range Road to the east and Astro Drive to the north. Drainage flows westerly to and through the proposed SFR site to a location just south of the intersection of Morgan Mill Road and Drako Way. Downgradient drainage then continues ~1,000 feet to the Carson River near the intersection of North Deer Run Road and Brunswick Canyon Road. Existing conditions at the site include ~85 acres of previously mass graded site with slopes ranging from 2.5 to 4.5 percent and land cover consisting of bare earth with areas of sagebrush and grass understory in fair to good condition. There is a fair amount of land disturbance from off highway vehicle use

on the property site. The subject site includes the Old Carson City Landfill (Facility ID # A-000050). The old landfill has been previously capped and NDEP has required that a stormwater management plan (SWMP) be developed for the old landfill site, which will be developed as parkland under the proposed conditions. A draft SWMP is currently on file with NDEP with a final SWMP due after acceptance of a tentative map.

Onsite and offsite undisturbed areas consist of sagebrush with grass understory in good condition with sparse Pinyon Pine-Juniper on the upper catchment areas. Slopes range from 5 to 20 percent in the upper offsite catchment. Offsite and onsite soils are classified as very high runoff potential with hydrologic soil group type D soils.

Any future development of the subject site will conform to Carson City Municipal Code for stormwater drainage and will incorporate the conditions of the SWMP for the old landfill site park. Increases in peak flow and runoff volume will be mitigated with detention basins designed to the 10-year storm event. In general, the conceptual mix of residential, multi-family commercial, and common open space will decrease the average impervious area from the current zoning for general industrial. The conceptual mix of uses results in an estimated average impervious area percentage of 39 percent as opposed to the average impervious area percentage of 72 percent for a general industrial area, resulting in a decrease of 45 percent impervious area from the current zoning.

A Conceptual Drainage Report is included with the tentative map application.

2 SANITARY SEWER

Sanitary sewer infrastructure does not currently exist at the subject site. The nearest sanitary sewer is a 15-inch sewer main at the end of the Morgan Mill Road improvements that connects to the Morgan Mill sewer lift station. Sanitary sewer improvements for the Plateau project will conform to Carson City Municipal Code. The following table presents the sanitary sewage loading for the existing general industrial zoning and the conceptual uses of residential, multi-family, commercial, and common open space. Sewage loading is estimated based on the 2017 Sewer System Sewer Master Plan Update[1].

The proposed conditions include the following land uses that constitute the sewershed:

- 270 Single Family Residential lots on 67.89 acres
- 18.0 acres Multi-Family
- 13.9 acres General Commercial

[1] ATKINS. (2017). *Sewer Master Plan Update Final Report*. Job No. 100052963. Reno, NV: Brian Janes, P.E.

	Sewage Loading Estimates (gpd)			
	Existing		Proposed	
Zoning	Ave. Day	Peak Hourly[1]	Ave. Day	Peak Day[1]
General Industrial	21,298	31,948	N/A	N/A
Single Family (SF6)			39,812	59,718
Multi-Family			30,790	46,125
General Commercial			6,029	9,044
Park/Open Space			0	0
Total	21,298	31,948	76,631	114,887

[1] estimated for peaking factor of 1.5 per *2017 Sewer Master Plan Update Final Report*

3 WATER USAGE

Water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. The project is shown as being in the 4880/Basin pressure zone. The East Valley pressure zone directly adjacent to the site. The *2010 Integrated Water Supply and Facility Plan* shows the subject site served from the 4880/Basin pressure zone with a looped 12-inch water main following the layout of Drako Way, Astro, Carabou, and Unicorn Drives and connecting to the existing 8-inch PVC at the intersection of Centennial Drive and Highway 50. It is anticipated that water infrastructure for the conceptual conditions will mimic that layout. A conceptual water design indicates that a booster station will be required to serve domestic and fire flow to the Plateau Development from the 4880/Basin pressure zone.

Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. The below table summarizes the water demand estimate for the existing and conceptual uses. It is anticipated that demands will increase with a change from industrial to a residential/commercial mix.

	Water Demand Estimates					
	Existing			Proposed		
Zoning	ADD (Ac-ft/yr)	ADD (gpd)	PDD[1] (gpd)	ADD (Ac-ft/yr)	ADD (gpd)	MDD[1] (gpd)
General Industrial	119	106,326	206,236			
Single Family Res.				161	144,089	295,382
Multi-Family				75	66,956	137,259
Commercial				14	12,150	24,908
Park/Open Space				0	0	0
Total	119	106,326	206,236	250	223,195	457,549

[1] estimated for peaking factor of 2.05 ADD:MDD

4 TRAFFIC

The following table analyzes the potential traffic impact if the site was built with the conceptual land uses, based on the proposed SF6, MFA, GC, and PR zoning designations as follows:

- 270 single family residential units (Tentative Map, proposed SF6 zoning)
- 250 multi-family residential units (Remainder Parcel, proposed MFA zoning)
- 12,000 sq. ft. of office space (Remainder Parcel, proposed GC zoning)
- 12,000 sq. ft. of retail space (Remainder Parcel, proposed GC zoning)
- 300 self-storage units (Remainder Parcel, proposed GC zoning)
- 18.9 acres of Public Regional space (PR zoning)

The Traffic Impact Study shows that the project is anticipated to generate 5,002 daily trips, including 344 AM peak hour trips and 473 PM peak hour trips. The following table analyzes the potential traffic impact if the site was built out with the existing General Industrial zoning designation to the proposed SF6/MFA/GC zoning configuration. The Trip Generation shows a 14.2% decrease in trips from 5,833 to 5,002 average daily trips. Trip Generation is based on the 10th Edition Institute of Transportation Engineers Trip Generation Manual.

A complete Traffic Impact Report is included with this application.

Land Use	Units	Daily Trip Gen. Rate	Total Daily Trips	AM Trip Gen. Rate	AM Peak Hour	PM Trip Gen. Rate	PM Peak Hour
EXISTING LAND USE							
General Light Industrial 110	112.61 acres	51.80/ac.	**5,833**				
CONCEPTUAL LAND USES							
Single Family Housing 210	270	9.44/du	2,549	.74/du	200	.99/du	267
Multi-Family Housing 220	250	7.32/du	1,830	.46/du	115	.56/du	140
General Office Building 710	12,000	9.74/ksf	116	1.16/ksf	14	1.15/ksf	14
Shopping Center 820	12,000	37.75/ksf	453	.94/ksf	11	3.81/ksf	46
Mini-Warehouse 151	300	17.96/100 units	54	1.39/100 units	4	1.95/100 units	6
TOTAL			**5,002**		**344**		**473**

Manhard CONSULTING

Civil Engineering
Surveying
Water Resources Management
Water & Wastewater Engineering
Construction Management
Environmental Sciences
Landscape Architecture
Land Planning

CONCEPTUAL SEWER REPORT FOR THE PLATEAU DEVELOPMENT

Carson City, Nevada

Prepared for:

TAHOE IV LLC (MR. KEITH SERPA)
P.O. BOX 1724
CARSON CITY, NEVADA 89702

Prepared by:

Manhard Consulting, Ltd.
241 Ridge Street, Suite 400, Reno, NV 89501

Job No. TIVCCNV01
October 16, 2018

Exp:12/31/18

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APPENDIX B: FLOWMASTER PIPE CAPACITY CALCULATIONS

ABBREVIATIONS

ac	Acre
ac-ft	Acre-feet
bgs	Below ground surface
CCMC	Carson City Municipal Code 2005
cfs	Cubic feet per second
d/D	depth to diameter ratio
EDU	Equivalent dwelling unit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
ft	Foot
ft^2	Square foot
ft^3	Cubic foot
fps	Feet per second
GIS	Geographical Information System
gpm	Gallons per minute
gpd	Gallons per day
Max.	Maximum
Min.	Minimum
NV	Nevada
Q_p	Peak flow
RCBC	Reinforced Concrete Box Culvert
ROW	Right of Way
vel.	Velocity

1 INTRODUCTION

1.1 PURPOSE OF STUDY

This report presents the data, methodology, and results of a conceptual sewer design report for the Plateau Development tentative map and zone change to remainder parcels. Adjacent remainder parcels that are being rezoned to multi-family and General Commercial are included in the analysis.

Future Final Maps and final designs will incorporate detailed sewer modeling and design.

This report documents the existing and proposed sewerage conditions of the proposed project:

- Existing and proposed sewershed
- Existing and proposed sewer generation rates
- Existing and proposed zoning
- Compliance with Carson City Municipal Code 2005 (CCMC) and/or other applicable ordinances

1.2 PROJECT LOCATION AND DESCRIPTION

The Plateau Development project site is in eastern Carson City, south of U.S. Highway 50 around Drako Way, located in Township 15 North, Range 20 East in portions of Sections 1 and 12.

Sanitary sewer infrastructure does not currently exist at the subject site. The nearest sanitary sewer is an 8-inch sewer main at the east end of the Morgan Mill Road that connects to the Morgan Mill sewer lift station.

Figure 1-1 shows the location of the project site. The site is not located in a FEMA flood zone. Relevant FEMA flood maps define the area as *outside the 0.2% annual chance flood.* Exhibit 1 shows the FEMA flood zone mapping adjacent to the Plateau Development.

Figure 1-1: Plateau Development Location Map

[Google Maps: https://www.google.com/maps/search/google+maps/@39.1897644,-119.7016629,4292m/data=!3m1!1e: accessed 10/10/2018]

2 METHODOLOGY AND ASSUMPTIONS

The existing zoning at the Plateau Development site is General Industrial. The proposed zone change and tentative map include the following land uses that constitute the sewershed for the Plateau Development and the remainder parcels:

- 269 Single Family Residential lots on 67.89 acres
- 18.53 acres Multi-Family
    - Estimated 250 EDUs
- 13.81 acres General Commercial

Existing and proposed conditions sewage loading is estimated based on the 2017 *Sewer System Sewer Master Plan Update* (ATKINS, 2017). Loading estimates are calculated using the unit rates in Table 2-1.

This conceptual sewer study for the Plateau Development adheres to the Carson City Municipal Code 2005 (CCMC) requirements for conceptual sanitary sewer preliminary design 12.06.360.

Table 2-1: *Sewer System Master Plan Update* Wastewater Generation Rates

Land Use Category	*Average Dry Weather Flow*	*Units*
Single-Family Residential	148	(gpd/DU)
Multi-Family Residential	123	(gpd/DU)
Office	269	(gpd/acre)
Commercial	443	(gpd/acre)
Hotel/Resort/Casino Hotels/Motels	62	(gpd/room)
Industrial	189	(gpd/acre)
Institutional	1,127	(gpd/acre)
School	158	(gpd/acre)
Prison	366	(gpd/acre)
Hospital	2,333	(gpd/acre)

Sewage generation estimates do not include wet weather flows. This assumption is based on construction of new infrastructure, segregation of the sewer system from stormwater infrastructure, and groundwater at 100 feet bgs.

A peaking factor of 1.5 was used for average daily to average peak hourly flow (ATKINS, 2017).

2.1 PIPE SIZING CRITERIA

Pipe sizing will conform to the Carson City Municipal Code Division 15.3.2 for sewer design criteria.

- Sewer capacity when peak flow is at d/D = 0.75
- Min. diameter for sewer mains is 8-inches
- Min. design velocity is 2 fps
- Max. design velocity is 10 fps

Minimum slope for sewer main pipe shall be per Table 2-2.

.

Table 2-2: Minimum Sewer Main Pipe Slope

Diameter (in)	*Minimum Slope*
8	0.4%[1]
10	0.25%
12	0.19%
15	0.14%

[1]Minimum slope for 8" PVC SDR-35 flexible pipe

3 CONCEPTUAL SEWER DESIGN RESULTS

This section discusses the results of the proposed conditions sewage generation, onsite and offsite pipe capacity, and the Morgan Mill lift station capacity.

3.1 SEWAGE GENERATION

The estimates for the existing zoning and proposed Plateau Development flows are contained in Appendix A. The methodology and assumptions are included in the calculated estimates. Table 3-1 summarizes the existing zoning and proposed conditions sewage generation.

Table 3-1: Existing Zoning Sewage Generation

	Sewage Loading (gpd)	
Land Use Category	*Ave. Day*	*Peak Hourly*
General Industrial	21,298	31,948

Table 3-2 summarizes the proposed sewage generation values.

Table 3-2: Proposed Plateau Development and Zone Change Sewage Generation

	Sewage Loading (gpd)	
Land Use Category	*Ave. Day*	*Peak Hourly*
Single Family (SF6)	39,812	59,718
Multi-Family	30,750	46,125
General Commercial	6,029	9,044
Park/Open Space	0	0
Total	**76,591**	**114,887**

The proposed conditions will increase the average day sewage loading by 55,333 gpd.

3.2 PLATEAU DEVELOPMENT PIPE CAPACITY

Pipe capacity has been estimated for the single family residential for average daily flow and peak hourly flow. The results show that the average day and peak hourly flow are contained below the maximum 0.75 d/D ratio for 8-inch PVC pipe at the minimum slope of 0.4%. Flow capacity estimate results for 8-inch PVC pipe at 0.4% slope are summarized as follows:

- d/D=16.9% for SFR ADF=27.6 gpm
- d/D=20.6% for SFR PHF=41.5 gpm

Design velocity is less than 2 fps for both ADF and PHF at 1.6 fps and 1.8 fps, respectively. This indicates that pipe will need to be designed at slopes greater than the minimum specified in the CCMC.

The manning's normal depth calculations are included in Appendix B.

The 2017 *Sewer System Sewer Master Plan Update* includes a full buildout analysis for sewer mains and assesses the capacity for potential future deficiencies (ATKINS, 2017). This buildout condition pipeline deficiency reports the sewer mains, between the proposed Plateau Development and the Morgan Mill Lift Station, as less than d/D 0.50. This implies that the loading from the Plateau Development and associated remainder parcel zone changes would not pose a sewer main capacity issue.

3.3 MORGAN MILL LIFT STATION

The sewer loading from the Plateau Development and related zone change remainder parcels flow to the Morgan Mill Lift Station. The information presented in this section was taken from the 2017 *Sewer System Sewer Master Plan Update* (ATKINS, 2017).

The *Sewer System Sewer Master Plan Update* reports the following for the Morgan Mill Lift Station.

Table 3-3: Morgan Mill Lift Station Capacity

		Dry Weather (gpm)	
Lift Station	*Pump Capacity (gpm)*	*Existing Q_p*	*Buildout Q_p*
Morgan Mill	450	483	897

Carson City staff and the *Sewer System Sewer Master Plan Update* report that the lift station pump is currently undersized for the existing flows. This indicates that the pumps will have to be upgraded with, or without, additional loading from the Plateau Development.

The force main is also experiencing low velocity per the *Sewer System Sewer Master Plan Update*. The lift station wet well has sufficient volume for existing flows and reportedly has issues with the sewage going septic. Additional flows from the proposed Plateau Development would help increase the cycle times at the lift station.

Table 3-4: Lift Station Emergency Storage Capacity

			Dry Weather		
Lift Station	*Emergency Storage (gal)*	*Existing Q_p (gpm)*	*Existing Storage (hrs)*	*Buildout Q_p (gpm)*	*Existing Storage (hrs)*
Morgan Mill	9,800	483	0.34	897	0.18

Assuming that the 80 gpm peak hour sewage loading from the Plateau Development coincides with the master plan existing peak flow, then the emergency storage time decreases to 0.29 hours.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 GENERAL CONSIDERATIONS

This study is intended to be a preliminary sewer analysis in support of the Plateau Development tentative map and remainder parcel zone changes. Further progress towards a final design of the Plateau Development site will include a master technical sewer report specific to the final site design.

This preliminary sewer design report shows that onsite and offsite sewer mains will have capacity.

The Morgan Mill Lift Station pumping capacity is less than the existing conditions peak flow. Loading from the Plateau Development would increase this discrepancy. However, the 2017 *Sewer System Sewer Master Plan Update* identifies that the lift station pumping capacity does not meet the existing peak flow.

4.2 REGULATIONS AND MASTER PLANS

The proposed improvements and the analyses presented herein are in accordance with Carson City Municipal Code 2005.

4.3 IMPACTS TO ADJACENT PROPERTIES

There are no impacts to adjacent properties regarding sanitary sewer.

4.4 STANDARDS OF PRACTICE

This study was prepared using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable professional engineers practicing in this and similar localities.

5 REFERENCES

Carson City Municipal Code. (2005). https://library.municode.com/nv/carson_city/codes/code_of_ordinances?nodeId=CANEMUCO2005

ATKINS. (2017). Sewer Master Plan Update Final Report. Job No. 100052963. Reno, NV: Brian Janes, P.E.

Exhibit 1: FEMA FIRM

NOTES TO USERS

use in administering the National Flood Insurance Program. It
ntify all areas subject to flooding, particularly from local
of small size. The **community map repository** should be
ssible updated or additional flood hazard information.

detailed information in areas where **Base Flood Elevations**
oodways have been determined, users are encouraged to consult
s and Floodway Data and/or Summary of Stillwater Elevations
within the Flood Insurance Study (FIS) report that accompanies
rs should be aware that BFEs shown on the FIRM represent
flood elevations. These BFEs are intended for flood insurance
only and should not be used as the sole source of flood
ation. Accordingly, flood elevation data presented in the FIS
be utilized in conjunction with the FIRM for purposes of
or floodplain management.

Flood Elevations shown on this map apply only landward
American Vertical Datum of 1988 (NAVD 88). Users of this
aware that coastal flood elevations are also provided in the
evation Elevations table in the Flood Insurance Study report
on. Elevations shown in the Summary of Stillwater Elevations
used for construction and/or floodplain management purposes
gher than the elevations shown on this FIRM.

floodways were computed at cross sections and interpolated
ections. The floodways were based on hydraulic considerations
quirements of the National Flood Insurance Program. Floodway
or pertinent floodway data are provided in the Flood Insurance
this jurisdiction.

s Special Flood Hazard Areas may be protected by **flood**
ers. Refer to Section 2.4 "Flood Protection Measures" of
ance Study report for information on flood control structures
ns.

used in the preparation of this map was Universal Transverse
zone 11. The **horizontal datum** was NAD83, GRS1980
rences in datum, spheroid, projection or UTM zones used in
F FIRMs for adjacent jurisdictions may result in slight positional
ssp features across jurisdiction boundaries. These differences
accuracy of this FIRM.

on this map are referenced to the North American Vertical
These flood elevations must be compared to structure and
ns referenced to the same **vertical datum.** For information
rsion between the National Geodetic Vertical Datum of 1929
American Vertical Datum of 1988, visit the National Geodetic
at http://www.ngs.noaa.gov/ or contact the National Geodetic
llowing address:

Services
Survey
Highway
20910-3282

elevation, description, and/or location information for **bench marks**
map, please contact the Information Services Branch of the
dic Survey at **(301) 713-3242**, or visit its website at
aa.gov/.

ation shown on this FIRM was provided in digital format by the
griculture Imagery Program (NAIP). This information
rrectly compiled at a scale of 1:12,000 from aerial photography

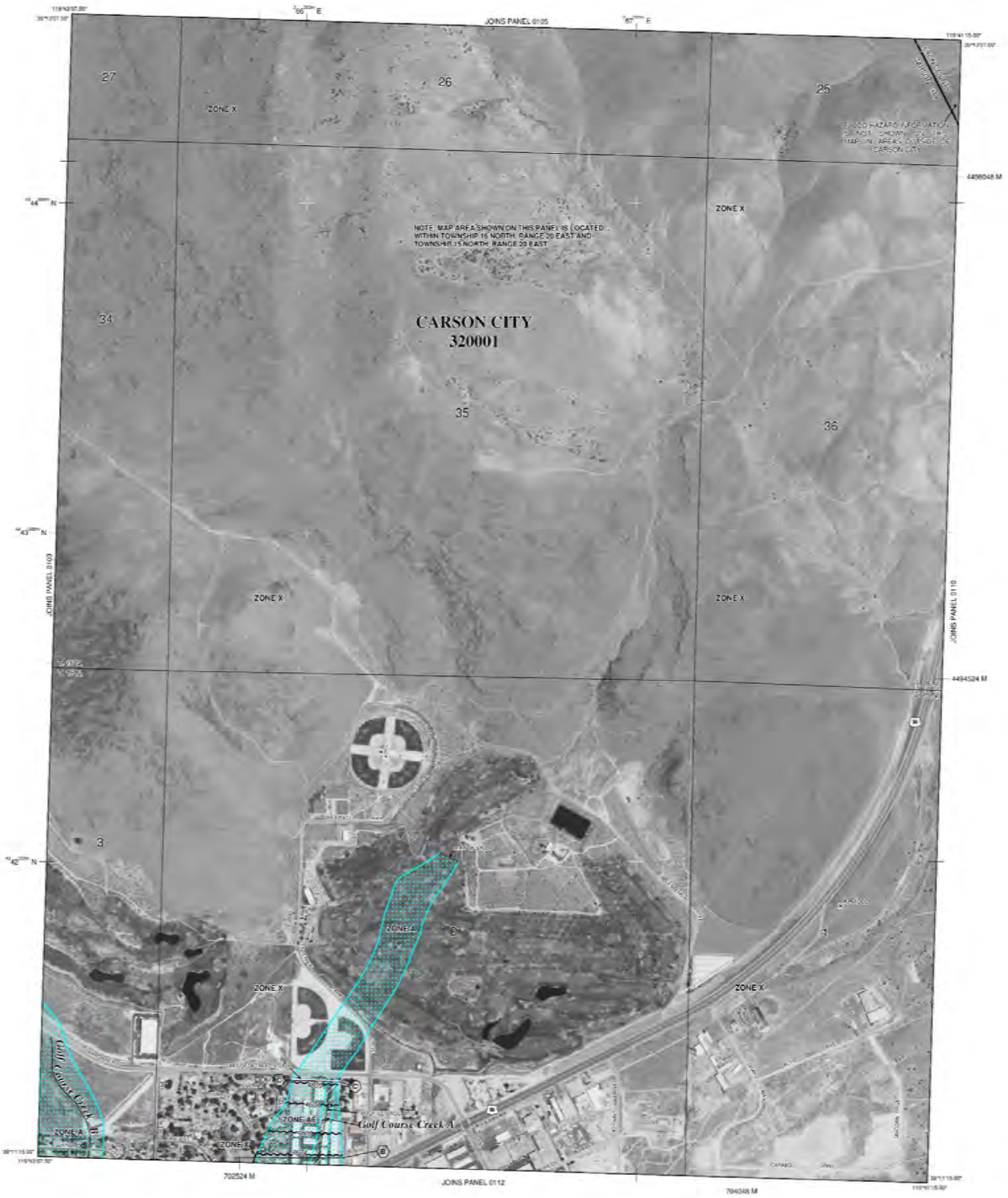
more detailed and up-to-date **stream channel configurations**
n on the previous FIRM for this jurisdiction. The floodplains
hat were transferred from the previous FIRM may have been
nforms to these new stream channel configurations. As a
d Profiles and Floodway Data tables in the Flood Insurance
hich contains authoritative hydraulic data) may reflect stream
s that differ from what is shown on this map.

s shown on this map are based on the best data available
blication. Because changes due to annexations or de-annexations
ed after this map was published, map users should contact
munity officials to verify current corporate limit locations.

the separately printed **Map Index** for an overview map showing
p panels for this jurisdiction.

A Map Service Center at 1-800-358-9616 for information on
s associated with this FIRM. Available products may include
d Letters of Map Change, a Flood Insurance Study report,
rsions of this map. The FEMA Map Service Center may also be
l 1-800-358-9620 and its website at http://www.msc.fema.gov/.

estions about this map or questions concerning the National
Program in general, please call **1-877-FEMA MAP** (1-877-336-2627)
A website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.
ZONE AE — Base Flood Elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000 N — 1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORY
Carson City Planning Dept, 3521 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution.)

INITIAL RFIP MAP DATE
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 4, 1988
FLOOD INSURANCE RATE MAP REVISIONS
March 18, 1989 — September 30, 1993 — October 16, 1996

January 16, 2009 - to add and update roads and road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0104E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 104 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0104	E

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
32000I0104E
MAP REVISED
JANUARY 16, 2009

Federal Emergency Management Agency

NOTES TO USERS

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... Services
... Survey
... Highway
... 20910-3282

... elevation, description, and/or location information for **bench marks** ... map, please contact the Information Services Branch of the ...tic Survey at **(301) 713-3242**, or visit its website at ...aa.gov/.

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LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

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FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

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- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A Cross section line
- 23 — 23 Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 4275000 mN 1000-meter Universal Transverse Mercator grid ticks, zone 13
- 6000000 M 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River Mile

MAP REPOSITORY

Carson City Planning Dept, 3521 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution)

EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 4, 1988
FLOOD INSURANCE RATE MAP REVISIONS
March 16, 1989 September 29, 1993 October 16, 1996

January 16, 2009 - to add and update roads and road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 1000'
500 0 1000 2000 FEET
300 0 300 600 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 110 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0110	E

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
32000I0110E

MAP REVISED
JANUARY 16, 2009

Federal Emergency Management Agency

NOTES TO USERS

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...Services

...Survey

...Highway
...2 20910–3282

...elevation, description, and/or location information for **bench marks** ...map, please contact the Information Services Branch of the ...tic Survey at **(301) 713–3242,** or visit its website at ...oaa.gov/.

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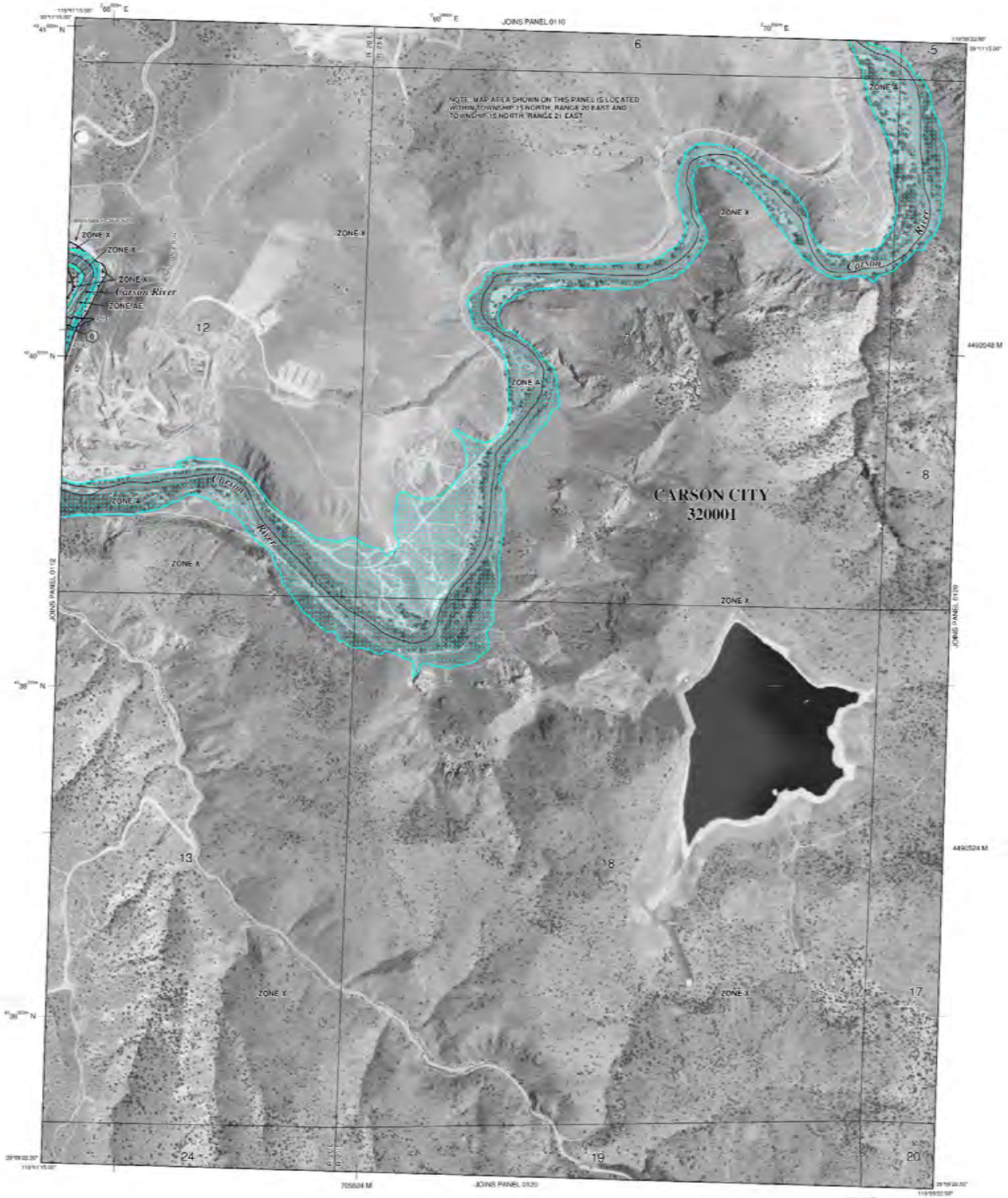

LEGEND

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March 1, 1983
FLOOD INSURANCE RATE MAP REVISIONS
March 16, 1989 September 30, 1994 October 16, 1995

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MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0116E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 116 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	[illegible]	[illegible]	E

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MAP NUMBER
3200010116E
MAP REVISED
JANUARY 16, 2002

Federal Emergency Management Agency

NOTES TO USERS

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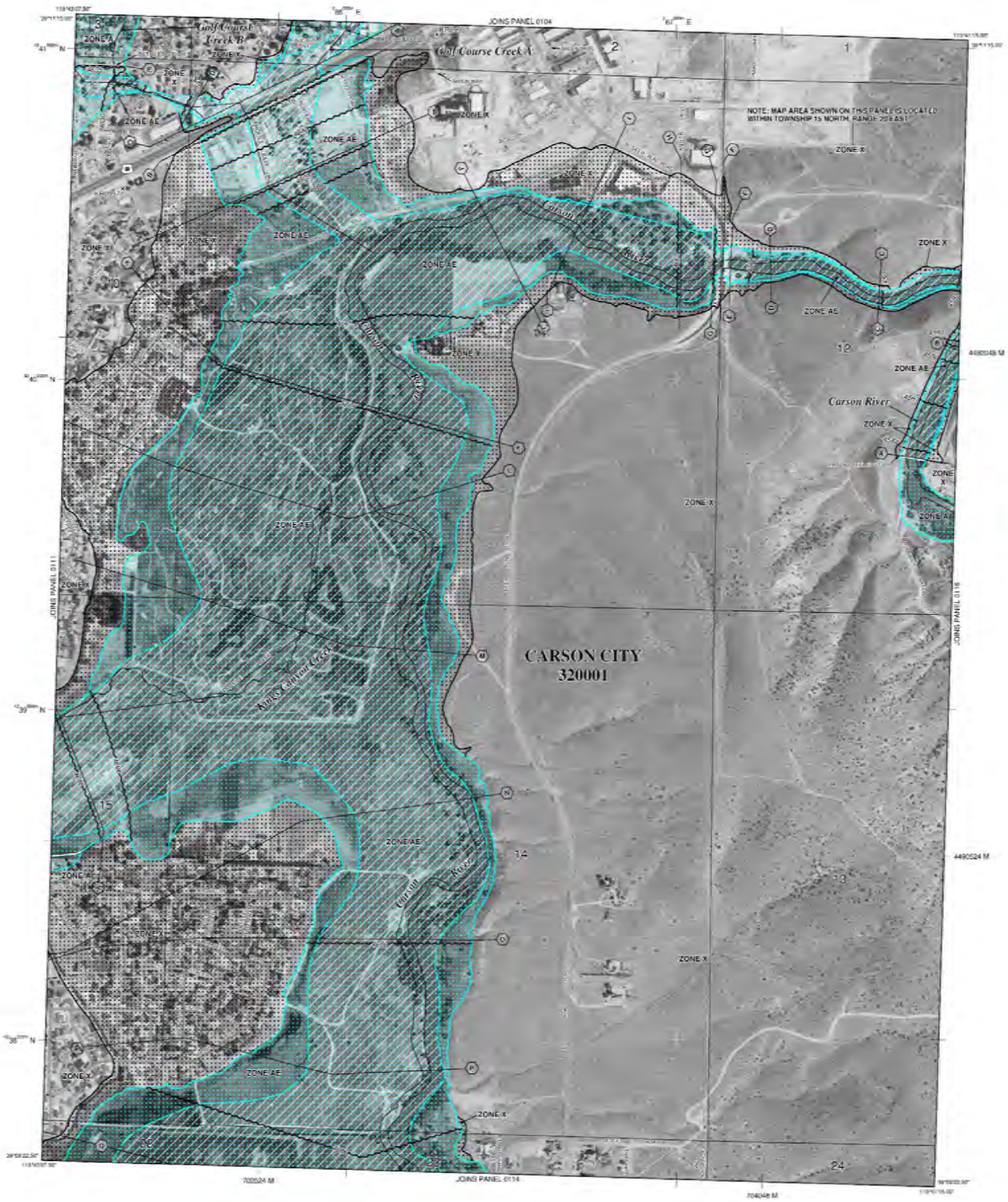

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6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703). Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5 — River Mile

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FLOOD INSURANCE RATE MAP REVISIONS
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150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0112E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 112 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0112	E

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MAP NUMBER
32000I0112E
MAP REVISED
JANUARY 16, 2009

Federal Emergency Management Agency

Appendix A: Sewage Generation Estimates

Manhard CONSULTING LTD
241 Ridge Street, Suite 400, Reno, Nevada 89501
(775)746-3500

Project: Plateau Development TM
Subject: Sewer Loading Estimate
Client: Tahoe IV LLC
Job Code: TIV.CCNV01.00
Date: 10/10/2018
By: CAnderson
Checked: RWenziger

PLATEAU TENTATIVE MAP

Goal:

Estimates of proposed sewage generation for Plateau based on the tentative map and adjacent zone changes.
Estimates of existing sewage generation for site based on the existing zoning.

Assumptions:

- Based on Table 5-4 Carson City Sewer Master Plan Update July 2017
- Assume no groundwater infiltration
- Assume no raw acreage offset
- Peaking Factor per Table 5-1 Carson City Sewer Master Plan Update July 2017

Peaking Factor= 1.5 Average Day to Peak Hourly

	Average Loading	
Single Family Residential=	148	gpd /EDU
Duplex=	148	gpd /EDU
Apartments/Multi-Family (MF)=	123	gpd /EDU
Office=	269	gpd /ac
Commercial=	443	gpd /ac

	Average Loading	
Hotel/Resort/Casino Hotels/Motels=	62	gpd /room
Industrial=	189	gpd /ac
Institutional=	1127	gpd/ac
School=	158	gpd/ac
Prison=	366	gpd/ac
Hospital=	366	gpd/ac

					Average Day		Peak Hourly	
Existing Zoning	Acres	Lots (EDUs)	Description	Zoning	EDUs	GPD	GPM	GPD	GPM
General Industrial	112.69				0	21,298	15	31,948	22
						21,298	**15**	**31,948**	**22**

					Average Day		Peak Hourly	
Plateau TM and Zoning Change Estimate	Acres	Lots or EDUs	Description	Zoning	EDUs	GPD	GPM	GPD	GPM
Park/Common Open Space	23.4		Desert landscaping		0	0	0.0	0	0.0
Single Family Residential	67.89	269		SF6	269	39,812	27.6	59,718	41.5
Multi-Family (MF)	18.53	250		MF	250	30,750	21.4	46,125	32.0
General Commercial	13.61			GC		6,029	4.2	9,044	6.3
						76,591	**53**	**114,887**	**80**

Calculations

SFR or MF Loading: Ave. GPD=EDU*gpd/EDU
Commercial, Industrial, Office, Institutional, School, Prison, or Hospital Loading: Ave. GPD=Acres*gpd/Acre

Table 5-4 summarizes the average calibrated wastewater unit generation rates categorized by land use and the recommended values for us in future planning and forecasting on wastewater flows. The unit wastewater generation rates for each land use type were primarily determined from using water usage data for the month of February 2016 and assuming a 100% return-to-sewer ratio. Winter water usage is assumed to only include indoor water use, therefore water rates, in theory, are typically considered to equal wastewater flows. These values were further refined with the flow metering data. In addition to the flow from sewer sources, significant groundwater infiltration was observed throughout the City. As discussed in **Section 5.3.2**, it is estimated that approximately 243 gallons/acre of developed land, on average, infiltrated into the sewer system.

Table 5-4 Calibrated and Recommended Future Wastewater Unit Generation Rates

Land Use Category (Land Use Unit)	Unit	Average Flow from Sewer Sources (Q_S)	Total Flow, Q_T ($Q_S + Q_{GWI}$)
Single-Family Residential	(gpd/DU)	148	219
Multi-Family Residential	(gpd/DU)	123	140
Office	(gpd/acre)	269	467
Commercial	(gpd/acre)	443	708
Hotel/Resort/Casino Hotels/Motels	(gpd/room)	62	68
Industrial	(gpd/acre)	189	564
Institutional	(gpd/acre)	1,127	1,452
School	(gpd/acre)	158	392
Prison	(gpd/acre)	366	463
Hospital	(gpd/acre)	2,333	2,686

Table 5-1 Temporary and Permanent Flow Metering Summary

Meter Name	Meter Type	Average Daily Flow (mgd)	Average Hourly Peak Flow (mgd)	Sewer Peaking Factor
Meter 01	Temporary	0.740	1.036	1.4
Meter 02	Temporary	2.016	2.744	1.4
Meter 03	Temporary	2.212	2.877	1.3
Meter 04	Temporary	1.169	1.367	1.2
Meter 05	Temporary	0.076	0.112	1.5
North Lift Station Meter	Permanent	4.129	5.671	1.5
Headworks Meter	Permanent	6.557	8.012	1.2

Notes:

- Permanent and temporary meter data was collected during February 16 to March 9, 2017.
- The data excludes metered data collected during February 20- 22 and March 5 due to the influence of wet weather flows. Refer to **Section 5.3.3** for a general discussion on wet weather flow analysis.

Appendix B: FlowMaster Pipe Capacity Calculations

TIVCCNV01 Plateau Development Average Daily Flow Capacity

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.40	%
Diameter	8.00	in
Discharge	27.60	gal/min

Results

Normal Depth	1.35	in
Flow Area	0.04	ft²
Wetted Perimeter	0.56	ft
Hydraulic Radius	0.83	in
Top Width	0.50	ft
Critical Depth	0.11	ft
Percent Full	16.9	%
Critical Slope	0.00400	ft/ft
Velocity	1.58	ft/s
Velocity Head	0.04	ft
Specific Energy	0.15	ft
Froude Number	1.00	
Maximum Discharge	1.07	ft³/s
Discharge Full	0.99	ft³/s
Slope Full	0.00002	ft/ft
Flow Type	SubCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	16.86	%
Downstream Velocity	Infinity	ft/s

TIVCCNV01 Plateau Development Average Daily Flow Capacity

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.35	in
Critical Depth	0.11	ft
Channel Slope	0.40	%
Critical Slope	0.00400	ft/ft

TIVCCNV01 Plateau Development Peak Hourly Flow Capacity

Project Description

Friction Method	Manning Formula
Solve For	Normal Depth

Input Data

Roughness Coefficient	0.010	
Channel Slope	0.40	%
Diameter	8.00	in
Discharge	41.50	gal/min

Results

Normal Depth	1.65	in
Flow Area	0.05	ft²
Wetted Perimeter	0.63	ft
Hydraulic Radius	0.99	in
Top Width	0.54	ft
Critical Depth	0.14	ft
Percent Full	20.6	%
Critical Slope	0.00392	ft/ft
Velocity	1.78	ft/s
Velocity Head	0.05	ft
Specific Energy	0.19	ft
Froude Number	1.01	
Maximum Discharge	1.07	ft³/s
Discharge Full	0.99	ft³/s
Slope Full	0.00003	ft/ft
Flow Type	SuperCritical	

GVF Input Data

Downstream Depth	0.00	in
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	in
Profile Description		
Profile Headloss	0.00	ft
Average End Depth Over Rise	0.00	%
Normal Depth Over Rise	20.61	%
Downstream Velocity	Infinity	ft/s

TIVCCNV01 Plateau Development Peak Hourly Flow Capacity

GVF Output Data

Upstream Velocity	Infinity	ft/s
Normal Depth	1.65	in
Critical Depth	0.14	ft
Channel Slope	0.40	%
Critical Slope	0.00392	ft/ft

Manhard CONSULTING

Civil Engineering
Surveying
Water Resources Management
Water & Wastewater Engineering
Construction Management
Environmental Sciences
Landscape Architecture
Land Planning

CONCEPTUAL WATER REPORT FOR THE PLATEAU DEVELOPMENT

Carson City, Nevada

Prepared for:

TAHOE IV LLC (MR. KEITH SERPA)
P.O. BOX 1724
CARSON CITY, NEVADA 89702

Prepared by:

Manhard Consulting, Ltd.
241 Ridge Street, Suite 400, Reno, NV 89501

Job No. TIVCCNV01
October 16, 2018

Exp:12/31/18

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ABBREVIATIONS

ADD	Average Daily Demand
ac	Acre
ac-ft	Acre-feet
bgs	Below ground surface
CCMC	Carson City Municipal Code 2005
cfs	Cubic feet per second
EDU	Equivalent dwelling unit
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
ft	Foot
ft^3	Cubic foot
fps	Feet per second
GIS	Geographical Information System
gpm	Gallons per minute
gpd	Gallons per day
Max.	Maximum
MDD	Maximum Daily Demand
MG	Million gallons
NV	Nevada
PHD	Peak Hourly Demand
PRV	Pressure reducing valve
PVC	Polyvinyl Chloride
vel.	Velocity
yr	Year

1 INTRODUCTION

1.1 Purpose of Study

This report presents the data, methodology, and results of a conceptual water design report for the Plateau Development tentative map and zone change to remainder parcels. Adjacent remainder parcels that are being rezoned to multi-family and General Commercial are included in the analysis.

Future Final Maps and final designs will incorporate detailed water modeling, technical reporting, and design.

This report documents the existing and proposed water demand conditions of the proposed project:

- Existing and proposed water infrastructure
- Existing and proposed water demands
- Compliance with Carson City Municipal Code 2005 (CCMC) and/or other applicable ordinances

1.2 Project Location and Description

The Plateau Development project site is in eastern Carson City, south of U.S. Highway 50 around Drako Way, located in Township 15 North, Range 20 East in portions of Sections 1 and 12.

Water infrastructure does not currently exist at the subject site. The nearest water line is a 12-inch PVC line in the 4880-Basin Pressure Zone at the east end of Morgan Mill Road. Prior buildout scenarios show water lines planned under Drako Way, Astro Drive, Unicorn Drive, and Carabou Drive in the General Industrial zoned area (Black & Veatch, 2010).

Figure 1-1 shows the location of the project site. The site is not located in a FEMA flood zone. Relevant FEMA flood maps define the area as *outside the 0.2% annual chance flood.* Exhibit 1 shows the FEMA flood zone mapping adjacent to the Plateau Development and the remainder parcels.

Exhibit 2 shows the existing water system and pressure zones at the site.

Figure 1-1: Location Map

[Google Maps: https://www.google.com/maps/search/google+maps/@39.1897644,-119.7016629,4292m/data=!3m1!1e: accessed 10/10/2018]

2 METHODOLOGY AND ASSUMPTIONS

The existing zoning at the Plateau Development site is General Industrial. The proposed zone change and tentative map include the following land uses for the Plateau Development and the remainder parcels:

- 270 Single Family Residential lots on 67.89 acres
- 18.53 acres Multi-Family
    - Estimated 250 EDUs
- 13.81 acres General Commercial

Water system modeling is not included in this conceptual design report. Water system modeling will be performed as part of the final design and plans. Water line sizes shown on the tentative map and report exhibits are conceptual and based on the buildout water line sizes in the 2010 *Integrated Water Supply and Facility Plan* (Black & Veatch, 2010).

Existing and proposed conditions water demands are estimated based on the Carson City Will-Serve Letter requirements effective July 1, 2015. Ac-ft are converted to average daily demand.

Demand estimates are calculated using the unit demands in Table 2-1.

Table 2-1: Water Unit Average Demand Rates

Land Use Category	*Average Demand*	*Units*
Single Family Residential (SFR)=	1	ac-ft/yr/EDU (>12,000 sq. ft.)
Single Family Residential (SFR)=	0.6	ac-ft/yr/EDU (<12,000 sq. ft.)
Apartments/Multi-Family (MF)=	0.3	ac-ft/yr/EDU
Commercial/Industrial=	1	ac-ft/yr/ac
Landscaping=	4	ac-ft/yr/ac (grass)
Landscaping=	2	ac-ft/yr/ac (desert)
Landscaping=	0	ac-ft/yr/ac (desert)

The following peaking factors are used.

- MDD=2.05 x ADD
- PHD=2.0 x MDD

2.1 Pipe Sizing Criteria

Water main sizing and system design will conform to the Carson City Municipal Code Division 15.3 and NAC 445A.65505 to 445A.6731, inclusive.

2.2 Water Storage

Water storage for operating, emergency, and fire supply use the following criteria.

2.2.1 Fire Storage

Fire storage estimates for existing and proposed conditions are based on the following:

- Single Family Residential and Multi-family: 1,500 gpm for two (2) hours
- General Commercial: 2,500 gpm for four (4) hours
- Industrial: 4,000 gpm for four (4) hours

2.2.2 Operating and Emergency Storage

Operating and emergency storage estimates are based on the criteria in

Table 2-2.

Table 2-2: Required Operating and Emergency Storage

Storage Category	*24-Hour Requirement*
Operating	25% MDD
Emergency	ADD

3 CONCEPTUAL WATER DESIGN

This section discusses the results of the existing and proposed conditions water demand, fire storage, and conceptual design.

3.1 Water Demands

The estimates for the existing zoning, the proposed Plateau Development, and remainder parcel demands are contained in Appendix A. The methodology and assumptions are included in the calculated estimates.

Table 3-1 summarizes the existing zoning and proposed conditions water demands.

Table 3-1: Existing Zoning Water Demands

	Water Demands (gpd)		
Land Use Category	*ADD*	*MDD*	*PHD*
General Industrial	106,326	217,968	435,935

Table 3-2 summarizes the proposed water demand values.

Table 3-2: Proposed Plateau Development and Remainder Parcel Zone Change Water Demands

	Water Demands (gpd)		
Land Use Category	*ADD*	*MDD*	*PHD*
Single Family (SF6)	152,480	312,585	625,170
Multi-Family	66,956	137,259	274,518
General Commercial	12,150	24,908	49,816
Open Space	0	0	0
Total	**231,586**	**474,752**	**949,504**

The proposed conditions will increase the average daily demands by 125,261 gpd.

3.2 Water Storage

The existing General Industrial zoning is estimated to have the following storage requirements per

Table 3-3.

Table 3-3: Existing Water Storage Requirement

Storage Category	*Requirement*	*Volume (gal)*
Operating	25% MDD	54,492
Emergency	ADD	106,326
Fire	4,000 gpm for 4 hrs	960,000
	Total	**1,120,818**

The proposed tentative map and remainder parcels are projected to have the following storage requirements per table. The storage values assume the larger fire flow for the mixed-use category of General Commercial.

Table 3-4: Proposed Water Storage Requirement

Storage Category	*Requirement*	*Volume (gal)*
Operating	25% MDD	114,662
Emergency	ADD	223,730
Fire	2,500 gpm for 4 hrs	600,000
	Total	**938,392**

Water storage near the Plateau Development and remainder parcels is provided from the Highway 50 Tank and the East Carson Tank. Manhard Consulting has no information on the available storage in these tanks. Tank capacities are 2.538 MG for the East Carson Tank and 3.025 MG for the Highway 50 tank.

3.3 Conceptual Water Design

The Plateau Development and re-zoned remainder parcels fall on a split between the 4880-Basin and the East Valley Pressure zones as illustrated on Exhibit 2. The East Carson tank does not have enough pressure to serve the entire Plateau Development. The conceptual design incorporates water connections to the 16-inch line that serves the Highway 50 Tank in the East Valley Pressure Zone. The conceptual design utilizes two (2) connections and PRV stations with a connection to the 4880-Basin Pressure Zone. The PRV stations are conceptually placed to meet the pressure requirements per CCMC and NAC 445A. The tentative map reserves a lot for a potential future booster

station adjacent to the pressure zone boundary. Water main connections through the Common Open Space areas will have easements dedicated to Carson City.

Exhibit 3 shows the conceptual water system design and proposed pipe sizes.

4 CONCLUSIONS AND RECOMMENDATIONS

4.1 General Considerations

This study is intended to be a conceptual water report and design in support of the Plateau Development tentative map and remainder parcel zone changes. Further progress towards a final design of the Plateau Development site will include a master technical water report and water modeling specific to the final site design.

4.2 Regulations

The conceptual improvements and the analyses presented herein are in accordance with Carson City Municipal Code 2005 and NAC 445A.

4.3 Impacts to Adjacent Properties

There are no impacts to adjacent properties regarding potable water transmission and distribution. Adjacent properties will benefit from increased fire protection water and future development requiring potable water.

4.4 Standards of Practice

This study was prepared using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable professional engineers practicing in this and similar localities.

5 REFERENCES

Black & Veatch. (2010). *Integrated Water Supply and Facility Plan*. Job No. BV PN 166932. Carson City, NV

Carson City Municipal Code. (2005). https://library.municode.com/nv/carson_city/codes/code_of_ordinances?nodeId=CANEMUCO2005

Exhibit 1: FEMA FIRM

NOTES TO USERS

use in administering the National Flood Insurance Program. It
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of small size. The **community map repository** should be
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llowing address:

Services
Survey
Highway
20910-3282

elevation, description, and/or location information for **bench marks**
map, please contact the Information Services Branch of the
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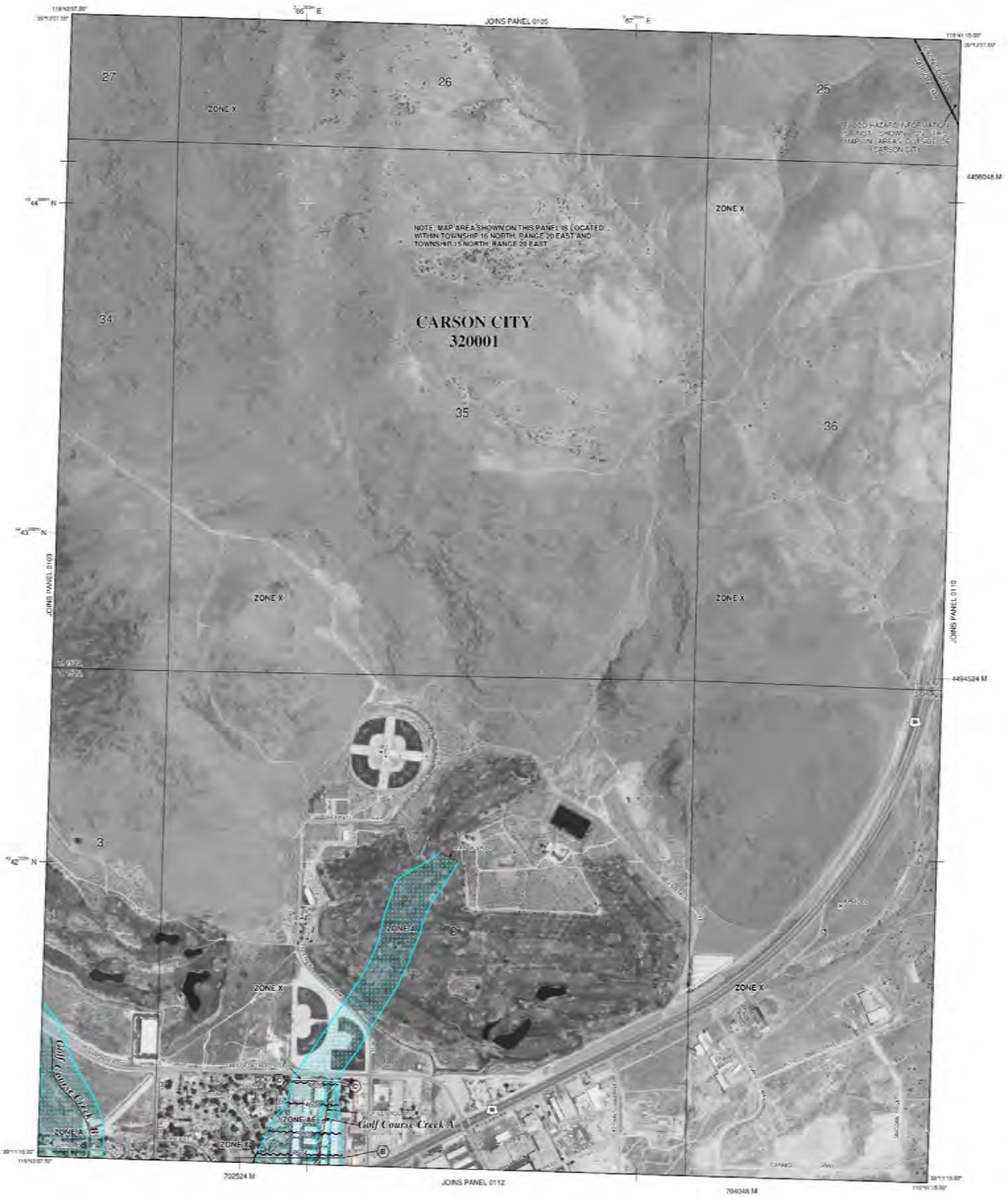
l 1-800-358-9620 and its website at http://www.msc.fema.gov/.

estions about this map or questions concerning the National
Program in general, please call **1-877-FEMA MAP** (1-877-336-2627)
A website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.
ZONE AE — Base Flood Elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A — Cross section line
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97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000 N — 1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORY
Carson City Planning Dept, 3521 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution.)

INITIAL RFIP MAP DATE
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 4, 1988
FLOOD INSURANCE RATE MAP REVISIONS
March 18, 1989 — September 30, 1993 — October 16, 1996

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To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0104E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 104 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0104	E

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
32000I0104E
MAP REVISED
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NOTES TO USERS

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EFFECTIVE DATE OF COUNTYWIDE FLOOD INSURANCE RATE MAP
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
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500 0 1000 2000 FEET
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NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 110 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

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MAP REVISED
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...t in Special Flood Hazard Areas may be protected by **flood ...res.** Refer to Section 2.4 "Flood Protection Measures" of ...ance Study report for information on flood control structures ...on.

...used in the preparation of this map was Universal Transverse ...zone 11. The **horizontal datum** was NAD83, GRS1980 ...ence, in datum, spheroid, projection or UTM zones used in ...of FIRMs for adjacent jurisdictions may result in slight positional ...map features across jurisdiction boundaries. These differences ...e accuracy of this FIRM.

...on this map are referenced to the North American Vertical ... These flood elevations must be compared to structure and ...ns referenced to the same **vertical datum.** For information ...rsion between the National Geodetic Vertical Datum of 1929 ...American Vertical Datum of 1988, visit the National Geodetic ... at http://www.ngs.noaa.gov/ or contact the National Geodetic ...llowing address:

...Services

...Survey

...Highway
...2 20910–3282

...elevation, description, and/or location information for **bench marks** ...map, please contact the Information Services Branch of the ...tic Survey at **(301) 713–3242,** or visit its website at ...oaa.gov/.

...ation shown on this FIRM was provided in digital format by the ...griculture Imagery Program (NAIP). This information ...etically compiled at a scale of 1:12,000 from aerial photography

...more detailed and up–to–date **stream channel configurations** ...n on the previous FIRM for this jurisdiction. The floodplains ...that were transferred from the previous FIRM may have been ...nform to these new stream channel configurations. As a ...d Profiles and Floodway Data tables in the *Flood Insurance ...*Flood hazard zones authoritative hydraulic data may reflect stream ...es that differ from what is shown on this map.

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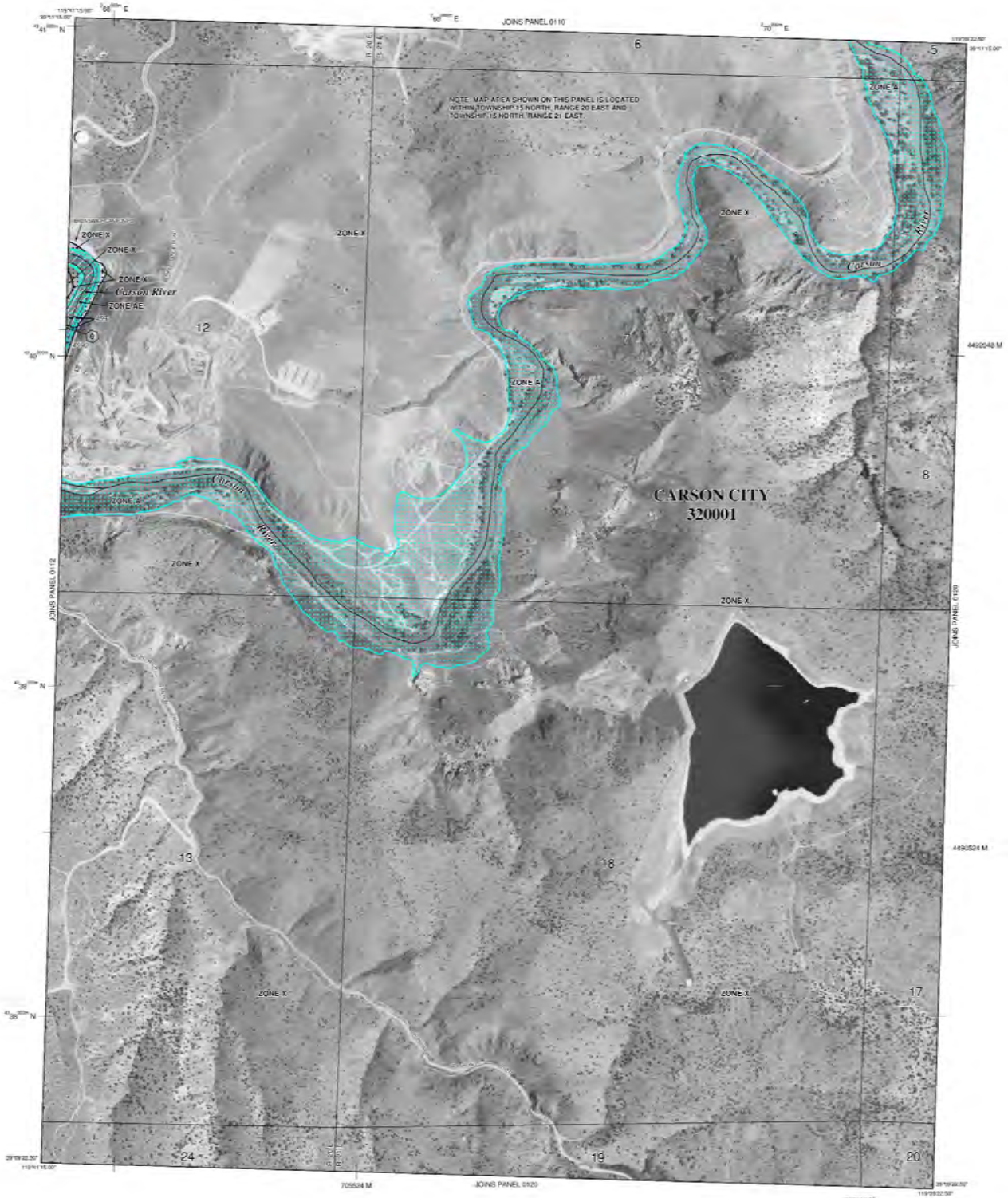
...the separately printed **Map Index** for an overview map showing ...p panels for this jurisdiction.

...**MA Map Service Center** at 1–800–358–9616 for information on ...s associated with this FIRM. Available products may include ...ed Letters of Map Change, a *Flood Insurance Study* report, ...rsions of this map. The FEMA Map Service Center may also be ...at 1–800–358–9620 and its website at http://www.msc.fema.gov/.

...estions about this map or questions concerning the National ...Program in general, please call **1–877–FEMA MAP** (1–877–336–2627) ...A website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water surface elevation of the 1% annual chance flood.

- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A Cross section line
- 23 — 23 Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 3°75'000"N 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 M 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River mile

MAP REPOSITORY
Carson City Planning Dept., 2621 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution.)

INITIAL NFIP MAP DATE
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 1, 1983
FLOOD INSURANCE RATE MAP REVISIONS
March 16, 1989 September 30, 1994 October 16, 1995

January 16, 2002 - to add and update roads and road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0116E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 116 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	[illegible]	[illegible]	E

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
3200010116E
MAP REVISED
JANUARY 16, 2002

Federal Emergency Management Agency

NOTES TO USERS

use in administering the National Flood Insurance Program. It ...arily identify all areas subject to flooding, particularly from local ...s of small size. The **community map repository** should be ...ssible updated or additional flood hazard information.

...e detailed information in areas where **Base Flood Elevations** ...**floodways** have been determined, users are encouraged to consult ...es and Floodway Data and/or Summary of Stillwater Elevations ... within the Flood Insurance Study (FIS) report that accompanies ...es should be aware that BFEs shown on the FIRM represent ...flood elevations. These BFEs are intended for flood insurance ... only and should not be used as the sole source of flood ...son. Accordingly, flood elevation data presented in the FIS ...be utilized in conjunction with the FIRM for purposes of ...r floodplain management.

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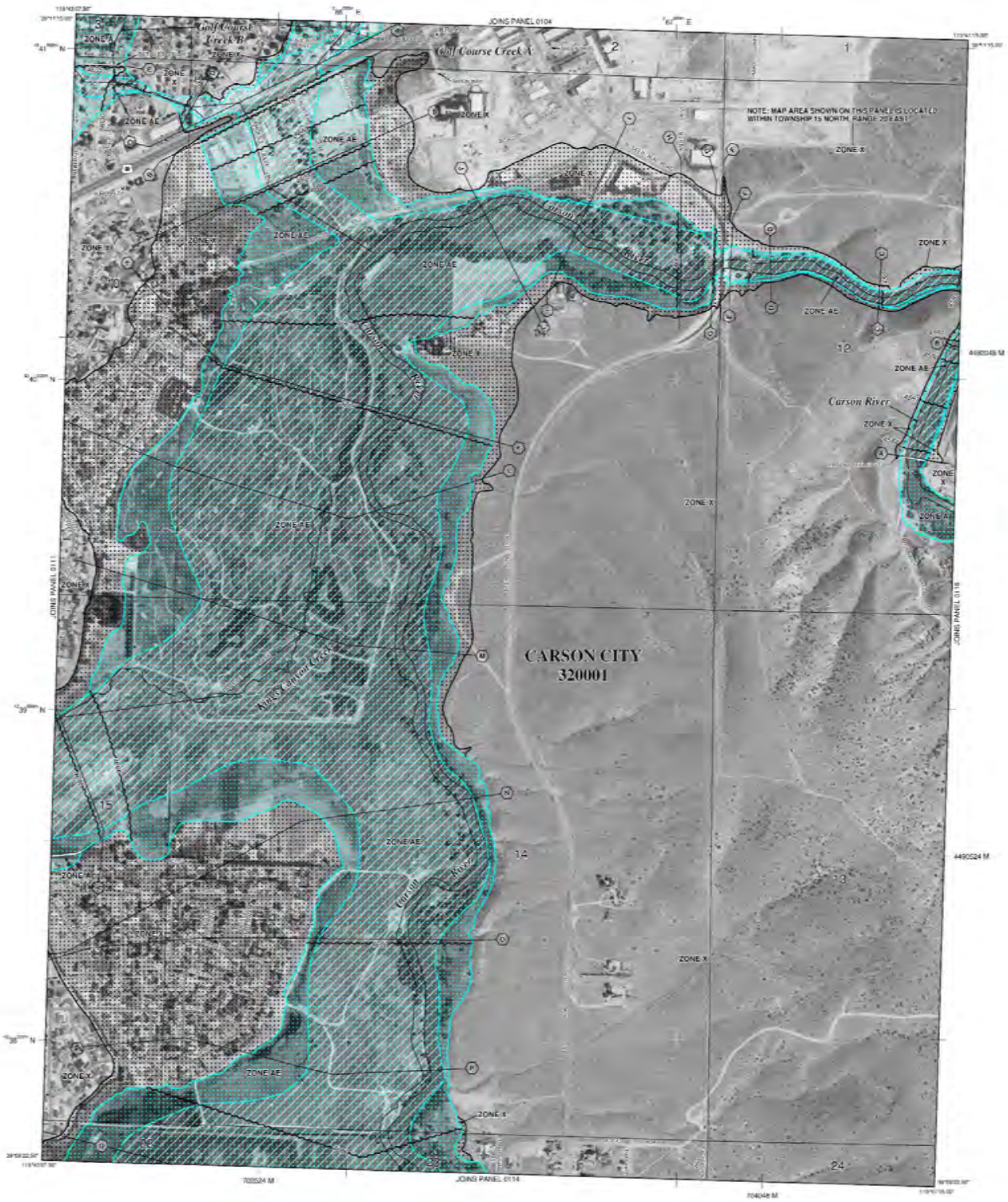

LEGEND

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0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
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23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
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6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703). Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5 — River Mile

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FLOOD INSURANCE RATE MAP REVISIONS
March 16, 1995 September 30, 1998 October 16, 1998

January 16, 2009 - to add and update roads, land road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

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MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0112E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 112 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0112	E

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
32000I0112E
MAP REVISED
JANUARY 16, 2009

Federal Emergency Management Agency

Exhibit 2: Existing Water System Infrastructure

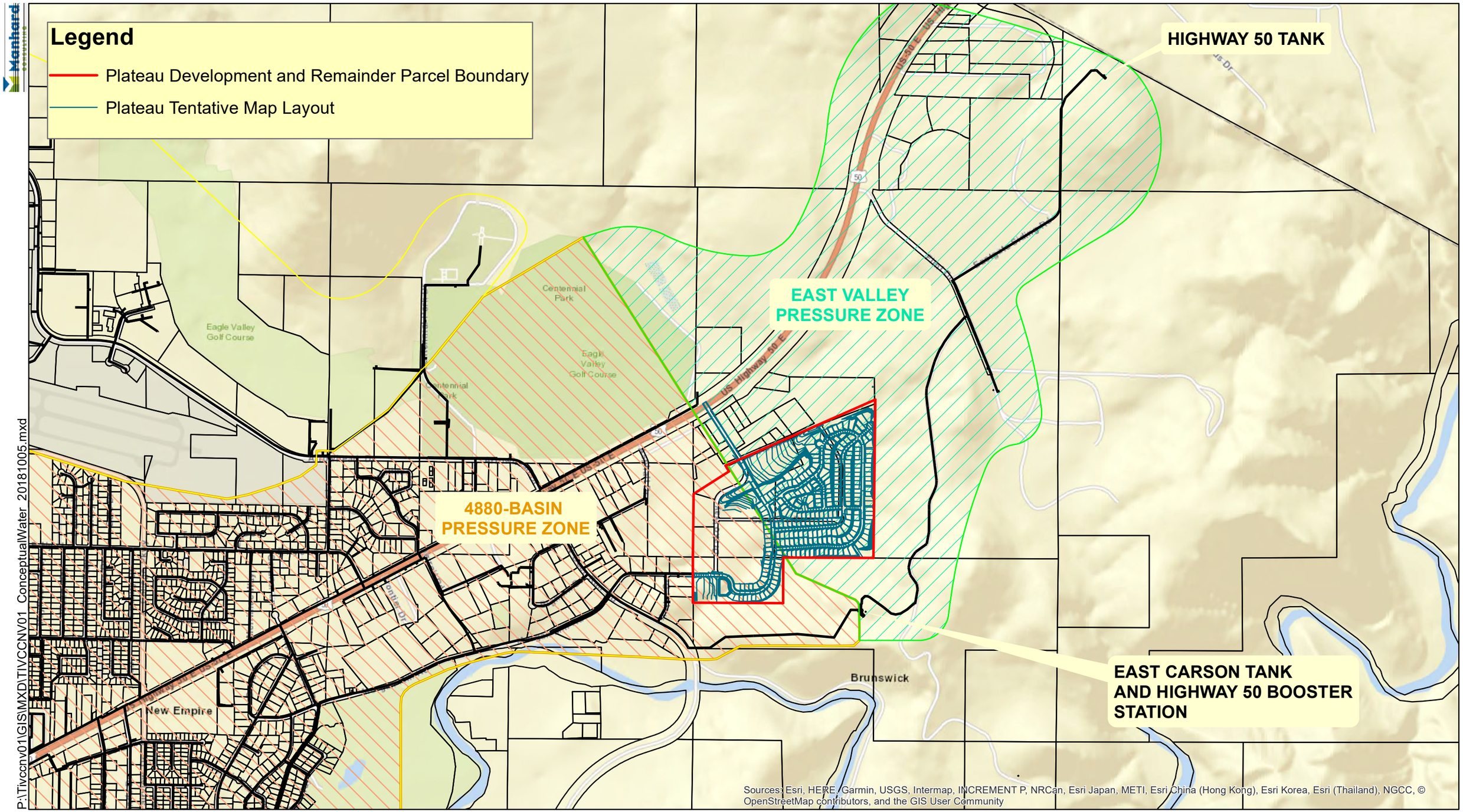

EXHIBIT 2: EXISTING WATER SYSTEM INFRASTRUCTURE

Plateau Development
Carson City | Nevada

Date Created: 10/15/2018

N

0 1,750 3,500 Feet

Prepared for:
Mr. Keith Serpa
Tahoe IV, LLC.
P.O. Box 1724
Carson City, Nevada 89702

Exhibit 3: Conceptual Water Design

Appendix A: Water Demand Estimates

Manhard CONSULTING LTD
241 Ridge Street, Suite 400, Reno, Nevada 89501
(775)746-3500

Project: Plateau TM
Subject: Water Demand Estimate
Client: Tahoe IV LLC
Job Code: TIV.CCNV01.00
Date: 10/8/2018
By: CAnderson
Checked: Rwenziger

PLATEAU TENTATIVE MAP

Goal:

Estimates of water demand for Plateau based on the Tentative Map layout

Estimates of water demand for Pleateau based on the existing master plan designation.

Assumptions:

Based on Carson City Will Serve Letter Requirements

Land Use	Average Demand			
Single Family Residential (SFR)=	1	ac-ft/yr/EDU (>12,000 sq. ft.)	MDD PF=	2.05
Single Family Residential (SFR)=	0.6	ac-ft/yr/EDU (<12,000 sq. ft.)	PHD PF=	2.00
Apartments/Multi-Family (MF)=	0.3	ac-ft/yr/EDU		
Commercial/Industrial=	1	ac-ft/yr/ac		
Landscaping=	4	ac-ft/yr/ac (grass)		
Landscaping=	2	ac-ft/yr/ac (desert)		
Landscaping=	0	ac-ft/yr/ac (desert)		

Existing Plateau Zoning

APN	Acres	Lots (EDUs)	Description	Zoning	EDUs	AC-FT/YR [1]	ADD [2] GPD	MDD [3] GPD	PHD [4] GPD
General Industrial	119.1	N/A		General Ind.		119	106,326	217,968	435,935
						119	**106,326**	**217,968**	**435,935**

Plateau TM Estimate

Proposed Zoning	Acres	Lots (EDUs)	Description	Zoning	EDUs	AC-FT/YR [1]	ADD [2] GPD	MDD [3] GPD	PHD [4] GPD
Landscaping (Park/Open Space)	17.85	N/A	Desert Landscaping	Park		0	0	0	0
Single Family Residential (SFR)	N/A	248	SF6 (<12,000)		248	149	132,840	272,322	544,644
Single Family Residential (SFR)	N/A	22	SF6 (>12,000)		22	13	11,784	24,158	48,315
Apartments/Multi-Family (MF)	18.53	250			250	75	66,956	137,259	274,518
Commercial/Industrial	13.61		General Commercial			14	12,150	24,908	49,816
					251	**223,730**	**458,647**	**917,294**	

Calculations

[1] Ac-ft/year for Land Use per Water Rights Calculation

[2] Ac-ft/year(325,851 gal/ac-ft)/(365 days/year*1,440 min/day)

[3] MDD*PHD PF

[4] ADD*MDD PF

Will Serve Letter Requirements

(7/1/2015 updated with rate changes)

Water

Lots > 12,000 sf = 1 ac-ft/yr

Lots < or = 12,000 sf = 0.6 ac-ft/yr

Apartments = 0.3 ac-ft/yr

Commercial/Industrial = 1 ac-ft/yr/acre

Landscaping (grass) = 4 ac-ft/yr/acre

Landscaping (desert) = 2 ac-ft/yr/acre

Existing Water Storage Requirement		
Category	Requirement	Volume (gal)
Operating	25% MDD	54,492
Emergency	ADD	106,326
Fire	4,000 gpm for 4 hrs	960,000
		1,120,818

Proposed Water Storage Requirement		
Category	Requirement	Volume (gal)
Operating	25% MDD	114,662
Emergency	ADD	223,730
Fire	2,500 gpm for 4 hrs	600,000
		938,392

Manhard CONSULTING LTD
241 Ridge Street, Suite 400, Reno, Nevada 89501
(775)746-3500

Project: Plateau TM
Subject: Water Demand Estimate
Client: Tahoe IV LLC
Job Code: TIV.CCNV01.00
Date: 10/8/2018
By: CAnderson
Checked: Rwenziger

Assumption:
- Total of 270 EDUs total for TM

MDD PF= 2.05
PHD PF= 2.00

Plateau Development Tentative Map						
Lot Count	Square Feet	Acres	AC-FT/Yr [1]	ADD (GPM)[2]	MDD (GPM)[3]	PHD (GPM)[4]
1	7,402	0.17	0.60	0.37	0.76	1.53
2	7,402	0.17	0.60	0.37	0.76	1.53
3	6,000	0.14	0.60	0.37	0.76	1.53
4	6,000	0.14	0.60	0.37	0.76	1.53
5	6,000	0.14	0.60	0.37	0.76	1.53
6	6,055	0.14	0.60	0.37	0.76	1.53
7	7,254	0.17	0.60	0.37	0.76	1.53
8	6,893	0.16	0.60	0.37	0.76	1.53
9	6,893	0.16	0.60	0.37	0.76	1.53
10	6,893	0.16	0.60	0.37	0.76	1.53
11	6,893	0.16	0.60	0.37	0.76	1.53
12	6,893	0.16	0.60	0.37	0.76	1.53
13	6,336	0.15	0.60	0.37	0.76	1.53
14	6,000	0.14	0.60	0.37	0.76	1.53
15	6,000	0.14	0.60	0.37	0.76	1.53
16	6,000	0.14	0.60	0.37	0.76	1.53
17	6,532	0.15	0.60	0.37	0.76	1.53
18	6,764	0.16	0.60	0.37	0.76	1.53
19	6,708	0.15	0.60	0.37	0.76	1.53
20	7,129	0.16	0.60	0.37	0.76	1.53
21	7,269	0.17	0.60	0.37	0.76	1.53
22	6,045	0.14	0.60	0.37	0.76	1.53
23	6,362	0.15	0.60	0.37	0.76	1.53
24	8,680	0.20	0.60	0.37	0.76	1.53
25	7,997	0.18	0.60	0.37	0.76	1.53
26	9,314	0.21	0.60	0.37	0.76	1.53
27	8,233	0.19	0.60	0.37	0.76	1.53
28	9,930	0.23	0.60	0.37	0.76	1.53
29	9,875	0.23	0.60	0.37	0.76	1.53
30	9,635	0.22	0.60	0.37	0.76	1.53
31	9,395	0.22	0.60	0.37	0.76	1.53
32	11,545	0.27	0.60	0.37	0.76	1.53
33	13,272	0.30	1.00	0.62	1.27	2.54
34	17,138	0.39	1.00	0.62	1.27	2.54
35	10,064	0.23	0.60	0.37	0.76	1.53

Plateau Development Tentative Map						
Lot Count	Square Feet	Acres	AC-FT/Yr [1]	ADD (GPM)[2]	MDD (GPM)[3]	PHD (GPM)[4]
36	15,733	0.36	1.00	0.62	1.27	2.54
37	17,085	0.39	1.00	0.62	1.27	2.54
38	13,145	0.30	1.00	0.62	1.27	2.54
39	11,693	0.27	0.60	0.37	0.76	1.53
40	8,402	0.19	0.60	0.37	0.76	1.53
41	8,400	0.19	0.60	0.37	0.76	1.53
42	8,400	0.19	0.60	0.37	0.76	1.53
43	8,400	0.19	0.60	0.37	0.76	1.53
44	9,811	0.23	0.60	0.37	0.76	1.53
45	9,830	0.23	0.60	0.37	0.76	1.53
46	9,380	0.22	0.60	0.37	0.76	1.53
47	9,380	0.22	0.60	0.37	0.76	1.53
48	9,100	0.21	0.60	0.37	0.76	1.53
49	9,100	0.21	0.60	0.37	0.76	1.53
50	9,100	0.21	0.60	0.37	0.76	1.53
51	9,100	0.21	0.60	0.37	0.76	1.53
52	9,100	0.21	0.60	0.37	0.76	1.53
53	9,100	0.21	0.60	0.37	0.76	1.53
54	9,100	0.21	0.60	0.37	0.76	1.53
55	9,709	0.22	0.60	0.37	0.76	1.53
56	14,700	0.34	1.00	0.62	1.27	2.54
57	8,734	0.20	0.60	0.37	0.76	1.53
58	7,700	0.18	0.60	0.37	0.76	1.53
59	16,416	0.38	1.00	0.62	1.27	2.54
60	15,972	0.37	1.00	0.62	1.27	2.54
61	11,790	0.27	0.60	0.37	0.76	1.53
62	11,775	0.27	0.60	0.37	0.76	1.53
63	17,950	0.41	1.00	0.62	1.27	2.54
64	11,612	0.27	0.60	0.37	0.76	1.53
65	8,745	0.20	0.60	0.37	0.76	1.53
66	6,803	0.16	0.60	0.37	0.76	1.53
67	7,022	0.16	0.60	0.37	0.76	1.53
68	7,205	0.17	0.60	0.37	0.76	1.53
69	9,608	0.22	0.60	0.37	0.76	1.53
70	10,715	0.25	0.60	0.37	0.76	1.53
71	12,782	0.29	1.00	0.62	1.27	2.54
72	13,835	0.32	1.00	0.62	1.27	2.54
73	9,941	0.23	0.60	0.37	0.76	1.53
74	8,147	0.19	0.60	0.37	0.76	1.53
75	6,820	0.16	0.60	0.37	0.76	1.53
76	8,791	0.20	0.60	0.37	0.76	1.53
77	7,172	0.16	0.60	0.37	0.76	1.53
78	6,720	0.15	0.60	0.37	0.76	1.53
79	6,720	0.15	0.60	0.37	0.76	1.53
80	6,720	0.15	0.60	0.37	0.76	1.53

Plateau Development Tentative Map						
Lot Count	Square Feet	Acres	AC-FT/Yr [1]	ADD (GPM)[2]	MDD (GPM)[3]	PHD (GPM)[4]
81	6,263	0.14	0.60	0.37	0.76	1.53
82	7,693	0.18	0.60	0.37	0.76	1.53
83	6,875	0.16	0.60	0.37	0.76	1.53
84	7,573	0.17	0.60	0.37	0.76	1.53
85	7,550	0.17	0.60	0.37	0.76	1.53
86	7,130	0.16	0.60	0.37	0.76	1.53
87	7,428	0.17	0.60	0.37	0.76	1.53
88	7,794	0.18	0.60	0.37	0.76	1.53
89	8,093	0.19	0.60	0.37	0.76	1.53
90	8,624	0.20	0.60	0.37	0.76	1.53
91	6,844	0.16	0.60	0.37	0.76	1.53
92	7,789	0.18	0.60	0.37	0.76	1.53
93	6,234	0.14	0.60	0.37	0.76	1.53
94	10,035	0.23	0.60	0.37	0.76	1.53
95	8,260	0.19	0.60	0.37	0.76	1.53
96	9,056	0.21	0.60	0.37	0.76	1.53
97	8,013	0.18	0.60	0.37	0.76	1.53
98	7,042	0.16	0.60	0.37	0.76	1.53
99	7,040	0.16	0.60	0.37	0.76	1.53
100	7,040	0.16	0.60	0.37	0.76	1.53
101	7,040	0.16	0.60	0.37	0.76	1.53
102	7,040	0.16	0.60	0.37	0.76	1.53
103	7,040	0.16	0.60	0.37	0.76	1.53
104	7,040	0.16	0.60	0.37	0.76	1.53
105	7,040	0.16	0.60	0.37	0.76	1.53
106	7,116	0.16	0.60	0.37	0.76	1.53
107	11,373	0.26	0.60	0.37	0.76	1.53
108	6,400	0.15	0.60	0.37	0.76	1.53
109	6,400	0.15	0.60	0.37	0.76	1.53
110	6,400	0.15	0.60	0.37	0.76	1.53
111	6,400	0.15	0.60	0.37	0.76	1.53
112	6,400	0.15	0.60	0.37	0.76	1.53
113	6,400	0.15	0.60	0.37	0.76	1.53
114	6,400	0.15	0.60	0.37	0.76	1.53
115	6,400	0.15	0.60	0.37	0.76	1.53
116	7,181	0.16	0.60	0.37	0.76	1.53
117	8,743	0.20	0.60	0.37	0.76	1.53
118	10,684	0.25	0.60	0.37	0.76	1.53
119	6,400	0.15	0.60	0.37	0.76	1.53
120	6,714	0.15	0.60	0.37	0.76	1.53
121	8,905	0.20	0.60	0.37	0.76	1.53
122	12,064	0.28	1.00	0.62	1.27	2.54
123	9,170	0.21	0.60	0.37	0.76	1.53
124	7,961	0.18	0.60	0.37	0.76	1.53
125	8,022	0.18	0.60	0.37	0.76	1.53

Plateau Development Tentative Map						
Lot Count	Square Feet	Acres	AC-FT/Yr [1]	ADD (GPM)[2]	MDD (GPM)[3]	PHD (GPM)[4]
126	6,214	0.14	0.60	0.37	0.76	1.53
127	10,334	0.24	0.60	0.37	0.76	1.53
128	9,757	0.22	0.60	0.37	0.76	1.53
129	6,512	0.15	0.60	0.37	0.76	1.53
130	6,090	0.14	0.60	0.37	0.76	1.53
131	6,550	0.15	0.60	0.37	0.76	1.53
132	6,791	0.16	0.60	0.37	0.76	1.53
133	6,607	0.15	0.60	0.37	0.76	1.53
134	6,090	0.14	0.60	0.37	0.76	1.53
135	6,512	0.15	0.60	0.37	0.76	1.53
136	9,605	0.22	0.60	0.37	0.76	1.53
137	12,961	0.30	1.00	0.62	1.27	2.54
138	8,349	0.19	0.60	0.37	0.76	1.53
139	7,024	0.16	0.60	0.37	0.76	1.53
140	7,823	0.18	0.60	0.37	0.76	1.53
141	8,790	0.20	0.60	0.37	0.76	1.53
142	8,193	0.19	0.60	0.37	0.76	1.53
143	7,199	0.17	0.60	0.37	0.76	1.53
144	7,746	0.18	0.60	0.37	0.76	1.53
145	7,200	0.17	0.60	0.37	0.76	1.53
146	9,234	0.21	0.60	0.37	0.76	1.53
147	13,542	0.31	1.00	0.62	1.27	2.54
148	12,741	0.29	1.00	0.62	1.27	2.54
149	15,024	0.34	1.00	0.62	1.27	2.54
150	14,028	0.32	1.00	0.62	1.27	2.54
151	10,401	0.24	0.60	0.37	0.76	1.53
152	9,945	0.23	0.60	0.37	0.76	1.53
153	10,969	0.25	0.60	0.37	0.76	1.53
154	12,093	0.28	1.00	0.62	1.27	2.54
155	12,026	0.28	1.00	0.62	1.27	2.54
156	7,963	0.18	0.60	0.37	0.76	1.53
157	9,547	0.22	0.60	0.37	0.76	1.53
158	7,906	0.18	0.60	0.37	0.76	1.53
159	7,000	0.16	0.60	0.37	0.76	1.53
160	6,902	0.16	0.60	0.37	0.76	1.53
161	7,599	0.17	0.60	0.37	0.76	1.53
162	7,599	0.17	0.60	0.37	0.76	1.53
163	6,852	0.16	0.60	0.37	0.76	1.53
164	6,000	0.14	0.60	0.37	0.76	1.53
165	6,000	0.14	0.60	0.37	0.76	1.53
166	6,000	0.14	0.60	0.37	0.76	1.53
167	6,000	0.14	0.60	0.37	0.76	1.53
168	6,000	0.14	0.60	0.37	0.76	1.53
169	6,000	0.14	0.60	0.37	0.76	1.53
170	6,000	0.14	0.60	0.37	0.76	1.53

Plateau Development Tentative Map						
Lot Count	Square Feet	Acres	AC-FT/Yr [1]	ADD (GPM)[2]	MDD (GPM)[3]	PHD (GPM)[4]
171	6,000	0.14	0.60	0.37	0.76	1.53
172	6,005	0.14	0.60	0.37	0.76	1.53
173	6,412	0.15	0.60	0.37	0.76	1.53
174	6,849	0.16	0.60	0.37	0.76	1.53
175	8,937	0.21	0.60	0.37	0.76	1.53
176	8,249	0.19	0.60	0.37	0.76	1.53
177	8,393	0.19	0.60	0.37	0.76	1.53
178	8,400	0.19	0.60	0.37	0.76	1.53
179	8,400	0.19	0.60	0.37	0.76	1.53
180	8,400	0.19	0.60	0.37	0.76	1.53
181	8,400	0.19	0.60	0.37	0.76	1.53
182	8,400	0.19	0.60	0.37	0.76	1.53
183	8,400	0.19	0.60	0.37	0.76	1.53
184	8,400	0.19	0.60	0.37	0.76	1.53
185	8,400	0.19	0.60	0.37	0.76	1.53
186	8,373	0.19	0.60	0.37	0.76	1.53
187	7,694	0.18	0.60	0.37	0.76	1.53
188	6,993	0.16	0.60	0.37	0.76	1.53
189	7,155	0.16	0.60	0.37	0.76	1.53
190	5,988	0.14	0.60	0.37	0.76	1.53
191	6,000	0.14	0.60	0.37	0.76	1.53
192	6,000	0.14	0.60	0.37	0.76	1.53
193	6,000	0.14	0.60	0.37	0.76	1.53
194	6,000	0.14	0.60	0.37	0.76	1.53
195	6,000	0.14	0.60	0.37	0.76	1.53
196	6,000	0.14	0.60	0.37	0.76	1.53
197	6,000	0.14	0.60	0.37	0.76	1.53
198	6,000	0.14	0.60	0.37	0.76	1.53
199	6,000	0.14	0.60	0.37	0.76	1.53
200	6,000	0.14	0.60	0.37	0.76	1.53
201	6,000	0.14	0.60	0.37	0.76	1.53
202	6,000	0.14	0.60	0.37	0.76	1.53
203	6,714	0.15	0.60	0.37	0.76	1.53
204	7,414	0.17	0.60	0.37	0.76	1.53
205	8,000	0.18	0.60	0.37	0.76	1.53
206	9,070	0.21	0.60	0.37	0.76	1.53
207	8,027	0.18	0.60	0.37	0.76	1.53
208	8,027	0.18	0.60	0.37	0.76	1.53
209	8,027	0.18	0.60	0.37	0.76	1.53
210	8,027	0.18	0.60	0.37	0.76	1.53
211	8,027	0.18	0.60	0.37	0.76	1.53
212	8,137	0.19	0.60	0.37	0.76	1.53
213	7,674	0.18	0.60	0.37	0.76	1.53
214	7,109	0.16	0.60	0.37	0.76	1.53
215	6,826	0.16	0.60	0.37	0.76	1.53

Plateau Development Tentative Map						
Lot Count	Square Feet	Acres	AC-FT/Yr [1]	ADD (GPM)[2]	MDD (GPM)[3]	PHD (GPM)[4]
216	6,800	0.16	0.60	0.37	0.76	1.53
217	6,800	0.16	0.60	0.37	0.76	1.53
218	8,160	0.19	0.60	0.37	0.76	1.53
219	8,160	0.19	0.60	0.37	0.76	1.53
220	8,160	0.19	0.60	0.37	0.76	1.53
221	8,160	0.19	0.60	0.37	0.76	1.53
222	8,160	0.19	0.60	0.37	0.76	1.53
223	8,160	0.19	0.60	0.37	0.76	1.53
224	8,134	0.19	0.60	0.37	0.76	1.53
225	6,914	0.16	0.60	0.37	0.76	1.53
226	6,800	0.16	0.60	0.37	0.76	1.53
227	6,800	0.16	0.60	0.37	0.76	1.53
228	6,800	0.16	0.60	0.37	0.76	1.53
229	6,800	0.16	0.60	0.37	0.76	1.53
230	6,800	0.16	0.60	0.37	0.76	1.53
231	6,800	0.16	0.60	0.37	0.76	1.53
232	8,160	0.19	0.60	0.37	0.76	1.53
233	8,160	0.19	0.60	0.37	0.76	1.53
234	8,160	0.19	0.60	0.37	0.76	1.53
235	8,160	0.19	0.60	0.37	0.76	1.53
236	8,160	0.19	0.60	0.37	0.76	1.53
237	10,406	0.24	0.60	0.37	0.76	1.53
238	14,179	0.33	1.00	0.62	1.27	2.54
239	14,457	0.33	1.00	0.62	1.27	2.54
240	12,249	0.28	1.00	0.62	1.27	2.54
241	9,448	0.22	0.60	0.37	0.76	1.53
242	8,507	0.20	0.60	0.37	0.76	1.53
243	6,520	0.15	0.60	0.37	0.76	1.53
244	6,330	0.15	0.60	0.37	0.76	1.53
245	6,985	0.16	0.60	0.37	0.76	1.53
246	6,776	0.16	0.60	0.37	0.76	1.53
247	6,579	0.15	0.60	0.37	0.76	1.53
248	6,602	0.15	0.60	0.37	0.76	1.53
249	6,604	0.15	0.60	0.37	0.76	1.53
250	6,606	0.15	0.60	0.37	0.76	1.53
251	6,608	0.15	0.60	0.37	0.76	1.53
252	6,610	0.15	0.60	0.37	0.76	1.53
253	6,060	0.14	0.60	0.37	0.76	1.53
254	6,053	0.14	0.60	0.37	0.76	1.53
255	6,000	0.14	0.60	0.37	0.76	1.53
256	6,000	0.14	0.60	0.37	0.76	1.53
257	6,000	0.14	0.60	0.37	0.76	1.53
258	6,000	0.14	0.60	0.37	0.76	1.53
259	6,000	0.14	0.60	0.37	0.76	1.53
260	8,730	0.20	0.60	0.37	0.76	1.53

Plateau Development Tentative Map						
Lot Count	**Square Feet**	**Acres**	**AC-FT/Yr [1]**	**ADD (GPM)[2]**	**MDD (GPM)[3]**	**PHD (GPM)[4]**
261	8,974	0.21	0.60	0.37	0.76	1.53
262	8,830	0.20	0.60	0.37	0.76	1.53
263	5,999	0.14	0.60	0.37	0.76	1.53
264	6,000	0.14	0.60	0.37	0.76	1.53
265	6,000	0.14	0.60	0.37	0.76	1.53
266	8,313	0.19	0.60	0.37	0.76	1.53
267	7,402	0.17	0.60	0.37	0.76	1.53
268	6,920	0.16	0.60	0.37	0.76	1.53
269	8,120	0.19	0.60	0.37	0.76	1.53
270	8,656	0.20	0.60	0.37	0.76	1.53
TOTAL	**2,205,149**	**50.62**	**171**	**105.89**	**217.08**	**434.15**

[1] Ac-ft/year for Land Use per Water Rights Calculation

[2] Ac-ft/year(325,851 gal/ac-ft)/(365 days/year*1,440 min/day)

[3] MDD*PHD PF

[4] ADD*MDD PF

Will Serve Letter Requirements

(7/1/2015 updated with rate changes)

Water

Lots > 12,000 sf = 1 ac-ft/yr

Lots < or = 12,000 sf = 0.6 ac-ft/yr

Apartments = 0.3 ac-ft/yr

Commercial/Industrial = 1 ac-ft/yr/acre

Landscaping (grass) = 4 ac-ft/yr/acre

Landscaping (desert) = 2 ac-ft/yr/acre

Manhard CONSULTING

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Surveying
Water Resources Management
Water & Wastewater Engineering
Construction Management
Environmental Sciences
Landscape Architecture
Land Planning

CONCEPTUAL DRAINAGE STUDY FOR THE PLATEAU DEVELOPMENT

Carson City, Nevada

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Job No. TIVCCNV01
October 17, 2018

Exp:12/31/18

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ABBREVIATIONS

Ac-ft	Acre-feet
CCMC	Carson City Municipal Code 2005
cfs	Cubic feet per second
CMP	Corrugated Metal Pipe
CN	SCS Curve Number
DEM	Digital Elevation Model
FEMA	Federal Emergency Management Agency
FIRM	Flood Insurance Rate Map
ft	Foot
ft^2	Square foot
ft^3	Cubic foot
fps	Feet per second
GIS	Geographical Information System
HEC-HMS	USACE Hydrologic Engineering Center Hydrologic Modeling System
HSG	Hydrologic Soil Group
Max.	Maximum
Min.	Minimum
NOAA	National Oceanic and Atmospheric Administration
NRCS	Natural Resources Conservation Service
NV	Nevada
RCBC	Reinforced Concrete Box Culvert
ROW	Right of Way
SCS	Soil Conservation Service (aka Natural Resources Conservation Service)
TMRDM	Truckee Meadows Regional Drainage Design Manual
USACE	United States Army Corp of Engineers
USGS	United States Geologic Survey
vel.	Velocity

1 INTRODUCTION

1.1 Purpose of Study

This report presents the data, hydrologic and hydraulic analyses, and conclusions of a conceptual drainage study performed for the Plateau Project. The information, data, and calculations presented herein are intended to provide conceptual drainage information for the Plateau Tentative Map and remainder rezoned parcels in accordance with the Carson City Municipal Code. This report documents the existing drainage conditions of the project site, presents the proposed drainage system, and includes summaries of analyses evaluating storm flows and proposed mitigations.

Referencing the tentative map plans will aid in the understanding of this report. Future Final Maps will incorporate a technical drainage report supporting the final design of improvements.

This conceptual report documents the existing and proposed conditions of the project for a range of rainfall events. The following are addressed herein:

- Existing information for project site and drainage basin
- Hydrologic analyses for existing site condition and proposed developed condition
- Proposed drainage facilities for drainage management
- Compliance with Carson City Municipal Code 2005 (CCMC) and other applicable ordinances

1.2 Project Location and Description

The Plateau project site is in eastern Carson City, south of U.S. Highway 50 in the area of Drako Way, located in Township 15 North, Range 20 East in portions of Sections 1 and 12. Figure 1-1 shows the location of the project site. The Plateau Development and remainder parcels have the following characteristics:

- 270 Single Family Residential lots on 67.89 acres
- 18.53 acres Multi-Family
    - Estimated 250 EDUs
- 13.81 acres General Commercial

The overall drainage catchment is 262 acres.

The site is not located in a FEMA flood zone. Relevant FEMA flood maps define the area as *outside the 0.2% annual chance flood.* Exhibit 1 shows the FEMA flood zone mapping adjacent to Plateau.

1.3 Drainage Patterns

Drainage to, and through, the site is from a 262-acre catchment that is roughly bounded by Rifle Range Road to the east and Astro Drive to the north. Drainage flows westerly through the proposed SFR site to a location just south of the intersection of Morgan Mill Road and Drako Way. Downgradient drainage then continues ~1,000 feet to the Carson River near the intersection of North Deer Run Road and Brunswick Canyon Road before entering the Carson River. Existing conditions at the site include ~85 acres of previously mass graded site with slopes ranging from 2.5 to 4.5 percent and land cover consisting of some bare earth, and areas of sagebrush and grass understory in fair to good condition. There is a fair amount of land disturbance from off highway vehicle use on the property site. Photos of site were collected and are and are contained in Appendix F. Onsite and offsite undisturbed areas consist of sagebrush with grass understory in good condition with sparse Pinyon Pine-Juniper on the upper catchment areas. Slopes range from 5 to 20 percent in the upper offsite catchment. Offsite and onsite soils are classified as very high runoff potential with hydrologic soil group type D soils.

The subject site includes the Old Carson City Landfill (Facility ID # A-000050). The old landfill has been previously capped and NDEP has required that a stormwater management plan (SWMP) be developed for the old landfill site which will be Common Open Space and mitigated with grading and drainage under the proposed conditions. A draft SWMP is currently on file with NDEP with a final SWMP due after acceptance of a tentative map.

Figure 1-1: Plateau Location Map

[Google Maps: https://www.google.com/maps/search/google+maps/@39.1897644,-119.7016629,4292m/data=!3m1!1e: accessed 10/10/2018]

2 METHODOLOGY AND ASSUMPTIONS

The offsite and onsite drainage areas total 0.4 square miles (262 acres). This conceptual report documents the following:

- Pre-development hydrology
- Post-development hydrology and mitigation
- Hydraulic analysis of flow in proposed roadways and catch basins

This conceptual drainage study for the Plateau Development and remainder parcels adheres to the 2005 CCMC requirements for conceptual studies including sections *14.2 Technical Criteria*, *14.6 Submittal and Review* process, and *14.8 Conceptual Drainage Study*. Per table 14.1 of the CCMC, the SCS TR-55 computation procedure is used as the Contributing Basin Area is over 100 acres. For the on-site storm drain system analysis, the Rational Method and Manning's Equation are used to show compliance with *Table 14.2 Design Storm Street Capacity Limitations* of the CCMC.

2.1 Hydrologic Methods

The hydrologic analysis for on- and offsite peak flows is performed using version 4.2 of the USACE HEC-HMS flood hydrograph software. The HEC-HMS model represents the response of a watershed to a storm event and estimates peak flow and runoff volume. The hydrology uses the SCS unit hydrograph method which routes peak flows through a defined basin area. GIS data is used in the ArcMap 10.5 software to develop the hydrologic and hydraulic parameters for use in HEC-HMS. The drainage basin overlain on local topography for existing and proposed conditions are illustrated in Exhibits 2 and 3, respectively.

Parameters for peak storm flow and runoff volume estimates are determined using the CCMC. The TMRDM and/or the other appropriate sources and software user manuals are used to augment the CCMC. Parameter calculations for peak storm flow and runoff volume estimates are determined using the methodologies specified within the CCMC and the TMRDM and are contained in Appendix A. These parameters are reflected in Exhibits 2 and 3. Rainfall data for Carson City is obtained from the NOAA database website that can be found at the following link and included in Appendix A:

- https://hdsc.nws.noaa.gov/hdsc/pfds/pfds_map_cont.html?bkmrk=nv

Rainfall depths are distributed using a frequency storm for the 5-, 15-minute, 1-, 2-, 3-, 6-, 12-, and 24-hour durations.

Table 2-1: NOAA Storm Depths for Plateau

Storm Event	*Rainfall Depth (in)*
5yr-24hr	1.76
10yr-24hr	2.05
25yr-24hr	2.46
100yr-24hr	2.78

2.2 Existing and Proposed Conditions Sub-Basin Delineation

Exhibits 2 and 3 show the drainage basin delineation for the existing and proposed conditions, respectively. The catchment boundary is delineated as all land area on which rain falls that flows out through the developed area. Onsite existing drainage patterns are estimated from pre-2006 aerial mapping and the patterns that currently exist. The 2017 USGS Reno-Carson-Lyon LIDAR DEM is used to develop 2-foot contours for catchment delineation and drainage patterns.

HEC-HMS is utilized to model stormwater runoff for the existing and proposed conditions. The hydrologic modeling uses the SCS methodology per the CCMC and TMRDM, which estimates runoff based on drainage area, lag time or time of concentration, the HSG, land cover/use, and rainfall. The method used to determine rainfall abstraction and runoff

method within the model is the SCS curve number method. The SCS curve number method uses the runoff curve number (CN) loss rate, related to potential abstraction.

$$CN = \frac{1000}{S + 10}$$

where: S (in.) = initial abstraction

The CN represents the "runoff potential" of a given land use/cover and HSG within the drainage basin. The CN is determined based on the HSG per the *USDA National Cooperative Soil Survey*. This soil report is contained in Appendix B. The basin that drains through the Plateau development is composed almost entirely of HSG D soils with high runoff potential. Appendix A contains the parameter calculations for area weighted CNs, lag time, and the relevant TMRDM references. Soil HSG data is obtained from the NRCS database (https://gdg.sc.egov.usda.gov/) from shapefiles of the sub-basins exported from ArcMap. The CN uses the sagebrush with grass understory in good condition for undeveloped areas. Other CN determinations are per the calculations in Appendix A and assume an antecedent moisture condition (AMC) 2.

Lag time is defined as the time elapsed between the center of mass rainfall excess to the center of mass of the resulting runoff hydrograph. This method uses the calculated lag time to determine the runoff hydrograph and peak runoff for each sub-basin. The lag time is calculated using two different methods as shown in Appendix A.

2.3 Hydraulic Methods

Hydraulic calculations are performed for open channel flow in the street sections using the software package Bentley FlowMaster. The proposed development contains street ROW with widths of 50 and 60 feet. Flow conditions are analyzed for both ROWs for slopes that are representative of the proposed streets. FlowMaster is used to determine the maximum allowable flow rate for each ROW that ensures the CCMC requirement of maintaining a 12-foot-wide dry lane across the crown of the road. The FlowMaster results are presented in Appendix D. These results are also used to determine the maximum area a catch basin can drain according to the rational method. A summary of the maximum area a catch basin can drain for a given street slope and rainfall depth are included in Appendix E. The placement of catch basins to meet required dry lane width meet or exceeded the 5-year and 100-year storm events required per section *14.2 Technical Criteria* of the CCMC.

3 HYDROLOGY RESULTS

This section presents the results of the hydrologic analysis for the existing and proposed conditions.

3.1 Existing Drainage Results

Rainfall on the pre-development drainage basin flows in a western or north-western direction. A hillslope located on the south and west quadrants of the basin direct flow away from the Carson River and towards US Highway 50. The existing basin and a representative flow path are illustrated in Figure 3-1 and Exhibit 2. To demonstrate how existing runoff drains from the catchment, a 24-hour duration rain event for the 10- and 100-year recurrence intervals is estimated for this site. The NOAA rainfall record used for this study is in Appendix A and summarized in Table 2-1.

Figure 3-1: Existing Conditions HEC-HMS Basin and Routing

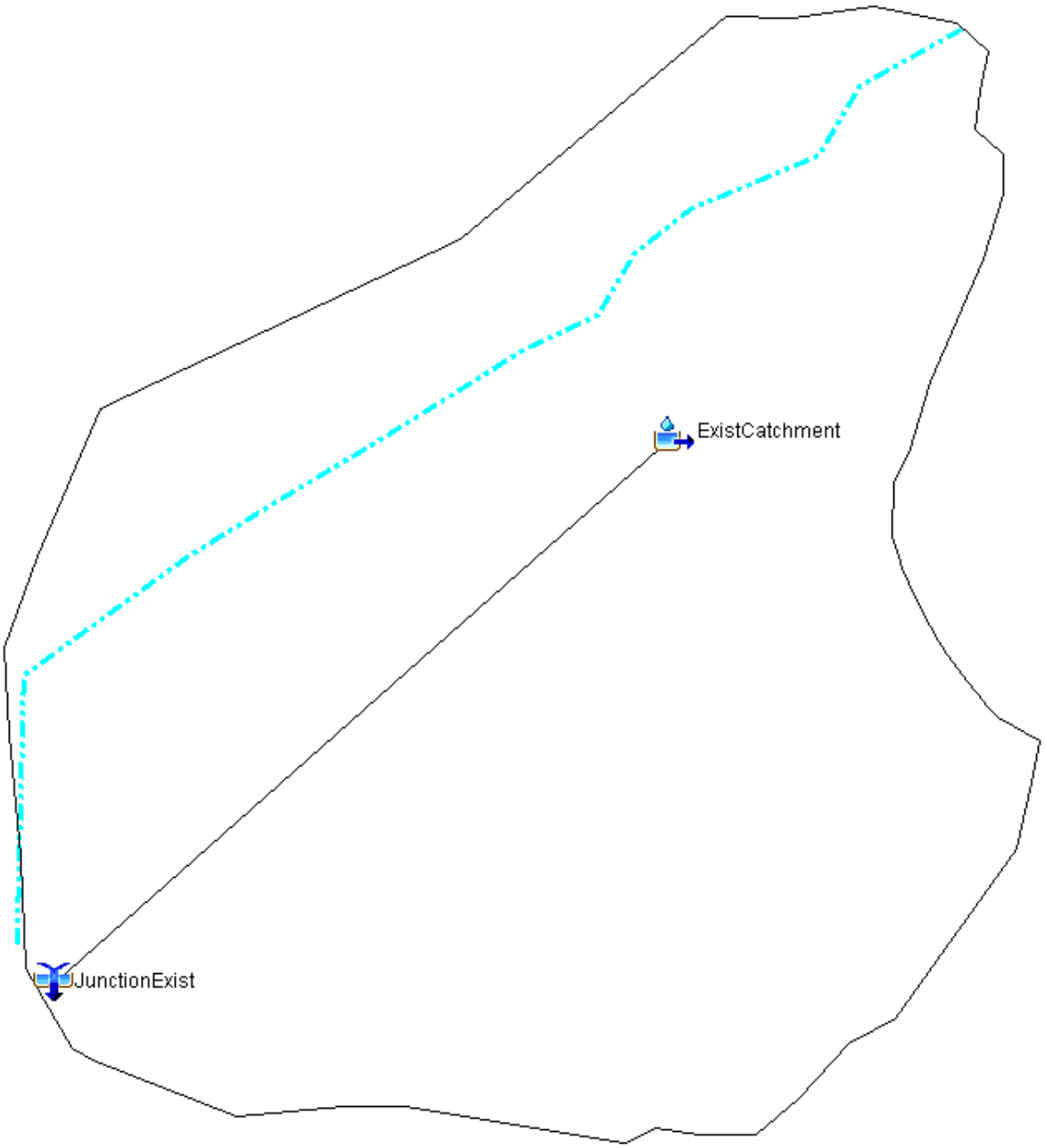


Table 3-1 summarizes the peak flow for existing and proposed conditions. Reference Appendix E for the complete hydrologic parameter estimates.

Table 3-1: Existing and Proposed Conditions Peak Flow Summary

Sub-Basin	*10-Yr (cfs)*	*100-Yr (cfs)*
EXIST-1	97.8	290.9
PROP-1	101.0	281.0

Table 3-2 summarizes the pre- and post-project runoff volume.

Table 3-2: Existing and Proposed Conditions Runoff Volume Summary

Sub-Basin	*10-Yr (ac-ft)*	*100-Yr (ac-ft)*
EXIST-1	*13.8*	*30.4*
PROP-1	*15.8*	*33.4*

3.2 Proposed Drainage Results

The proposed onsite drainage is modeled for identical storm conditions. To represent the proposed conditions in HEC-HMS, a weighted CN and modified time of concentration accounting for the existing and proposed land cover and increased impervious area is used. Results are presented in Table 3-1 and Table 3-2.

Per the CCMC, detention facilities are required to mitigate the proposed conditions peak flow to the existing conditions peak flow according to the following criteria (CMC Section 14.8):

1. Onsite detention storage shall be sized to detain enough runoff to limit flows from a five (5) year storm (Q5) to their predevelopment condition

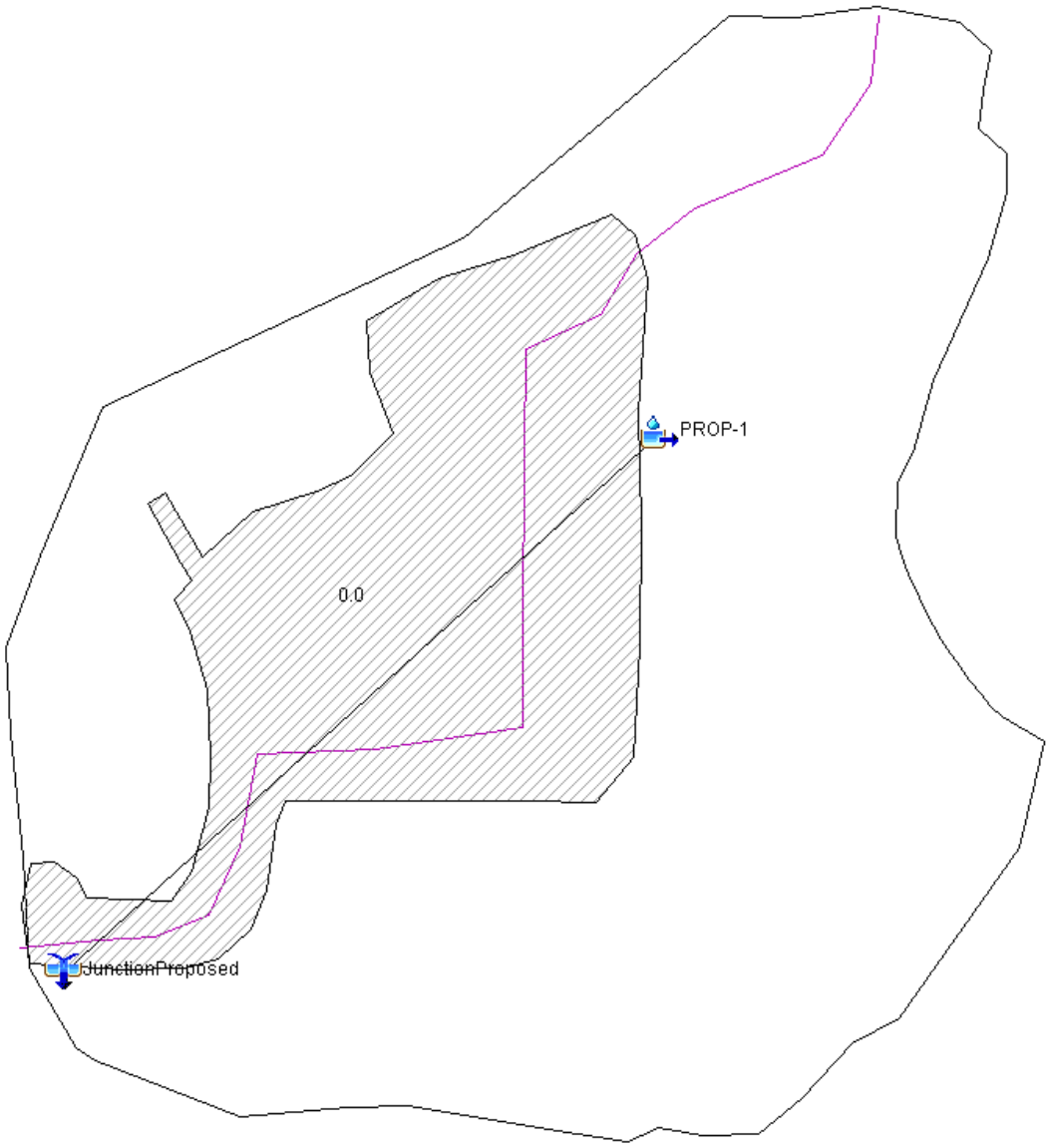
2. Design Storm Events. Drainage facilities shall be designed to convey the run off for the twenty-four (24) hour duration storm with a recurrence interval for a minor storm (5-year) and major storm event (100-year).

This study, modeling, and improvements assume use the 10-year storm input data in place of the 5-year storm in anticipation of a future change to the CCMC. Design consideration is given to the 100-year storm event. Refer to Appendix A and Appendix C for all data and supporting calculations using the HEC-HMS model.

Figure 3-2 shows the proposed conditions HEC-HMS basin and routing.

Appendix C contains the global summary from the existing and proposed conditions HEC-HMS models.

Figure 3-2: Proposed Conditions HEC-HMS Basin and Routing



4 HYDRAULIC RESULTS

This section presents the hydraulic calculations for the prosed conditions street flow and catch basin placement.

4.1 Street Flow Results

Table 14.2 - Design Storm Street Capacity Limitations of the CCMC requires that street capacity for the 5-year storm results in a dry twelve (12) foot land across the road crown. Street flow capacity estimates to convey the 100-year flows are computed using the Bentley FlowMaster software. A range of street slopes representative of the proposed development roadways are analyzed to determine the maximum carrying capacity of the roadway while maintaining the dry lane centered on the road crown. The results show that the proposed street slopes and catch basin locations convey flows while preserving the dry center lane for 5-year and 100-year storm events.

The hydraulic results summarized in Appendix E and the FlowMaster output is contained in Appendix D.

5 CONCLUSIONS AND RECOMMENDATIONS

5.1 General Considerations

This study is intended to be a conceptual drainage analysis in support of the Plateau Development and rezoned remainder parcels. Further progress towards a final design of the Plateau Development or rezoned remainder parcel sites will include a technical drainage report specific to the final civil design.

The hydrologic analysis and hydraulic calculations presented in this report shows that the proposed storm water facilities meet or exceed the drainage performance required to mitigate post-project flows to below the pre-project conditions.

5.2 Regulations

The proposed improvements and the analyses presented herein are in accordance with drainage regulations and guidance presented in the CCMC, the TMRDM. Other appropriate sources and software user manuals are used to the standard of care in the engineering industry.

5.3 Impacts to Adjacent Properties

The performance of the proposed conceptual improvements, roadways, and storm water conveyance facilities should not adversely impact upgradient or downstream properties adjacent to this site within the context of the CCMC requirements and limitations of this conceptual report. The development of the site for the uses proposed should not significantly increase upstream or downstream storm flow runoff rates, volumes, velocities, depths, and should not influence floodplain boundaries. A future technical drainage report will address pre- and post-project potential impacts in greater detail.

5.4 Standards of Practice

This conceptual drainage report has been prepared using the degree of care and skill ordinarily exercised, under similar circumstances, by reputable professional engineers practicing in this and similar localities.

6 REFERENCES

Carson City Government (2005). *Carson City Municipal Code*. Retrieved from: https://library.municode.com/nv/carson_city/codes/code_of_ordinances?nodeId=CANEMUCO2005

Truckee Meadows Water Authority (2009). *Truckee Meadows Regional Drainage Design Manual*. Retrieved from: http://documents.wrwc.us/files/Truckee%20Meadows%20Regional%20Drainage%20Manual.pdf

USDA (June 1986). *Urban Hydrology for Small Watersheds TR-55*. Retrieved from: https://www.nrcs.usda.gov/Internet/FSE_DOCUMENTS/stelprdb1044171.pdf

Exhibit 1: FEMA FIRM

NOTES TO USERS

use in administering the National Flood Insurance Program. It
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Services
Survey
Highway
20910-3282

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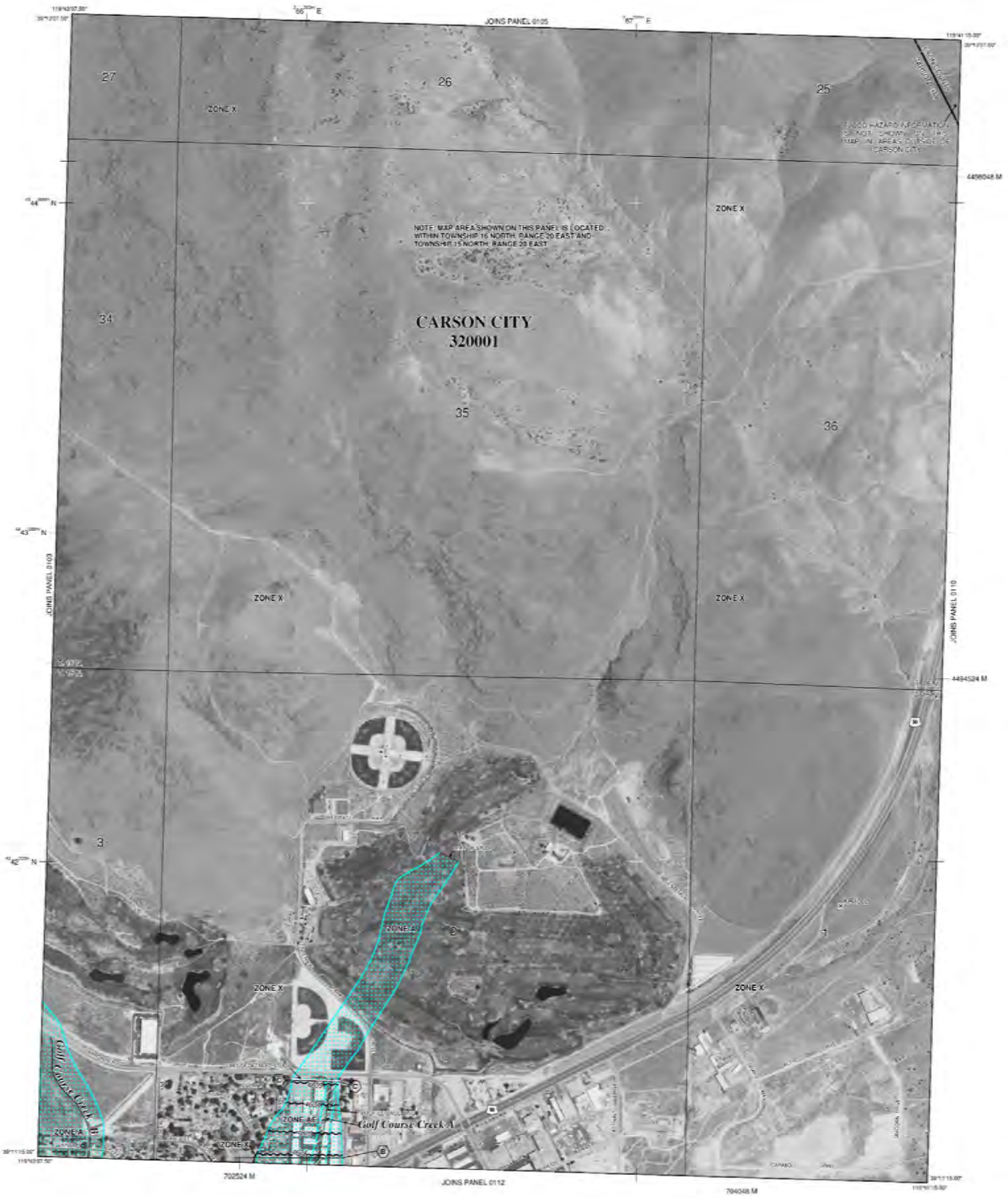

LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.
ZONE AE — Base Flood Elevations determined.
ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
ZONE AR — Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.
ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
4275000 N — 1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
M1.5 — River Mile

MAP REPOSITORY
Carson City Planning Dept, 3521 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution.)

INITIAL RFIP MAP DATE
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 4, 1988
FLOOD INSURANCE RATE MAP REVISIONS
March 18, 1989 — September 30, 1993 — October 16, 1996

January 16, 2009 - to add and update roads and road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

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MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0104E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 104 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0104	E

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
32000I0104E
MAP REVISED
JANUARY 16, 2009

Federal Emergency Management Agency

NOTES TO USERS

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NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0110E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 110 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

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MAP REVISED
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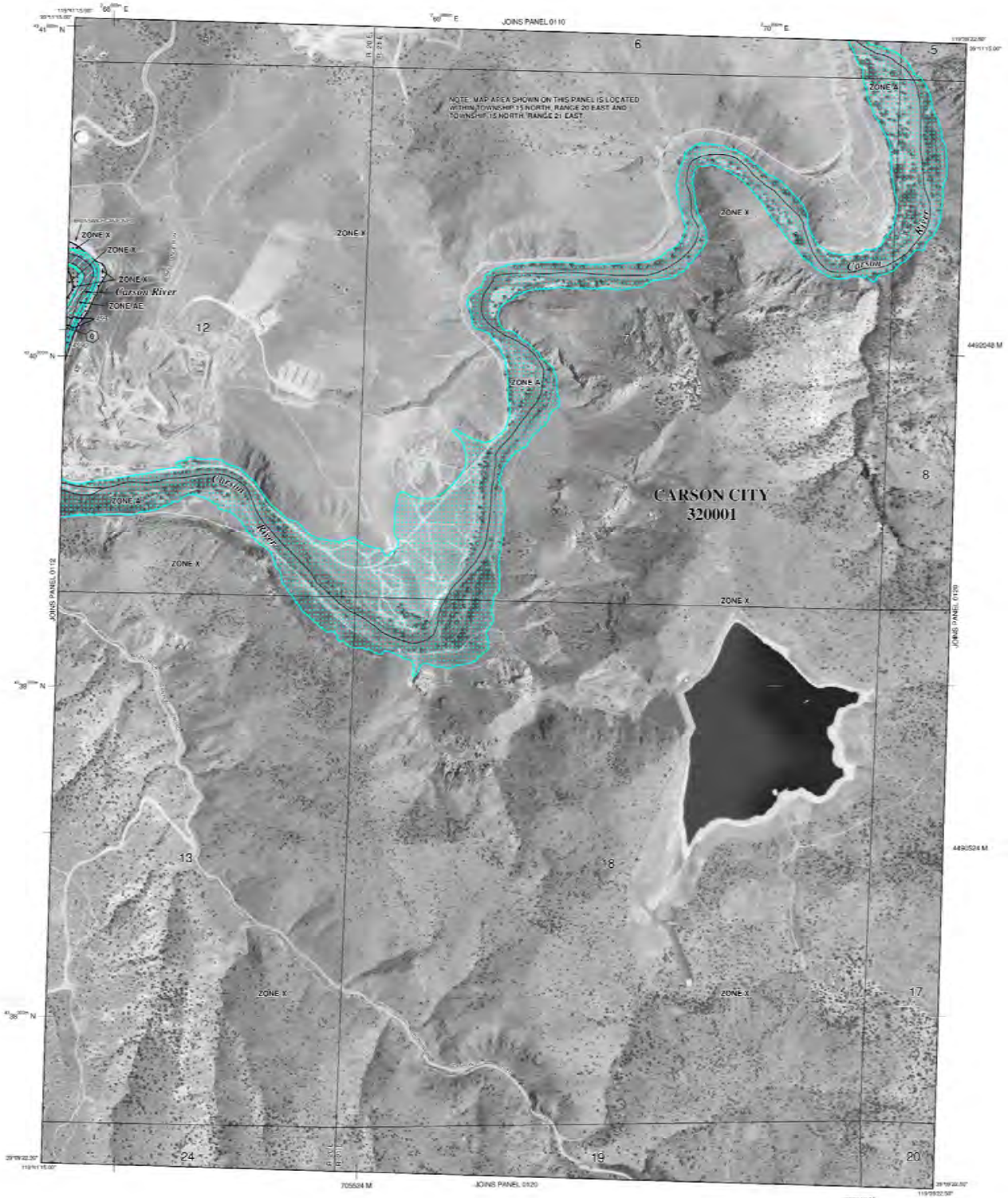

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- **ZONE A** No Base Flood Elevations determined.
- **ZONE AE** Base Flood Elevations determined.
- **ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- **ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- **ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- **ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- **ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- **ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

- **ZONE X** Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot, or with drainage areas less than 1 square mile, and areas protected by levees from 1% annual chance flood.

OTHER AREAS

- **ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- **ZONE D** Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- 513 Base Flood Elevation line and value; elevation in feet*
- (EL 987) Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

- A — A Cross section line
- 23 — 23 Transect line
- 97°07'30", 32°22'30" Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
- 3°75'000"N 1000-meter Universal Transverse Mercator grid ticks, zone 11
- 6000000 M 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703), Transverse Mercator
- DX5510 Bench mark (see explanation in Notes to Users section of this FIRM panel)
- M1.5 River mile

MAP REPOSITORY
Carson City Planning Dept., 2621 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution.)

INITIAL NFIP MAP DATE
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 1, 1983
FLOOD INSURANCE RATE MAP REVISIONS
March 16, 1989 September 30, 1994 October 16, 1995

January 16, 2002 - to add and update roads and road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0116E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 116 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	[illegible]	[illegible]	E

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
3200010116E
MAP REVISED
JANUARY 16, 2002

Federal Emergency Management Agency

NOTES TO USERS

use in administering the National Flood Insurance Program. It ...arily identify all areas subject to flooding, particularly from local ...s of small size. The **community map repository** should be ...ssible updated or additional flood hazard information.

...e detailed information in areas where **Base Flood Elevations** ...**floodways** have been determined, users are encouraged to consult ...es and Floodway Data and/or Summary of Stillwater Elevations ... within the Flood Insurance Study (FIS) report that accompanies ...es should be aware that BFEs shown on the FIRM represent ...flood elevations. These BFEs are intended for flood insurance ... only and should not be used as the sole source of flood ...son. Accordingly, flood elevation data presented in the FIS ...be utilized in conjunction with the FIRM for purposes of ...r floodplain management.

... **Flood Elevations** shown on this map apply only landward ...American Vertical Datum of 1988 (NAVD 88). Users of this ...aware that coastal flood elevations are also provided in the ...evation Elevations table in the Flood Insurance Study report ...on. Elevations shown in the Summary of Stillwater Elevations ... used for construction and/or floodplain management purposes ...igher than the elevations shown on this FIRM.

... **floodways** were computed at cross-sections and interpolated ...ections. The floodways were based on hydraulic considerations ...quirements of the National Flood Insurance Program. Floodway ...or pertinent floodway data are provided in the Flood Insurance ... this jurisdiction.

...d in Special Flood Hazard Areas may be protected by **flood** ...**ves.** Refer to Section 2.4 "Flood Protection Measures" of ...ance Study report for information on flood control structures ...s.

... used in the preparation of this map was Universal Transverse ...zone 11. The **horizontal datum** was NAD83, GRS1980 ...ences in datum, spheroid, projection or UTM zones used in ...of FIRMs for adjacent jurisdictions may result in slight positional ...ssp features across jurisdiction boundaries. These differences ...e accuracy of this FIRM.

... on this map are referenced to the North American Vertical ... These flood elevations must be compared to structure and ...ns referenced to the same **vertical datum.** For information ...rsion between the National Geodetic Vertical Datum of 1929 ...American Vertical Datum of 1988, visit the National Geodetic ...at http://www.ngs.noaa.gov/ or contact the National Geodetic ...llowing address:

...Services
...Survey
...Highway
...-20910-3282

... elevation, description, and/or location information for **bench marks** ... map, please contact the Information Services Branch of the ...detic Survey at **(301) 713-3242,** or visit its website at ...naa.gov/.

...ation shown on this FIRM was provided in digital format by the ...griculture Imagery Program (NAIP). This information ...erically compiled at a scale of 1:12,000 from aerial photography ...

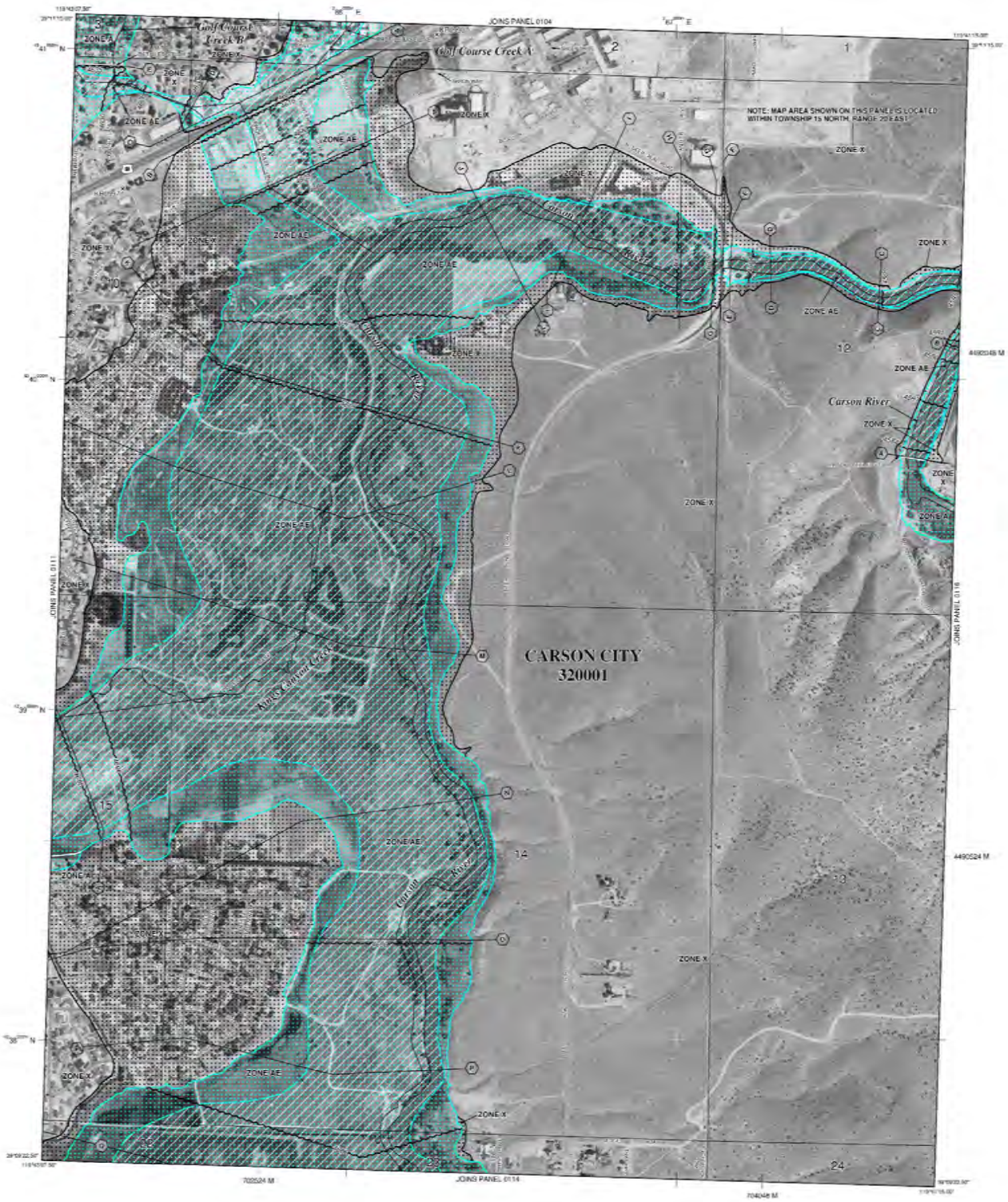
... more detailed and up-to-date **stream channel configurations** ...n on the previous FIRM for this jurisdiction. The floodplains ...hat were transferred from the previous FIRM may have been ...ditions to these new stream channel configurations. As a ...d Profiles, and Floodway Data tables in the Flood Insurance ...which contains authoritative hydraulic data) may reflect stream ...s that differ from what is shown on this map.

...s shown on this map are based on the best data available ...publication. Because changes due to annexations or de-annexations ...ed after this map was published, map users should contact ...munity officials to verify current corporate limit locations.

...the separately printed **Map Index** for an overview map showing ...up panels for this jurisdiction.

...A Map Service Center at 1-800-358-9616 for information on ... associated with this FIRM. Available products may include ...d Letters of Map Change, a Flood Insurance Study report, ...sions of this map. The FEMA Map Service Center may also be ...at 1-800-358-9620 and its website at http://www.msc.fema.gov/.

...estions about this map or questions concerning the National ...Program in general, please call **1-877-FEMA MAP** (1-877-336-2627) ...A website at http://www.fema.gov/.



LEGEND

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equalled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

ZONE A — No Base Flood Elevations determined.

ZONE AE — Base Flood Elevations determined.

ZONE AH — Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.

ZONE AO — Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.

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ZONE A99 — Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.

ZONE V — Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.

ZONE VE — Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.

FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.

OTHER FLOOD AREAS

ZONE X — Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.

OTHER AREAS

ZONE X — Areas determined to be outside the 0.2% annual chance floodplain.

ZONE D — Areas in which flood hazards are undetermined, but possible.

COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS

OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

1% annual chance floodplain boundary
0.2% annual chance floodplain boundary
Floodway boundary
Zone D boundary
CBRS and OPA boundary
Boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
513 — Base Flood Elevation line and value; elevation in feet*
(EL 987) — Base Flood Elevation value where uniform within zone; elevation in feet*

* Referenced to the North American Vertical Datum of 1988 (NAVD 88)

A — A — Cross section line
23 — 23 — Transect line
97°07'30", 32°22'30" — Geographic coordinates referenced to the North American Datum of 1983 (NAD 83)
3000000 N — 1000-meter Universal Transverse Mercator grid ticks, zone 11
6000000 M — 5000-foot grid ticks: Nevada State Plane coordinate system, west zone (FIPSZONE 2703). Transverse Mercator
DX5510 — Bench mark (see explanation in Notes to Users section of this FIRM panel)
• M1.5 — River Mile

MAP REPOSITORY
Carson City Planning Dept, 2621 Northgate Lane, Suite 62, Carson City, Nevada 89706 (Maps available for reference only, not for distribution)

INITIAL RFIP MAP DATE
May 24, 1974
FLOOD HAZARD BOUNDARY MAP REVISIONS
January 7, 1977
FLOOD INSURANCE RATE MAP EFFECTIVE
March 4, 1988
FLOOD INSURANCE RATE MAP REVISIONS
March 16, 1995 September 30, 1998 October 16, 1998

January 16, 2009 - to add and update roads, land road names, to update map format, to change Special Flood Hazard Areas based on updated topographic information, to convert to a new vertical datum, and to incorporate previously issued Letters of Map Revision.

To determine if flood insurance is available in this community, contact your insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

MAP SCALE 1" = 500'
250 0 500 1000 FEET
150 0 150 300 METERS

NFIP
NATIONAL FLOOD INSURANCE PROGRAM

PANEL 0112E

FIRM
FLOOD INSURANCE RATE MAP

CARSON CITY, NEVADA
INDEPENDENT CITY

PANEL 112 OF 275
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)
CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
CARSON CITY	320001	0112	E

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
32000I0112E
MAP REVISED
JANUARY 16, 2009

Federal Emergency Management Agency

Exhibit 2: Existing Conditions Hydrology Map

LEGEND

- 10-Foot Contours
- Landfill Extents
- Offsite Watershed - "PRE-1"
- EXIST_FLOWPATH

Offsite Watershed Hydrology (Existing)
Area: 262 ac
CN: 81
Tc: 26 min

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EXHIBIT 2: EXISTING CONDITIONS - HYDROLOGY

Plateau Development
Carson City | Nevada

Date Created: 10/17/2018

N

0 675 1,350 Feet

Prepared for:
Mr. Keith Serpa
Tahoe IV, LLC.
P.O. Box 1724
Carson City, Nevada 89702

Exhibit 3: Proposed Conditions Hydrology Map

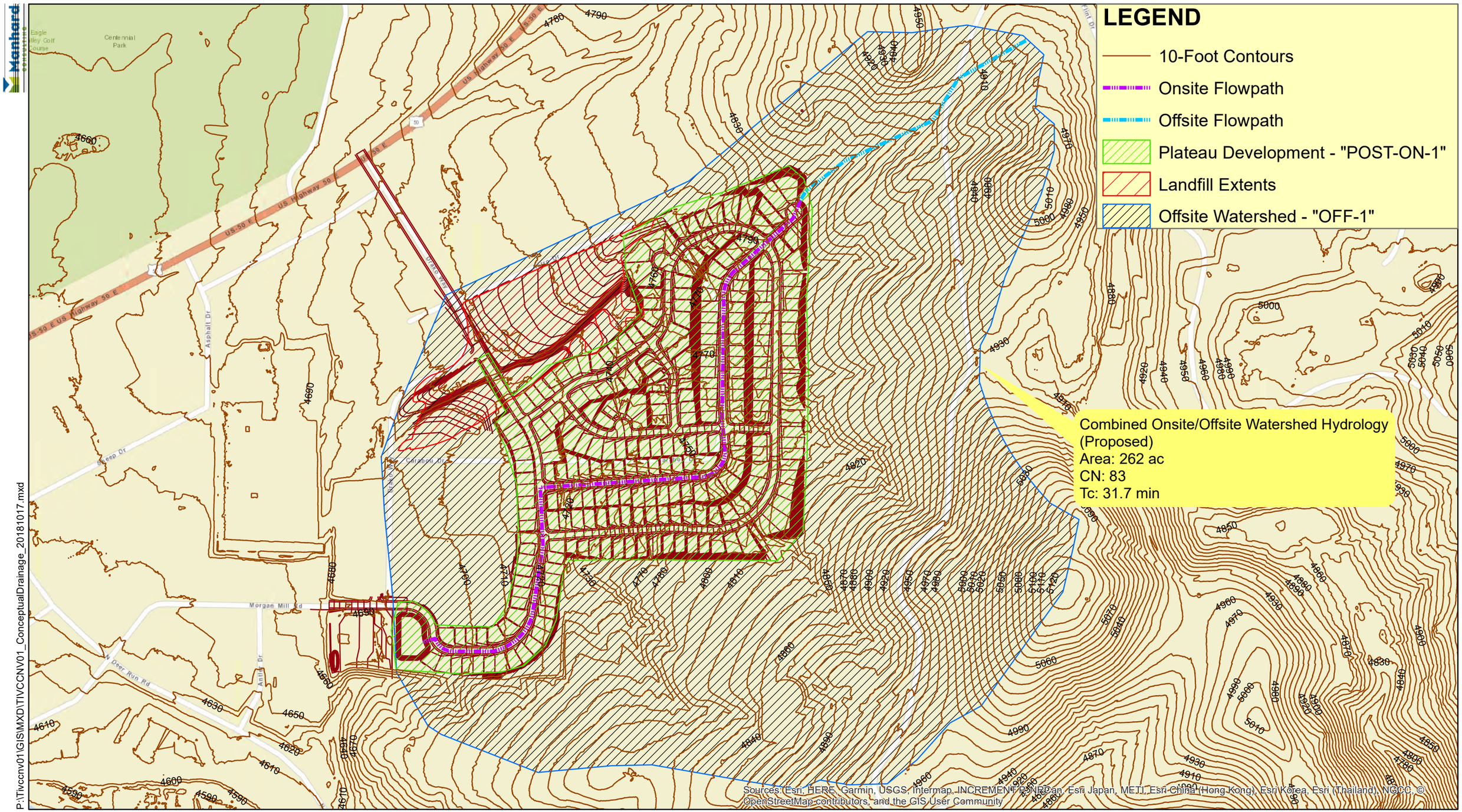

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EXHIBIT 3: PROPOSED CONDITIONS - HYDROLOGY

Plateau Development
Carson City | Nevada

Date Created: 10/17/2018

N

0 675 1,350 Feet

Prepared for:
Mr. Keith Serpa
Tahoe IV, LLC.
P.O. Box 1724
Carson City, Nevada 89702

Appendix A: HEC-HMS Parameter Calculations

APPENDIX A - HEC-HMS Parameters

Manhard CONSULTING LTD
241 Ridge Street, Suite 400, Reno, Nevada 89501
(775)746-3500

Project: PLATEAU DEVELOPMENT
Subject: Tentative Map Conceptual Hydrology
Client: Tahoe IV LLC
Job Code: TIV.CCNV01.00
Date: 10/10/2018
By: KANKENBAUER
Checked: CANDERSON

PLATEAU EXISTING DRAINAGE

HEC-HMS INPUT DATA

Assumptions:

- Soil cover conditions is Fair with average 50% vegetation cover
- Hydrologic Soil Groups (HSG) are 99.7% group D, 0.3% group C; assume HSG D for all
- Directly connected impervious is negligable and 0% of offsite catchment areas
- Directly connected impervious is incorporated as lumped parameter in developed and proposed areas
- Depth Area Reduction Factor is not applicable
- For methodology not included in the Carson City Code, the Truckee Meadows Regional Drainage Manual (TMRDM) is used
- TLAG method is not applicable and use $0.6t_c$ LagTime estimate

Curve Number Estimates

SUB-BASIN	Area (ac)	Area (mi^2)	% Area	% HSG A	CN HSG A	% HSG B	CN HSG B	% HSG C	CN HSG C	% HSG D	CN HSG D	Weighted	Land Use CN's
PRE-1	104.8	0.164	40%	0%	51	0%	51	0%	63	100%	70	70	40% Sagebrush -Grass Soil Complex AMC II
PRE-1	131.0	0.205	50%	0%	71	0%	71	0%	81	100%	89	89	50% Herbaceous Soil Complex AMC II
PRE-1	26.2	0.041	10%	0%	58	0%	58	0%	73	100%	80	80	10% Pinyon Juniper Soil Complex AMC II
Total	**262.0**	**0.409**										**81**	**Weighted CN**

LAG TIME (TLAG) CALCULATION (Basins > 1 $mile^2$ and Slope >10%)

SUB-BASIN	Kn	L (ft)	L (mi)	L_c (ft)	L_c (mi)	Upper El. (ft)	Lower El. (ft)	S (ft/mi)	TLAG (hr) [1]	TLAG (min)	CURVE NUMBER (CN)	
PRE-1											81	<-----N/A

[1] TLAG EQUATION: 22.1*Kn(L*Lc/S^0.5)^0.33
LAG CALCULATIONS BASED ON TMRDM STANDARDS

PLATEAU EXISTING DRAINAGE
HEC-HMS INPUT DATA
LAG TIME CALCULATION (Basins < 1 mile^2)
Calculate TLAG=0.6t_c

SUB-BASIN DATA			INITIAL/OVERLAND TIME (t_i)				SHALLOW CONC. FLOW TRAVEL TIME (t_t)				t_c (t_i+t_t)	TLAG	
Desig.	CN	R	Area (ac)	Length (ft)	Slope (%)	t_i (min)	Length (ft)	Slope (%)	Velocity (fps)	t_t (min)	t_c (min)	(min)	(hr)
(1)	(2A)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
PRE-1	81	**0.67**	262.00	200.00	15.0	**4.5**	5,076	4.0	4.00	**21.2**	**26**	**15**	**0.26**

(2) R = .0132 CN - 0.39 for SCS Unit Hydrograph Method
(2A) CN=weighted curve number
(3) Catchment area
(4) L_o = length of overland flow (feet, 500 feet maximum)
(5) S = average overland flow slope (percent)
(6) $t_i=(1.8(1.1-R)L_o^{1/2})/(S^{1/3})$
(7) Concentrated flow path length
(8) Estimated concentrated flow path slope=100*((Upper Elev-Lower Elev)/Length)
(9) From Figure 701
(10) t_t=Length*Velocity
(11) $t_c = t_i + t_t$
(12) TLAG = 0.6*t_c for small drainage basins less than 1 square mile
(13) TLAG in hours

PLATEAU EXISTING DRAINAGE
HEC-HMS INPUT DATA

705.3 LAG TIME

Input data for the Soil Conservation Service dimensionless unit hydrograph method (SCS, 1985) consists of a single parameter, TLAG, which is equal to the lag (in hours) between the center of mass of rainfall excess and the peak of the unit hydrograph. For small drainage basins (less than one square mile) and basin slopes less than ten percent the lag time may be related to the time of concentration, t_c, by the following empirical relationship:

$$TLAG = 0.6\ t_c \qquad (709)$$

The t_c is computed as presented in Section 702.

For larger drainage basins (greater than one square mile) and basins with a basin slope equal to or greater than ten percent, the lag time (and t_c) is generally governed mostly by the concentrated flow travel time, not the initial overland flow time. In addition, as the basin gets increasingly larger, the average flow velocity (and associated travel time) becomes more difficult to estimate. Therefore, for these basins, the following lag equation is recommended for use in computing TLAG:

$$TLAG = 22.1\ K_n\ (L\ L_c/S^{0.5})^{0.33} \qquad (710)$$

where K_n = Roughness factor for the basin channels
L = Length of longest watercourse (miles)

L_c = Length along longest watercourse measured upstream to a point opposite the centroid of the basin (miles)
S = Representative (average) slope of the longest watercourse (feet per mile)

This lag equation is based on the United States Bureau of Reclamation (USBR)'s analysis of the above parameters for several drainage basins in the Southwest desert, Great Basin, and Colorado Plateau area (USBR, 1989). Since the SCS and the USBR define lag differently, this equation was developed by modifying the USBR's S-graph lag equation to correspond to the SCS's definition of the dimensionless unit hydrograph lag equation.

In order to obtain comparable results between the t_c calculation and the TLAG calculation, it is recommended that either method be used as a check of the other method for drainage areas around one square mile in size.

where:

C = 1560 (174)
L_g = Lag Time, min (sec)
L = Length of longest watercourse, measured as approximately 90% of the distance from the point of interest to the headwater divide of the basin, miles (m)
L_c = Length along the longest watercourse measured upstream from the point of interest to a point close to the centroid of the basin, miles (m)
S = Overall slope of the longest watercourse between the headwaters and concentration point, ft/mile (m/m)
n = Basin "n" from Table 7-1.

RUNOFF CURVE NUMBERS FOR ARID AND SEMIARID RANGELANDS[1]

Cover Description	Hydrologic Condition[2]	Runoff Curve Numbers Soil Comp A[3]	Soil Comp B	Soil Comp C	Soil Comp D
Herbaceous – mixture of grass, weeds, and low-growing brush, with brush the minor element.	Poor		80	87	93
	Fair		71	81	89
	Good		62	74	85
Oak-aspen – mountain brush mixture of oak brush, aspen, mountain mahogany, bitter brush, maple, and other brush	Poor		66	74	79
	Fair		48	57	63
	Good		30	41	48
Pinyon-juniper – pinyon, juniper, or both; grass understory	Poor		75	85	89
	Fair		58	73	80
	Good		41	61	71
Sagebrush with grass understory	Poor		67	80	85
	Fair		51	63	70
	Good		35	47	55
Desert shrub – major plants include saltbrush, greasewood, creosotebush, blackbrush, bursage, palo verde, mesquite, and cactus	Poor	63	77	85	88
	Fair	55	72	81	86
	Good	49	68	79	84

[1]Average runoff condition, and $I_a = 0.2S$. For range in humid regions, use Table 702 - 3 of 4.

[2]*Poor:* <30% ground cover (litter, grass, and brush overstory)
Fair: 30 to 70% ground cover
Good: >70% ground cover

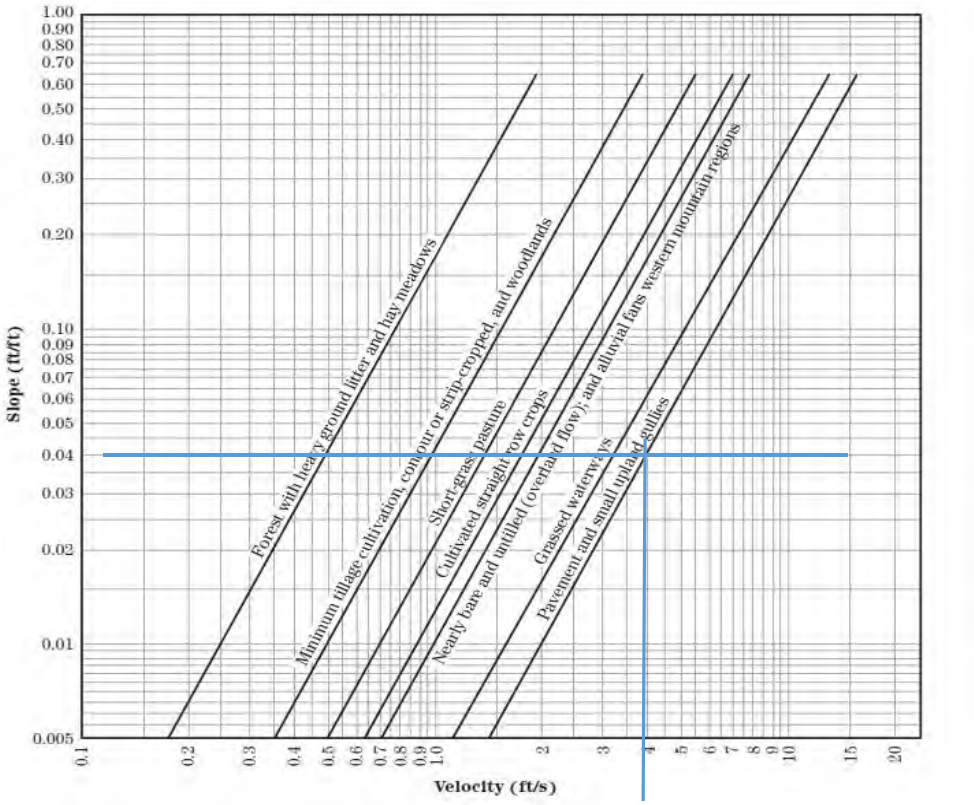
[3]Curve numbers for group A have been developed only for desert shrub.

VERSION: April 30, 2009 | REFERENCE: 210-VI-TR-55, Second Edition, June 1986 | TABLE 702 4 of 4

WRC ENGINEERING INC

PLATEAU EXISTING DRAINAGE
HEC-HMS INPUT DATA

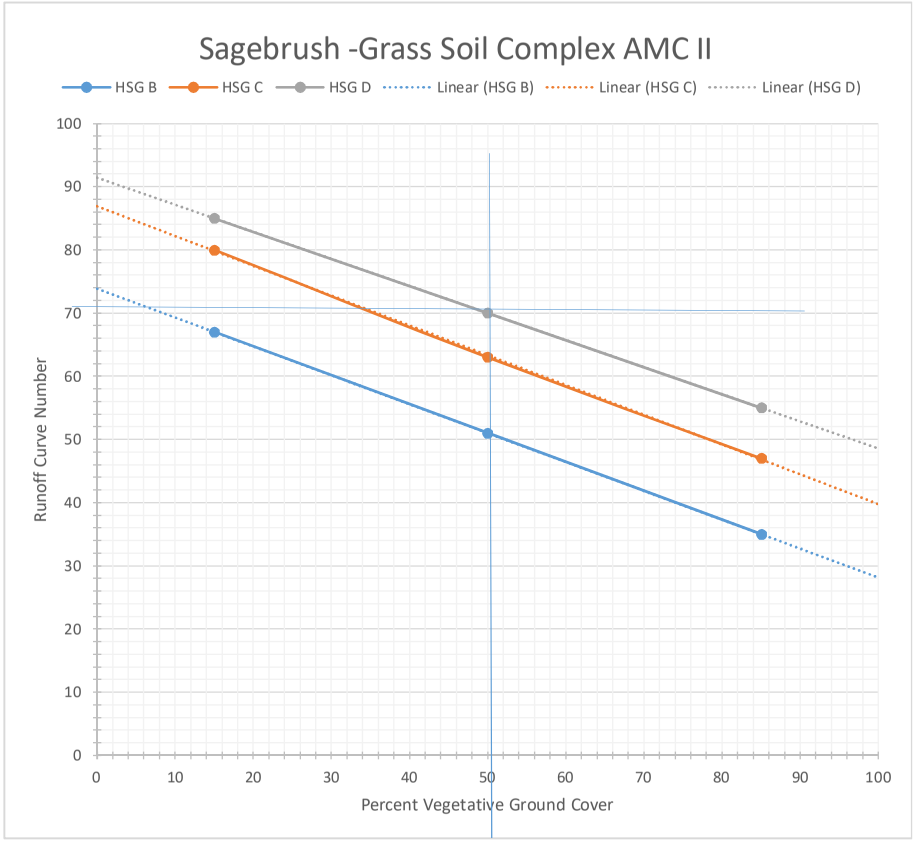
Figure 15–4 Velocity versus slope for shallow concentrated flow



Sage-Grass CN[1]

	% Cover	HSG B	HSG C	HSG D
POOR		15	67	80	85
FAIR		50	51	63	70
GOOD		85	35	47	55

[1] Values are the median between the Poor/Fair/Good ground cover density. Refer too Figure 9-2 of the NRCS NEH Chapter 9



Manhard CONSULTING LTD
241 Ridge Street, Suite 400, Reno, Nevada 89501
(775)746-3500

Project: PLATEAU DEVELOPMENT
Subject: Tentative Map Conceptual Hydrology
Client: Tahoe IV LLC
Job Code: TIV.CCNV01.00
Date: 10/10/2018
By: KANKENBAUER
Checked: CANDERSON

PLATEAU PROPOSED DRAINAGE

HEC-HMS INPUT DATA

Assumptions:

- Soil cover conditions is Fair with average 50% vegetation cover
- Hydrologic Soil Groups (HSG) are 99.7% group D, 0.3% group C; assume HSG D for all
- Sub-basins are segregated for the purpose of estimating a weighted CN
- All sub-basins are lumped into one basin called PROP-1 for HEC-HMS
- Assume OFF-1 CN is same as for Exist Conditions
- Directly connected impervious is negligable and 0% of offsite catchment areas
- Directly connected impervious is incorporated as lumped parameter in developed and proposed areas
- Depth Area Reduction Factor is not applicable
- For methodology not included in the Carson City Code, the Truckee Meadows Regional Drainage Manual (TMRDM) is used
- TLAG method is not applicable and use $0.6t_c$ LagTime estimate

Curve Number Estimates

SUB-BASIN	Area (ac)	Area (mi^2)	% Area	% HSG A	CN HSG A	% HSG B	CN HSG B	% HSG C	CN HSG C	% HSG D	CN HSG D	Weighted	Land Use CN's
OFF-1	179.6	0.281	69%									81	Sagebrush -Grass Soil Complex AMC II
POST-ON-1	67.9	0.106	26%	0%	61	0%	75	0%	83	100%	87	87	1/4 acre Single Family AMC II
LAND-1	14.5	0.023	6%	0%	63	0%	77	0%	85	100%	88	88	Natural desert landscape Group D
Total	**262.0**	**0.409**										**83**	**Weighted CN**

LAG TIME CALCULATION (Basins < 1 $mile^2$)

LAG TIME (TLAG) CALCULATION (Basins > 1 $mile^2$ and Slope >10%)

SUB-BASIN	Kn	L (ft)	L (mi)	L_c (ft)	L_c (mi)	Upper El. (ft)	Lower El. (ft)	S (ft/mi)	TLAG (hr) [1]	TLAG (min)	CURVE NUMBER (CN)	
PRE-1												<-----N/A

Check TLAG=0.6t_c

SUB-BASIN DATA			INITIAL/OVERLAND TIME (t_i)				OFFSITE TRAVEL TIME (t_t)				ONSITE TRAVEL TIME (t_t)				t_c (t_i+t_t)	TLAG	TLAG
Desig.	CN	R	Area (ac)	Length (ft)	Slope (%)	t_i (min)	Length (ft)	Slope (%)	Velocity (fps)	t_t (min)	Length (ft)	Slope (%)	Velocity (fps)	t_t (min)	t_c (min)	(min)	(hr)
(1)	(2A)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
PROP-1	83	**0.70**	262.00	200.00	15.0	**4.2**	1,356	8.1	5.50	**4.1**	4072	2.80	2.9	**23.4**	**31.67**	**19.0**	**0.32**

(2) R = .0132 CN - 0.39 for SCS Unit Hydrograph Method
(2A) CN=weighted curve number
(3) Catchment area
(4) L_o = length of overland flow (feet, 500 feet maximum)
(5) S = average overland flow slope (percent)
(6) $t_i=(1.8(1.1-R)L_o^{1/2})/(S^{1/3})$
(7) Concentrated flow path length
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(13) TLAG in hours

705.3 LAG TIME

Input data for the Soil Conservation Service dimensionless unit hydrograph method (SCS, 1985) consists of a single parameter, TLAG, which is equal to the lag (in hours) between the center of mass of rainfall excess and the peak of the unit hydrograph. For small drainage basins (less than one square mile) and basin slopes less than ten percent the lag time may be related to the time of concentration, t_c, by the following empirical relationship:

$$TLAG = 0.6\ t_c \qquad (709)$$

The t_c is computed as presented in Section 702.

For larger drainage basins (greater than one square mile) and basins with a basin slope equal to or greater than ten percent, the lag time (and t_c) is generally governed mostly by the concentrated flow travel time, not the initial overland flow time. In addition, as the basin gets increasingly larger, the average flow velocity (and associated travel time) becomes more difficult to estimate. Therefore, for these basins, the following lag equation is recommended for use in computing TLAG:

$$TLAG = 22.1\ K_n\ (L\ L_c/S^{0.5})^{0.33} \qquad (710)$$

where K_n = Roughness factor for the basin channels
L = Length of longest watercourse (miles)

L_c = Length along longest watercourse measured upstream to a point opposite the centroid of the basin (miles)
S = Representative (average) slope of the longest watercourse (feet per mile)

This lag equation is based on the United States Bureau of Reclamation (USBR)'s analysis of the above parameters for several drainage basins in the Southwest desert, Great Basin, and Colorado Plateau area (USBR, 1989). Since the SCS and the USBR define lag differently, this equation was developed by modifying the USBR's S-graph lag equation to correspond to the SCS's definition of the dimensionless unit hydrograph lag equation.

In order to obtain comparable results between the t_c calculation and the TLAG calculation, it is recommended that either method be used as a check of the other method for drainage areas around one square mile in size.

where:

C = 1560 (174)
L_g = Lag Time, min (sec)
L = Length of longest watercourse, measured as approximately 90% of the distance from the point of interest to the headwater divide of the basin, miles (m)
L_c = Length along the longest watercourse measured upstream from the point of interest to a point close to the centroid of the basin, miles (m)
S = Overall slope of the longest watercourse between the headwaters and concentration point, ft/mile (m/m)
n = Basin "n" from Table 7-1.

RUNOFF CURVE NUMBERS FOR URBAN AREAS[1]

Cover Type and Hydrologic Condition	Aver. % Impervious Area[2]	Runoff Curve Numbers: Soil Comp A	Soil Comp B	Soil Comp C	Soil Comp D
Fully developed urban area (vegetation established)					
Open space (lawns, parks, golf courses, cemeteries, etc.)[3]					
Poor condition (grass cover < 50%)		68	79	86	89
Fair condition (grass cover 50 to 75%)		49	69	79	84
Good condition (grass cover > 75%)		39	61	74	80
Impervious areas:					
Paved parking lots, roofs, driveways, etc. (excluding right-of-way)		98	98	98	98
Streets and roads:					
Paved; curbs and storm sewers (excluding right-of-way)		98	98	98	98
Paved; open ditches (including right-of-way)		83	89	92	93
Gravel (including right-of-way)		76	85	89	91
Dirt (including right-of-way)		72	82	87	89
Western desert urban areas:					
Natural desert landscaping (pervious areas only)[4]		63	77	85	88
Artificial desert landscaping (impervious weed barrier, desert shrub with 1- to 2-inch sand or gravel mulch and basin borders)		96	96	96	96
Urban districts:					
Commercial and business	85	89	92	94	95
Industrial	72	81	88	91	93
Residential districts by average lot size:					
1/8 acre or less (town houses)	65	77	85	90	92
1/4 acre	38	61	75	83	87
1/3 acre	30	57	72	81	86
1/2 acre	25	54	70	80	85
1 acre	20	51	68	79	84
2 acres	12	46	65	77	82
Developing urban areas					
Newly graded areas (pervious only, no vegetation)[5]		77	86	91	94
Idle lands (CNs are determined using cover types similar to those Table 702 - 3 of 4)					

[1] Average runoff condition, and $I_a = 0.2S$

[2] The average percent impervious area shown was used to develop the composite CNs. Other assumptions are as follows: impervious areas are directly connected to the drainage system, impervious areas have a CN of 98, and pervious areas are considered equivalent to open space in good hydrologic condition. CNs for other combinations of conditions may be computed using figure 2-3 or 2-4 in TR-55 (SCS, 1986).

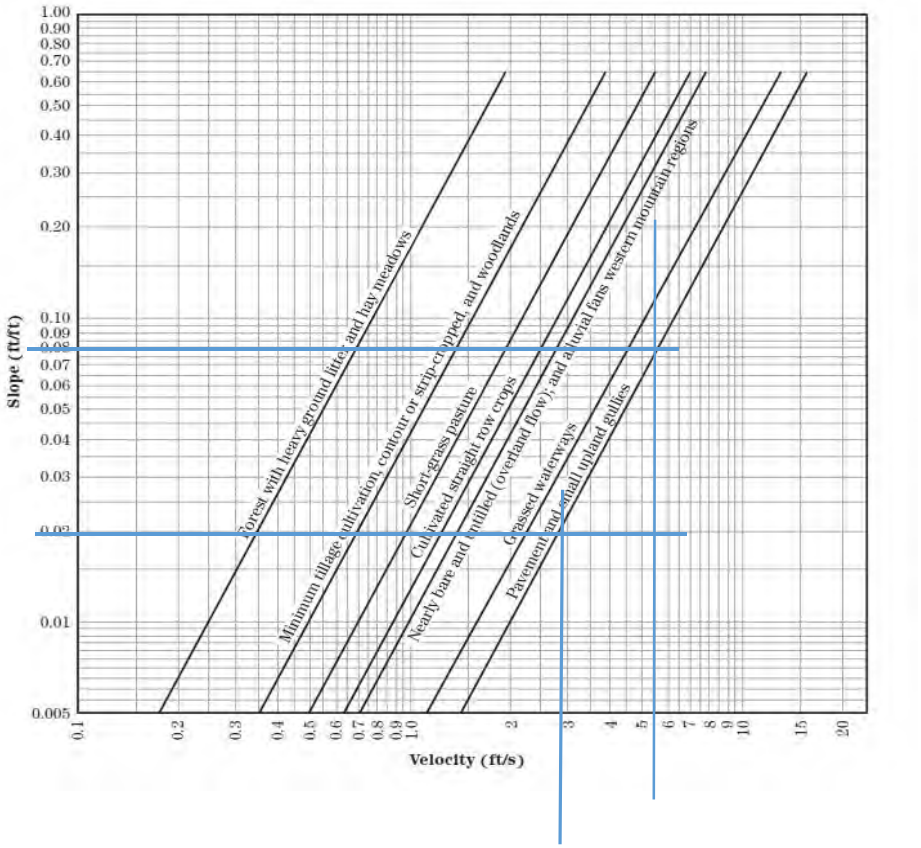
[3] CNs shown are equivalent to those of pasture. Composite CNs may be computed for other combinations of open space cover type.

[4] Composite CNs for natural desert landscaping should be computed using figure 2-3 or 2-4 in TR-55 (SCS, 1986) based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CNs are assumed equivalent to desert shrub in poor hydrologic condition.

[5] Composite CNs to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4 in TR-55 (SCS, 1986) based on the degree of development (impervious area percentage) and the CNs for the newly graded pervious areas.

VERSION: April 30, 2009	REFERENCE: 210-VI-TR-55, Second Edition, June 1986	TABLE 702 1 of 4
WRC ENGINEERING INC		

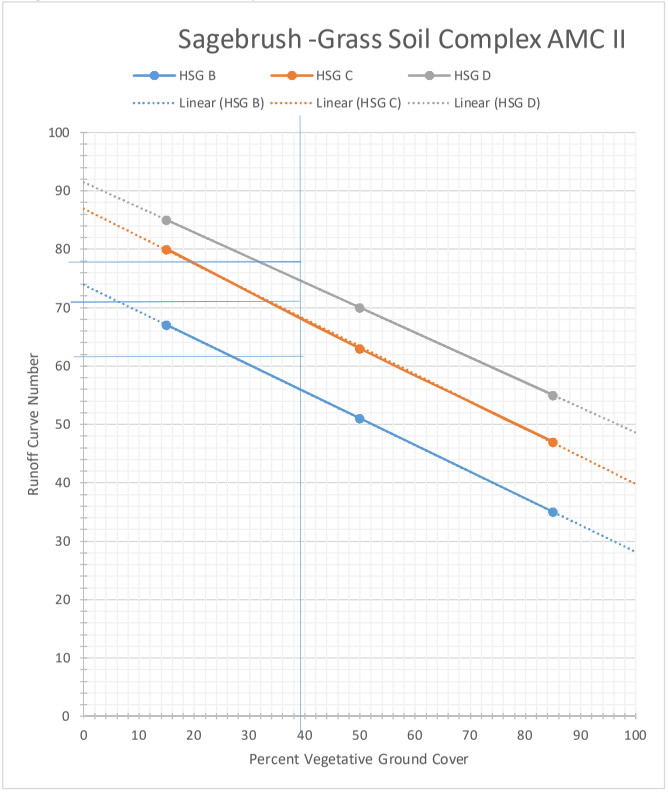
Figure 15–4 Velocity versus slope for shallow concentrated flow



Sage-Grass CN[1]

	% Cover	HSG B	HSG C	HSG D
POOR	15	67	80	85
FAIR	50	51	63	70
GOOD	85	35	47	55

[1] Values are the median between the Poor/Fair/Good ground cover density. Refer too Figure 9-2 of the NRCS NEH Chapter 9



Manhard CONSULTING LTD
241 Ridge Street, Suite 400, Reno, Nevada 89501
(775)746-3500

Project: PLATEAU DEVELOPMENT
Subject: Tentative Map Conceptual Hydrology
Client: Tahoe IV LLC
Job Code: TIV.CCNV01.00
Date: 10/10/2018
By: KANKENBAUER
Checked: CANDERSON

PLATEAU PROPOSED DRAINAGE
HEC-HMS INPUT DATA

Point precipitation frequency estimates (inches)
NOAA Atlas 14 Volume 1 Version 5
Data type: Precipitation depth
Time series type: Partial duration
Project area: Southwest
Location name (ESRI Maps): Cars Nevada USA
Station Name: -
Latitude: 39.1895°
Longitude: -119.6891°
Elevation (USGS): 4762.02 ft

PRECIPITATION FREQUENCY ESTIMATES

by duration for ARI (years):	1	2	5	10	25	50	100	200	500	1000
5-min:	0.098	0.122	0.163	0.202	0.265	0.322	0.391	0.473	0.604	0.722
10-min:	0.149	0.185	0.247	0.306	0.403	0.491	0.596	0.72	0.919	1.1
15-min:	0.184	0.23	0.306	0.38	0.499	0.609	0.738	0.893	1.14	1.36
30-min:	0.248	0.309	0.413	0.512	0.672	0.82	0.994	1.2	1.53	1.84
60-min:	0.307	0.382	0.511	0.633	0.832	1.02	1.23	1.49	1.9	2.27
2-hr:	0.41	0.51	0.651	0.776	0.963	1.13	1.32	1.55	1.94	2.31
3-hr:	0.49	0.61	0.767	0.895	1.08	1.23	1.41	1.63	1.99	2.34
6-hr:	0.674	0.842	1.05	1.21	1.43	1.61	1.78	1.99	2.29	2.55
12-hr:	0.886	1.12	1.41	1.63	1.94	2.18	2.42	2.67	3	3.27
24-hr:	1.12	1.4	1.76	2.05	2.46	2.78	3.12	3.46	3.94	4.31
2-day:	1.32	1.65	2.09	2.45	2.94	3.34	3.75	4.18	4.77	5.24
3-day:	1.44	1.81	2.31	2.71	3.28	3.73	4.21	4.71	5.41	5.97
4-day:	1.57	1.97	2.52	2.98	3.61	4.13	4.67	5.24	6.05	6.71
7-day:	1.82	2.29	2.96	3.48	4.22	4.8	5.41	6.04	6.92	7.61
10-day:	2.01	2.55	3.3	3.88	4.67	5.3	5.93	6.59	7.47	8.16
20-day:	2.43	3.08	3.97	4.64	5.54	6.22	6.91	7.59	8.49	9.16
30-day:	2.74	3.47	4.46	5.19	6.17	6.91	7.65	8.38	9.34	10
45-day:	3.22	4.09	5.24	6.08	7.16	7.93	8.67	9.37	10.2	10.8
60-day:	3.7	4.7	6.02	6.96	8.12	8.94	9.7	10.4	11.2	11.7

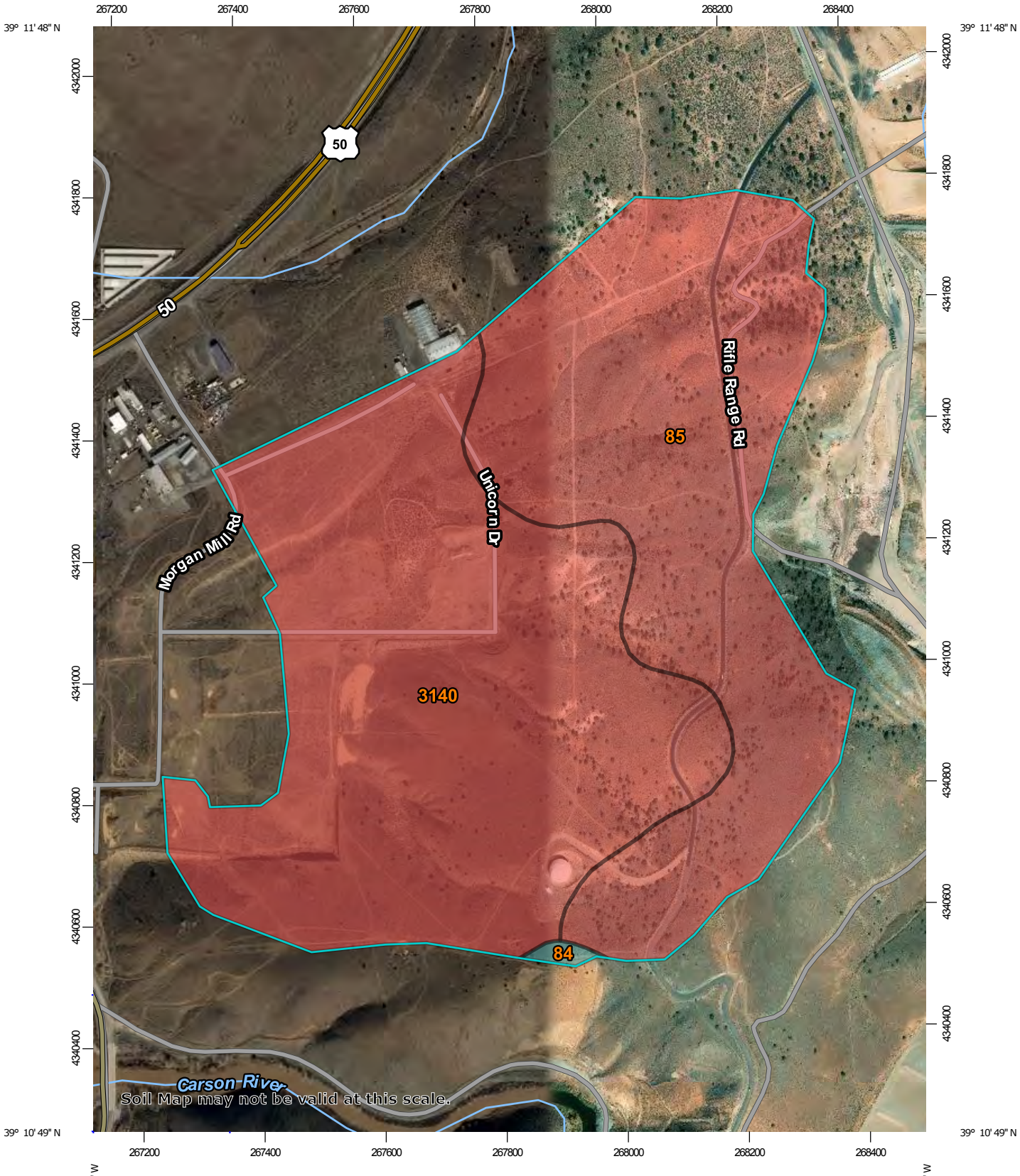
Date/time (GMT): Thu Oct 11 00:13:13 2018
pyRunTime: 0.0253670215607

POINT PRECIPITATION FREQUENCY (PF) ESTIMATES
WITH 90% CONFIDENCE INTERVALS AND SUPPLEMENTARY INFORMATION
NOAA Atlas 14, Volume 1, Version 5

Appendix B: NRCS Hydrologic Soils Group Rating

APPENDIX B

Hydrologic Soil Group—Carson City Area, Nevada
(TIV.CCNV01 Plateau)



Map Scale: 1:8,860 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 100 200 400 600

Feet: 0 400 800 1600 2400

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 11N WGS84

MAP LEGEND

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

Soils

Soil Rating Polygons
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Lines
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

Soil Rating Points
- A
- A/D
- B
- B/D
- C
- C/D
- D
- Not rated or not available

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:
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 12, Sep 17, 2018

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

Date(s) aerial images were photographed: Mar 26, 2015—Oct 26, 2017

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.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
84	Ister-Reywat-Koontz association	C	0.8	0.3%
85	Devada-Rock outcrop association	D	104.1	43.3%
3140	Fulstone-Reno complex, 2 to 30 percent slopes	D	135.8	56.4%
Totals for Area of Interest			**240.7**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

Appendix C: HEC-HMS Output

Global Summary Results for Run "10yr Exist"

Project: TIVCCNV01 Plateau Simulation Run: 10yr Exist

Start of Run: 01Jan2019, 00:00
End of Run: 02Jan2019, 00:00
Compute Time: 10Oct2018, 17:35:46

Basin Model: Exist Catchment
Meteorologic Model: 02_Met 10-Year
Control Specifications: Control 1

Show Elements: All Elements Volume Units: ○ IN ◉ AC-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
ExistCatchment	0.41	97.8	01Jan2019, 12:20	13.8
JunctionExist	0.41	97.8	01Jan2019, 12:20	13.8

Global Summary Results for Run "Prop 10-Year"

Project: TIVCCNV01 Plateau Simulation Run: Prop 10-Year

Start of Run: 01Jan2019, 00:00
End of Run: 02Jan2019, 00:00
Compute Time: 10Oct2018, 17:45:42

Basin Model: PROP-1
Meteorologic Model: 02_Met 10-Year
Control Specifications: Control 1

Show Elements: All Elements Volume Units: ○ IN ◉ AC-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
PROP-1	0.41	101.0	01Jan2019, 12:25	15.8
JunctionProposed	0.41	101.0	01Jan2019, 12:25	15.8

Global Summary Results for Run "100yr Exist"

Project: TIVCCNV01 Plateau Simulation Run: 100yr Exist

Start of Run: 01Jan2019, 00:00
End of Run: 02Jan2019, 00:00
Compute Time: 10Oct2018, 17:35:57

Basin Model: Exist Catchment
Meteorologic Model: 04_Met 100-Year
Control Specifications: Control 1

Show Elements: All Elements Volume Units: ○ IN ◉ AC-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
ExistCatchment	0.41	290.9	01Jan2019, 12:20	30.4
JunctionExist	0.41	290.9	01Jan2019, 12:20	30.4

Global Summary Results for Run "Prop 100-Year"

Project: TIVCCNV01 Plateau Simulation Run: Prop 100-Year

Start of Run: 01Jan2019, 00:00
End of Run: 02Jan2019, 00:00
Compute Time: 10Oct2018, 17:45:53

Basin Model: PROP-1
Meteorologic Model: 04_Met 100-Year
Control Specifications: Control 1

Show Elements: All Elements Volume Units: ○ IN ◉ AC-FT Sorting: Hydrologic

Hydrologic Element	Drainage Area (MI2)	Peak Discharge (CFS)	Time of Peak	Volume (AC-FT)
PROP-1	0.41	281.0	01Jan2019, 12:25	33.4
JunctionProposed	0.41	281.0	01Jan2019, 12:25	33.4

Appendix D: FlowMaster Output

Cross Section for Plateau 50 ft ROW

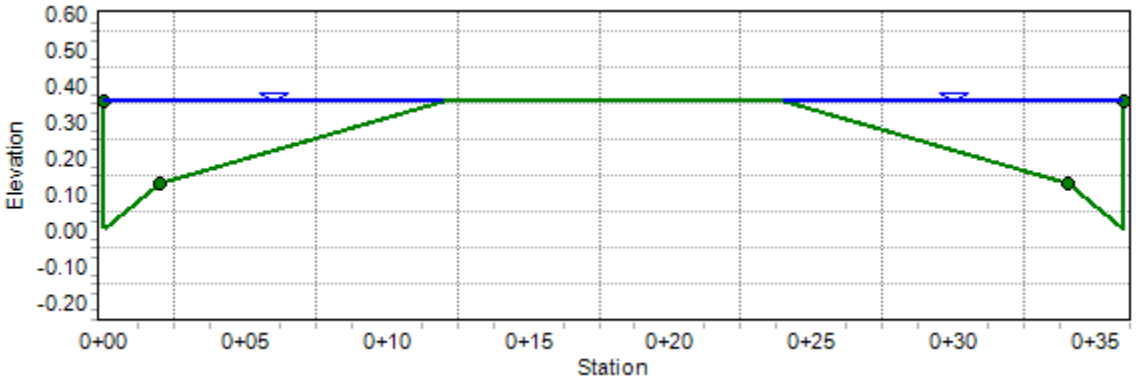
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.08000	ft/ft
Normal Depth	0.36	ft
Discharge	27.69	ft^3/s

Cross Section Image



Worksheet for Plateau 50 ft ROW - 0.5 Percent

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.36	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.36
0+00	0.00
0+02	0.13
0+12	0.36
0+24	0.36
0+34	0.13
0+36	0.00
0+36	0.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.36)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+34, 0.13)	0.016
(0+34, 0.13)	(0+36, 0.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	6.92	ft^3/s
Elevation Range	0.00 to 0.36 ft	
Flow Area	3.48	ft^2

Worksheet for Plateau 50 ft ROW - 0.5 Percent

Results

Wetted Perimeter		24.73	ft
Hydraulic Radius		0.14	ft
Top Width		24.00	ft
Normal Depth		0.36	ft
Critical Depth		0.37	ft
Critical Slope		0.00649	ft/ft
Velocity		1.99	ft/s
Velocity Head		0.06	ft
Specific Energy		0.42	ft
Froude Number		0.92	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.36	ft
Critical Depth	0.37	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.00649	ft/ft

Worksheet for Plateau 50 ft ROW - 3 Percent

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.03000	ft/ft
Normal Depth	0.36	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.36
0+00	0.00
0+02	0.13
0+12	0.36
0+24	0.36
0+34	0.13
0+36	0.00
0+36	0.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.36)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+34, 0.13)	0.016
(0+34, 0.13)	(0+36, 0.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	16.96	ft^3/s
Elevation Range	0.00 to 0.36 ft	
Flow Area	3.48	ft^2

Worksheet for Plateau 50 ft ROW - 3 Percent

Results

Wetted Perimeter		24.73	ft
Hydraulic Radius		0.14	ft
Top Width		24.00	ft
Normal Depth		0.36	ft
Critical Depth		0.45	ft
Critical Slope		0.00535	ft/ft
Velocity		4.87	ft/s
Velocity Head		0.37	ft
Specific Energy		0.73	ft
Froude Number		2.26	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.36	ft
Critical Depth	0.45	ft
Channel Slope	0.03000	ft/ft
Critical Slope	0.00535	ft/ft

Worksheet for Plateau 50 ft ROW - 5 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.05000	ft/ft
Normal Depth	0.36	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.36
0+00	0.00
0+02	0.13
0+12	0.36
0+24	0.36
0+34	0.13
0+36	0.00
0+36	0.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.36)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+34, 0.13)	0.016
(0+34, 0.13)	(0+36, 0.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	21.89	ft^3/s
Elevation Range	0.00 to 0.36 ft	
Flow Area	3.48	ft^2

Worksheet for Plateau 50 ft ROW - 5 Percent Slope

Results

Wetted Perimeter		24.73	ft
Hydraulic Radius		0.14	ft
Top Width		24.00	ft
Normal Depth		0.36	ft
Critical Depth		0.49	ft
Critical Slope		0.00507	ft/ft
Velocity		6.29	ft/s
Velocity Head		0.61	ft
Specific Energy		0.97	ft
Froude Number		2.91	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.36	ft
Critical Depth	0.49	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00507	ft/ft

Worksheet for Plateau 50 ft ROW - 6 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.06000	ft/ft
Normal Depth	0.36	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.36
0+00	0.00
0+02	0.13
0+12	0.36
0+24	0.36
0+34	0.13
0+36	0.00
0+36	0.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.36)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+34, 0.13)	0.016
(0+34, 0.13)	(0+36, 0.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	23.98	ft^3/s
Elevation Range	0.00 to 0.36 ft	
Flow Area	3.48	ft^2

Worksheet for Plateau 50 ft ROW - 6 Percent Slope

Results

Wetted Perimeter		24.73	ft
Hydraulic Radius		0.14	ft
Top Width		24.00	ft
Normal Depth		0.36	ft
Critical Depth		0.50	ft
Critical Slope		0.00497	ft/ft
Velocity		6.89	ft/s
Velocity Head		0.74	ft
Specific Energy		1.10	ft
Froude Number		3.19	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.36	ft
Critical Depth	0.50	ft
Channel Slope	0.06000	ft/ft
Critical Slope	0.00497	ft/ft

Worksheet for Plateau 50 ft ROW - 8 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.08000	ft/ft
Normal Depth	0.36	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.36
0+00	0.00
0+02	0.13
0+12	0.36
0+24	0.36
0+34	0.13
0+36	0.00
0+36	0.36

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.36)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+34, 0.13)	0.016
(0+34, 0.13)	(0+36, 0.36)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	27.69	ft^3/s
Elevation Range	0.00 to 0.36 ft	
Flow Area	3.48	ft^2

Worksheet for Plateau 50 ft ROW - 8 Percent Slope

Results

Wetted Perimeter		24.73	ft
Hydraulic Radius		0.14	ft
Top Width		24.00	ft
Normal Depth		0.36	ft
Critical Depth		0.53	ft
Critical Slope		0.00482	ft/ft
Velocity		7.96	ft/s
Velocity Head		0.98	ft
Specific Energy		1.34	ft
Froude Number		3.68	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.36	ft
Critical Depth	0.53	ft
Channel Slope	0.08000	ft/ft
Critical Slope	0.00482	ft/ft

Cross Section for Plateau 60 ft ROW

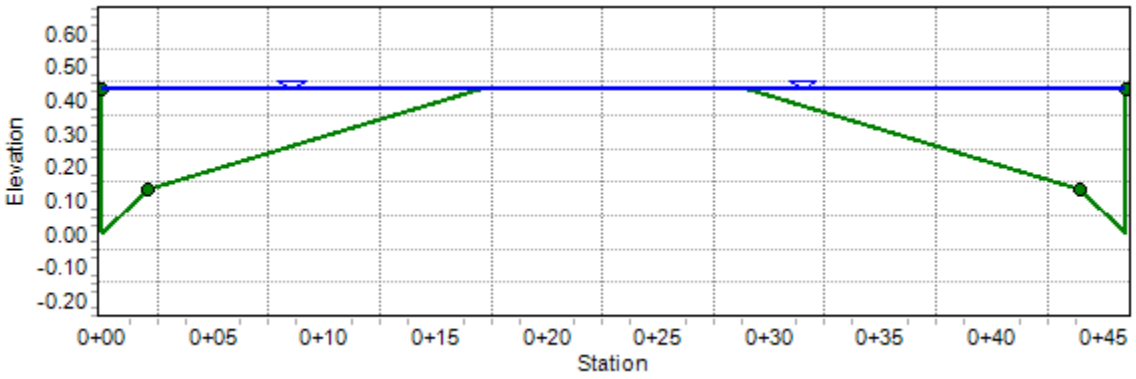
Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.08000	ft/ft
Normal Depth	0.43	ft
Discharge	46.00	ft³/s

Cross Section Image



Worksheet for Plateau 60 ft ROW-0.5 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.00500	ft/ft
Normal Depth	0.43	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.43
0+00	0.00
0+02	0.13
0+17	0.43
0+29	0.43
0+44	0.13
0+46	0.00
0+46	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.43)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+44, 0.13)	0.016
(0+44, 0.13)	(0+46, 0.43)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	11.50	ft^3/s
Elevation Range	0.00 to 0.43 ft	
Flow Area	6.03	ft^2

Worksheet for Plateau 60 ft ROW-0.5 Percent Slope

Results

Wetted Perimeter		46.87	ft
Hydraulic Radius		0.13	ft
Top Width		46.00	ft
Normal Depth		0.43	ft
Critical Depth		0.40	ft
Critical Slope		0.00545	ft/ft
Velocity		1.91	ft/s
Velocity Head		0.06	ft
Specific Energy		0.49	ft
Froude Number		0.93	
Flow Type	Subcritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.40	ft
Channel Slope	0.00500	ft/ft
Critical Slope	0.00545	ft/ft

Worksheet for Plateau 60 ft ROW-3 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.03000	ft/ft
Normal Depth	0.43	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.43
0+00	0.00
0+02	0.13
0+17	0.43
0+29	0.43
0+44	0.13
0+46	0.00
0+46	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.43)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+44, 0.13)	0.016
(0+44, 0.13)	(0+46, 0.43)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	28.17	ft^3/s
Elevation Range	0.00 to 0.43 ft	
Flow Area	6.03	ft^2

Worksheet for Plateau 60 ft ROW-3 Percent Slope

Results

Wetted Perimeter		46.87	ft
Hydraulic Radius		0.13	ft
Top Width		46.00	ft
Normal Depth		0.43	ft
Critical Depth		0.53	ft
Critical Slope		0.00485	ft/ft
Velocity		4.67	ft/s
Velocity Head		0.34	ft
Specific Energy		0.77	ft
Froude Number		2.28	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.53	ft
Channel Slope	0.03000	ft/ft
Critical Slope	0.00485	ft/ft

Worksheet for Plateau 60 ft ROW-5 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.05000	ft/ft
Normal Depth	0.43	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.43
0+00	0.00
0+02	0.13
0+17	0.43
0+29	0.43
0+44	0.13
0+46	0.00
0+46	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.43)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+44, 0.13)	0.016
(0+44, 0.13)	(0+46, 0.43)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	36.37	ft^3/s
Elevation Range	0.00 to 0.43 ft	
Flow Area	6.03	ft^2

Worksheet for Plateau 60 ft ROW-5 Percent Slope

Results

Wetted Perimeter		46.87	ft
Hydraulic Radius		0.13	ft
Top Width		46.00	ft
Normal Depth		0.43	ft
Critical Depth		0.57	ft
Critical Slope		0.00459	ft/ft
Velocity		6.03	ft/s
Velocity Head		0.57	ft
Specific Energy		1.00	ft
Froude Number		2.94	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.57	ft
Channel Slope	0.05000	ft/ft
Critical Slope	0.00459	ft/ft

Worksheet for Plateau 60 ft ROW-6 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.06000	ft/ft
Normal Depth	0.43	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.43
0+00	0.00
0+02	0.13
0+17	0.43
0+29	0.43
0+44	0.13
0+46	0.00
0+46	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.43)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+44, 0.13)	0.016
(0+44, 0.13)	(0+46, 0.43)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	39.84	ft^3/s
Elevation Range	0.00 to 0.43 ft	
Flow Area	6.03	ft^2

Worksheet for Plateau 60 ft ROW-6 Percent Slope

Results

Wetted Perimeter		46.87	ft
Hydraulic Radius		0.13	ft
Top Width		46.00	ft
Normal Depth		0.43	ft
Critical Depth		0.58	ft
Critical Slope		0.00450	ft/ft
Velocity		6.61	ft/s
Velocity Head		0.68	ft
Specific Energy		1.11	ft
Froude Number		3.22	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.58	ft
Channel Slope	0.06000	ft/ft
Critical Slope	0.00450	ft/ft

Worksheet for Plateau 60 ft ROW-8 Percent Slope

Project Description

Friction Method	Manning Formula
Solve For	Discharge

Input Data

Channel Slope	0.08000	ft/ft
Normal Depth	0.43	ft

Section Definitions

Station (ft)	Elevation (ft)
0+00	0.43
0+00	0.00
0+02	0.13
0+17	0.43
0+29	0.43
0+44	0.13
0+46	0.00
0+46	0.43

Roughness Segment Definitions

Start Station	Ending Station	Roughness Coefficient
(0+00, 0.43)	(0+02, 0.13)	0.013
(0+02, 0.13)	(0+44, 0.13)	0.016
(0+44, 0.13)	(0+46, 0.43)	0.013

Options

Current Roughness Weighted Method	Pavlovskii's Method
Open Channel Weighting Method	Pavlovskii's Method
Closed Channel Weighting Method	Pavlovskii's Method

Results

Discharge	46.00	ft^3/s
Elevation Range	0.00 to 0.43 ft	
Flow Area	6.03	ft^2

Worksheet for Plateau 60 ft ROW-8 Percent Slope

Results

Wetted Perimeter		46.87	ft
Hydraulic Radius		0.13	ft
Top Width		46.00	ft
Normal Depth		0.43	ft
Critical Depth		0.61	ft
Critical Slope		0.00437	ft/ft
Velocity		7.63	ft/s
Velocity Head		0.91	ft
Specific Energy		1.34	ft
Froude Number		3.72	
Flow Type	Supercritical		

GVF Input Data

Downstream Depth	0.00	ft
Length	0.00	ft
Number Of Steps	0	

GVF Output Data

Upstream Depth	0.00	ft
Profile Description		
Profile Headloss	0.00	ft
Downstream Velocity	Infinity	ft/s
Upstream Velocity	Infinity	ft/s
Normal Depth	0.43	ft
Critical Depth	0.61	ft
Channel Slope	0.08000	ft/ft
Critical Slope	0.00437	ft/ft

Appendix E: FlowMaster and Hydraulic Calculations Summary

APPENDIX E - FlowMaster and Hydraulic Calculations Summary

Design Storm Street Capacity Limitations of Catchbasins and Roadways

50 ft ROW Street Cross Section

Flowmaster (Mannings Eq.)		Rational Formula Results				
Street Slope [ft/ft]	**Flowmaster Mannings Q [cfs]**	**C**	**i [in/hr] Q5**	**i [in/hr] Q100**	**5yr Potential Drainage Area [acres]**	**100yr Potential Drainage Area [acres]**
0.08	27.69	0.6	1.480	3.560	31.2	13.0
0.06	23.98				27.0	11.2
0.05	21.89				24.7	10.2
0.03	16.96				19.1	7.9
0.005	6.92				7.8	3.2

60 ft ROW Street Cross Section

Flowmaster (Mannings Eq.)		Rational Formula Results				
Street Slope [ft/ft]	**Flowmaster Mannings Q [cfs]**	**C**	**i [in/hr] Q5**	**i [in/hr] Q100**	**5yr Potential Drainage Area A5 [acres]**	**100yr Potential Drainage Area [acres]**
0.08	46	0.6	1.480	3.560	51.8	21.5
0.06	39.84				44.9	18.7
0.05	36.37				41.0	17.0
0.03	28.17				31.7	13.2
0.005	11.5				13.0	5.4

Appendix F: Site Photographs

APPENDIX F - Site Photographs

PLATEAU DEVELOPMENT

ZONING MAP AMENDMENT
TENTATIVE SUBDIVISION MAP

October 2018

Prepared For:

Tahoe IV LLC

P.O. Box 1724 Carson City, NV 89702

Prepared By:

Manhard CONSULTING

241 Ridge Street Reno, NV 89501

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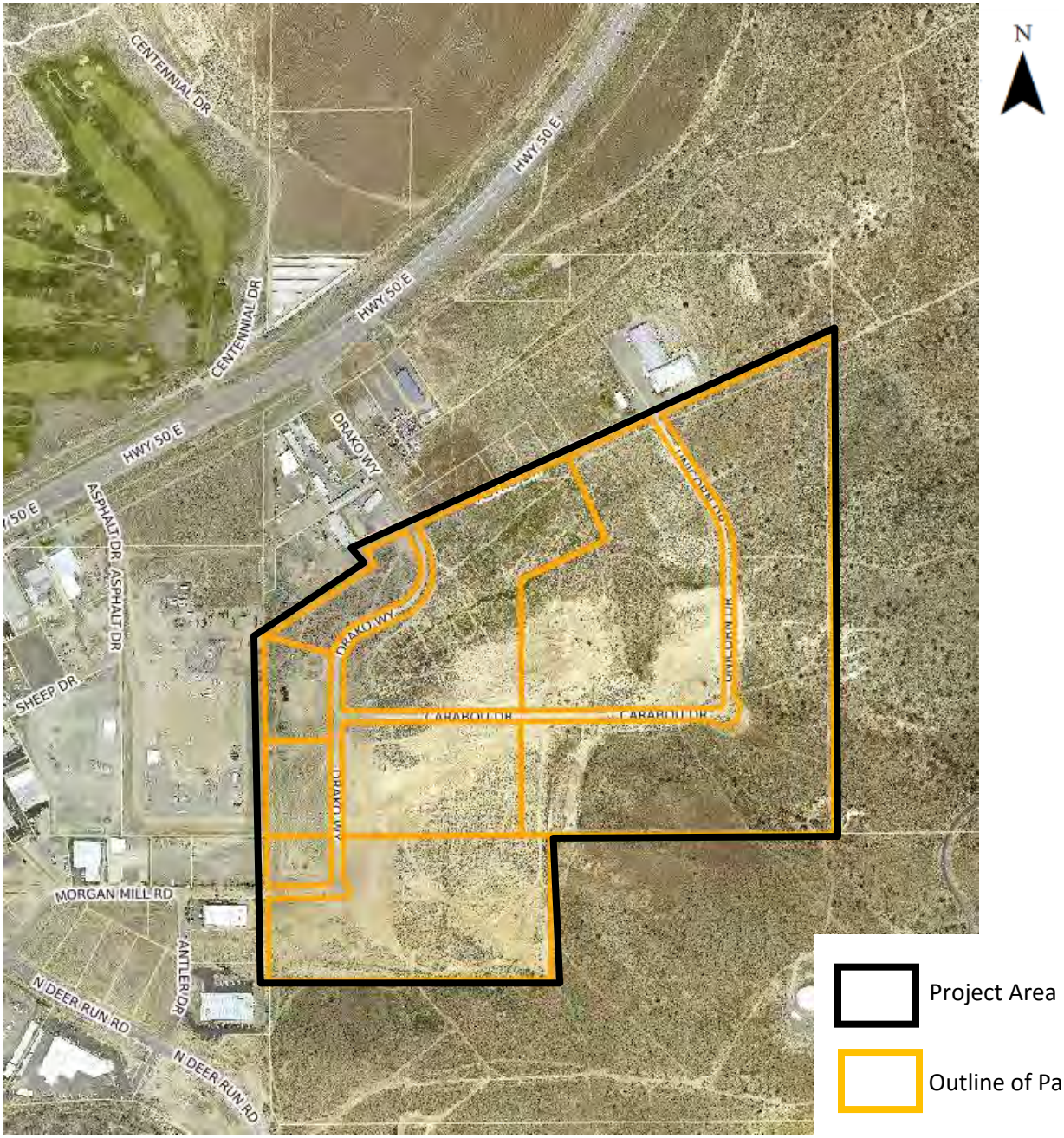
- Conceptual Water Study
- Conceptual Sewer Study
- Traffic Study
- Geotechnical Report

PROJECT LOCATION

The project site encompasses 9 parcels (APNs 008-521-54, -55, -89, -90, 005-522-16, -17, -18, 008-531-59, -60) totaling +/- 112.69 acres; the total project area is 119.1 acres because it includes the existing rights-of way of Drako Way, Carabou Drive, and Unicorn Drive. The site is located southeast of US Highway 50 and northeast of Deer Run Road, within the V&T Specific Plan Area. The project site is accessed by Drako Way and Morgan Mill Road.

Figure 1: Project Location



EXISTING CONDITIONS

The +/- 119.1 acre project area is undeveloped and is the site of the Old Carson City Landfill. The site is surrounded by a mix of commercial and industrial uses to the north and west, and open space to the east and south.

Figure 2: Surrounding Property Designations

Direction	Current Zoning	Master Plan	Current Land Use
North	General Industrial	Mixed-Use Commercial	Mix of commercial and industrial uses
East	Public Regional	Open Space	Open Space
South	Public Regional	Public/Quasi-Public	Open Space
West	General Industrial	Public/Quasi-Public Industrial	Mix of commercial and industrial uses Public Facility

Conditions in the Previous Five-Year Time Period

Regional connectivity near the project area has increased in the previous five-year time period. US Highway 50 now connects to USA Parkway to the east (opened in September 2017), providing enhanced access to industrial development such as the Tahoe Reno Industrial Center (TRIC) and Tesla Gigafactory. US Highway 50 also continues to Lake Tahoe to the west and connects to Interstate 580, which leads to Reno to the north. This increase in nearby job opportunities and increased regional connectivity will continue to lead to increased demand for housing development in the region.

Additionally, the opening of US Highway 50 West and Interstate 580, approximately 8.4 miles southwest of the project, represents a significant change in Carson City and will encourage commercial development and job opportunities. The last leg of Interstate 580 opened in August 2017.

The site has been zoned industrial for many years but has remained vacant because there has not been market demand for industrial land. Instead, housing opportunities represent the highest and best use of the site. This is further demonstrated by the shift in the Master Plan designation from Industrial to Mixed-Use Residential. Also, as detailed in the Carson City Master Plan, a mix of residential use types are needed to supply the housing demand. This project has the opportunity to supply a mix of residential use types, along with adjacent commercial land uses to provide for residents' day-to-day needs, and enhanced pedestrian access to adjacent open space.

Figure 3: Site Photographs

Facing south from corner of Drako Way and Carabou Drive

Facing southeast from Drako Way

Figure 3: Site Photographs (continued)

Figure 4: Existing Master Plan Designation

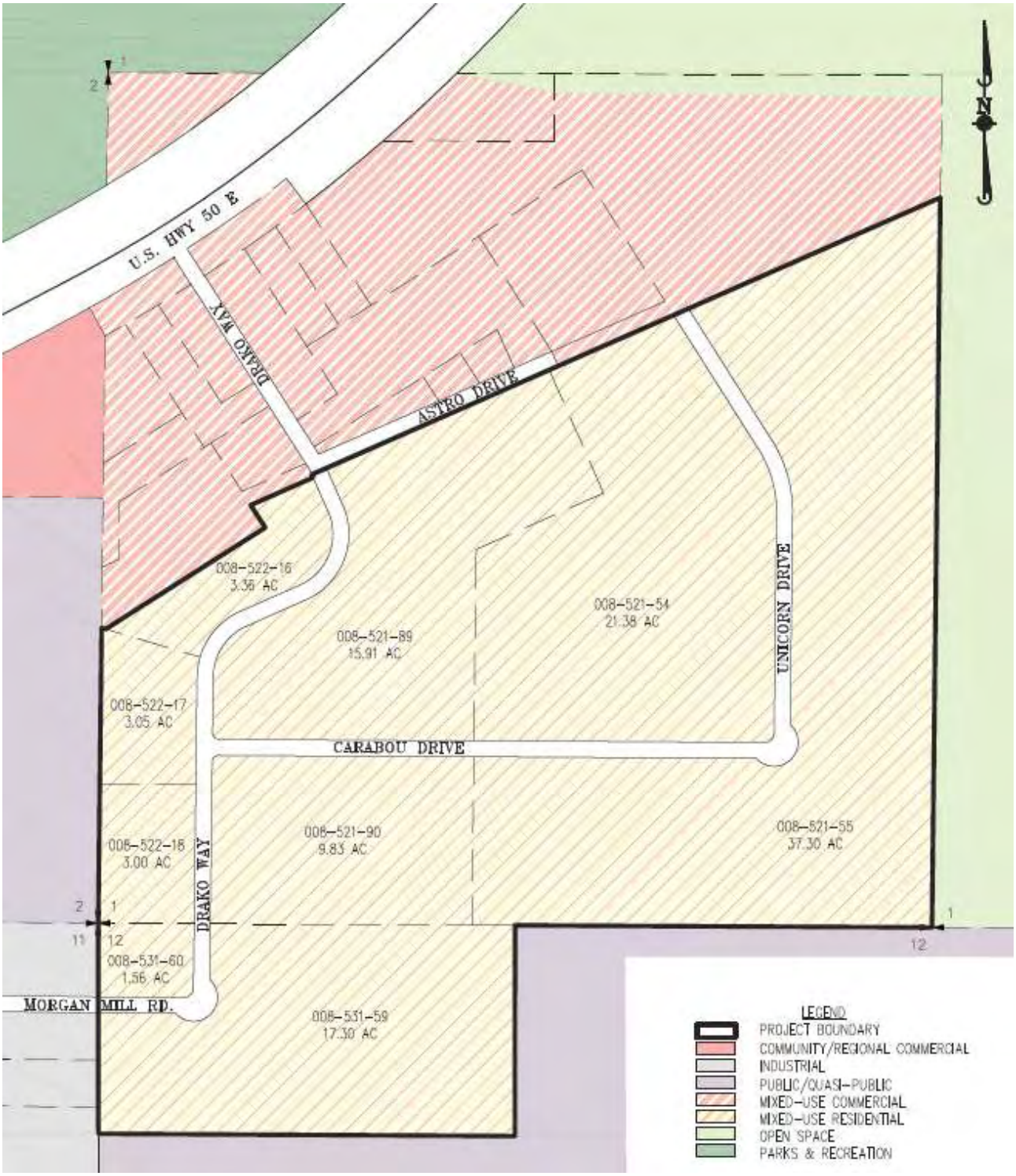
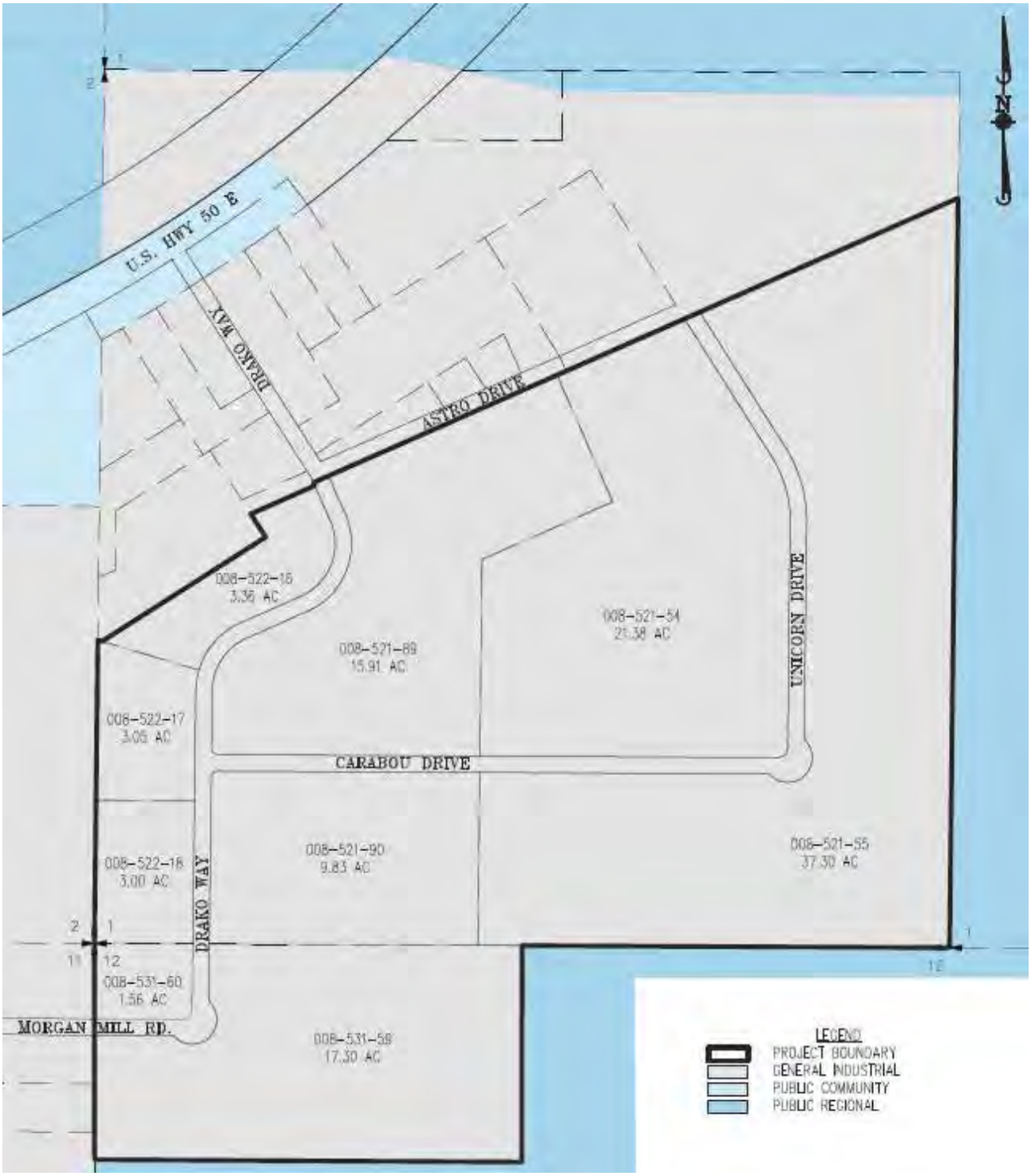


Figure 5: Existing Zoning Designation



APPLICATION REQUEST

The enclosed application is a request for:

ZONING MAP AMENDMENT from General Industrial to Single-family 6,000 (SF6, +/- 68.3 acres), Multifamily Apartment (MFA, +/- 18.0 acres), General Commercial (GC, +/- 13.9 acres), and Public Regional (PR, +/- 18.9 acres)

TENTATIVE SUBDIVISION MAP to create 270 single family residential lots, 9 common area parcels, 3 remainder parcels, and +/- 13.36 acres of right-of-way within a +/- 119.1 acre project area.

PROJECT DESCRIPTION AND JUSTIFICATION

The Plateau mixed-use development is proposed to include 270 single family residential parcels on 68.3 acres (SF6), 18.0 acres of MFA, 13.9 acres of GC, and 18.9 acres of PR use. The ultimate mixed-use development will be in compliance with the Carson City Municipal Code.

The proposed zoning designations of SF6, MFA, GC, and PR (see Figure 8: Proposed Zoning Designation) will allow for a mixed-use development in accordance with the Mixed-use Residential (MUR) Master Plan designation and meets the Interim Mixed-Use Evaluation Criteria. The development will ultimately provide a cohesive mix of housing types, expanded recreational opportunities, commercial services, and employment opportunities so that residents can meet their day-to-day needs within a close proximity.

The residential density is 3.95 units/acre (270 units/68.3 acres of residential development area). Single family residential lots range in size from 6,000 sq. ft. to 17,950 sq. ft. with an average lot size of 8,104 sq. ft. Home designs are not available, however, all future development will comply with the requirements of the Carson City Municipal Code.

The proposed development provides for enhanced recreational opportunity, with +/- 18.9 acres proposed to be designated PR and developed with recreational trails. Additional pedestrian access will be provided from the proposed development to the adjacent Carson City open space through Common Area parcels A through I, as shown on the Tentative Map, and between the different uses within the site.

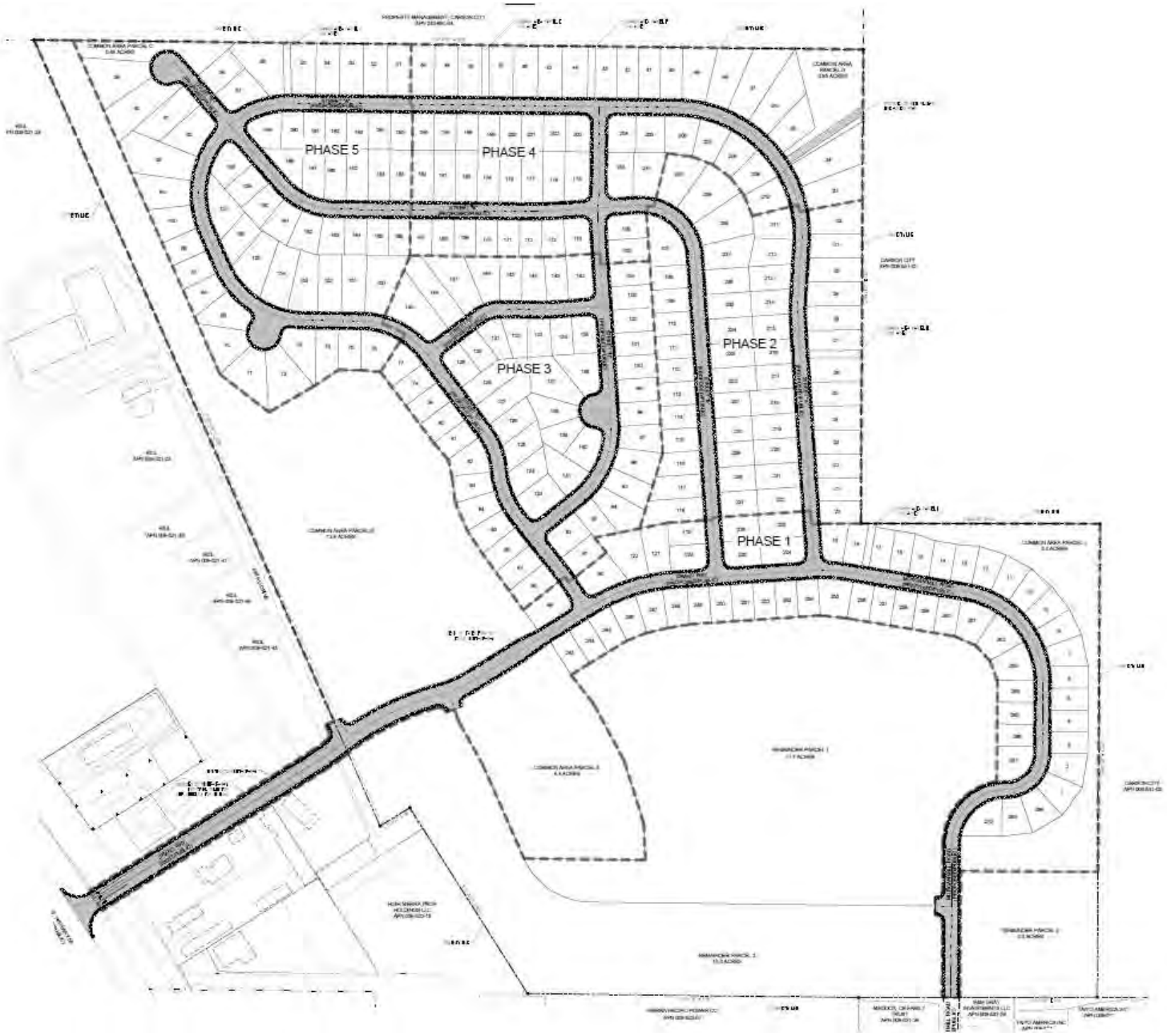
Wildland fire access will be provided from the southeast corner of the development, along a 20’ wide fire access road. The access point will be gated and will be available for fire access in the event of an emergency.

The Common Area parcels are proposed to be maintained by a Landscape Maintenance District (LMD) or similar entity as approved by Carson City. The LMD or similar entity will provide for weed abatement, trail maintenance, and maintenance of landscaping installed in the common area and right-of-way. Carson City will not be responsible for maintaining the common areas.

Figure 6: Project Summary

Project Summary	
Total Project Area	119.1 acres
- **SF6 Proposed Acres**	68.3 acres (270 units); 57%
- **MFA Proposed Acres**	18.0 acres; 15%
- **GC Proposed Acres**	13.9 acres; 12%
- **PR Proposed Acres**	18.9 acres; 16%
Residential Lot Area	50.69 acres
Remainder Parcels	31.0 acres (GC and MFA parcels)
Total Common Area	22.98 acres (PR and common area parcels)
Right-of-Way Area	14.36 acres (not including off-site access road)
Total Number of Residential Lots	270
Smallest Lot	6,000 sq. ft.
Largest Lot	17,950 sq. ft.
Average Lot Size	8,104 sq. ft.
Overall Gross Density	3.95 (270 units/68.3 acres)

Figure 7: Site Plan



PROPOSED ZONING DESIGNATION

This application proposes to amend the zoning designations from GI to a mix of SF6, MFA, GC, and PR to accomplish a mixed-use development in accordance with the MUR Master Plan designation and the proposed use described in the V&T SPA, which indicates that:

> *"the land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property (V&T SPA Policy 1.5)."*

Consistency with the Carson City Master Plan and V&T Specific Plan

The Carson City Master Plan was adopted in 2006 and includes policies related to mixed-use land use categories. The mixed-use policies were established to:

- facilitate higher intensity, mixed-use development in locations designated on the Land Use Plan for mixed-use development;
- allow for the incorporation of a variety of housing as a part of a broader mix of uses;
- allow for projects to be designed with an interconnected network of streets between uses;
- promote a more compact, pedestrian-friendly environment; and
- incorporate recreational features.

The project area has a Mixed-Use Residential (MUR) Master Plan designation, however the existing GI zoning is not in conformance with the existing MUR land use designation. The proposed mix of SF6, MFA, GC, and PR is consistent with the MUR Master Plan designation and reflects the City's desire to establish a more diverse mix of uses within the community and to encourage a more efficient use of the City's limited developable land by encouraging the development of commercial services, employment opportunities, a diversity of housing, and an array of services within a close proximity (General Mixed-Use goal, Carson City Master Plan, Chapter 3, page 3-31).

The proposed zoning for a mixed-use development accomplishes the V&T SPA goals:

- To provide for a cohesive development within the area
- To encourage public/private cooperation in creating public access, trails, and recreational opportunities

The proposed zoning is consistent with the MUR Master Plan designation. Future development will meet the general Mixed-Use Policies and MUR policies contained in the General Plan, including density range, location and scale, mix of uses, mix of housing types, relationship to surrounding development, and parks, open space, and pathways.

Figure 8: Proposed Zoning Designation

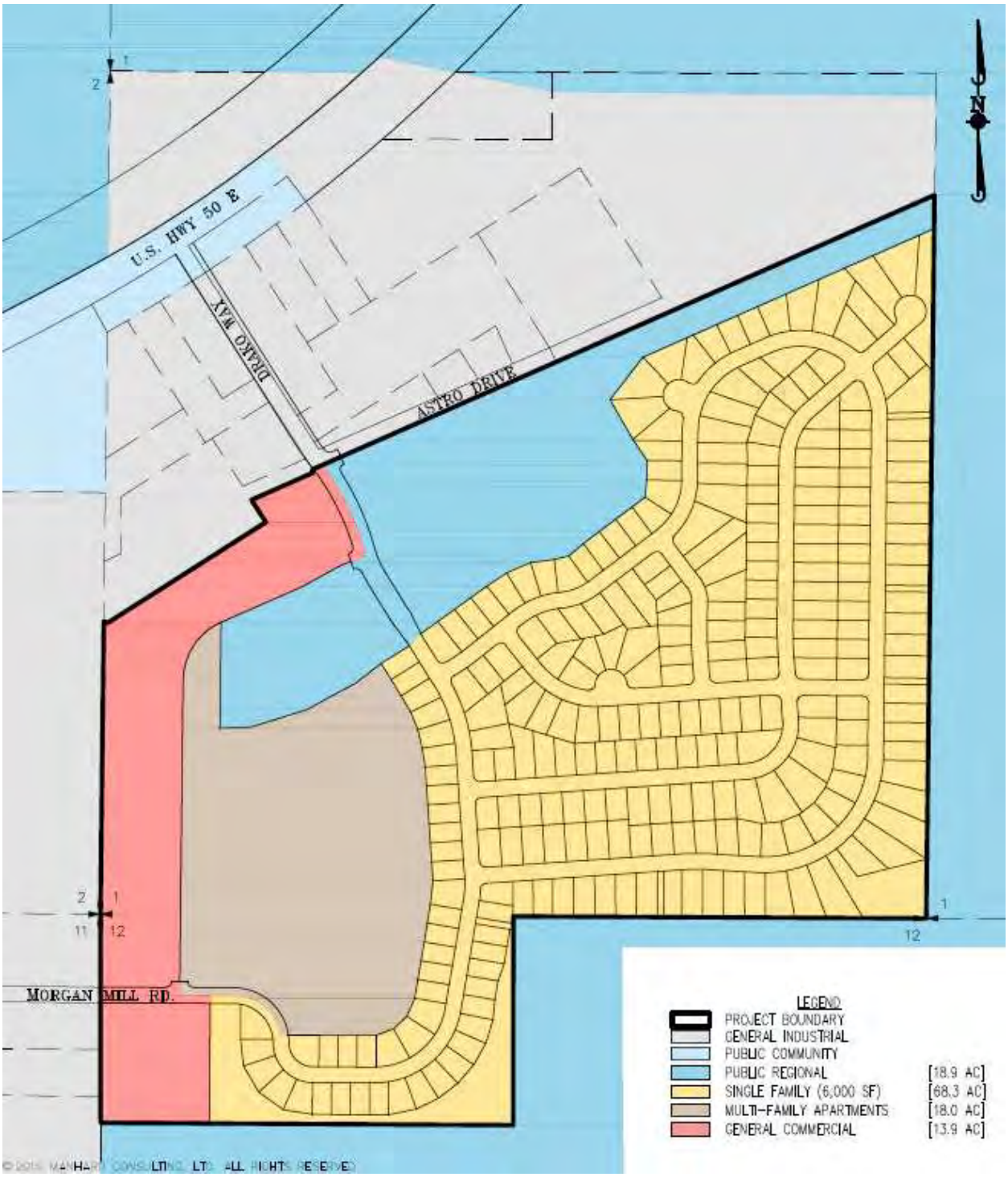


Figure 9: Existing and Proposed Zoning Acreage

ZONING CATEGORY	EXISTING ZONING (+/- ACRES)	PROPOSED ZONING (+/- ACRES)
General Industrial	119.1	0
Single-family 6,000	0	68.3
General Commercial	0	13.9
Multi-Family Apartment	0	18.0
Public Regional	0	18.9
TOTAL ACREAGE	**119.1**	**119.1**

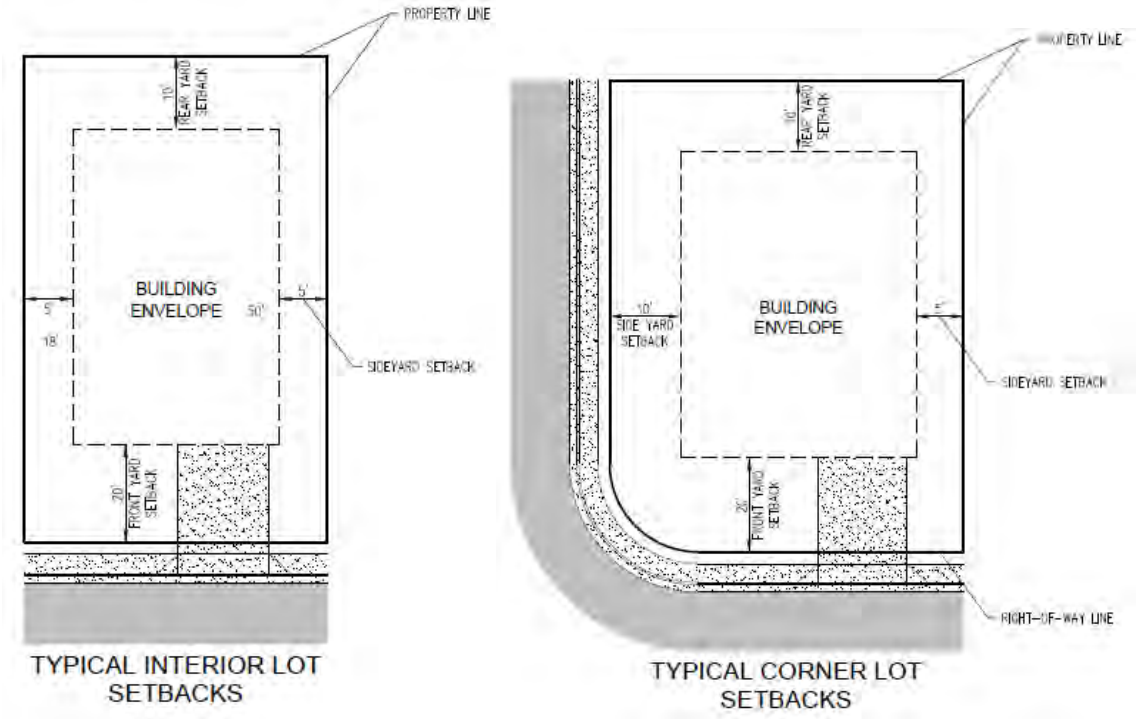
TENTATIVE MAP REVIEW

The Tentative Map includes 270 residential lots, totaling +/-50.68 acres. Three remainder parcels are included on the Tentative Map; one is proposed for multi-family development and zoned MFA (1 parcel = 17.7 acres) and two are proposed for general commercial development and zoned GC (2 parcels = 13.3 acres). There is no specific development associated with the remainder parcels. However, to analyze project impacts, proposed uses have been identified to include 250 multi-family residential units, 12,000 sq. ft. of office space, 12,000 sq. ft. of retail space, and 300 self-storage units. The remainder parcels will be developed in accordance with the Carson City Master Plan and Municipal Code.

Site Development Standards

The proposed residential lots are designed in accordance with SF6 site development standards, including parcel size, density, height, and setbacks, as detailed in CCMC Section 18.04.190. The minimum lot width is 60’ and the maximum height is 26’. Setbacks are 20’ front yard, 5’ side yard, 10’ street side yard, and 10’ rear yard.

Figure 10: Typical Lot Setbacks



Off-street parking will be provided as follows in accordance with CCMC Division 2, Section 2.2:

- A minimum of two (2) off street parking spaces for each single family unit

Specific floorplans are not available at this time, however it is expected that each single family unit will have at least a two car garage and a driveway with two off-street parking spaces.

Figure 11: Parking Calculations

Zoning	# of Units	Spaces Required per Unit	Total Required Spaces	Total Spaces Proposed
SF6	270	2	540	**Minimum: 540***

** This does not include any on-street parking or driveway, or any units that may contain a 3-car garage.*

Hillside Development

As shown in Figure 10: Slope Map, the project site does not meet the requirements for hillside development, since the development site does not average 15% slope. The average slope of the site is 3.94%. Specific parcels that average 15% slope or more are identified on the Tentative Map plan set.

Figure 12: Slope Map

Vehicle and Pedestrian Access

The site is accessed by US Highway 50 with access from Drako Way and from N. Deer Run Road to Morgan Mill Road. Cross sections of a typical local street (50' ROW) and industrial street (65' ROW) are included below. All lots will be accessed by public streets.

Drako Way is the project entrance road and will be landscaped to provide an appealing entrance to the project. Landscaping will be maintained by a LMD or similar entity as approved by Carson City. The entrance road is off-site and the proposed 65' right-of-way and improvements will meet industrial street standards. As detailed on the cross section below, Drako Way will include 5' sidewalks on each side of the

road and bike lanes in accordance with Carson City standards. Drako Way will maintain the existing westerly right-of-way.

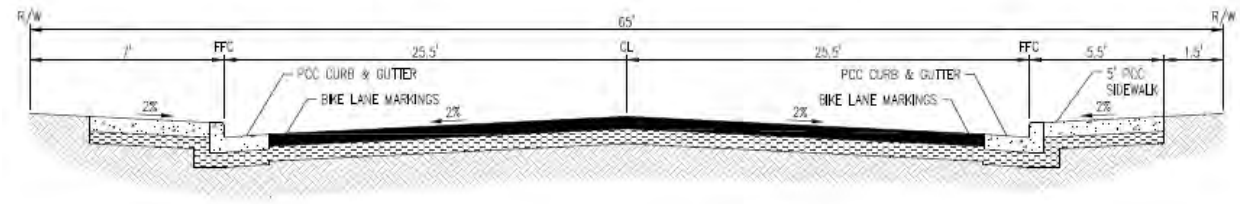
Internal project circulation will be provided by local streets (50' ROW). The proposed street layout is intended to replace the existing rights-of-way (Drako Way, Carabou Drive, Unicorn Drive). It appears that Drako Way, Carabou Drive, and Unicorn Drive were offered for dedication at some point but were not accepted. A Merger and Resubdivision will be offered with the Final Map, to eliminate the previously proposed ROW.

To provide for pedestrian access and connectivity, sidewalks will be provided throughout the development in accordance with the approved Tentative Map. There will be 4' wide sidewalks on both sides of the streets and a 5' wide sidewalk on both sides of Drako Way (project entrance). Sidewalks will be located within the ROW, providing safe pedestrian access throughout the development.

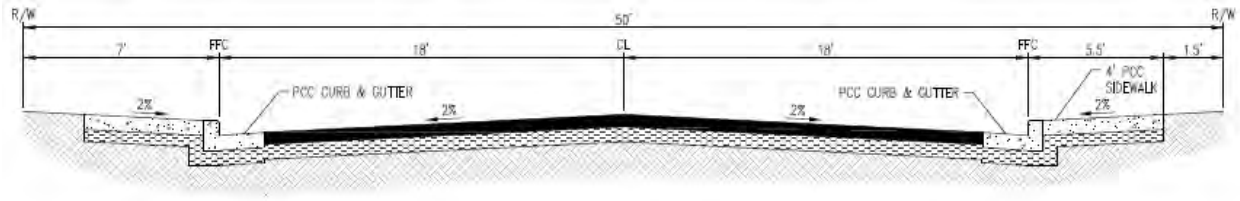
The street network has been designed to provide pedestrian connectivity between the proposed single family residential development and the commercial and multi-family zoned properties. Sidewalks, recreation trails, and open space will be easily accessible from all areas of the development.

The project has been designed to meet Wildland Urban Interface (WUI) standards to prevent wildfire spreading from vegetation to a building. Fire access is provided to the adjacent open space at the southeast corner of the project along a 20' fire access road.

Figure 13: Street Cross Sections



65' RIGHT-OF-WAY STREET (INDUSTRIAL STREET WITH BIKE LANES)



50' RIGHT-OF-WAY STREET

Traffic Improvements

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. The intersection currently operates at Level of Service E during the PM peak hour. The existing volumes on US Highway 50 are high enough to effectively prohibit northbound left-turns from the project unless improvements are made. A signalized intersection would improve operations to acceptable levels of service (LOS A) during the AM and PM peak hours. Improvements will be addressed in coordination with the Nevada Department of Transportation (NDOT) and will meet the requirements of Carson City and NDOT. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

Phasing Plan

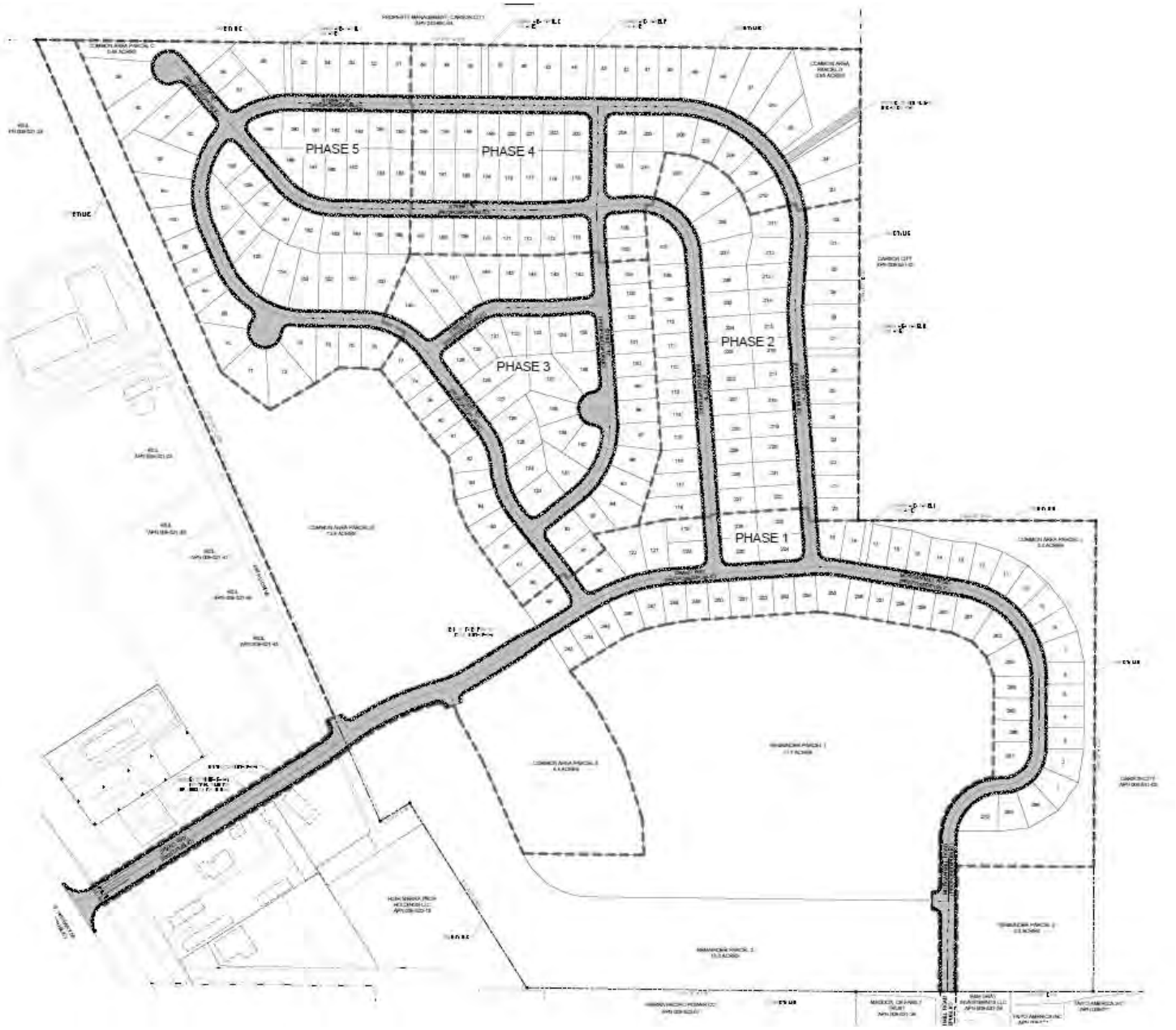
The project phasing plan includes 5 phases, as detailed below.

- Phase 1 will consist of +/- 57 SF6 residential lots, local streets as necessary, off-site infrastructure improvements, including Drako Way and Morgan Mill Road, as needed for the development, and other associated infrastructure improvements. Phase 1 will also include remediation of the Old Carson City Landfill (PR development area), and associated recreation improvements.
- Phase 2 will consist of +/- 51 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.
- Phase 3 will consist of +/- 53 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.
- Phase 4 will consist of +/- 53 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.
- Phase 5 will consist of +/- 56 SF6 residential lots, local streets as necessary, and associated infrastructure improvements.

With approval of the Planning Department, the phasing plan may be modified to accommodate site or market conditions.

The phasing plan meets the Carson City Land Use requirements and NRS 278.360 regarding presentation of final maps. All final maps will be recorded in accordance with NRS 278.

Figure 14: Phasing Plan



Old Carson City Landfill

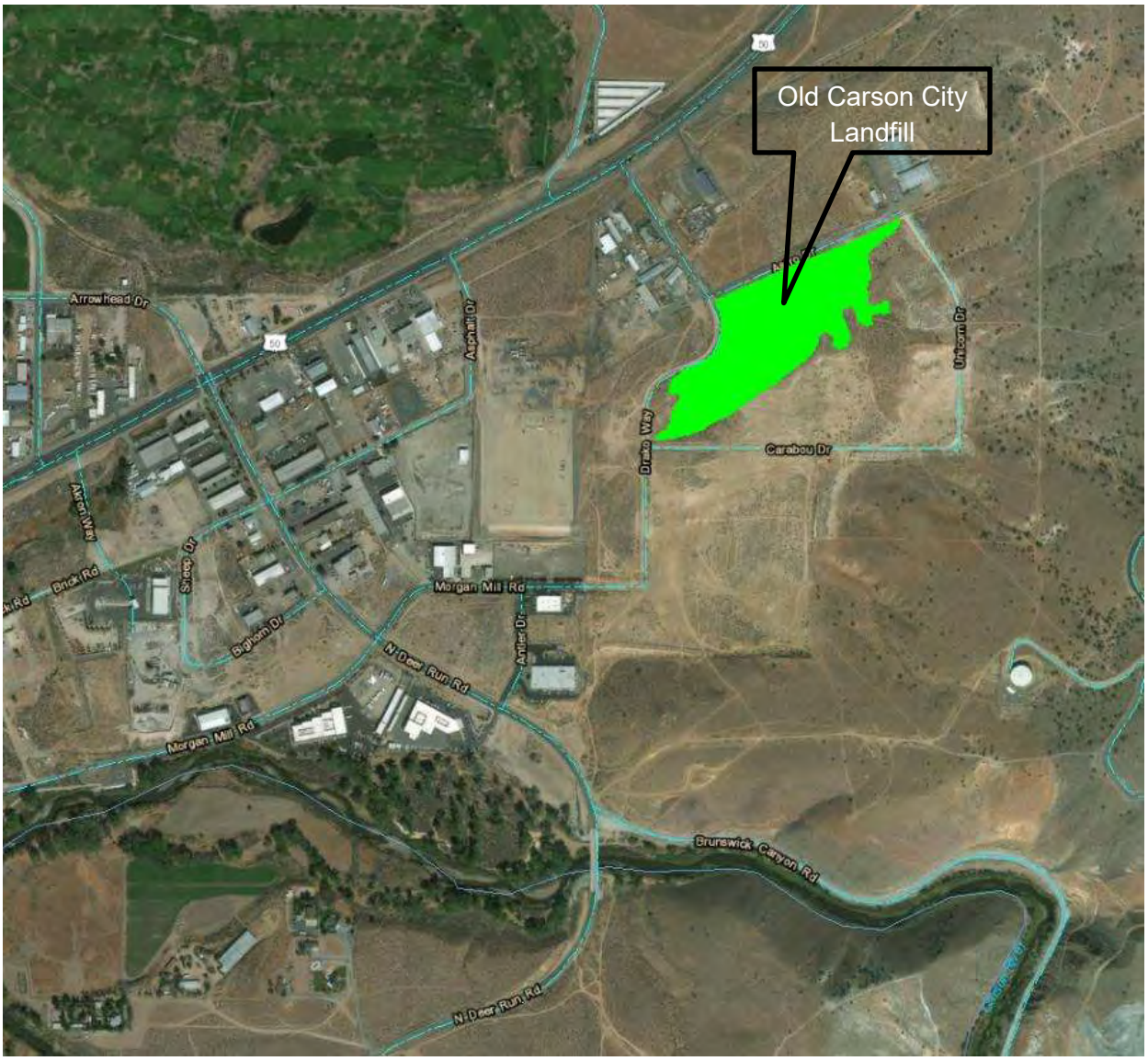
A portion of the site consists of what was once the Old Carson City Landfill, covering +/- 14.5 acres. The landfill was located between Drako Way and Unicorn Drive, extending approximately 800 feet south of Astro Drive. The landfill area is currently zoned GI and is encompassed within the proposed PR zoning. There is a fair amount of land disturbance from off highway vehicle use on the property site.

A remediation plan was submitted to the Nevada Division of Environmental Protection in November 2017 and subsequently approved. A draft Storm Water Management Plan (SWMP) was submitted to NDEP in

April 2018, which was deemed to meet NDEP's requirements. The Final SWMP will be submitted following Tentative Map approval. Remediation will consist of constructing a road within the landfill site, removing any exposed landfill waste and contaminated soil, and capping the entire extents of the landfill with a soil cap. After remediation, the area will be revegetated with native vegetation and recreational trails will be installed. These improvements are proposed to be included with Phase 1 as shown on Figure 14.

The proposed project will leave the old landfill site undisturbed, except for the proposed recreational trails and roadway, in accordance with the Draft SWMP.

Figure 15: Old Carson City Landfill General Location



PROJECT IMPACTS

Project impacts are based on a proposed layout that includes a mix of single family residential, multi-family residential, general commercial, and open space uses. Project impacts related to drainage, sanitary sewer, water, traffic, education, and public safety are detailed below.

Drainage

The subject site consists of 119.1 acres of land and has a Master Plan designation of Mixed-Use Residential and an existing zoning designation of General Industrial. To determine project impacts related to the Zoning Map Amendment, a conceptual land plan has been used that includes a mix of single family residential, multi-family residential, commercial, and common open space.

- 270 Single Family Residential lots on 68.6 acres
- 18.0 acres Multi-Family
- 13.9 acres General Commercial
- 22.98 acres of Common Open Space
    - 18.9 acres is zoned Public Regional for the remediated Old Carson City Landfill

The project is in eastern Carson City, south of U.S. Highway 50 in the area of Drako Way, located in Township 15 North, Range 20 East in portions of Sections 1 and 12. The site is not located in a FEMA flood zone. Drainage to, and through, the site is from a 262-acre catchment that is roughly bounded by Rifle Range Road to the east and Astro Drive to the north. Drainage flows westerly to and through the proposed SFR site to a location just south of the intersection of Morgan Mill Road and Drako Way. Downgradient drainage then continues ~1,000 feet to the Carson River near the intersection of North Deer Run Road and Brunswick Canyon Road. Existing conditions at the site include ~85 acres of previously mass graded site with slopes ranging from 2.5 to 4.5 percent and land cover consisting of bare earth with areas of sagebrush and grass understory in fair to good condition. There is a fair amount of land disturbance from off highway vehicle use on the property site. The subject site includes the Old Carson City Landfill (Facility ID # A-000050). The old landfill has been previously capped and NDEP has required that a stormwater management plan (SWMP) be developed for the old landfill site, which will be developed as parkland under the proposed conditions. A draft SWMP is currently on file with NDEP with a final SWMP due after acceptance of a tentative map.

Onsite and offsite undisturbed areas consist of sagebrush with grass understory in good condition with sparse Pinyon Pine-Juniper on the upper catchment areas. Slopes range from 5 to 20 percent in the upper offsite catchment. Offsite and onsite soils are classified as very high runoff potential with hydrologic soil group type D soils.

Any future development of the subject site will conform to Carson City Municipal Code for stormwater drainage and will incorporate the conditions of the SWMP for the old landfill site park. Increases in peak flow and runoff volume will be mitigated with detention basins designed to the 10-year storm event. In general, the conceptual mix of residential, multi-family commercial, and common open space will decrease the average impervious area from the current zoning for general industrial. The conceptual mix

of uses results in an estimated average impervious area percentage of 39 percent as opposed to the average impervious area percentage of 72 percent for a general industrial area, resulting in a decrease of 45 percent impervious area from the current zoning.

A Conceptual Drainage Report is included with this application.

Sanitary Sewer

Sanitary sewer infrastructure does not currently exist at the subject site. The nearest sanitary sewer is a 15-inch sewer main at the end of the Morgan Mill Road improvements that connects to the Morgan Mill sewer lift station. Sanitary sewer improvements for the Plateau project will conform to Carson City Municipal Code. The following table presents the sanitary sewage loading for the existing general industrial zoning and the conceptual uses of residential, multi-family, commercial, and common open space. Sewage loading is estimated based on the 2017 Sewer System Master Plan Update.

The proposed conditions include the following land uses that constitute the sewershed:

- 270 Single Family Residential lots on 68.3 acres
- 18.0 acres Multi-Family
- 13.9 acres General Commercial

A complete Sewer Report is included with this application.

Figure 16: Sewage Loading Estimates

	Sewage Loading Estimates (gpd)			
	Existing		Proposed	
Zoning	**Ave. Day**	**Peak Hour[1]**	**Ave. Day**	**Peak Hour[1]**
General Industrial	21,298	31,948	N/A	N/A
Single-family (SF6)			39,812	59,718
Multi-Family (MFA)			30,790	46,125
General Commercial (GC)			6,029	9,044
Public Regional			**0**	**0**
Total	21,298	31,948	76,631	114,887

[1] estimated for peaking factor of 1.5 per 2017 Sewer Master Plan Update

Water

Water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. The project is shown as being in the 4880/Basin pressure zone. The East Valley pressure zone directly adjacent to the site. The *2010 Integrated Water Supply and Facility Plan* shows the subject site served from the 4880/Basin pressure zone with a looped 12-inch water main following the layout of Drako Way, Astro, Carabou, and Unicorn Drives and connecting to the existing 8-inch PVC at the intersection of Centennial Drive and Highway 50. It is anticipated that water infrastructure for the

conceptual conditions will mimic that layout. A conceptual water design indicates that a booster station will be required to serve domestic and fire flow to the Plateau Development from the 4880/Basin pressure zone. If a booster station is required, it is expected to be located within the single family portion of the project area, on one of the SF6 lots.

Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. The below table summarizes the water demand estimate for the existing and conceptual uses. It is anticipated that demands will increase with a change from industrial to a residential/commercial mix.

A complete Water Report is included with this application.

Figure 17: Water Demand Estimates

Water Demand Estimates						
	Existing			Proposed		
ZONING	ADD Ac-ft/yr	ADD (gpd)	PDD[1] (gpd)	ADD Ac-ft/yr	ADD (gpd)	MDD[1] (gpd)
General Industrial	119	106,326	206,236			
Single-family Residential 6,000				161	144,089	295,382
Apartments				75	66,956	137,259
Commercial				14	12,150	24,908
Park/Open Space				0	0	0
Total	**119**	**106,326**	**206,236**	**250**	**223,195**	**457,549**
[1] estimated for peaking factor of 2.05 Average Daily Demand (ADD) : Maximum Daily Demand (MDD)						

Traffic

The Traffic Impact Study shows that the project is anticipated to generate 5,002 daily trips, including 344 AM peak hour trips and 473 PM peak hour trips. The following table analyzes the potential traffic impact if the site was built out with the existing General Industrial zoning designation to the proposed SF6/MFA/GC zoning configuration. The Trip Generation shows a 14.2% decrease in trips from 5,833 to 5,002 average daily trips. Trip Generation is based on the 10th Edition Institute of Transportation Engineers Trip Generation Manual.

A complete Traffic Impact Report is included with this application.

Figure 18: Trip Generation Estimates

Land Use	Units	Daily Trip Gen. Rate	Total Daily Trips	AM Trip Gen. Rate	AM Peak Hour	PM Trip Gen. Rate	PM Peak Hour
EXISTING LAND USE							
General Light Industrial 110	112.61 acres	51.80/ac.	**5,833**	-	-	-	-
CONCEPTUAL LAND USES							
Single Family Housing 210	270	9.44/du	2,549	.74/du	200	.99/du	267
Multi-Family Housing 220	250	7.32/du	1,830	.46/du	115	.56/du	140
General Office Building 710	12,000	9.74/ksf	116	1.16/ksf	14	1.15/ksf	14
Shopping Center 820	12,000	37.75/ksf	453	.94/ksf	11	3.81/ksf	46
Mini-Warehouse 151	300	17.96/100 units	54	1.39/100 units	4	1.95/100 units	6
TOTAL			**5,002**		**344**		**473**

Educational Services

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

Public Safety

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The Sheriff's overall average response time City-wide is 4.34 minutes (December 2017). The closest fire station to the project site is located at 2400 East College Parkway (Station 52), approximately 3.3 miles west of the project site, and has a +/-6 minute response time. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 520 dwelling units, will have a greater impact to public safety than development of the site under the

existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

Flood Zone

The project area is not located in a FEMA flood zone. Relevant FEMA flood maps define the area as outside the 0.2% annual chance of flood (Panel 32031C3475G).

Compatibility with Adjacent Land Uses

The proposed Zoning Map Amendment to SF6, MFA, GC, and PR promotes the desired pattern for mixed-use development located in the V&T Specific Plan Area.

The proposed development has been designed to be a cohesive development, so that adjacent land uses are compatible, both internally and externally. There is an existing mix of commercial and industrial uses north of the project site and west of the project site. There is vast open space to the south and west of the project area. Internally, uses have been integrated so that residents have the ability to meet many of their day-to-day needs within close proximity of their home.

Commercial uses are planned to be adjacent to the project boundaries where there are existing commercial and industrial uses so that potential conflicts with residential uses, such as visual and noise impacts, are minimized. Multi-family development is planned to be a transition area between the commercial and single family uses. The single family residential lots are adjacent to the open space, with pedestrian connections to the surrounding area.

To further ensure compatibility, standards established in the Carson City Municipal Code will be applied to single family residential, multi-family residential, and general commercial development. Future development will be designed in accordance with Carson City requirements and the Mixed-Use criterial and evaluation factors required by Carson City and will allow for more efficient development and provide for the least amount of natural resource impairment.

MASTER PLAN POLICY CHECKLIST

The purpose of the Master Plan Policy Checklist is to provide a list of answers that address whether a development proposal is in conformance with the goals and objectives of the 2006 Carson City Master Plan that are related to this project. The Master Plan Policy Checklist provided with the application is also attached separately. This project complies with the Master Plan and accomplishes the following objectives:

Chapter 3: A Balanced Land Use Pattern

1. The proposed development is located within an area that is served by community water and wastewater facilities, however, water infrastructure does not exist at the subject site. The nearest water line is a

12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. (1.1b)

2. The builder, where feasible, will encourage the use of sustainable building materials and construction techniques to promote energy efficient, sustainable buildings. (1.1e)
3. The project site is not located near Downtown. (1.2a)
4. The proposed development maintains existing access to surrounding public lands from Astro Drive and Rifle Range Road, and provides enhanced pedestrian access from within the development. (1.4a)
5. The proposed development has been designed to minimize disturbances to existing site features by providing approximately 18.9 acres of undisturbed open space. (1.4c)
6. The project site is not adjacent to county boundaries (1.5a)
7. The project site is not adjacent to State or Federal lands. (1.5b)
8. The project area can be adequately served by city services including fire and sheriff services, the school district, Sierra Pacific Power and Southwest Gas. (1.5d)
9. The proposed single-family development, and zoning designations for multi-family and commercial development within the project promote a range of mixed-use, residential, commercial and employment uses at a variety of scales and intensities. (2.1a)
10. The proposed MUR Master Plan designation will promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria. (2.1b, 2.2b, 2.3b, Land Use Districts)
11. The proposed development is located within the Virginia & Truckee Railroad Gateway Specific Plan Area. (2.1c)
12. The proposed ZMA includes appropriate zoning designations so that there are not incompatible uses. Commercial is adjacent to the existing industrial uses, multi-family is adjacent to commercial and single family is adjacent to multi-family and open space. Friction zones are not created. (2.1d)
13. The proposed development encourages a mix of housing densities by providing a variety of lot sizes throughout the project and both single family and multi-family housing opportunities. (2.2a)
14. The builder, where feasible, will encourage energy conservation and minimize the impacts of light pollution within the urban interface. (3.2b)
15. Development will be consistent with the policies contained in the V&T Railroad Gateway Specific Plan chapter of the Carson City Master Plan. (3.2e)
16. The proposed development is designed to minimize the impacts of potential natural disasters by providing multiple access points, including a tertiary emergency vehicle only gated access at the north easterly corner of the project. Homes and outbuildings will be constructed to Carson City Development Code. (3.3b)
17. The proposed development is not within the 100-year floodplain or other hazardous areas and is away from geologic hazards areas. (3.3d, e)
18. Does not create land use conflicts; the proposed MUR designation is anticipated in the V&T SPA and is adjacent to the MUC designation and open space. (Land Use descriptions)
19. The proposed MUR designation is located within the V&T SPA and implements the applicable policies of that SPA. (Land Use Map, Chapter 8).

Chapter 4: Equitable Distribution of Recreational Opportunities

1. The proposed MUR designation allows for the expansion of park and recreation opportunities. (4.2a)
2. Any future development will be consistent with the Open Space Master Plan and Carson River Master Plan. (4.3a)

Chapter 5: Economic Vitality

1. The proposed zoning will help maintain and enhance the primary job base. (5.1)
2. The proposed project provides 13.9 acres of land zoned for General Commercial development. (5.1i)
3. The proposed development provides single family housing models with designated space set aside for multi-family housing to cater to different populations within the City. (5.1j)
4. The project site is not in an area that would be used as a regional retail center. (5.2a)
5. The site is undeveloped so the there is no opportunity to reuse or redevelop underused retail spaces. (5.2b)
6. It is not expected that the proposed zoning designation will support heritage tourism activities, particularly those associated with historic resources, cultural institutions and the State Capitol. (5.4a)
7. The proposed project encourages the protection of natural resources and environmental quality by providing approximately 18.9 acres of undisturbed open space. (5.5f)

Chapter 6: Livable Neighborhoods and Activity Centers

1. The builder, where feasible, will utilize durable, long-lasting building materials. 6.1a)
2. The proposed project aims to promote variety and visual interest in its design through the incorporation of well-articulated building facades, clearly defined entrances and pedestrian connections, landscaping, and other features as consistent with the City's Development Standards. (6.1c)
3. The proposed project will provide appropriate height, density, and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects in accordance with the Carson City Municipal Code. (6.2a, 9.3b, 9.4a)
4. The project is not spot zoned. The proposed zoning designations are compatible with the MUR Master Plan designation and adjacent uses and existing development (9.4b)

Chapter 7: A Connected City

1. The proposed project will promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density), however the project site is not along a major travel corridor to facilitate future transit. (11.2b)
2. It is not expected that the proposed project will promote enhanced roadway connections and networks consistent with the Transportation Master Plan as it is in an area with existing circulation. (11.2c)
3. The proposed project provides for appropriate pathways through the development and to surrounding public lands, consistent with the Unified Pathways Master Plan and the proposed use and density. (12.1a,c)

Chapter 8: Specific Plan Areas

1. The proposed project will be developed in accordance with the V&T-SPA design standards, in accordance with the Carson City Master Plan. (1.1)

2. The proposed ZMA aims to rezone a 13.9 acre area to General Commercial. (1.2)
3. The project site is within the V&T SPA and implements policy V&T SPA-1.5, "The land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment, shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property." The NDEP approval letter is attached that includes approved engineering controls for development of the property. (1.5)
4. The proposed development encourages use of trail facilities in the area by providing multiple pedestrian access points from the single-family portion of the project to the public land on the south and east borders of the project. (2.1)

TENTATIVE SUBDIVISION MAP FINDINGS

In accordance with Carson City Municipal Code Section 17.07.005, this project has been designed to consider the following:

1. Environmental and health laws and regulations concerning water and air pollution, the disposal of solid waste, facilities to supply water, community or public sewage disposal and, where applicable, individual systems for sewage disposal.

All environmental health laws and regulations regarding water, air pollution, and waste disposal are incorporated into the proposed project.

2. The availability of water which meets applicable health standards and is sufficient in quantity for the reasonably foreseeable needs of the subdivision.

Water is available to the site, with infrastructure improvements. It will be provided by Carson City and conform to the applicable health standards and fulfill quantity requirements for residences.

3. The availability and accessibility of utilities.

Public utilities are currently available to serve the proposed project. Complete water and sewer reports are included with the application that detail existing and proposed service and improvements.

4. The availability and accessibility of public services such as schools, police protection, transportation, recreation and parks.

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent

brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The Sheriff's overall average response time City-wide is 4.34 minutes (December 2017). The closest fire station to the project site is located at 2400 East College Parkway (Station 52), approximately 3.3 miles west of the project site, and has a +/-6 minute response time. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 520 dwelling units, will have a greater impact to public safety than development of the site under the existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

The Regional Transportation Commission is responsible for transportation in and around the project area.

Carson City Parks Department will provide recreational and parks services. Enhanced recreational opportunities are provided with this project through the addition of trails and access to adjacent public land.

5. **Access to public lands. Any proposed subdivision that is adjacent to public lands shall incorporate public access to those lands or provide an acceptable alternative.**

   The project site is adjacent to public lands on the south and east. Pedestrian access has been incorporated at multiple locations throughout the project site.

6. **Conformity with the zoning ordinance and land use element of the city's master plan.**

   The proposed project is in conformance with the MUR Master Plan designation and the Interim Mixed-Use Evaluation Criteria and has been designed to be in conformance with the proposed zoning designations of SF6, MFA, GC, and PR.

7. **General conformity with the city's master plan for streets and highways.**

   The proposed project is in conformance with the Carson City streets and highways master plan. In additional the project is providing off-site improvements at Drako Way.

8. **The effect of the proposed subdivision on existing public streets and the need for new streets or highways to serve the subdivision.**

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. The intersection currently operates at Level of Service E during the PM peak hour. The existing volumes on US Highway 50 are high enough to effectively prohibit northbound left-turns from the project unless improvements are made. A signalized intersection would improve operations to acceptable levels of service (LOS A) during the AM and PM peak hours. Improvements will be addressed in coordination with the Nevada Department of Transportation (NDOT) and will meet the requirements of Carson City and NDOT. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

9. The physical characteristics of the land such as flood plains, earthquake faults, slope and soil.

The site does not trigger hillside requirements (3.94% average slope). The parcel is designated by FEMA as Zone X, Area of Minimal Flood Hazard. The site has been designed to accommodate peak flow events. A complete geotechnical investigation is also included as part of this request.

10. The recommendations and comments of those entities reviewing the subdivision request pursuant to NRS 278.330 thru 278.348, inclusive.

All recommendations and comments provided during the review of this project will be incorporated where applicable.

11. The availability and accessibility of fire protection including, but not limited to, the availability and accessibility of water and services for the prevention and containment of fires including fires in wild lands.

The availability and accessibility of fire protection to the proposed residential units will be in compliance with Carson City Fire Department recommendations.

12. Recreation and trail easements.

Trails are provided throughout the Old Carson City Landfill property and will be maintained by a LMD or similar entity as approved by Carson City.

ZONING MAP AMENDMENT FINDINGS

In accordance with Carson City Municipal Code Section 18.02.070(10), this project has been designed to meet the following findings:

a. Before a zoning map amendment map be recommended for approval, the applicant shall provide evidence to the commission and board concerning the physical use of land and zoning currently existing in the general vicinity, and which have occurred in the previous five (5) year time period and describe:

1. How the proposal will impact the immediate vicinity;

The proposed Zoning Map Amendment will allow the project area to be in conformance with the MUR Master Plan designation and the V&T Specific Plan, by providing for a mixed-use project that includes SF6, MFA, GC, and PR. In comparison to the existing General Industrial zoning, there will be greater water and sewer impact and impact to the existing roadway. As further described in the project description, improvements are incorporated into the design to minimize impact.

2. How the proposal supports the goals, objectives, and recommendations of the master plan concerning land use and related policies for the neighborhood where the subject project is situated;

As demonstrated in the Master Plan Policy Checklist that is included with this application package, the proposed amendment is in substantial compliance with the following goals, policies, and action programs of the Master Plan:

Chapter 3: A Balanced Land Use Pattern

1. The proposed development is located within an area that is served by community water and wastewater facilities, however, water infrastructure does not exist at the subject site. The nearest water line is a 12-inch PVC at the end of the Morgan Mill Road improvements that connects to a 12-inch PVC line in Antler Road in the 4880/Basin pressure zone. Water improvements for the subject site will conform to Carson City Municipal Code and NAC 445A.65505 through .6731. (1.1b)
2. The builder, where feasible, will encourage the use of sustainable building materials and construction techniques to promote energy efficient, sustainable buildings. (1.1e)
3. The project site is not located near Downtown. (1.2a)
4. The proposed development maintains existing access to surrounding public lands from Astro Drive and Rifle Range Road, and provides enhanced pedestrian access from within the development. (1.4a)
5. The proposed development has been designed to minimize disturbances to existing site features by providing approximately 18.9 acres of undisturbed open space. (1.4c)
6. The project site is not adjacent to county boundaries (1.5a)
7. The project site is not adjacent to State or Federal lands. (1.5b)
8. The project area can be adequately served by city services including fire and sheriff services, the school district, Sierra Pacific Power and Southwest Gas. (1.5d)

9. The proposed single-family development, and zoning designations for multi-family and commercial development within the project promote a range of mixed-use, residential, commercial and employment uses at a variety of scales and intensities. (2.1a)
10. The proposed MUR Master Plan designation will promote mixed-use development patterns as appropriate for the surrounding context consistent with the land use descriptions of the applicable Mixed-Use designation, and meet the intent of the Mixed-Use Evaluation Criteria. (2.1b, 2.2b, 2.3b, Land Use Districts)
11. The proposed development is located within the Virginia & Truckee Railroad Gateway Specific Plan Area. (2.1c)
12. The proposed ZMA includes appropriate zoning designations so that there are not incompatible uses. Commercial is adjacent to the existing industrial uses, multi-family is adjacent to commercial and single family is adjacent to multi-family and open space. Friction zones are not created. (2.1d)
13. The proposed development encourages a mix of housing densities by providing a variety of lot sizes throughout the project and both single family and multi-family housing opportunities. (2.2a)
14. The builder, where feasible, will encourage energy conservation and minimize the impacts of light pollution within the urban interface. (3.2b)
15. Development will be consistent with the policies contained in the V&T Railroad Gateway Specific Plan chapter of the Carson City Master Plan. (3.2e)
16. The proposed development is designed to minimize the impacts of potential natural disasters by providing multiple access points, including a tertiary emergency vehicle only gated access at the north easterly corner of the project. Homes and outbuildings will be constructed to Carson City Development Code. (3.3b)
17. The proposed development is not within the 100-year floodplain or other hazardous areas and is away from geologic hazards areas. (3.3d, e)
18. Does not create land use conflicts; the proposed MUR designation is anticipated in the V&T SPA and is adjacent to the MUC designation and open space. (Land Use descriptions)
19. The proposed MUR designation is located within the V&T SPA and implements the applicable policies of that SPA. (Land Use Map, Chapter 8).

Chapter 4: Equitable Distribution of Recreational Opportunities

1. The proposed MUR designation allows for the expansion of park and recreation opportunities. (4.2a)
2. Any future development will be consistent with the Open Space Master Plan and Carson River Master Plan. (4.3a)

Chapter 5: Economic Vitality

1. The proposed zoning will help maintain and enhance the primary job base. (5.1)
2. The proposed project provides 13.9 acres of land zoned for General Commercial development. (5.1i)
3. The proposed development provides single family housing models with designated space set aside for multi-family housing to cater to different populations within the City. (5.1j)
4. The project site is not in an area that would be used as a regional retail center. (5.2a)
5. The site is undeveloped so the there is no opportunity to reuse or redevelop underused retail spaces. (5.2b)
6. It is not expected that the proposed zoning designation will support heritage tourism activities,

particularly those associated with historic resources, cultural institutions and the State Capitol. (5.4a)

7. The proposed project encourages the protection of natural resources and environmental quality by providing approximately 18.9 acres of undisturbed open space. (5.5f)

Chapter 6: Livable Neighborhoods and Activity Centers

1. The builder, where feasible, will utilize durable, long-lasting building materials. 6.1a)
2. The proposed project aims to promote variety and visual interest in its design through the incorporation of well-articulated building facades, clearly defined entrances and pedestrian connections, landscaping, and other features as consistent with the City's Development Standards. (6.1c)
3. The proposed project will provide appropriate height, density, and setback transitions and connectivity to surrounding development to ensure compatibility with surrounding development for infill projects in accordance with the Carson City Municipal Code. (6.2a, 9.3b, 9.4a)
4. The project is not spot zoned. The proposed zoning designations are compatible with the MUR Master Plan designation and adjacent uses and existing development (9.4b)

Chapter 7: A Connected City

1. The proposed project will promote transit-supportive development patterns (e.g. mixed-use, pedestrian-oriented, higher density), however the project site is not along a major travel corridor to facilitate future transit. (11.2b)
2. It is not expected that the proposed project will promote enhanced roadway connections and networks consistent with the Transportation Master Plan as it is in an area with existing circulation. (11.2c)
3. The proposed project provides for appropriate pathways through the development and to surrounding public lands, consistent with the Unified Pathways Master Plan and the proposed use and density. (12.1a,c)

Chapter 8: Specific Plan Areas

1. The proposed project will be developed in accordance with the V&T-SPA design standards, in accordance with the Carson City Master Plan. (1.1)
2. The proposed ZMA aims to rezone a 13.9 acre area to General Commercial. (1.2)
3. The project site is within the V&T SPA and implements policy V&T SPA-1.5, "The land use designation of the property in the vicinity of Drako Way, east of the V&T railroad alignment, shall be changed by Carson City from Industrial to Mixed-Use Commercial and/or Mixed-Use Residential upon removal of the old landfill identified on the site or with approved engineering controls in accordance with NDEP standards upon development of the property." The NDEP approval letter is attached that includes approved engineering controls for development of the property. (1.5)
4. The proposed development encourages use of trail facilities in the area by providing multiple pedestrian access points from the single-family portion of the project to the public land on the south and east borders of the project. (2.1)

3. If the proposed amendment will impact properties within that use districts;

The proposed amendment will not impact any other properties zoned SF6, MFA, GC, or PR. This amendment will only amend the zoning map for the project area (9 parcels) included in this application.

4. Any impacts on public services and facilities.

Complete water, sewer, and hydrology reports are included with this application that detail impacts on public services and proposed improvements.

A Traffic Impact Study (attached) has been prepared to evaluate the potential traffic impacts associated with the proposed development. A traffic signal at US Highway 50 and Drako Way is necessary to alleviate existing access management concerns. Other intersections, US Highway 50 and Deer Run Road and Deer Run Road and Morgan Mill Road, are expected to operate at acceptable levels of service with the project.

Carson City School District provides educational services for Carson City. The current zoned schools for the project area are Fremont Elementary School, Eagle Valley Middle School, and Carson High School. An expansion is currently underway at Fremont Elementary School to accommodate an increase in student population.

Based on the addition of 520 single family and multi-family dwelling units, it is expected that ultimate development of the project will add 145 elementary students (.279 per unit), 28 middle school students (.054 per unit), and 67 high school students (.129 per unit). A $15 million capital improvement school bond was recently passed to replace portable classrooms with permanent brick and mortar classrooms and to expand capacity. Carson City School District will also receive additional tax revenue from real property taxes and per student as the project area develops.

The Carson City Sheriff's Office currently provides public safety services to this area and will continue to provide services. The project will be required to provide adequate means of access for emergency vehicles to serve the site and adequate circulation within the site. It is expected that the proposed amendment to SF6, MFA, GC and PF, adding 520 dwelling units, will have a greater impact to public safety than development of the site under the existing GI zoning. Carson City will receive additional revenue (from property taxes, licenses and permit, intergovernmental, charges for services, fines and forfeits, and miscellaneous, etc.) as the project area develops to fund public safety.

The Regional Transportation Commission is responsible for transportation in and around the project area.

Carson City Parks Department will provide recreational and parks services. Enhanced recreational opportunities are provided with this project through the addition of trails and access to adjacent public land.

Carson City Planning Division
108 E. Proctor Street· Carson City NV 89701
Phone: (775) 887-2180 • E-mail: planning@carson.org

FILE # TSM - 18 -

APPLICANT **PHONE #**
Keith Serpa

MAILING ADDRESS, CITY, STATE, ZIP
P.O.Box 1724 Carson City, NV 89702

EMAIL
kserpa@sbcglobal.net

PROPERTY OWNER **PHONE #**
Tahoe IV LLC 775-267-9510 ext. 204

MAILING ADDRESS, CITY, STATE, ZIP
PO Box 1724 Carson City, NV 89702

EMAIL
kserpa@sbcglobal.net

APPLICANT AGENT/REPRESENTATIVE **PHONE #**
Manhard Consulting (Karen Downs) 775-321-6538

MAILING ADDRESS, CITY, STATE, ZIP
241 Ridge St. Ste 400 Reno, NV 89501

EMAIL
kdowns@manhard.com

Project's Assessor Parcel Number(s)
008-521-54 & 55; 008-521-89 & 90; 008-522-16, 17 & 18; 008-531-59 & 60

Project's Street Address

Nearest Major Cross Street(s)
Carabou Drive & Unicorn Drive

Project's Master Plan Designation
Mixed-Use Residential

Project's Current Zoning
General Industrial

FOR OFFICE USE ONLY:

CCMC 17.06 and 17.07

TENTATIVE SUBDIVISION MAP

FEE*: $3,500.00 + noticing fee
*Due after application is deemed complete by staff

SUBMITTAL PACKET – 4 Complete Packets (1 Unbound Original and 3 Copies) including:
- Application Form including Applicant's Acknowledgment
- Property Owner Affidavit
- Copy of Conceptual Subdivision Map Letter
- Detailed Written Project Description
- Proposed Street Names
- Master Plan Policy Checklist
- Wet Stamped Tentative Map (24" x 36")
- Reduced Tentative Map (11" x 17")
- Conceptual Drainage Study
- Geotechnical Report
- Traffic Study (if applicable)
- Documentation of Taxes Paid to Date

CD or USB DRIVE with complete application in PDF

STATE AGENCY SUBMITTAL including:
- 2 Wet-stamped copies of Tentative Map (24" x 36")
- Check made out to NDEP for $400.00 + $3/lot
- Check made out to Division of Water Resources for $180.00 + $1/lot

Application Reviewed and Received By:

Submittal Deadline: See attached Planning Commission application submittal schedule.

Note: Submittals must be of sufficient clarify and detail for all departments to adequately review the request. Additional information may be required.

Project Name
Plateau

Total Project Area	Number of Lots	Smallest Parcel Size
119.1 acres	270	6,000 sf

Please provide a brief description of your proposed project below. Provide additional pages to describe your request in more detail.

Tentative Subdivision Map to create 270 single family residential lots, 9 common area parcels, 3 remainder parcels, and 13.4 acres of right-of-way within a +/- 119.1 acre project area.

NOTE: If your project is located within the Historic District or airport area, it may need to be scheduled before the Historic Resources Commission or the Airport Authority in addition to being scheduled for review by the Planning Commission. Planning staff can help you make this determination.

ACKNOWLEDGMENT OF APPLICANT: (a) I certify that the foregoing statements are true and correct to the best of my knowledge and belief; (b) I agree to fulfill all conditions established by the Board of Supervisors.

Applicant's Signature

10/12/18
Date

PROPERTY OWNER'S AFFIDAVIT

I, KEITH SERPA (Print Name), being duly deposed, do hereby affirm that I am the record owner of the subject property located at 008-521-54 & 55, 008-531-59 & 60, 008-521-89 & 90, 008-522-16, 17 & 18 (Property Address and APN), and that I have knowledge of, and I agree to, the filing of this Tentative Subdivision Map application.

Signature _____ Address PO BOX 1724 CARSON CITY NV 89702 Date 10/12/18

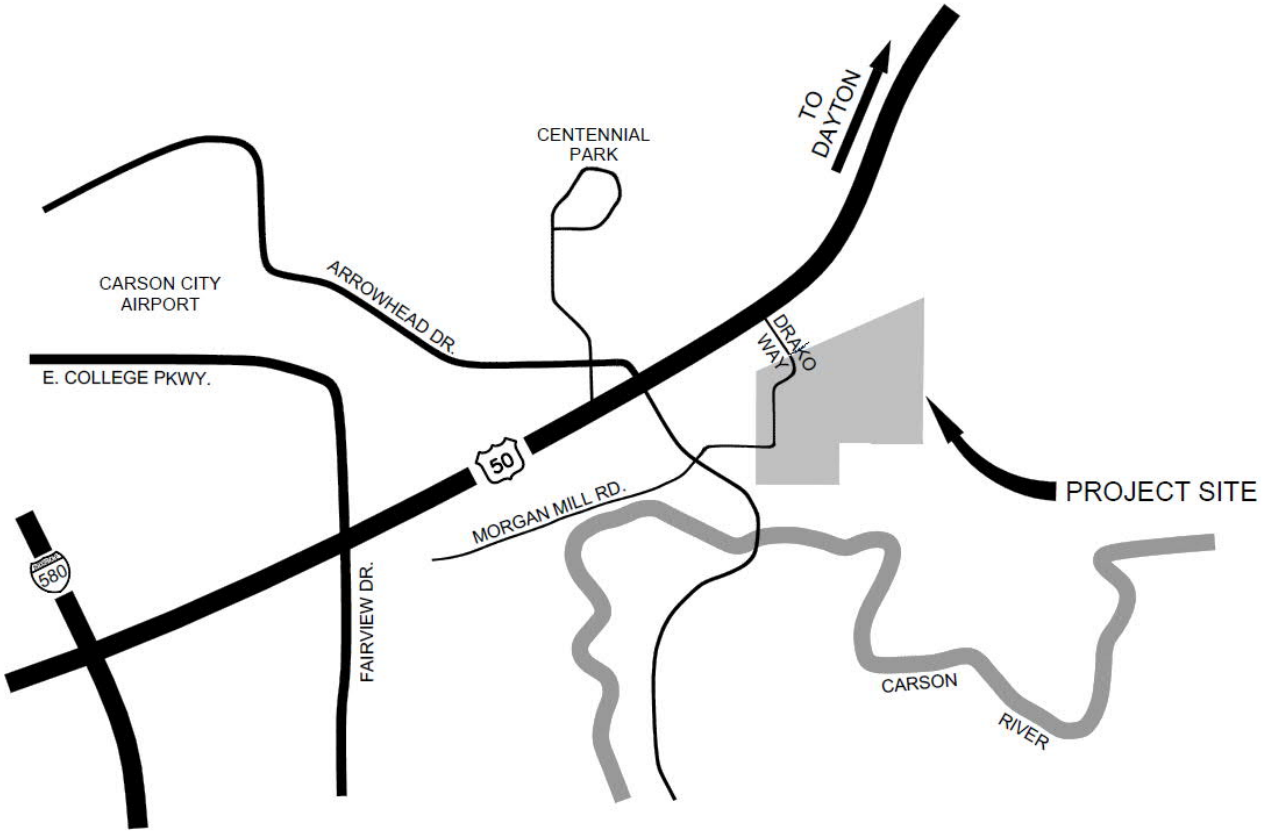
Use additional page(s) if necessary for other names.

STATE OF NEVADA)
COUNTY DOUGLAS)

On OCTOBER 12, 2018, personally appeared before me, a notary public, KEITH SERPA, personally known (or proved) to me to be the person whose name is subscribed to the foregoing document and who acknowledged to me that he/she executed the foregoing document.

Notary Public

T. PETERSON
NOTARY PUBLIC
STATE OF NEVADA
No. 99-37055-5 My Appt. Exp. June 29, 2019



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Civil Engineers - Surveyors - Water Resources Engineers - Water & Wastewater Engineers
Construction Managers - Environmental Scientists - Landscape Architects - Planners

PLATEAU DEVELOPMENT
CARSON CITY, NEVADA
VICINITY MAP

PROJ. MGR.:	KCK
DRAWN BY:	SDF
DATE:	OCT 2018
SCALE:	N.T.S.

SHEET 1 OF 1
TIV.CCNV01