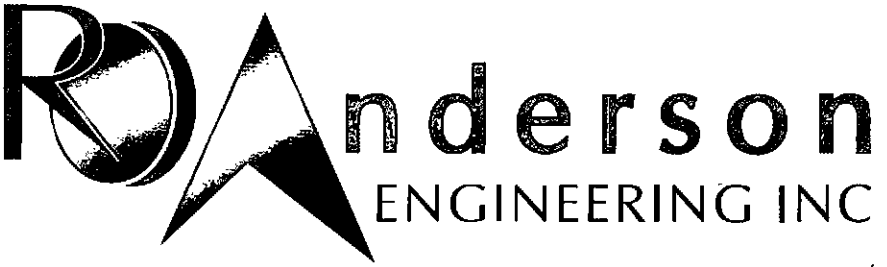
Nevada Northwest, LLC.

SPECIFIC PLAN



NEVADA NORTHWEST, LLC. SPECIFIC PLAN

DOUGLAS COUNTY, NEVADA

Prepared For:

Nevada Northwest, LLC.

Prepared By:

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July 20, 2001

LIST OF EXHIBITS (found in appendix)

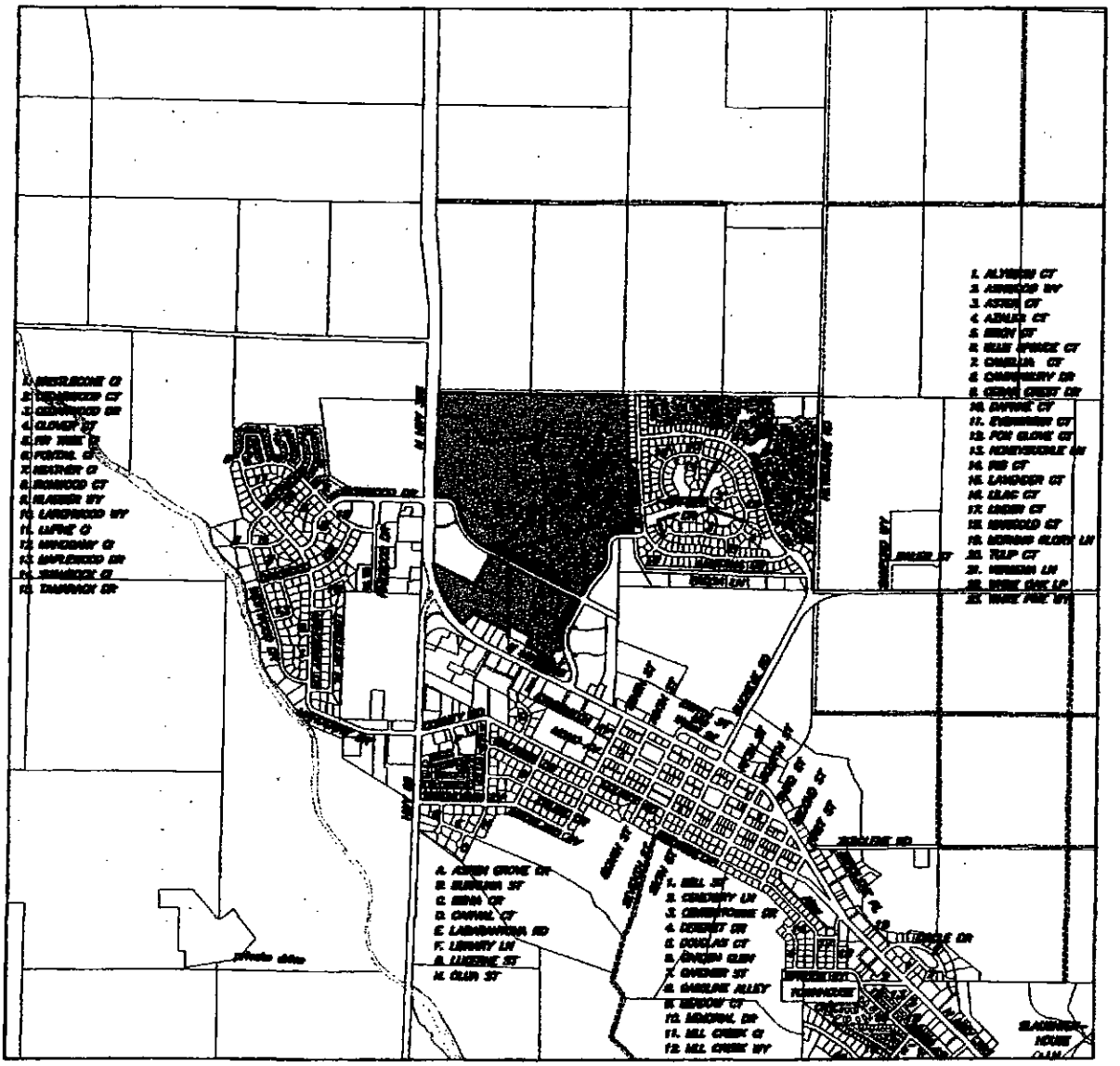
LIST OF FIGURES

FIGURE

Vicinity Map

APN(s)

1320-30-501-003, -004, 1320-30-601-002, -003, 1320-30-702-001, -004, -008, -018, -019



Subject Parcel(s)

FIGURE A

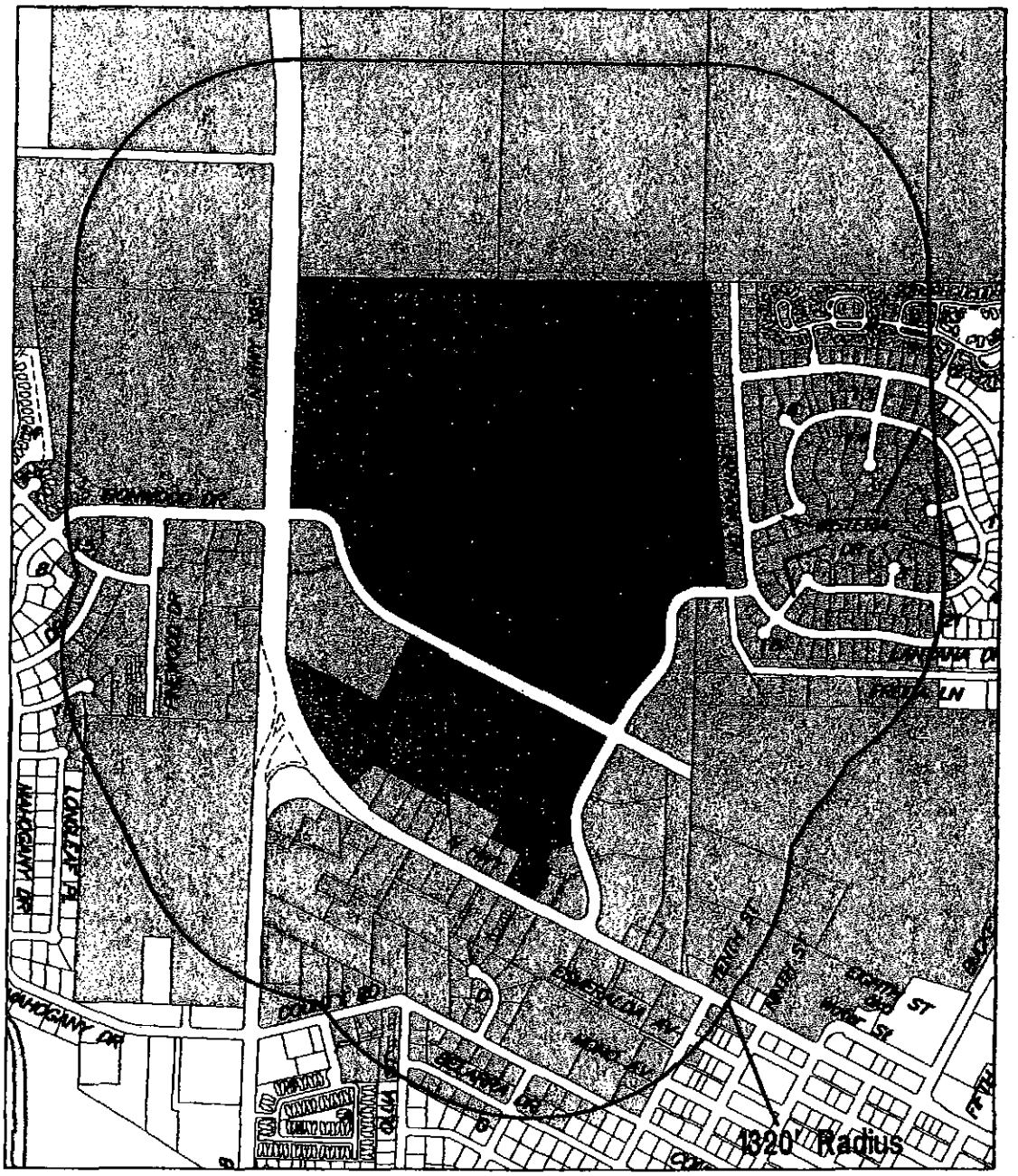
05/8/01

RO Anderson ENGINEERING INC

1320' Noticing Radius

APN(s)

1320-30-501-003, -004, 1320-30-601-002, -003, 132030702-001, -004, -008, -018, -019



LEGEND

Subject Area

Parcels Within Noticing Radius

FIGURE B

NOT TO SCALE
DATE: 5-7-01

R.O. Anderson ENGINEERING INC

I. EXECUTIVE SUMMARY

A. Overview

The Nevada Northwest LLC Specific Plan represents a comprehensive planning effort to create a sensitive, site specific framework to govern the long-term development of the sites identified in the Nevada Northwest LLC Specific Plan. Development standards, goals, objectives, policies, regulatory procedures and implementation are combined to ensure a high quality program consistent with the goals and policies embodied in the Douglas County Master Plan.

The Nevada Northwest LLC Specific Plan establishes the type, location, intensity and character of the development. The Specific Plan guides the coordinated layout of infrastructure and related amenities and ensures that the completed development will meet the high quality standards envisioned at the time of approval. The Specific Plan also functions as a regulatory tool establishing the zoning controls, standards and procedures to govern the successful completion of the Nevada Northwest LLC Specific Plan.

B. Project Description

The Nevada Northwest LLC Specific Plan development approach is to provide for a mixed-use area in the Town of Minden while providing for open space preservation and enhancing Douglas County's economic base.

The proposed development site has few development constraints based on environmental conditions. Per the Douglas County Master Plan documents, the site does not contain any known faults or geological conditions which could pose a hazard. The site is relatively level, and is not located within a Hillside area. The site is not located in a high fire hazard area. The site is not identified or mapped as containing any significant cultural or historical resources. Portions of the site are located within the primary and secondary flood zone, particularly those areas within or immediately adjacent to the Martin Slough. The Martin Slough is proposed to be set aside as a permanent open space feature and dedicated to Douglas County for the Town of Minden's beneficial use as a future linear park. No residential uses are proposed within the primary flood zone.

The project includes essentially three project areas which have different applications under this specific plan. A summary of these project areas from north to south are as follows:

- North Commercial Planning Area: This planning area is 22.65 acres in size and is planned for approximately 252,000 square feet in commercial floor area. This area is proposed to be zoned General Commercial and is anticipated to be able to accept uses acceptable within the GC zoning district.

- South Commercial Planning Area: This planning area is 42.18 acres in size and is planned for approximately 323,460 square feet of commercial floor area. This area is proposed to be zoned both Tourist Commercial and Neighborhood Commercial (TC on the west side of Ironwood Drive, NC on the east side of Ironwood Drive). The area proposed for TC zoning is planned to contain a Casino Hotel complex, entertainment-bowling center, 100 space recreation vehicle park, restaurants, meeting rooms and retail space. Additional specialty retail space is included within the areas proposed for NC zoning .

- Residential Planning Area: This planning area contains 52.47 acres, 9.79 acres of open space aligned along the Martin Slough. 116 patio homes and 274 apartment housing units are proposed within this development area.

C. Goals, Objectives and Policies

The following abbreviated list highlights the goals, objectives and policies of the Nevada Northwest LLC Specific Plan. The complete listing and discussion of the Master Plan goals, objectives and policies is provided in Section III, "Master Plan Conformance".

1. Land Use

Goal: Respect the physical environment of the Nevada Northwest LLC Specific Plan site.

a) Objective: To create a development which integrates with the natural environment and existing developed areas.

b) Policies:

1) Incorporate land uses into the Development Plan which are

compatible with surrounding land uses.

2) Develop conservation design standards and landscape criteria reflective of the natural environment of the Carson Valley and the vernacular of the Town of Minden.

3) Ensure development respects the unique character of Minden and the surrounding development patterns.

- Compatible, but not identical, physical design shall be used.
- Building materials shall be similar to or complementary with those used throughout the development area.

2. Provision of Community Facilities and Infrastructure

Goal: Provide financing, facilities and infrastructure which are necessary as a result of new development, and which minimize financial impacts to the existing community.

a) Objectives: Devise a system of improvements, streets, landscaping, utilities, drainage facilities, water system and sewer system which is provided through developer funding or builder funding

b) Policies:

1) Dedicate rights-of-way and/or construct on-site major roads to ultimate street configurations to provide adequate capacity as a result of impacts caused by the Nevada Northwest LLC Specific Plan.

2) Builders shall finance and construct subdivision infrastructure necessary at the time of construction.

Goal: Minimize short term financial impacts to the surrounding community.

a) Objective: Incorporate a phasing program which anticipates necessary improvements and infrastructure so as to minimize costs.

b) Policies:

1) Roadway phasing criteria shall provide adequate levels of service on- and off-site.

3. Open Space

Goal: Provide open space for both passive and active use that is equally accessible to the community.

a) Objective: Provide for agricultural open space which provides the highest environmental benefit by protecting in perpetuity riverine and flood plain areas adjacent to the Carson River. Promote hiking, biking ,running, sightseeing activities to enjoy the viewsheds that these protected areas afford to the public while not interfering with agricultural activities.

b) Policies:

1) Encourage the development and provision of recreation opportunities that are both active and passive; e.g., hiking and biking trails, running, sightseeing, etc.

2) Incorporate access to encourage pedestrian and biking activities.

4. Housing

Goal: Create housing availability and opportunity for all market sectors.

a) Objective: To validate the Transfer of Development Rights (TDR) system identified in the Douglas County Master Plan

b) Policies:

1) Create development standards which allow flexibility to respond to changing community needs.

2) Ensure that TDR's on the site are used to provide housing in areas identified to accept these units as provided for in the master plan and development code.

5. Transportation

Goal: Provide balanced transportation systems for the safe and efficient movement of people, goods, and services throughout Nevada Northwest LLC Specific Plan.

a) Objectives:

1) Design and construct the transportation system and individual development projects to provide capacities that are needed to adequately serve the projected travel demand.

2) Promote bicycle and pedestrian trails as both a circulation and recreation alternative.

b) Policies:

1) Develop and promote interconnected bike and pedestrian trail routes.

2) Limit access to arterial streets and ensure sufficient distance between points at which traffic may enter arterial streets, in order to reduce congestion.

3) Ensure that each new development satisfactorily meets the standards set by fire and safety planning with regard to traffic access.

4) Ensure that regional circulation connections are considered and provided for at the appropriate time.

6. Public Services and Utilities.

Goal: Promote adequate public and semi-public services consistent with the needs of Nevada Northwest LLC Specific Plan in an efficient and cost effective manner.

a) Objective: Ensure that the basic and essential public facilities, services and utilities are available at the time of development.

b) Policies:

1) The rate at which development at Nevada Northwest LLC Specific Plan occurs shall not exceed the capacities of both public and semi-public services.

2) Development shall not adversely impact the provision of services (e.g., sewerage, water, fire, police, parks and schools) to other residents of Douglas County.

3) Adequate assurance of the long-term operation and maintenance of private service systems shall be required prior to development approval for those developments to be served.

Goal: Develop and maintain a water supply system capable of meeting normal and emergency demands at Nevada Northwest LLC Specific Plan.

a) Objective: Nevada Northwest LLC Specific Plan shall be served by water supply systems meeting minimum standards for domestic and emergency supply and quality.

b) Policies:

1) Evaluate the water supply and distribution system to ensure its continued adequacy.

2) Require new development to incorporate water conservation in the overall design, landscaping and installation of fixtures.

Goal: Maintain a sewage system adequate to protect the health and safety of all residents.

a) Objective: All development areas shall be served by sewage disposal systems which are adequately sized to handle expected wastewater flows and designed and maintained to protect the health of residents.

b) Policy:

1) Provide sanitary sewer service to all development within Nevada Northwest LLC Specific Plan.

7. Aesthetics

Goal: Preserve and enhance the unique aesthetic qualities of Nevada Northwest LLC Specific Plan.

a) Objective: Perpetuate and enhance the site-built environment and the architectural character of Minden.

b) Policies:

1) Devise design standards which address visual and aesthetic concerns within Nevada Northwest LLC Specific Plan.

2) Incorporate architectural, landscape and fence and wall guidelines into the Specific Plan.

8. Safety

Goal: Minimize hazards to public health, safety, and welfare resulting from natural and man-made hazards.

a) Objective: Incorporate measures into the Specific Plan to reduce natural and man-made hazards.

b) Policies:

1) Ensure that the Nevada Northwest LLC Specific Plan water distribution and supply facilities have adequate capacity to supply both everyday and emergency fire-flow needs.

2) Comply with all building and fire codes.

3) Require conformance with the County Flood Hazard Ordinance in the Primary and Secondary FEMA floodplain

II. INTRODUCTION

A. Purpose and Intent

Superior community development can be ensured through the approval of a development control mechanism that reflects thorough and comprehensive land use planning. Douglas County has adopted a mechanism which allows for flexibility in design while creating concomitant understandings between the developer, the County and the community at large as to how land designated as Receiving Area in the Douglas County Master Plan would be developed. The planning tool the County chose in achieving this goal is a Specific Plan.

The Specific Plan is generally considered to be the most appropriate method of zoning control for large properties containing a variety of land uses. Douglas County code requires the use of a Specific Plan for projects greater than 160 acres located within Receiving Areas. For smaller projects, Douglas County code permits the use of Specific Plans (but does not require the use of) down to 40 acres, although certainly in most cases the variety of land uses would be diminished accordingly. The Specific Plan must anticipate physical and environmental issues, and can be structured to provide flexibility to respond to changing conditions which will arise during the completion of a comprehensively planned development. The Specific Plan process is appropriate and desirable in this instance because all of these attributes are found in the Nevada Northwest LLC Specific Plan.

Douglas County Code Chapter 20.612 establishes the authority, the required contents of a Specific Plan and its necessary consistency with the Master Plan. According to Section 20.612.020, the Specific Plan shall include text and a diagram or diagrams which specify all of the following in detail:

A. A map showing proposed specific plan area boundaries and the relationship of the area to abutting uses and structures;

B. A map of the specific plan area showing sufficient topographical data to indicate clearly the character of the terrain, the location of ridgelines and drainage patterns and active or potentially active faults;

C. A plan indicating the existing and proposed uses, approximate gross floor area, lot coverage, height, parking and density;

D. A circulation plan, showing proposed streets and the relationship to the local and regional circulation system, and a traffic impact analysis;

E. A preliminary development schedule indicating phases or tentative subdivision boundaries, the sequence and timing of development and the timetable for provision of adequate public facilities and services;

F. A plan for extension of public facilities and services and for flood control and drainage, including proposed financing arrangements for public improvements;

G. Guidelines for the physical development of the property, including illustrations for proposed architectural, urban design, landscape and signing concepts;

H. Any additional requirements as are needed to meet approval standards; and

I. Terms for abandonment or termination of the project. (Ord. 96-763)

In addition, Douglas County Code requires the following findings be made before approval of a Specific Plan:

A. That the proposed location of the development and the proposed conditions under which it will be operated or maintained is consistent with the goals and policies embodied in the master plan;

B. That the proposed development is in accordance with the purposes and objectives of this title and, in particular, will further the purposes stated for each zoning district;

C. That the proposed development conforms to the adequate public facilities policies of Part I, Division D of this title;

D. That the development will not be detrimental to the public health, safety or welfare of persons residing or working in or adjacent to such a development; and will not be detrimental to the properties or improvements in the vicinity or to the general welfare of the county; and

E. That the applicant has demonstrated the ability to provide transfer development rights (TDR's) to meet project phasing. (Ord. 96-763)

The purpose and benefit of a Specific Plan might best be demonstrated through comparison with the Master Plan. The purpose of the Master Plan is to express, in general terms, the County's planning of its future environment. The Master Plan functions as a general blueprint of future development within the County. The Master Plan is adopted by the County as a legislative act and may thereafter be amended up to two (2) times a year as required by changing circumstances.

The Specific Plan, on the other hand, is a device used to implement the Master Plan. In the simplest sense, a Specific Plan is a more detailed, site specific version of the Master Plan. The Specific Plan focuses on particular parcels, articulates the planning considerations for such parcels and imposes regulations or controls on the use of such parcels. It serves to implement the physical and economic development of the project site by establishing major infrastructure requirements and addressing specific land uses within the property. Further, the Specific Plan identifies areas to be preserved as visual resources and specified standards employed to ensure compatibility with adjacent land uses and mitigations required for reduction of environmental impacts.

The Nevada Northwest LLC Specific Plan establishes the type, location, intensity and character of development to take place while allowing for flexible community design concepts. The elements of the Specific Plan are focused on providing the integration of the commercial and residential development and assurances for concomitant phasing of necessary infrastructure. The Nevada Northwest LLC Specific Plan establishes development controls to provide the County and the community at large with the assurance that the completed project will reflect the level of excellence envisioned at the time of approval.

B. Project Location

The project is located on approximately 115 acres located on the west side of the Winhaven development, east of US Highway 395, south of Muller Lane and North of Lucerne Drive. (see Figure A).

C. Authority and Scope

The Nevada Northwest LLC Specific Plan has been prepared in accordance with the provisions of Chapter 20.612 of Douglas County Code. Generally, the purpose of a specific plan is to provide a comprehensive means of implementing the Master Plan for specific properties. The Specific Plan will implement development according to the standards and policies provided herein. All subsequent development plans for the site shall be consistent with the approved Specific Plan which by virtue of its approval, deemed consistent with the Master Plan.

D. Relationship to the Master Plan

The overall relationship between the Nevada Northwest LLC Specific Plan and the Douglas County Master Plan is that the Specific Plan provides a site specific, detailed program of regulations, standards and guidelines for implementation of Master Plan policies and priorities. In order to accomplish this, the Specific Plan must be in conformance with and be consistent with the Master Plan.

Consistency with the Master Plan exists when the land uses contained in the Specific Plan are compatible with the objectives, policies and general pattern of land uses and programs contained in the Master Plan. Planners have defined consistency as "An action, program or project consistent with the General Plan (Master Plan) if, considering all its aspects, will further the objectives and policies in the General Plan (Master Plan) and not obstruct their attainment" (Governor's Office of Planning and Research, Sacramento). A detailed element by element discussion of Master Plan conformance is contained in Section III, "Master Plan Conformance" of this document.

E. Relationship between the Specific Plan and Development Code

Specific Plans are typically adopted by ordinance and serve as the zoning regulatory document for the area included as part of the Specific Plan. This would allow the Specific Plan to be carried out as intended, which is to serve as the Land Use Policy Plan for the area covered under this Specific Plan as well as the zoning regulatory document. Where there is a conflict between this Specific Plan and Douglas County zoning ordinance, the terms of this Specific Plan shall prevail. The Specific Plan will be implemented through the approval of subsequent tentative and final subdivision and planned development maps as well as design review applications. The County shall require compliance with the Specific Plan in its review of the aforementioned development applications.

F. Site Analysis

The following discussion provides the background which forms the basis for the Development Plan and Development Standards contained in the Specific Plan.

1. Existing Land Use

The Nevada Northwest LLC Specific Plan sites total 115 acres and is located adjacent to and north of the Town of Minden. The exhibit titled "Existing Land Use" depicts the current area development and the how the project area is situated in existing and planned development areas. The site is eligible for annexation to the Town of Minden. It will be able to receive water service upon annexation. The parcel is located within the district boundaries of M.G.S.D. Power, telephone and gas will be available within the U.S. Highway 395 and Ironwood Drive right of way.

2. Existing Zoning

Exhibit 2 entitled "Existing Zoning Map" graphically depicts the existing zoning of the Nevada Northwest LLC Specific Plan site and the surrounding area.

3. Existing Master Plan

Exhibit 1 titled "Existing Land Use" graphically depicts the current Master Plan designations for the Specific Plan sites and the surrounding area. The North Commercial Planning Area is designated as Agriculture and Receiving Area as is all of the adjacent and surrounding properties. The Residential Planning Area is designated as Receiving Area, with adjacent lands and surrounding lands to the south and north as Receiving Area, and lands to the southeast as Agriculture, land to the east is designated as Single Family Residential. The South Commercial Planning Area is designated as MultiFamily Residential and Commercial.

4. Topography and Slope

Exhibit 6 titled "Elevation Contour Map" indicates all of the Plan Areas in relation to topography. All of the plan areas generally slope west by northwest at less than 1% slope.

5. Flood Plain

Exhibit 5 titled "Flood Zone Map" graphically depicts plan areas with respect to F.E.M.A. mapped flood plains.

6. Soils and Geology

Exhibits 4 and 11 titled "Soil Map" and "Geologic Features Map" graphically depict the soils and geology in the site. Geology maps show the site in alluvium of the Quaternary Age with no faults within several miles of the site. Bedrock is expected to be at a depth of 1,000 feet per the Report Geohydrology and Simulated Response to Ground-Water Pumpage in Carson Valley, by the U.S.G.S., Water Resource Investigations Report 86-4328.

7. Circulation

Site access to North Commercial Planning Area and the Residential Planning Area will be provided from the realignment of Muller Lane via U.S. Highway 395 to coincide with existing access easements bordering the northern boundary of the planning area. Muller Lane extended east would then become Muller Parkway, and would terminate the eastern boundary of the project area. A secondary access would be extended to Lucerne Street. Stub streets are extended to project boundaries for future development within the Dreyer Ranch. The South Commercial Area will be directly accessed from the signal at US Hwy 395 and State Route 88. Other means of access include driveways from

Lucerne Street and Ironwood Drive, and US Hwy. 395 between Lucerne Street and US Hwy.395/SR 88 intersection. The key study area roadways and intersections are analyzed in the traffic report found in the appendix of this specific plan prepared by LSC Transportation Consultants. New signals would be developed at Muller Lane as realigned, and either Ironwood Drive or Lucerne Street. Channelization improvements, restriping and signal coordination is also recommended within the traffic study.

Exhibits 12 and 13 graphically depict the "Master Plan Transportation Map" and the "Bikeways and Scenic Corridor Map". A multipurpose trail is shown along the alignment of Ironwood Drive and the North Commercial Planning Area is located at the entry/exit point of a scenic corridor. Muller Lane is identified as a minor collector road and Ironwood Drive is shown as a major collector in the Master Transportation Plan Map.

III. MASTER PLAN CONFORMANCE

A. General

Pursuant to Douglas County Master Plan and Development Code, the Nevada Northwest LLC Specific Plan has been designed to conform with or exceed the goals, objectives and policies of the currently adopted Douglas County Master Plan. The following section provides an element by element description of the Master Plan and identifies conformance of the Nevada Northwest LLC Specific Plan with those elements. The criteria for conformance includes compatibility as well as consistency. Any future Master Plan updates are anticipated to incorporate the Nevada Northwest LLC Specific Plan. As specified in Section VII. N., "Specific Plan Amendments", in order to be approved, all specific plan amendments must be found to be consistent with the Master Plan and its elements. Therefore, consistency is assured over time as the Specific Plan evolves to meet future changing conditions.

B. Conservation Element

The Conservation Element provides for the conservation, development and utilization of natural resources. It also addresses flood control, erosion control, water and air pollution. Douglas County contains a wide variety of environments, from alpine and sub-alpine environments, meadows, valleys and arid, desert areas. Because the Specific Plan is located in only one of these environments and due to its limited size, many of the policies may not be directly applicable to the site. The following is a narrative description of the goals and policies in the Conservation Element of the Master Plan. The Nevada Northwest LLC Specific Plan is consistent with the intent of the goals and policies of the Conservation Element. Areas of consistency with the Master Plan include the following goals from the Master Plan Conservation Element:

Goal 4.01: To minimize danger and damage to County residents from natural hazards due to seismic activity, liquefaction, and other geologic hazards.

Discussion: The site is located in Seismic Zone III, as is most of Douglas County. This particular site is located several miles from any known fault traces. Foundation and building design can easily address issues with respect to any geologic hazards.

Policy 4.01.01: Adopt policies and standards requiring special studies and design in areas of seismic hazards.

Discussion: Geologic Hazard requirements are set forth in Douglas County Code Chapter 20.690 "Property Development Standards" and under the subdivision regulations. The property is not subject to known geologic hazards and is, therefore, not subject to any special standards or requirements.

Goal 4.02: To manage hillside development densities, locations, and project designs in order to minimize impacts on the County's natural resources and aesthetic character, and to protect future residents from safety hazards.

Discussion: The site is not located in a hillside area, therefore this goal is not applicable to this specific plan.

Goal 4.03: Continue to improve and enforce development regulation to provide the residents of Douglas County sufficient level of safety from flooding.

Discussion: Shortly after the adoption of the Master Plan in April of 1996, Douglas County adopted Title 20 which essentially implements this portion of the Master Plan through the adoption of the Floodplain Management Chapter 20.50. This chapter was based on FEMA's model flood hazard ordinance. With a few exceptions, the County adopted FEMA's ordinance virtually verbatim.

Policy 4.03.01: Utilize FEMA recognized 100-year flood plain mapping to limit development in the flood plain.

Discussion: The specific plan is located within the primary 100 year flood plain and a recognized flood way. This area is proposed to be restricted from further development through the recordation of an easement and through dedication to Douglas County. Other areas designated within the primary flood plain will be prohibited from residential development.

Policy 4.03.02: Restrict or prohibit uses in undeveloped delineated flood areas and maintain flood plain and floodway regulations in developed flood areas.

Discussion: As stated earlier, proposed development within the Specific Plan are not located in a flood plain identified by Douglas County as requiring restricted development.

Policy 4.03.03: Minimize the alteration of natural flood plains, stream channels, and natural protective barriers that accommodate or channel floodwaters.

Discussion: The site is relatively flat. Detention basins sized to accommodate the entire project are identified in the Master Drainage Plan (See

Figure G). The project meets the requirements of the Floodplain Management ordinance. The Martin Slough is offered for dedication to Douglas County for flood and open space uses.

Policy 4.03.04: Limit filling, grading, dredging, and other development that may increase flood potential.

Discussion: The Floodplain Management Ordinance, which implements this portion of the Master Plan, does not place restrictions on filling and grading activities unless the site is affected by the primary flood zone (100 year flood plain). The developed areas of the Specific Plan do not involve the primary flood zone.

Policy 4.03.05: Ensure that flood information is made available to property owners, potential buyers and residents living in flood plains and that they are encouraged to participate in the Federal Flood Insurance Program. Seek legislation to require disclosure of flood plains by developers and Realtors.

Discussion: This policy is outside the scope of this specific plan.

Policy 4.03.06: Evaluate flood potential of areas being considered for development and determine the need to develop structural and non-structural methods to provide the public with a sufficient level of safety.

Discussion: The Floodplain management ordinance requires that all finished floors of habitable structures be constructed one foot above natural grade in flood zone "X Shaded". The project will comply with the requirements of this ordinance.

Policy 4.03.07: Consider formation of a special district responsible for the development of regional flood and stormwater solutions and preparation of drainage plans for each community and for their implementation and maintenance.

Discussion: This policy is outside the scope of this specific plan.

Policy 4.03.08: Flood-prone areas, including wetlands, sloughs, arroyos, alluvial fans, detention facilities, and other flood risk areas should be considered for acquisition by public purchase or by dedication for public usage as parkways, sports facilities, neighborhood parks, recreational areas, and for wildlife habitat. Adequate right-of-way for the conveyance of storm water to the Carson River should be obtained.

Discussion: The project proposes to use drainage detention facilities. Under the specific plan's master drainage plan, these facilities are offered for dedication to the Town of Minden along with the Martin Slough area.

Policy 4.03.09: Develop a priority and phasing plan to provide for a detailed watershed analysis and improvement recommendations by watershed in relation to the seriousness of the existing and potential flood flow problems.

Discussion: This policy is outside the scope of this specific plan.

Policy 4.03.10: Non-structural flood control measures such as zoning limitations, open space acquisition, and watershed management should be used within the Carson River Flood Plain as alternatives to structural measures.

Discussion: The applicant is proposing dedicating open space along the Martin Slough for open space and watershed management purposes.

Goal 4.04: Minimize the impacts of stormwater and Carson River flooding.

Policy 4.04.01: Investigate the use of existing irrigation ditches and canals to help alleviate Carson River and stormwater flooding problems, and prevent critical water conveyances from being obstructed or abandoned.

Discussion: The proposed development is consistent with this policy. Furthermore, future development will comply with the Irrigation Facilities and Drainage improvement standards found in Douglas County Code.

Policy 4.04.02: Investigate acquisition of rights-of-way, development of conveyances, and utilization of wetlands southeast of airport and southeast of Genoa as possible detention facilities.

Discussion: This policy is outside the scope of this Specific Plan.

Policy 4.04.03: Evaluate the concept to provide fair share of maintenance costs for irrigation facilities used for flood control.

Discussion: This policy is outside the scope of this Specific Plan, since this action requires the adoption of an impact fee pursuant to N.R.S. Chapter 278B.

Policy 4.04.04: Improve portions of irrigation system to improve flood conveyance capacities while not impacting operational capabilities.

Discussion: Future projects in the area are required to be reviewed by the Water Conveyance Advisory Committee for compliance with the Irrigation Facilities and Drainage improvement standards found in Douglas County Code. This requires the over-sizing of conveyance features when necessary to convey run-off in addition to irrigation

system requirements.

Policy 4.04.05: Require sufficient easement widths for improvements and maintenance along all conveyance ditches that will be used for stormwater flood flows.

Discussion: Easement width requirements are addressed in Title 20 of Douglas County Code, and are reviewed by the Water Conveyance Advisory Committee (WCAC) for compliance.

Policy 4.04.06: Encroachment and structure setbacks should be reviewed to eliminate conflicts and ensure that maintenance of the conveyance ditch and/or storm drain system can be achieved.

Discussion: See previous comment under Policy 4.04.05.

Policy 4.04.07: These policies are not intended to encourage public management or acquisition of private conveyances, but rather to facilitate planning for flood management.

Goal 4.05: To protect surface water quality in the County from the effects of growth and urbanization.

Policy 4.05.01: Require development to incorporate storm drainage facilities that reduce urban run-off pollutants within the site or as part of a regional facility.

Discussion: Part of the Specific Plan includes a Master Drainage Plan where urban run-off is directed into a single regional detention basin which are maintained by the property owners association and which are also designed to continue its use for agricultural purposes.

Policy 4.05.02: Require industrial facilities to comply with the storm water discharge regulations in the national discharge elimination system (NPDES) section of the Federal Clean Water Act.

Discussion: This policy is outside the scope of this Specific Plan.

Policy 4.05.03: Require a maintenance program for oil, grease, and silt traps for all paved parking lots over ten spaces and also investigate methods for retrofitting existing parking lots.

Discussion: Parking facilities associated with the development areas will use the regional detention facility with sand oil separators source of cleaning the urban run-off generated by the project.

Policy 4.05.04: Provide yearly cleaning for County, District, and Town maintained

underground drainage systems.

Discussion: This policy is outside the scope of this Specific Plan. However, as part of the implementation of this Specific Plan, the Property Owners Association is required to have in its bylaws regular maintenance of drainage facilities owned or maintained by the POA.

Policy 4.05.05: Cooperate with private and public agencies to protect water quality throughout the region.

Discussion: This policy is outside the scope of this Specific Plan.

Goal 4.06: To improve existing drainage and prevent future drainage problems from occurring.

Policy 4.06.01: Douglas County shall develop comprehensive storm drainage design criteria for developed areas in conjunction with the Towns and GIDs.

Discussion: A Master Drainage Plan is included as part of the Specific Plan. The plan uses a regional approach to urban run-off created by the project. The design will meet Douglas County's current storm design requirement.

Policy 4.06.02: Arterial and collector roadways shall be designed and constructed to allow for a minimum of one access to communities during 100-year flood events. Care should be exercised in design of these facilities to not impact other areas by damming or diverting flood waters.

Discussion: The minor collector Muller Lane is an existing Douglas County Master Planned roadway as is Ironwood Drive, Lucerne Street and U.S. Highway 395.

Policy 4.06.03: Continue utilization of the Water Conveyance Advisory Committee for review of projects and effects on irrigation facilities.

Discussion: Development proposals within the Specific Plan will be reviewed by the WCAC in accordance with Douglas County's development code.

Policy 4.06.04: Continue to participate in watershed management with the Upper Carson River Watershed Management Committee.

Discussion: This policy is outside the scope of this Specific Plan.

Policy 4.06.05: Drainage facilities on U.S. Highway 395 at Smelter Creek, south of Gardnerville, and from Minden north to Cradlebaugh Bridge should be expanded and improved at every opportunity.

Discussion: All proposed improvements along the U.S. Hwy. 395 frontage will include upgraded drainage improvements consistent with NDOT standards to perpetuate stormwater run-off from these communities.

Goal 4.07: To protect wetlands for their values for groundwater recharge, flood protection, sediment and pollution control, wildlife habitat, and open space.

Discussion: The site has not been delineated as containing wetlands under the jurisdiction of the Army Corps of Engineers. The probable wetland areas contained adjacent the Martin Slough is proposed to be restricted through dedication to Douglas County for the use of the Town of Minden for its storm water management system and linear open space improvements.

Goal 4.08: The County shall adopt policies and implementation programs that protect potable water supplies, limit non-point source impacts on groundwater quality, and promote a regional approach to aquifer management.

Policy 4.08.01: Development shall be designed so as to minimize the amount of newly created impervious surfaces. Open spaces and landscaped areas shall be encouraged.

Discussion: The Specific Plan includes provisions for the creation and maintenance of open space areas. Figure K is a graphical depiction of the proposed open space areas.

Policy 4.08.02: Historic drainage patterns shall be utilized and pre-development run-off rates and volumes shall be maintained as planned as a part of a regional drainage plan.

Discussion: As part of the Master Drainage Plan, pre-development run-off quantities will not be exceeded through the use of the regional detention basin to detain the post development run-off quantities created through additional impervious surface area.

Policy 4.08.03: Development occurring at urban densities shall be serviced by a sanitary sewer utility.

Discussion: The Specific Plan requires that full urban services, such as community sewer and community water, are required to serve development within the Specific Plan area.

Policy 4.08.04: Industrial uses shall implement spill containment and

management systems consistent with current best management practices. Industrial uses shall be encouraged to develop and implement on-going monitoring programs aimed at reducing the potential for impacts to groundwater quality.

Discussion: Industrial uses are not proposed within the Specific Plan.

Policy 4.08.05: The potential for contamination of critical aquifer recharge areas by proposed development shall be determined through an environmental review process. Potential impacts to groundwater supplies serving as potable water supplies shall be appropriately mitigated.

Discussion: According to the U.S.G.S. report titled Geohydrology and Simulated Response to Ground-Water Pumpage in Carson Valley, Water Resource Investigations Report 86-4328 there are a number of distinct aquifers underlying the site separated by clay lenses. The separate aquifers are either partially or totally confined. Because of limited communication between aquifers, any ground water quality analysis is only representative of the aquifer(s) being sampled and does not represent overall ground water quality.

The U.S.G.S. Report: Ground-Water Quality Assessment of the Carson River Basin, Nevada and California Results of Investigations, 1987-91 has compiled water quality data from numerous wells and various aquifers within the area of the site. The report determines that both the deep and shallow aquifers generally met the primary and secondary drinking water standards.

The U.S.G.S Ground-Water Quality Assessment report cited above estimates that groundwater movement is to the west by northwest across the site. It is unlikely that development proposed in the Nevada Northwest LLC Specific Plan would directly cause Ground Water contamination. Development proposals within the Specific Plan area require review and approval by the Nevada Division of Environmental Protection and State Health. These agencies are charged with authority to review development proposals for environmental compliance.

Policy 4.08.06: The County shall consider developing and disseminating a public information program directed at informing residents of strategies for minimizing non-point source impacts to groundwater.

Discussion: This policy is outside the scope of this Specific Plan.

Policy 4.08.07: The County shall participate in the development of an interjurisdictional approach to protect critical aquifer recharge areas. Additional

hydrogeologic and groundwater contamination vulnerability studies shall be conducted to better understand groundwater movement, locations of significant aquifer resources, and the potential for groundwater contamination.

Discussion: This policy is outside the scope of this Specific Plan.

Goal 4.09: The County shall identify and protect the functions and values of surface water systems, which include fish and wildlife habitat, aquifer recharge and discharge, and recreational opportunities.

Policy 4.09.01: Disposal of wastewater, disposal of solid waste, and creation of unstable fills which are inappropriate to the function of surface water systems or which may result in water pollution shall not be permitted.

Discussion: The Specific Plan does not contain any topographic conditions which would result in the creation of unstable fills interfering with the function of surface water systems. Wastewater will be disposed of through the Minden-Gardnerville Sanitation District, solid waste collection is provided by the Town of Minden, with disposal by Douglas Disposal. Douglas Disposal operates the transfer station site in Douglas County, with disposal at the Lockwood Landfill.

Policy 4.09.02: Activities which interfere with an aquatic system's function as a groundwater recharge area shall not be permitted.

Discussion: This Specific Plan does not propose any activity which would result in the condition described in this policy.

Policy 4.09.03: Activities which cause an increase in the intensity, duration of frequency of water level fluctuations within surface water systems should not be permitted.

Discussion: Duration of frequency within the off-site ditch system will occur during storm events which cause the detention basin to fill. However, these storm events are relatively infrequent and are not expected to be a significant impact on the overall drainage and irrigation system.

Goal 4.10: Programs shall be implemented to prevent impacts to surface water systems, to encourage private property owners to preserve surface water systems, and to encourage preservation and to promote the utilization of stormwater best management practices.

Policy 40.10.01: The County shall encourage maintenance of historic stormwater discharge rates and volumes into surface water systems.

Discussion: Douglas County Code section 20.100.060 requires development to

detain the pre-development storm water flows.

Policy 40.10.02: The County shall develop and update current best management practices related to stormwater management and aquatic system protection.

Discussion: This is not within the scope of this Specific Plan. However, the Specific Plan has identified a regional approach with respect to drainage which essentially operates as BMP's for the entire specific plan site(s), such as using both structural and non-structural means to improve water quality of surface run-off from the developed areas proposed in the Specific Plan.

Policy 40.10.03: The County shall develop criteria and standards that recognize those situations where impacts upon surface water systems are unavoidable and minimize identified potential impacts to surface water systems where such impacts are unavoidable.

Discussion: This is not within the scope of this Specific Plan.

Policy 40.10.04: The County shall promote the utilization of best management practices including state-of-the-art stormwater management techniques, which ensure maintenance or improvement of the quality of the water entering surface water systems from stormwater drainage systems.

Discussion: The Master Drainage Plan for the Nevada Northwest LLC Specific Plan calls for both structural and non-structural means of handling stormwater run-off.

Goal 4.11: Douglas County shall coordinate a regional approach to water resource development and management.

Discussion: This is outside the scope of this Specific Plan.

Goal 4.12: Maintain groundwater withdrawals at, or preferably, below the limits prescribed by the State Engineer for the Carson Valley and Antelope Valley groundwater basins.

Discussion: The project site will annex into the Town of Minden. The project will use and provide water rights to meet the requirements of the State Engineer regarding water rights.

Goal 4.13: Douglas County shall begin evaluation of water resource alternatives to supplement the groundwater supply for future quasi-municipal use.

Discussion: This goal is outside the scope of the Specific Plan.

Goal 4.14: To create a system of open space areas and linkages throughout the County that protects the natural and visual character of the County and provides for appropriate active and passive recreational uses.

Discussion: The following policies in support of this goal can only be implemented by Douglas County and are outside the scope of this Specific Plan. However, the Plan offers to dedicate the Martin Slough area as it crosses the affected parcels to Douglas County for open space uses, including the Town of Minden's proposed linear park.

Policy 4.14.01: The County should establish an open space acquisition program that identifies acquisition area priorities based on capital costs, operation and maintenance costs, accessibility, open space needs, resource preservation, ability to complete or enhance the existing open space linkage system and unique environmental features. Techniques for acquisition may include fee simple acquisition, acquisition of development rights, transfer of development rights, or other measures.

Discussion: It is outside the scope of this plan to address this policy.

Policy 4.14.02:Douglas County should consider efforts to manage riverbank areas to provide for both active and passive recreational opportunities.

Discussion: It is outside the scope of this plan to address this policy.

Policy 4.14.03:The County should promote the design and operation of a regional trail system which provides access connection between major Open Space areas.

Discussion: The plan includes provisions for trail improvements and dedicated open space areas for the Martin Slough alignment.

Goal 4.15: To preserve USFS, BLM, and other public lands for their habitat, recreational, and scenic values.

Discussion: The project site does not involve any public lands. The following policies in support of this goal can only be implemented by Douglas County and are outside the scope of this Specific Plan

Policy 4.15.01: The County shall work with other governmental entities to ensure that areas acquired as pan of the Open Space System are developed, operated, and maintained to provide the County with a permanent. publicly accessible open space system.

Policy 4.15.02: Douglas County shall encourage and support land exchanges between private land owners. the U.S. Forest Service, and the Bureau of Land Management when such exchanges are consistent with the Master Plan, particularly the Land Use Element.

Goal 4.16: To preserve agricultural uses and open space areas to maintain the County's open rural character.

Discussion: The following agricultural goals and policies are intended to give Douglas County guidance on how to write code and policies implementing this portion of the Master Plan. As such, addressing most of these policies are beyond the scope of this Specific Plan.

Policy 4.16.01: Douglas County shall promote and encourage agriculture as an important industry and as a desirable land use which serves to define the desired character of the County.

Discussion: Addressing this policy is beyond the scope of this Specific Plan.

Policy 4.16.02: Douglas County shall enact "right to farm" regulations to establish that, in designated agricultural areas, normal agricultural operations cannot be considered nuisances to other surrounding uses.

Discussion: Since the adoption of the Master Plan, Douglas County has enacted a "Right-To-Farm" ordinance. As each development area is approved as outlined under the implementation chapter of this Specific Plan, development in these areas will comply with the terms of this ordinance by recording deed restrictions regarding the agricultural operations adjacent to the project site.

Policy 4.16.03: Douglas County should ensure that regulations applied to agricultural uses are appropriate to the type and intensity of proposed agricultural development.

Discussion: This was accomplished by Douglas County with the adoption of Title 20 Consolidated Development Code.

Goal 4.17: To create alternatives to the urban development of existing agricultural lands, such as programs for financing compensation or development rights transfers, in order to preserve these agricultural areas.

Discussion: Addressing this goal and the related policies is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County shall provide for a range of compatible uses on agricultural lands and means for agricultural property owners to obtain benefit

from this land while achieving the public goal of agricultural preservation.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County shall provide for agriculture-related commercial and industrial uses in agricultural zoning districts. Such uses should include the sale or marketing of farm products, the provision of services or the rental of equipment similar to the equipment and services normally utilized as pant of an agricultural operation, and the provision of agriculture-oriented tourism facilities. These uses should be secondary to the primary agricultural use of the property. They shall be of a scale and design to retain the agricultural character of the property. The Development Code shall establish the specific regulatory provisions to implement this policy.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County shall establish regulations to provide development options for lands designated "Agriculture' in the Land Use Element and Community Plans. These options shall include division of land into parcels that are suitable for continued agricultural use, clustering of residential development in one part of the property (while the remainder stays in agricultural use). and transfer of development rights.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County shall. in cooperation with the agricultural community, investigate and support the creation of a non-profit land trust for Douglas County.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County shall provide procedures for the acquisition, dedication, or purchase of agricultural preservation easements, by public or non-profit entities, as a means to retain land in agricultural.

Discussion: This is beyond the scope of this Specific Plan. However, one of the benefits of this specific plan is the reservation of 450 acres through the use of agricultural conservation easements.

Policy 4.17.01: Douglas County shall evaluate a program for public acquisition of agricultural water rights as a means to retain land in agricultural use.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County shall, in cooperation with the agricultural community, evaluate other programs to retain land in agricultural use while

providing benefits to the property owner. Such programs may include purchase-leaseback of water for agricultural use through its policies and program regarding water quality and quantity.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.17.01: Douglas County should coordinate its programs for public acquisition and development of open space areas with its efforts to protect land for agricultural use, so that adverse impacts of open space preservation and use on agricultural operations are minimized and the benefits to the County's open space character are maximized.

Discussion: All of the areas under the influence of this specific plan were either zoned commercial and multifamily or were slated for commercial and residential development in the master plan for area designated as Receiving Area. Proposed residential areas delineated as receiving area will be subject of TDR transfers which coordinates development on the site with concomitant open space easements on other agricultural lands.

Goal 4.18: Pursue cost effective air quality management strategies that contribute to improved local and regional air quality.

Policy 4.18.01: Work with NDEP for the establishment of a cost-effective program to measure and monitor air quality in the Carson Valley and other "airsheds", in order to establish base data for future projections.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.18.01: Establish standards for roadway surfacing and maintenance which reduce dust generation.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.18.01: Encourage techniques to reduce the generation of fugitive dust resulting from agricultural activities. Such techniques may include vegetative cover, windbreaks, improved tillage practices, and other means.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.18.01: Maintain regulations which require the upgrade of existing wood burning devices and fireplaces and control the numbers of and set strict performance standards for other wood burning devices in new housing construction.

Discussion: This is beyond the scope of this Specific Plan.

Policy 4.18.01: Promote reduced wood burning by encouraging use of solar and geothermal resources and the use of other energy-efficient strategies.

Discussion: This is beyond the scope of this Specific Plan.

Goal 4.19: To protect Douglas County's sensitive wildlife and vegetation in recognition of their importance as components of the County's quality of life.

Policy 4.19.01: Douglas County shall protect environmentally sensitive and habitat areas that serve valuable ecological functions by limiting their development or by requiring mitigation of adverse impacts resulting from development.

Discussion: The County has assisted in the protection of certain environmentally sensitive area, primarily riparian areas and intermittent streams through the use of Planned Developments and lot clustering. This site has been tilled and used for agricultural purposes since at least the 1800's and as such the biological value of the site is likely to be very low in terms of flora and fauna protection.

Policy 4.19.02: Douglas County shall establish development regulations and design guidelines to minimize impacts of new development on sensitive habitats and migration routes.

Discussion: The site is not identified in the Master Plan as being located in a deer migratory route. The site is not identified as containing sensitive habitat.

Policy 4.19.03: Douglas County shall work with the USFS and BLM to retain and enhance the viability of deer migration corridors through the County.

Discussion: This is not within the scope of this Specific Plan.

Policy 4.19.04: Douglas County shall support efforts to manage the County's rivers and streams to maintain or enhance the existing riparian ecosystems.

Discussion: The specific plan includes proposals to provide easements for 450 acres of area located adjacent to the East Fork of the Carson River.

Goal 4.20: To encourage the efficient use of available energy resources and to provide incentives for energy conservation in construction.

Policy 4.20.01: The County shall support the development of non-polluting renewable energy sources, such as geothermal and solar energy, through the provision of appropriate land use designation and development regulation, which

provide for on-site use of these energy resources.

Discussion: Addressing this policy is not within the scope of this Specific Plan.

Policy 4.20.01: The County shall encourage incorporation of energy conservation features in the design of all new construction and substantial rehabilitation projects, both public and private.

Discussion: The County's adoption of Title 20 included a section on Solar Energy, which promotes the use of alternative energy sources. This Specific Plan development standards section includes provisions for compliance with this particular provision of Douglas County Code.

Policy 4.20.01: The energy-efficiency of proposed new development should be considered when land use and development review decisions are made. The County's development regulations and design techniques shall include provisions for protecting solar access, for siting structures to maximize natural heating and cooling, and for landscaping to aid passive cooling protection from prevailing winds and maximum year-round solar access.

Discussion: This Specific Plan includes language in the development standards section which promotes the use of energy efficient appliances, addresses siting to obtain maximum passive heating and cooling, and protects solar access.

Policy 4.20.01: The County should encourage development which utilizes geothermal energy, ensuring compatibility with the environment.

Discussion: This is not within the scope of this Specific Plan to address.

Goal 4.21: To minimize noise levels throughout the County and, wherever economically feasible, mitigate the effects of noise to provide a safe and healthy environment.

Policy 4.21.01: The County' shall adopt standards for maximum permissible levels and durations of noise emanating from various stationary sources by land use category. Standards may address general noise levels as well as intermittent noise or noise occurring at inappropriate hours. Noise standards shall be used in evaluating proposals for new development and in establishing site and structural design requirements.

Discussion: Douglas County Code section 20.690.030 N. contains the requirements regarding noise levels and property development standards. Noise receptors are located significantly away from the development area so the noise generation that can be attributed with development will not pose a significant impact.

Policy 4.21.02: Where possible, the County shall avoid locating noise generating facilities in close proximity to areas planned for noise sensitive land uses.

Discussion: Proposed development areas which could be attributed to increased noise levels are buffered by higher land use densiites. Lower density residential land uses are not located in close proximity.

Policy 4.21.03: The County shall avoid locating noise sensitive land uses such as hospitals, schools, and homes in existing and anticipated noise impact areas.

Discussion: The proposed land uses are not classified as being noise sensitive. The proposed commercial land uses are not significant noise generators.

Policy 4.21.04: The County shall consider noise concerns in evaluating all development proposals and major roadway projects.

Discussion: The project has been designed to address noise concerns associated with this Specific Plan. The possible relocation of Muller Lane should consider adjacent neighborhoods and consider the use of noise attenuation through structural means, such as sound walls adjacent to existing neighborhoods.

Policy 4.21.05: The County shall consider establishing noise standards for construction related activities, including limitations on hours of operation within the day.

Discussion: Douglas County Code section 20.690.030 L. "Hours of Construction" addresses this policy issue.

C. Economic Development Element

The mission of the Economic Diversification Plan is to create and maintain a positive business climate in Douglas County. The goals towards implementation of this mission are as follows:

Goal 5.01: Promote Douglas County as a "Community of Choice" for business.

Goal 5.02: Retain and strengthen our existing business base.

Goal 5.03: Team Douglas County shall create quality employment opportunities.

Goal 5.04: Team Douglas County shall streamline the process and reduce the cost of doing business.

Discussion: Although many of these goals cannot be directly addressed by this Specific Plan, attainment of quality employment opportunities, strengthening the existing business base and promoting Douglas County as a "Community of Choice" involves providing adequate development areas of sufficient size to serve these key land uses and employers near existing urban centers. Sufficient and significant nearby retail uses will also help sustain the viability of the community as a place to located new businesses and create better employment opportunities for the future.

D. Historic Preservation Element

Goal 6.01: To preserve Douglas County's historic, cultural, and archaeological resources as physical reminders of the County's past and as unique focal points to shape the County's identity, now and in the future.

Discussion: Implementation of the Historic Preservation Element and the related policies requires Douglas County to adopt legislation to fully implement this element in the Master Plan and also provide mapping of areas which may contain archeological and historical resources. Furthermore, this element calls for the County to maintain a standing committee which would essentially be responsible for implementing historic preservation strategies contemplated in the Master Plan. Since many of these policies have not been acted on, it is difficult for a single Specific Plan to address these issues. The Nevada Northwest LLC Specific Plan site has been historically used for agricultural purposes since at least the 1800's, and due to the extensive tilling and agricultural operations on the land, prehistoric archeological resources, if they were ever present on the site, have likely been destroyed. The site is vacant, and therefore does not any contain buildings of historical significance. However, under the implementation section of this Specific Plan, if any historic or prehistoric artifacts are encountered during excavation or construction operations for the development, these resources must be identified and recovered or archived by an Archeologist or historic preservation specialist.

Policy 6.01.01: Douglas County shall support, whenever feasible, the preservation of the County's rich cultural heritage, including the establishment of historic districts to protect significant historic properties.

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.02: Douglas County will cooperate and encourage the development of historical preservation efforts of the towns, the Washoe Tribe, and other entities in the County.

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.03: Douglas County shall consider adoption of an ordinance for the designation and protection of historic properties, which is consistent with the purposes of the National Historic Preservation Act of 1966 as amended in 1980 (P.L. *96-515)* and consistent with State of Nevada enabling legislation, NRS 384).

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.04: Douglas County will coordinate work with the Town of Genoa to ensure that new development within the Genoa Historic District is of scale, design, and siting that conforms to the character of the Historic District and that the Historic District Design Manual is updated and integrated into the County Design Guidelines.

Discussion: The site is not located in the Town of Genoa.

Policy 6.01.05: Douglas County will coordinate work with the Towns of Minden and Gardnerville to develop appropriate programs to identify, designate, and preserve significant buildings and sites within the Towns and to establish guidelines for new development adjacent to historic structures, and for the reuse of historic structures, in order to preserve their character and setting.

Discussion: This is outside the scope of this Specific Plan. No program or ordinance has been adopted by Douglas County which implements this particular policy.

Policy 6.01.06: Routes of historic trails, including but not limited to, the Emigrant Trail, the Pony Express Route, and the V&T Railway, where they are accessible to the public, are to be included in the County's network of scenic routes, and should use distinctive signage or other techniques to reflect this heritage.

Discussion: There is no evidence that historic roads or trails are contained within this site.

Policy 6.01.07: Douglas County will coordinate with the Washoe Indian Tribe in the identification and preservation of structures and sites of cultural or archaeological significance. Developments proposed in areas of potential archaeological significance shall be required to conduct an investigation in order

to determine whether valuable archaeological remains may be affected by the project.

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.08: The Architectural Heritage of Carson Valley will be updated to include the entire County and encourage the periodic update of this survey in accordance with the requirements of NRS 278.160(I)(d).

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.09: The preparation of informational materials to educate County residents and visitors about historic, cultural, and archaeological resources will be encouraged.

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.10: Efforts to secure State, Federal, or other funding directed toward revitalizing historic areas or maintaining historic buildings and sites will be pursued. Under provisions of NRS 244.377, funding may be included in the County's annual budget for maintenance of County museums, including consideration of a tax levy.

Discussion: This is outside the scope of this Specific Plan.

Policy 6.01.11: Incentives for preservation of historic properties and sites, both urban and rural, will be pursued. These could include property tax relief, special zoning districts, and bonus densities for additional transfer of development rights.

Discussion: The Specific Plan site does not contain historic artifacts and is not an important historic property. Furthermore, none of the implementation measures identified in this policy have been adopted by Douglas County.

E. Land Use Element

The following is an excerpt from the Introduction to the Land Use Element in the Master Plan:

> "The Land Use Element of the Douglas County Master Plan is designed to promote sound land use decisions within the County. The pattern of land uses--their location, mix, and density--is a critical component of any community's character. The Land Use Element is intended to provide sufficient land for residential, commercial, industrial, and public uses; to locate these various

uses appropriately in order to enhance community balance and character; to preserve and protect important natural resources; and to enable the County to provide adequate public services to the community. This Element also includes the Land Use Map, which designates existing or potential land uses for all properties within the Master Plan area.

Land use is a mixture of private ownership and enterprise and public or governmental participation. The actual development of property, whether a residential subdivision, a commercial center, or an industrial park, is determined and controlled by the owner of the property. Public land use planning plays an important role in establishing a pattern and a guide for such development.

The Master Plan is intended to give everyone involved in or affected by the use of land, current and future residents, property owners, developers, elected officials and staff representing the public interest-a clear understanding of the development patterns the community has found to be most appropriate and desirable. This shared vision will allow and support future decisions and further the preferred and adopted County Land Use Plan. Without a shared vision, each involved private party or governmental agency may take a different approach to land use issues, resulting in development which may not be well-coordinated, or which may not be served efficiently or properly by the necessary public infrastructure. Accordingly, a key component of the planning process is the desired County land use plan, which is described in the Land Use Element."

The following excerpts are the Key Issues identified in the Land Use Element of the Master Plan and our discussion of each key issue:

"**Accommodation of Growth in Accordance with Community Goals and Objectives and Regional General Welfare**. The Land Use Element establishes a planned pattern for the development of Douglas County for the next 20 years. It reflects the County's historical development patterns as well as the pattern, amount, and types of new development occurring today. The Land Use Element provides an advanced view of what Douglas County should and will become in the years ahead, and acts as a guide for informed decision-making in development matters.

The Land Use Element also addresses important issues such as infrastructure availability, development compatibility, and the community desire to preserve and retain the quality of life enjoyed within the region. Additionally, the Land Use Element provides the

basis for the implementation of appropriate and necessary growth coordination techniques within the County. This Element, in conjunction with other Plan Elements and as a part of the Master Plan as a whole, provides the structural basis for assuring that future growth occurs in accordance with the community's vision and its needs and limitations."

Discussion: The context of "accommodation of growth in accordance with community goals and objectives and regional welfare" is a holistic approach to land use issues, simply stated where the whole of the Master Plan is considered in making land use decisions rather than focusing on individual parts. The advantage of the Specific Plan process is that it allows for a macro view of development and formulates project review and mitigation measures in the development strategy of the project area under review. Because no project could reasonably forward every single goal or policy in a Master Plan, planners have defined consistency as "An action, program or project consistent with the General Plan (Master Plan) if, considering all its aspects, will further the objectives and policies in the General Plan (Master Plan) and not obstruct their attainment."

"**Development Guidance.** The Land Use Element provides direction and predictability for both developers and decision makers. It establishes the vision for the County's future and guides the development of land accordingly. Individual developments must fit into the overall development pattern described in the Plan. Development approvals, capital improvement programs and service level provisions, implementation ordinances, financing, and regulatory mechanisms of the County, Towns, and all general improvement districts and other service providers, must be consistent with this Master Plan, and each element of the Master Plan must be internally consistent with each other element."

Discussion: There is some debate regarding the development guidance found in the land use element, particularly regarding areas designated as Receiving Area. Development patterns are difficult to ascertain on large expanses of vacant land adjacent to the community edge, particularly given the dearth of development and compatibility planning statements for these areas. In order to address this issue, the Specific Plan process is beneficial by looking at the development area in a broader context. But even this approach has its

limitations, since overlapping regions in the community plans may have different goals and objectives. Furthermore, there is some conflict between different elements in the Master Plan and conflicting language between some Master Plan element language and implementation ordinances found in Title 20 and State Law. It is best that all parties recognize and understand this weakness in the approach to future development areas found in the Master Plan, in order that the process can be better understood for what it is: the Specific Plan serves to supplement the Master Plan as a refined development policy and ordinance document for a given development area.

"Land Use Compatibility. The development and mapping of the Land Use Categories reduces the potential for incompatible land uses, while ensuring that each use is compatible with adjacent uses and property. The goals, policies, and implementation measures of the Plan provide additional guidance for ensuring compatibility between dissimilar land uses."

Discussion: The site has been planned to provide compatibility between the proposed land uses on the Specific Plan site and the existing, neighboring land uses. A complete Master Plan policy analysis is included as part of this Specific Plan document to examine specific compatibility issues.

"Preservation of Natural Environment and Agricultural Use. The preservation of the natural environment and agricultural uses is recognized as an important feature contributing to the quality of life of County residents. The Master Plan recognizes the importance of the natural environment and agricultural uses, and incorporates these goals and objectives into each Element of the Plan, as well as into the regulations for each land use category and the implementation structure of all ordinances. The preservation of agricultural uses must be done in a manner which respects the rights of private land ownership and use of agricultural property and provides incentives for such owners to continue the agricultural use."

Discussion: The purpose of this specific plan is to examine the appropriateness of the current land use designations for the specific plan site in context of the Master Plan, and to propose amendments to the Master Plan which when accomplished, still achieve the overarching goals and

policies found in the Master Plan with assurances not otherwise found in other types of development applications. This specific plan proposal accomplishes this in part by proposing the use of Transfer of Development Rights in the new residential areas delineated as Receiving Area in the master plan. Furthermore, the plan examines the placement of land uses in the overall context of the Master Plan considering the viability of the ranchland being replaced by development as well as the suitability of the sites due to the location and adjacency to the existing urban areas and infrastructure.

"**Distinctive Community Character.** The Land Use Element recognizes that there are and will continue to be different types of community areas within Douglas County. The Master Plan as a whole creates a long-range vision of the types of future development, which may enrich the lives of County citizens, and recognizes that future residents will want to and should be able to choose between distinctive communities and types of residences. This element provides areas for both urban and rural development so that future residents can select the living environment they prefer. It provides for growth and flexibility while retaining the important characteristics of the County. The element focuses most of the County's growth in urban development areas, thereby preserving the character of rural development areas and the sparse development patterns in remote areas."

Discussion: The Specific Plan is in accordance with this key issue since the site is located within an Urban Service Area designated in the Master Plan and adjacent to regional public improvements which diminish the value of the development site as important areas to retain for open space purposes. The accompanying design element and regional approach to infrastructure planning gives the Specific Plan area the opportunity to integrate with the character of the area.

"**Infill Development.** The Land Use Element also supports the efficient use of public and private resources by promoting urban growth in areas where infrastructure is already in place or in close proximity. Infill development--the development of vacant or underdeveloped parcels in existing developed areas--reduces the need for new public facilities and most efficiently utilizes the existing or planned facilities. The Plan also encourages the efficient use of public and private resources by designating growth areas

that are in close proximity to existing or planned infrastructure."

Discussion: The site is a vacant site located adjacent to an Urban Service Area, with all urban services near the proposed development portion of the specific plan. This proposed development area is adjacent to the Minden Town Boundary and provides for the efficient use of resources located within this existing urban area.

Community Balance Policies

Goal 7.01: To retain the beauty, the natural setting and resources, and the rural/agricultural character of the County while providing opportunities for managed growth and development.

Policy 7.01.01: Douglas County shall establish and maintain its land use plans to provide areas for different types of future land use and intensity and shall plan public services and facilities appropriate to the planned land uses.

Discussion: The Specific Plan's goal to provide a land use plan consistent with the overarching goals and policies within the Master Plan. The public facilities with respect to community water and sewer facilities, solid waste disposal, road maintenance and drainage will be provided several different entities, such as the Town of Minden for contract water service, the East Valley Utility District, Douglas Disposal, etc. Services provided by the County include the sheriff and judicial services, community services, etc. The relation between development and the impact to these services is in the Public Services and Facilities element of the Master Plan.

Policy 7.01.02: Douglas County shall plan for areas identified as rural communities, urban communities, agricultural areas, and other non-urban areas. The policies in this Land Use Element and in the Community Plans shall pertain to these distinct areas of the County.

Discussion: The Nevada Northwest LLC Specific Plan site is located within the Minden-Gardnerville community plan area and is located within an identified Urban Service Area.

Policy 7.01.03: In planning for growth of its rural and urban communities, Douglas County shall give first priority to development of vacant or under-utilized land within the communities ("infill") and second priority to development that expands the community. The County's policies regarding public service provision shall support these priorities.

Discussion: The site is adjacent to and also within the Town of Minden, and is

located within an Urban Service Area. There are few, if any commercially zoned sites available which have adequate area available for larger retail and tourist related users.

Policy 7.01.04: Douglas County shall use its planning and development regulations to protect residential neighborhoods from encroachment of incompatible activities or land uses which may have a negative impact on the residential living environment.

Discussion: The land use plan for Nevada Northwest LLC is consistent with the buffering and screening provisions found in Title 20 of Douglas County Code Chapter 20.690. New commercial areas proposed in the plan are buffered by higher density residential land uses which decrease in density as it comes closer to existing neighborhoods. Residential land uses proposed under the plan directly adjacent to existing neighborhoods are planned at the same density as the bordering land use.

Policy 7.01.05: Proposed non-residential development adjacent to residential neighborhoods shall be designed and sited to protect the privacy of residences.

Discussion: The proposed commercial development will be buffered through structural and non-structural means, including open space areas, landscaping and fencing.

Policy 7.01.06: Douglas County shall require the undergrounding of new utility lines and shall encourage the undergrounding of existing lines.

Discussion: The County has adopted an ordinance as part of Title 20 which requires the undergrounding of new utility extensions. The project will comply with the provisions of this ordinance.

Policy 7.01.07: In reviewing development proposals, Douglas County shall consider issues of community character, environmental impact, resident security and safety, aesthetics, and efficient service provision.

Discussion: The purpose of this Specific Plan is to give adequate and sufficient detail in terms of the development area for the reviewing agencies to make these determinations. With respect to these issues, the Nevada Northwest LLC Specific Plan is consistent with the Master Plan goals and policies and Douglas County ordinance regarding these issues. The intent of this Specific Plan is to detail the requirements and how consistency is accomplished.

Policy 7.01.08: The County should evaluate development projects for compliance with the Comprehensive Trail Plan, to be developed by Douglas County. The

County should include provisions within the Development Code for acquisition, construction, and maintenance of trails and trailhead facilities during project review. Such provisions may include allowing developers to utilize a density transfer for land set aside for public access or waiver of Parks and Recreation fees in lieu of dedication of such lands to the County.

Discussion: The County has not adopted a Comprehensive Trail Plan. It is outside the scope of this specific plan to address this particular policy.

Policy 7.01.09: Douglas County shall include within its Development Code provisions for review and approval of exterior lighting to reduce negative impacts to the community.

Discussion: Title 20 includes provisions regarding pedestrian and parking lot lighting specifications. These specifications require that light sources be shielded to reduce glare and requires in this circumstance, that a lighting schematic be prepared by a Nevada licensed Electrical Engineer with design review approval.

Land Use Map Policies

Discussion: Many of the policies in this section relate to how the Land Use Maps shall be prepared, depicted, and implemented by Douglas County. As a result, many of these policies are either not applicable to the Specific Plan or cannot be addressed by the Specific Plan.

Goal 7.02: To use the Master Plan Land Use Map to graphically depict the County's desired community form and character.

Policy 7.02.01: Douglas County shall maintain current land use and zone maps and make them available to the public.

Discussion: This is outside the scope of this Specific Plan.

Policy 7.02.02: The Douglas County Master Plan Land Use Map shall be defined as the set of maps depicting future land use in each region or designated community and in other areas of the County. This set of maps shall establish the general pattern of land use and intensity appropriate to achieve the County's goals.

Discussion: This is outside the scope of this Specific Plan.

Policy 7.02.03: Douglas County shall revise its zoning districts and other development regulations as appropriate and on a continuing basis to allow development compatible with the Master Plan land use designations.

Discussion: The implementation of this Specific Plan requires the reclassification of the site with a Planned Development overlay zone consistent with the provisions of this Specific Plan. This is to set the land use development pattern for this area based on this plan.

Policy 7.02.04: Douglas County shall initiate a comprehensive County-wide rezoning of lands based upon the revised land use designations and revised zoning districts following adoption of the Master Plan.

Discussion: Douglas County completed this action in 1996.

Policy 7.02.05: Douglas County shall only approve requests for rezoning, special use permits, the division of land, or other new development proposals or public projects that are consistent with the Land Use Map, the policies contained in this Land Use Element, and the other Elements of this Master Plan. Rezoning shall be consistent with the Master Plan if lands are zoned at a density less than the Master Plan allows. See also Page 12.1 Implementation.

Discussion: The purpose of this Specific Plan is to provide sufficient documentation and information to demonstrate consistency with Master Plan for the proposed land use in the development area.

Policy 7.02.06: The density or intensity of land use within a parcel(s) shall be consistent with the Land Use Map and Element where: 1) the overall residential density is equal to or less than the range for the residential land use designation; or 2) the intensity of the proposed use is equal to or less than that indicated for the land use designation. Overall residential density may be increased through density bonuses for affordable housing projects.

Discussion: The land use intensities considered in this plan is consistent with the amended master plan designations proposed in conjunction with this specific plan.

Policy 7.02.07: In general, the County will establish zoning at the least density or intensity as part of the consistency rezoning process, unless the project involves an existing established use, will result in consistency with the surrounding parcelization, or will result in significant benefit to the community as determined by Douglas County.

Discussion: The consistency rezoning process was completed by Douglas County in the fall of 1996. Therefore, this policy is outside the scope of this Specific Plan.

Policy 7.02.08: Within a residential development proposal, clustering of units shall be considered consistent with the Master Plan's densities if the highest

proposed density is within the range of the land use designation shown for the property on the Land Use Map and is consistent with other Master Plan policies. Clustering of units at densities above the range shown on the Land Use Map may be approved on properties which include floodplains, steep slopes, or other environmentally sensitive areas, if the cluster results in the use of development potential outside these sensitive areas and includes easements (or other mechanisms) to permanently retain sensitive areas as open space. In no event shall clustering result in a higher density for the overall project than the density shown on the Land Use Map for the property, except as approved through density bonus provisions. The actual density approved will take into consideration and must be consistent with the policies found in all elements of the Master Plan.

Discussion: This policy is not applicable to this proposal.

Policy 7.02.09: Within all land use designations, the following factors, as further defined in the Development Code, shall be considered in reviewing and approving individual development proposals: a) outstanding project design; b) retention of the site's natural topography and vegetation; c) design supportive of conservation of energy use; d) inclusion of amenities or designs that enhance the community's desired character; e) presence of moderate or steep slopes, floodplains, or active fault zone areas; f) location in a high fire hazard area; g) the need to provide setbacks, access and traffic circulation according to established standards; h) of the approval on the County's ability to achieve other Master Plan goals and policies; i) ability to meet established levels of service and follow facility design requirements; and j) provision of affordable housing units or employment opportunity for low and moderate income residents.

Discussion: The development code has addressed most of the factors within this policy. Some of the factors outlined in this policy are somewhat esoteric in nature, and as a result are not easily quantified. The purpose of this Specific Plan is to demonstrate, from a holistic perspective, how the project seeks to address the factors outlined in this policy.

Policy 7.02.10: The Master Plan's Land Use Map shall not be interpreted to affect the status of existing uses, densities, or intensities that are not consistent with the land use designation shown on the Land Use Map for the site. Such uses shall be considered legal non-conforming uses and the Development Code shall set forth specific provisions to implement this policy.

Discussion: This is outside the scope of this Specific Plan to address.

Community Plans

Goal 7.03: To recognize the distinct character of individual communities

and encourage land uses consistent with this character.

Policy 7.03.01: Douglas County shall adopt Community and Regional Plans to establish the special goals and policies necessary to reflect and enhance each community's desired character. These plans shall be part of the Douglas County Master Plan.

Discussion: The Douglas County Master Plan includes a Community Plan for the North, South and Central Agricultural area. A complete analysis of the this Community Plan is included in this Specific Plan.

Policy 7.03.02: The Land Use Map contained in each Regional and Community Plan shall be interpreted according to the policies set forth in this Land Use Element.

Discussion: The analysis of the Community Plan policies and mapping integrates the policies found in Land Use Element of the Master Plan. Interpretation of the Community Plan Land Use Map must be according to policies found in this element.

Agricultural Land Use

Goal 7.04: To maintain agriculture as an important land use in the Carson Valley and to retain the open rural character, cultural heritage and economic value created by this land use.

Policy 7.04.01: Douglas County shall plan for the continuation of agriculture as a distinct and significant land use in the County.

Discussion: Although this may be outside the scope of this Specific Plan to address, the benefits of the proposal must be judged against and balanced by other priorities for the County, such as validating the transfer of development rights scheme, continuing economic development and stemming the leakage of tax revenues, as well as preparing Douglas County to be able to fiscally withstand the time when Nevada's tax distribution scheme changes and the County is forced to become more dependent on revenues exclusively generated within the County, especially tax revenue within the Carson Valley area. Furthermore, the proposal has the benefit of permanently restricting important open space along the Martin Slough through a proposed dedication to Douglas County. This is provided through no cost to Douglas County taxpayers. Within this specific plan, only a small portion of land near US Highway 395 designated as Agriculture in the master plan is proposed to be converted to a commercial land use. The majority of land designated as Agriculture in the plan is the Martin Slough area.

Policy 7.04.02: Douglas County shall identify areas for future agricultural use on

the Master Plan Land Use Map. In general, irrigated agricultural lands shall be designated "Agriculture" while non-irrigated lands shall be designated "Forest/Range".

Discussion: This was accomplished during the master plan mapping effort.

Goal 7.05: To identify particular areas within Douglas County for development as distinct urban communities.

Policy 7.05.01: In identified urban communities, the goals and policies of adopted Community Plans shall apply as well as the policies contained in other sections of the Master Plan.

Discussion: The policy analysis contained in this Specific Plan considers all of the policies in the entire Master Plan.

Policy 7.05.02: Douglas County shall designate "Urban Service Areas" within identified urban communities. Urban Service Areas are those areas where development of an urban character exists or is developing. New development in these areas may be approved by Douglas County if it is consistent with the land use designations shown on the Land Use Map, if services are available at the appropriate urban levels, if applicable policies of the Community Plan and Master Plan have been met, and developed in accordance with the provisions of the Development Code.

Discussion: The Specific Plan is located within an urban service area boundary. The policy analysis of the Master Plan is the focus of this section of the Specific Plan. The site is consistent with the land use designation of Receiving Area and all urban services can be provided at the appropriate levels.

Policy 7.05.03: Douglas County shall plan urban communities to provide a balance of land uses, including sufficient commercial area to meet the needs of community residents.

Discussion: The Nevada Northwest LLC Specific Plan provides sufficient land area to accommodate commercial growth in the urban core of Douglas County for many years. The build-out window of Planning Area is anticipated to be 20 years.

Policy 7.05.04: Within Urban Service Areas, Douglas County shall plan locations for Multiple-Family Residential uses along collector or arterial streets, adjacent to non-residential uses, and adjacent to other residential areas where the site configuration and project design can provide compatibility between residential uses. Designated areas shall be limited in size and location to not overly concentrate the multiple-family use.

Discussion: Not applicable to this specific plan.

Policy 7.05.05: Douglas County shall review the design of all multiple-family residential projects to provide future residents with a safe and functional living environment, while maximizing project compatibility with surrounding uses, existing and planned. The design review process shall address issues including, but not limited to, site design, circulation and access (including access for people with disabilities), landscaping, recreational amenities, energy conservation, grading, drainage, and lighting.

Discussion: Not applicable to this specific plan.

Policy 7.05.06: Douglas County shall provide for the use of flexible design techniques within Urban Service areas. These techniques, such as Planned Unit Developments, should be considered when site design or neighborhood compatibility concerns can best be addressed by a project with a mix of uses or densities.

Discussion: Future development within the residential areas of the plan will require submittal of a Planned Development application along with a Tentative Subdivision Map application.

Policy 7.05.07: Douglas County and/or other entities shall plan and provide for services to urban communities at established urban service levels.

Discussion: Outside of the scope of this specific plan to address.

Policy 7.05.08: Residential office uses shall be consistent with both the single-family residential designation and commercial designation provided by and established in accordance with Douglas County Development Code.

Discussion: This use in not included within this Specific Plan.

Rural Areas and Communities

Goal 7.06: To identify particular areas within Douglas County where the residents desire to develop distinct rural communities.

Policy 7.06.01: In identified rural communities, the goals and policies of adopted Community Plans shall apply in addition to the policies contained in other sections of the Master Plan.

Discussion: Not applicable to this specific plan.

Policy 7.06.02: Rural areas and communities are those areas where

development of rural character exists or is developing. New development in these areas may be approved by Douglas County if it is consistent with the land use designations shown on the Land Use Map, if services are available at the appropriate rural levels, if other policies of the Community Plan and Master Plan have been met, and developed in accordance with the provisions of the Development Code.

Discussion: The project is not within a rural development area.

Policy 7.06.03: Rural Development, for the purposes of this Master Plan, shall include the residential land use designations of "Single-Family Estates" and "Rural Residential." Rural development may include local-serving commercial, limited industrial, public, recreational, or agricultural uses as are appropriate to the particular rural community.

Discussion: Not applicable to this Specific Plan.

Policy 7.06.04: Douglas County and/or other entities shall plan and provide for services to rural communities at established rural service levels.

Discussion: Not applicable to this Specific Plan.

Commercial and Industrial Land Uses

Goal 7.07: To identify particular areas in Douglas County for commercial and industrial development, consistent with the County's Economic Development/Diversification Element.

Policy 7.07.01: Douglas County shall encourage the design of new commercial developments as integrated centers, or compatible infill within developed communities, rather than as small individual strip development projects.

Discussion: The design elements of this specific plan proposes an integrated commercial center with design standards for the buildings, the landscaping, and other elements to tie the project together. Furthermore, the infrastructure plan also calls for an integrated approach towards development.

Policy 7.07.02: Douglas County shall establish design standards and guidelines to ensure that commercial and industrial development, located adjacent to residentially designated land, include appropriate setbacks, location of parking and loading facilities, screening and landscaping to minimize impacts on the surrounding neighborhood.

Discussion: The majority of Commercial land use contained within the specific plan are buffered form proposed residential areas by either Ironwood Drive or the Martin Slough. Commercial areas near Muller Lane will buffer residential areas

though the use of concentric densities, with higher densities nearest the commercial land use and generating to lower densities the further removed the residential uses are from the commercial area.

Policy 7.07.03: Douglas County shall establish design standards and guidelines to ensure that commercial development in the historic centers of Minden, Gardnerville, and Genoa is compatible with the traditional development styles in these areas and creates or enhances distinct identities for these areas.

Discussion: This is not within the scope of this Specific Plan to address. The developed portion of the specific plan is not within a historic center of any of the three towns mentioned in this policy. However, this specific plan does introduce a characteristic architectural vernacular to this area, particularly the commercial areas, which will be used throughout the plan area. The European theme is a design element found in the design guidelines within this specific plan.

Policy 7.07.04: Douglas County shall protect industrially-designated areas from encroachment by incompatible uses and from the effects of incompatible uses in adjacent areas.

Discussion: There are no industrial areas bordering the specific plan site(s).

Policy 7.07.05: Douglas County shall provide through a combination of activities, including public-private partnerships, continued industrial development within designated employment centers.

Discussion: The proposal does not include industrial development.

Policy 7.07.06: Douglas County shall establish design standards and guidelines for development in areas planned for commercial and industrial uses to ensure that these areas develop with high quality, compatible design. Standards and guidelines shall address elements including, but not limited to, minimum lot sizes, building scale, setbacks, lighting, loading areas, landscaping, screening and fencing, accessibility to people with physical disabilities, signage, internal circulation, and building materials.

Discussion: Douglas County has an adopted design manual that addresses this issues found in this policy. This specific plan takes this policy a step further to develop its own set of design guidelines in order for the proposed development area to progress with high quality development in an integrated fashion.

Phasing

Goal 7.08: To provide flexibility in project phasing to meet changing market conditions while ensuring improvements are provided concurrent with the demand for infrastructure and services.

Policy 7.08.01: Phasing of development projects shall be designed to function effectively and independently for each phase.

Discussion: Figure E is a graphic depiction of the phasing plan for the site. The implementation section of this Specific Plan contains the narrative description of the proposed phasing plan.

Policy 7.08.02: Phasing of development projects shall utilize the specific plan process. The specific plan shall include, but not be limited to, provisions for land use, circulation, parcelization, infrastructure, open space, and phasing or timeline for overall development. The timeframe for completion of improvements shall be established through the resolution adopting the specific plan or a development agreement.

Discussion: The requested Specific Plan includes approval of a Planned Development, which is the intended implementation measure for this Specific Plan. The Phasing Plan for this proposal includes details on the factors included in this policy.

Policy 7.08.03: Upon approval of a specific plan, the development of tentative and final maps consistent with the specific plan may be submitted, reviewed, approved, and recorded in accordance with NRS and Douglas County Codes.

Discussion: This is the implementation measure contemplated within the Nevada Northwest LLC Specific Plan.

Policy 7.08.04: Douglas County shall address phasing of existing approved projects on a case-by-case basis through revisions to existing development agreements.

Discussion: This is outside the scope of this Specific Plan to address.

Policy 7.08.05: Douglas County shall establish criteria within its Development Code for review of time extension requests for all development projects.

Discussion: This is outside the scope of this Specific Plan to address.

Policy 7.08.06: Development project approval shall contain terms that plan for potential abandonment or termination of the development prior to completion.

Discussion: This is included in the implementation section of this Specific Plan. Essentially, the Specific Plan is contemplated to run concurrently with the Planned Development approval. The extension or termination of the Specific Plan would therefore, run a parallel with the Planned Development. Douglas County Code Chapter 20.676

addresses these issues.

F. Housing and Population Element

This element of the Master Plan analyzes the composition of the County's population in terms of growth, geography and demographics. It also considers the current state of housing needs and affordability as of 1995. The housing needs assessment determined that there is a need for affordable housing assistance in Douglas County and contains a narrative description of the different strategies that might be implemented at the local level. All of the goals and policies in this element of the Master Plan are intended to give the County direction on how the County can assist in providing affordable housing.

Goal 8.01: To increase the availability of affordable housing for persons with special needs, in light of the housing needs identified in the Housing and Population Element.

Goal 8.02: To consider a tiered or incremental approach to progressively greater County involvement in housing programs and policy, as needed, in light of limited County resources, state legal requirements, and a County-wide focus.

Policy 8.02.01: Douglas County shall promote affordable housing projects in areas with a range of existing support services, such as water, sewer, public transportation, commercial services, and health services. Affordable housing projects will, therefore, be encouraged to locate in designated TDR Receiving Areas and Urban Service Areas as defined in the Master Plan. Douglas County may modify or waive provisions for requirement of TDR's for affordable housing, such as senior affordable housing and low income housing. Development Codes to be prepared shall include provisions for these modifications.

Policy 8.02.02: Douglas County supports the private sector in constructing a variety of affordable housing units specially designed to accommodate seniors, small families and large families, unrelated and single-person households, and persons with special needs (e.g., persons with disabilities). Techniques used to encourage this construction could include growth allocation set-asides and/or specific targets for affordable housing units as a percent of total units generated.

Policy 8.02.03: Douglas County shall prepare development code revisions which do not create impediments to the development of affordable housing through the establishment of special categories of housing units, such as accessory (secondary) dwelling units, and housing for persons with special needs (e.g., congregate care and assisted living arrangements).

Policy 8.02.04: Douglas County shall prepare development code revisions which

incorporate specially targeted incentives for affordable housing. Bonus density provided as part of development approval shall not be subject to the use of Transfer Development Rights program. Such revisions should be carefully designed and selectively applied in order to ensure balance with other goals and objectives of the Master Plan.

Policy 8.02.05: The County will investigate and pursue affordable housing resources available at the State and Federal level to fund programs such as first-time homebuyers and rental assistance programs.

Policy 8.02.06: The County supports the creation of non-profit corporations that are designed with the primary focus of providing affordable housing consistent with overall County housing objectives.

Policy 8.02.07: The County may consider designating a housing coordinator or housing authority to monitor and coordinate housing efforts and programs.

G. Growth Management Element

The following is an excerpt from the Douglas County Master Plan introduction to the Growth Management Element:

> "The purpose of the Growth Management Element is to establish the policies and systems to manage orderly community growth. It provides the link between the Land Use Element and Community Plans, which form the basis for facility planning and capital programming. The Growth Management Element is also designed to coordinate new development with the timely and efficient provision of adequate public facilities and services to Douglas County's residents and businesses."

The key factors of the Growth Management Element are as follows:

1. Minimum Development Standards
2. Adequate Public Facilities
3. Urban Service Areas
4. Clustering of Development
5. Transfer of Development Rights
6. Acquisition of Development Rights
7. Building Permit Allocation System

Many of these factors found in the growth management element require the adoption of a Capital Improvement Plans and for essentially a Strategic Planning effort by Douglas County to prioritize limited funds needed for public improvements and facilities. Some of these factors

have yet to be implemented by the County, which limits the ability of other factors to be effective or to even be implemented.

Goal 9.01: To manage growth in Douglas County at a level our natural and fiscal resources can support.

Policy 9.01.01: Douglas County shall plan land uses and intensities to provide more area for development than is needed to accommodate the desired 2015 population and employment, in order to support market choice and flexibility. Such areas shall be included in Land Use mapping and shall be served according to the policies in the Public Facilities Services Element of the Master Plan.

Discussion: It is beyond the scope of this Specific Plan to address this issue. However, it appears when considering the policies in the Land Use and Housing elements of this Master Plan, that the Receiving Area designation was intended to provide this additional area for market flexibility discussion in this policy.

Policy 9.01.02: Douglas County shall manage the timing and location of development to achieve the County's goals related to natural resources, community character, and provision of public services.

Discussion: The purpose of this analysis of the Master Plan policies in relation to the Nevada Northwest LLC Specific Plan is to demonstrate that the project is consistent with the Goals and Policies of these different elements of the Master Plan.

Goal 9.02: To direct new development to locations within or adjacent to existing communities where public facilities can be provided and a sense of community can be created or enhanced.

Policy 9.02.01: Douglas County shall use the Land Use Element of this Master Plan to designate areas for distinct urban and rural communities. The designated development areas of these communities shall not include land which cannot be served with adequate facilities and services during the time frame of the Master Plan.

Discussion: The Nevada Northwest LLC Specific Plan will provide all required urban facilities as outlined in the Master Plan and Development Code.

Policy 9.02.02: The development areas of designated urban and rural communities shall be expanded only when expansion areas can be served with adequate facilities and services and when expansions are consistent with the type, intensity, and character of development planned for the particular

community as detailed in the Land Use Element and the individual Community or Area Plan.

Discussion: The site can be served with adequate public facilities as outlined in Douglas County Code Chapter 20.100 (Public Facilities and Improvements). This Master Plan policy analysis examines the Land Use and Community Plan Elements of the Master Plan. The location of adjacent public facilities is compatible with proposed commercial uses contemplated in this specific plan for the urban area.

Policy 9.02.03: Douglas County shall revise its Development Code to ensure that individual developments within the County are consistent with the goals and policies of the Master Plan, including the individual Community or Area Plans.

Discussion: Douglas County has completed revisions to the development code that require new development proposals be consistent with the Master Plan.

Policy 9.02.04: Douglas County shall limit extension of urban levels of public services outside identified Urban Service Areas.

Discussion: The Nevada Northwest LLC Specific Plan is currently located within an urban service area.

Policy 9.02.05: Douglas County shall revise its Development Code to include provisions for the Growth Management strategies, including but not limited to, Minimum Development Standards, Transfer of Development Rights, Acquisition of Development Rights, Clustering and Urban Service Areas, and a Building Permit Allocation System. Additional incentives for TDR's are to be considered for historic properties, trail development, and open space acquisition.

Discussion: The revisions to the Development Code does include Minimum Development Standards as found in Chapter 20.100 (Public Facilities and Improvement Standards), Chapter 20.662 (Specific Standards), and Chapter 20.690 (Property Development Standards). Transfer of Development Rights is found in Chapter 20.500; Acquisition of Development rights is not within the code, presumably due to the failure of a sales tax increase question to fund open space acquisitions. Clustering is addressed in Douglas County Code 20.660.100 B., Urban Service Areas are addressed in Chapter 20.100 (Public Facilities and Improvement Standards), and the Building Permit Allocation System was not adopted in the last revision to Douglas County's Development Code.

Policy 9.02.06: Douglas County shall not support annexations to unincorporated Towns or to the service areas of providers (such as GIDs) that are not

compatible with the Master Plan's identified service areas and shall encourage annexation which supports the Master Plan's service areas.

Discussion: The project is within identified service areas for the Town and for M.G.S.D.

Goal 9.03: To accommodate new development at a pace which can be adequately served by available community facilities and services.

Policy 9.03.01: Douglas County shall define adequate levels of service for each major public service through the Capital Facility Improvement Plan process. Adequate levels of service may be different for urban and rural development. The specific standards and requirements for service adequacy shall be defined in the Development Code.

Discussion: Douglas County has not defined adequate level of service for all major public services. There are service adequacy requirements for major infrastructure in urban areas, such as roads, water and sewer systems. The Specific Plan will meet the requirements of service adequacy as currently defined in Chapter 20.100 of Douglas County Code (Public Improvements and Facilities).

Policy 9.03.02: Douglas County shall evaluate the following services in determining whether community facilities are available and adequate to serve new development: a) roadways and intersections within and outside the project site; b) systems to provide potable water; c) wastewater treatment systems; d) fire protection stations and equipment; e) law enforcement; f) emergency medical service; g) local park sites and facilities; h) storm drainage facilities, libraries, and other facilities.

Discussion: Some of the public facilities listed here can only be determined to be adequate or inadequate objectively through a level of service standard which for many of these facilities, has not been adopted. The following is a response to the community facilities listed in this policy:

a) **Roadways and intersections within and outside the project site;** The project area and key intersections were the subject of a traffic study found in the appendix to this Specific Plan. The project is required to build additional improvements to Muller Lane as well as construct a traffic signal at U.S. Hwy 395/Muller Lane. The Owner has participated in additional improvements made at the U.S. Hwy. 395/S.R. 88 intersection.

b) **Systems to provide potable water**; The Specific Plan requires that the site connect to Town of Minden's water system. The development will as a result, be required to pay all connection and capacity fees to

be served by The Town of Minden's water system. Since development on the site must provide a will-serve letter with future development applications, this requirement serves to implement the concurrency policy in the Master Plan regarding this particular public facility.

c) **Wastewater treatment systems**; The Specific Plan require that the site connect to MGSD's community sewerage disposal system. All capacity and annexation fees will be paid concurrently with development of the site. Since development on the site must provide a will-serve letter with future development applications, this requirement serves to implement the concurrency policy in the Master Plan regarding this particular public facility.

d) **Fire protection stations and equipment**; The Public Services and Facilities Element of the Master Plan indicates that the recommended Level of Service Standard for these facilities is that they be within a five mile radius of new development. There are four facilities within the required radius; Minden EMS Station, Minden Fire Station, Gardnerville Fire/EMS Station, and tbe Gardnerville Ranchos Fire/EMS Station..

e) **Law enforcement**; The Public Services and Facilities Element indicates that based on the recommended LOS standards, that adequate capacity exists to serve development through the year 2001.

f) **Emergency medical service**; EMS facilities are to be located within five miles of new development in order to accommodate the seven minute response time LOS standard in urban areas. Two EMS stations are within the five mile radius, the Minden EMS Station and the Gardnerville Fire/EMS.

g) **Local parks sites and facilities**; The Public Services and Facilities Element indicates that in 1995 there were 18 acres of park area for every 1,000 residents in the County. The national standard is 10 acres for every 1,000 people. There appears that based on the improvements proposed to the project site and based on the existing capacity of the Douglas County Parks system as stated in the Master Plan, that the level of service required to serve the project is available.

h) **Storm drainage facilities, libraries, and other facilities**. Master storm drainage facility plans are included as part of this Specific Plan. It is not within the scope of this Specific Plan to address impacts to these other facilities without an adopted Level of Service standard for each facility completed as part of the annual budget process and CIP.

Policy 9.03.03: Douglas County shall require that adequate levels of services be provided concurrent with the timing of development. Concurrency means that the necessary facilities to serve a particular development project or project phase shall be of sufficient capacity to provide adequate service at the time the development is occupied and/or creating a demand for services. The regulations to implement this policy shall be contained in the Development Code.

Discussion: Chapter 20.100 of Douglas County Code addresses the issue of necessary public facilities necessary to serve new development. All public facilities addressed in Title 20 will be available to meet the required level of service standards as stated in the implementation and phasing sections of this Specific Plan.

Policy 9.03.04: Where existing facilities or facilities programmed in a public capital improvements program are not adequate to serve a new development project at designated service levels, concurrent with the impacts of that development, the County may require phasing of the development, installation of interim facilities and/or installation and financing of off-site facilities, including oversized facilities, by the developer in lieu of denying the development proposal. The Development Code shall incorporate appropriate provisions to implement this policy.

Discussion: The project will address adequate service levels outlined in Douglas County Code.

Policy 9.03.05: The costs of providing adequate public facilities to serve new development should be equitably prorated between existing and new development and among new developments benefiting from such facilities. Douglas County may establish impact fee programs, County policies for participation in the costs of off-site facilities, and provisions for reimbursing developers who initially install oversized facilities to serve their development projects and other affected projects. Such programs and provisions shall be implemented through revisions to the Development Code.

Discussion: Reimbursement agreements are included in Title 20 of Douglas County Code. No reimbursements are sought in conjunction with the public improvements provided for in this specific plan.

Policy 9.03.06: Interim facilities may be required to provide adequate service levels prior to completion of planned public facilities for an area.

Discussion: No interim facilities are anticipated to be developed resulting from this Specific Plan.

Policy 9.03.07: Douglas County shall work with its State legislators to expand the use of impact fees.

Discussion: This is beyond the scope of this Specific Plan to address.

Policy 9.03.08: Douglas County shall include within the Development Code provisions for a Building Permit Allocation System, but shall not implement the system until a Capital Improvements Plan is adopted and growth rates are adopted.

Discussion: A section in Title 20 has been reserved for this system, however language has not been included in the code addressing this issue since growth rates, a comprehensive CIP and level of service standards have not been adopted by Douglas County.

Goal 9.04: To provide for adequate review of development proposals by all interested parties through processes which are clearly defined, applied consistently, and are designed to achieve the goals of the Master Plan.

Policy 9.04.01: Douglas County shall review and revise its Development Code as necessary to provide appropriate regulations to implement the Master Plan's growth management policies.

Discussion: This is beyond the scope of this Specific Plan to address.

Policy 9.04.02: Douglas County shall evaluate its development review processes and revise the Development Code as necessary to provide for complete applications, consistent project review, clear scheduling of review steps, and action to implement the Master Plan.

Discussion: This is beyond the scope of this Specific Plan to address.

Policy 9.04.03: Douglas County shall evaluate its development review processes and revise the Development Code as necessary to provide for appropriate public notification, review, and participation in action on development proposals.

Discussion: The Specific Plan and subsequent development applications will be noticed as stated in Title 20 of Douglas County Code.

Policy 9.04.04: Douglas County shall revise the Development Code as necessary to establish specific criteria for the use of development agreements and standard provisions to be included in development agreements.

Discussion: This is beyond the scope of this Specific Plan to address.

H. Public Services and Facilities Element

The following is an excerpt from the introduction to the Public Services and Facilities Element of the Douglas County Master Plan:

> "The Public Services and Facilities Plan is a plan for capital improvements that support the County's current and future population and economy. One of the principal criteria for identifying needed capital improvements are standards for levels of service

(LOS). The Public Services and Facilities Plan contains a method for developing LOS standards for each public facility, and requires that new development be served by adequate facilities (i.e., the 'concurrency' requirement). The plan also contains broad goals and specific policies that guide and implement the provisions of adequate facilities. Taken together, these policies help insure that growth will not outstrip the ability of the County, the service providers, or the public to pay for adequate public facilities."

GOALS AND POLICIES

Goal 10.01: To provide levels of services for its residents to maintain at a minimum, the current quality of life for the County's citizens.

Policy 10.01.01 The County shall determine public facility level of service standards and select specific capital improvements needed to achieve and maintain the standards for existing and future population, and to repair or replace existing public facilities.

Discussion: It is outside the scope of this Specific Plan to address this policy.

Policy 10.01.02 The County shall establish an approach to fund needed capital facilities improvements and associated operating and maintenance costs so as to achieve and maintain the adequacy of the County's public facilities. If the total cost of needed public facilities cannot reasonably be funded, then the County shall adjust levels of service, growth, rates, required facility quality, or other factors to create a financially feasible alternative.

Discussion: It is outside the scope of this Specific Plan to address this policy.

Policy 10.01.03 Adequate public facilities shall be provided by constructing needed capital improvements which I) repair or replace obsolete or worn out facilities, 2) eliminate existing deficiencies, and 3) meet the needs of future development and redevelopment caused by previously issued and new development permits. The County's ability to provide needed improvements will be demonstrated by maintaining a financially feasible schedule of capital improvements.

Discussion: The project will construct or secure for adequate public facilities to serve the development in accordance with Title 20 of Douglas County Code. It is outside the scope of this Specific Plan to address the policy regarding the schedule of capital improvements.

Policy 10.01.04 The County finds that the impacts of development on public facilities within the County occur at the same time as occupancy of development authorized by a final development permit. The County shall condition the issuance of development permits on a determination that there is sufficient capacity of public facilities to meet the standards for levels of service for existing

development and the impacts of the proposed development concurrent with the proposed development.

Discussion: Based on the discussion in the Master Plan policy analysis and the implementation sections of this Specific Plan, there is sufficient capacity of public facilities to meet the standards for levels of service for existing development and the impacts of the proposed development concurrent with the proposed development.

Policy 10.01.05 The following programs shall be implemented to ensure that the goals and policies established in this plan will be achieved or exceeded and that the capital improvements will be constructed. Each implementation program will be adopted by ordinance, resolution or executive order, as appropriate for each implementation program.

Review of Applications for Development Permits
Impacts Fees
Annual Budget
Update of Public Services and Facilities Plan
Concurrency Implementation and Monitoring System

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Goal 10.02: To provide for the organized planning, funding, construction, and maintenance of infrastructure at locations consistent with planned land uses and with capacities which are adequate to meet the needs of these planned land uses.

Policy 10.02.01 Douglas County shall establish a process for developing a 5-year Capital Improvements Program (CIP) to plan and provide for the services necessary to implement this Master Plan.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.02: Douglas County shall only include capital projects in the CIP when they are consistent or do not conflict with the Master Plan and all its elements.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.03: Douglas County shall include in the 5-year CIP descriptions of each capital project, including its location, estimated construction cost and schedule, funding source, estimated life-cycle cost (including operation and

maintenance costs over the life of the facility), and effect on the County's ability to achieve the goals and policies of the Master Plan.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.04: Douglas County shall evaluate potential capital projects according to an established set of criteria to determine their importance in implementing the Master Plan's goals and policies. Priorities in the CIP shall be based on projects' importance to the Master Plan implementation.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.05: Douglas County shall update its CIP annually.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.06: Douglas County shall provide for public participation in the review of the proposed 5-year CIP and in its annual update.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.07: Douglas County shall use its CIP to provide facilities needed to correct existing deficiencies in public services and facilities provided by the County.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.08: Douglas County shall identify funding and establish programs to operate and maintain public facilities required for adequate levels of service, which are not otherwise provided, operated, and maintained by another public entity.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.02.09: Douglas County shall cooperate with other service providers to encourage the use of common improvement standards, to coordinate the timing of capital projects, and to ensure that requirements of adequacy and concurrency are met.

Discussion: It is outside the scope of this Specific Plan to address the issues in

this policy.

Goal 10.03:: To ensure that new development pays its equitable share of the costs for public services and facilities needed to serve it.

Policy 10.03.01: Douglas County shall review and revise the Development Code as necessary to ensure that development projects provide all on-site and off-site facilities to meet the County's adequate public facilities requirements.

Discussion: The development within the Specific Plan will meet the public facilities requirements in Douglas County Code.

Policy 10.03.02: Douglas County shall require that facilities constructed and/or operated by the private sector meet the same improvement and operation standards required for facilities provided by the public sector.

Discussion: The development within the Specific Plan will meet the public facilities requirements in Douglas County Code.

Policy 10.03.03: Douglas County shall evaluate potential funding sources such as impact fees or assessment districts (to the extent permitted under Nevada law) to determine whether such programs should be instituted as means for new development to fund the facilities and services needed by that development.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.03.04: Douglas County shall seek changes in State legislation to provide additional means to ensure equitable payments of costs for services and facilities. Such measures could include changes in requirements for construction or excise taxes, expansion of impact fees to fund other services, or other changes in available public financing techniques.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.03.05: The County shall not permit nor initiate the construction of any facility where there is inadequate funding to properly maintain it.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.03.06: The County shall continue to refer development proposals to State agencies for review and comment.

Discussion: It is outside the scope of this Specific Plan to address the issues in

this policy.

Goal 10.04:: The County shall promote reliable and cost-effective solid waste management services.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.04.01: The County shall seek to implement solid waste management processes that reduce the waste stream, promote recycling, and provide for the separation of waste prior to incineration or landfilling.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.04.02: The County shall seek to expand its recycling program to include commercial recycling in addition to single-family and multi-family recycling.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.04.03: The County shall seek to implement additional waste diversion programs, such as plastics recycling and yard waste collection for composting.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.04.04: The County may evaluate the development of a landfill site within Douglas County if necessary in the future.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.04.05: The County should evaluate alternative waste management programs, including but not limited to waste-to-energy programs.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Goal 10.05: All water systems shall provide a minimum level of service, designated by this element as the minimum facilities requirement, in identified areas.

Policy 10.05.1: All water systems currently not meeting minimum facilities requirements for their existing service areas should either make improvements to rectify the deficiency or combine with another system able to provide the

minimum facilities requirements for its own service area as well as the deficient system.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.05.2: Water systems should expand service area boundaries as necessary and provide service to first-tier demands as they develop. Provisions shall be made for future service of second-tier demands. The County shall set milestones to determine when to provide water service to either first- or second-tier demands, either by distance to water mains, by physical constraints such as excessive drawdown in areas with a high density of domestic wells, by total demand in an area, or due to groundwater quality concerns.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.05.3: A majority of water systems will be deficient in minimum facility requirements as demands develop over time. Systems will need to combine storage, pumpage, and supply capabilities to meet these future demands. System combinations or improvements will be made when demands would otherwise result in a level of service for the whole system being less than the minimum requirements.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.05.4: New development must maintain a system's minimum level of service.

Discussion : Development within the Nevada Northwest LLC Specific Plan will pay capacity and connection fees or make necessary system upgrades to the Town's water system as needed to maintain the systems minimum level of service as a result of the proposed project.

Policy 10.05.5 : Major water purveyors in the Carson Valley, including the Gardnerville Ranchos General Improvement District, the Indian Hills General Improvement District, Washoe Tribe, and Douglas County should join the Carson Valley Water Authority formed by the Town of Minden and the Gardnerville Town Water Company for proper management of the Carson Valley basin water rights and resources.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.05.6: Douglas County shall evaluate and implement system

recommendations contained within this plan.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Goal 10.06: Urban Service Areas will be served by community wastewater facilities.

Policy 10.06.1: The County shall encourage wastewater utilities to expand their service area boundaries to meet first and second-tier demands as necessary. The County shall facilitate modifications to current wastewater utility facility and financing plans.

Discussion: The Nevada Northwest LLC Specific Plan site will connect to the M.G.S.D. facility.

Policy 10.06.2: The County shall designate a level of service for public wastewater treatment, storage, and disposal facilities as part of the CIP process.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Policy 10.06.3: Neither new development nor the expansion of service areas should be allowed to decrease a system's level of service below the specified minimum.

Discussion: The development of the Nevada Northwest LLC Specific Plan site will not result in a decrease below M.G.S.D.'s minimum level of service.

Policy 10.06.4: The County shall promote a coordinated regional approach to the disposal and use of treated effluent. The County shall encourage the reuse of treated effluent to promote the goals and policies of the Master Plan. The County shall periodically review and inspect monitoring and control of effluent to protect surface and groundwater resources.

Discussion: It is outside the scope of this Specific Plan to address the issues in this policy.

Individual Sewage Disposal System Goals and Policies

Goal 10.07: Rural areas may be served by individual sewage disposal systems if groundwater quality will not result in degradation beyond Federal and State standards.

Discussion: The Nevada Northwest LLC Specific Plan site is not located in a

rural area as delineated in the Master Plan and does not propose the use of septic systems. As a result, policies 10.07.01 through 10.07.05 are not applicable to the Nevada Northwest LLC Specific Plan and are not included in this analysis.

Goal 10.08: Parks and Recreation Plan

Discussion: It is beyond the scope of the Nevada Northwest LLC Specific Plan to address the issues related to preparing a Parks and Recreation Plan. Therefore, policies 10.08.01 through 10.08.16 are not included in this analysis.

Functional Classifications

The majority of roadways within Douglas County fall under the functional classifications of rural/urban major collector, rural/urban minor collectors, and rural/urban local roadways.

Goal 10.09,10: Provide a safe and efficient transportation system.

Discussion: The policies found under this objective are outside of the scope of this Specific Plan to address since all of the actions are required to be instituted by Douglas County. Therefore, Policies 10.09.01.1 through 10.10.02.3 have not been included in this narrative.

Goal 10.11: Provide safe and efficient vehicle circulation while continuing to preserve the rural character of the County.

Objective 10.11.01: Maintain an adequate Level of Service on all major roadways in the County.

Implementation Strategies:

10.11.01.1 Maintain LOS "C" as the standard on all County, Town, and District maintained arterial and collector roads and at County road intersections, except as noted in Implementation Strategies 10.11.01 .2&3 below.

Discussion: The traffic report prepared for the Nevada Northwest LLC Specific Plan states that the levels of service will be maintained in accordance with this policy on Lucene, Ironwood Drive and Muller Lane..

10.11.01.2 Maintain LOS "D' as the standard on all NDOT maintained principal arterial roads, except as noted in Implementation Strategies 10.11.01.3 below.

Discussion: The US Hwy 395/S.R. 88 intersection is expected to operate at a LOS "D" or better during AM peak hour conditions.

10.11.01.3 In the Lake Tahoe Basin, accept the designated standard for principal arterial roads included in the Regional Transportation Plan - Air Quality Plan for the Lake Tahoe Region (i.e., LOS "D" for signalized intersections, although LOS "E" may be acceptable during peak periods not to exceed four hours per day.)

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.11.01.4 The Traffic Forecast Demand Model shall be updated upon adoption of the Master Plan based on land use revised with adoption of the Master Plan and the Transportation Plan shall be updated to include necessary revisions.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

Short-Term Improvements

No major road improvements are projected for the short-term analysis. The NDOT Highway System Plan, as programmed, includes several long-term roadway upgrading projects in Douglas County as described in the Transportation Plan. These improvements will improve traffic safety, but the improvements would not significantly increase the capacity of the roadways to accommodate additional traffic growth.

Improvements are recommended in the short-term scenario to address existing traffic operations and safety problems. Several of these improvements relate to U.S. Highway 395 and 88 in Minden and Gardnerville. The implementation program recommends that access be consolidated and intersections be realigned as redevelopment occurs in these areas.

Goal 10.12: Provide a Safe and Effective Transportation System.

Objective I0.12.01: Implement short-term traffic safety and traffic operations improvements.

Implementation Strategies:

10.12.01.1 U.S. Highway 395 Intersections Within Town of Minden

As redevelopment occurs on parcels adjacent to the intersections of U.S. Highway 395 with Esmeralda Avenue, Mono Avenue and County Road in Minden, identify opportunities to acquire right-of-way to realign the intersections as perpendicular intersections. If right-of-way can be acquired, implement

engineering studies and construct improvements. Implementation: When development is proposed for an affected parcel.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.12.01.2 U.S. Highway 395 Within Towns of Minden and Gardnerville

As redevelopment occurs on parcels adjacent to U.S. Highway 395 in Minden and in Gardnerville, review site plans to identify opportunities to consolidate and organize driveway access locations. Implement driveway modifications wherever feasible. Implementation: Immediate.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.12.01.3 Gardnerville Downtown Development Area

The Gardnerville Downtown Development Area map (Figure 11.14, Page 11.59) as adopted by the Town board contains elements related to widening of existing non-standard right-of-ways and development of a 30-foot public access way that connects US 395 to the Village Green. As redevelopment occurs on parcels adjacent to those area, acquisitions *of right-of-way* and construction of facilities should be required. Implementation: Immediate.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.12.01.4 State Route 88 Intersections

Coordinate with NDOT to annually monitor traffic volumes and intersection delays at critical locations (County Road, Waterloo Lane, Centerville Road, Kimmerling Road). Based on results of monitoring, coordinate with NDOT to conduct traffic studies and determine if localized intersection improvements are warranted. Coordinate with NDOT to implement intersection improvements if required. Implementation: As required by annual monitoring of traffic volumes and operations.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.12.01.5 Ironwood Drive Extension

Design and construct improvements to extend Ironwood Drive east from Highway 395 as a major collector as development occurs. Implementation: Concurrent with adjacent development.

Discussion: Ironwood Drive extends east from U.S. Hwy. 395 to Lucerne Street. This roadway within the 20 year planning horizon the minor arterial will actually connect with Stock Parkway in the Town of Gardnerville. It is not anticipated to be constructed as the proposed bypass road connecting to Muller Lane until after the 20-year planning period. Therefore, the design and construction of this planned minor arterial roadway concurrent with development of the site is consistent with this Master Plan policy.

Mid-Term Improvements

The effects of mid-term land use growth were evaluated assuming that no major roadways would be constructed within new development areas. With mid-term traffic growth, traffic volumes are projected to result in LOS "C" or better conditions on nearly all County roads. Exceptions to the LOS "C" standard would be U.S. 395 in the area of SR 88 and Riverview Drive west of U.S. 395. On U.S. 395, forecast traffic conditions would be at LOS "D" which is acceptable on Primary Arterials. On Riverview Drive, LOS "D" conditions are also forecast and improvement alternatives to increase access to the Ranchos area will need to be considered by Douglas County.

The following improvements are recommended to accommodate mid-term traffic growth at acceptable standards:

Goal 10.13: Provide a Safe and Efficient Transportation System

Objective 10.13.01: Implement road improvements to provide acceptable traffic operations with mid-term traffic growth.

Implementation Strategies:

10.13.01.1 Develop alternatives to Riverview Drive

Two alternatives exist for reducing the traffic volume forecast on Riverview Drive to LOS "C" levels. However, as the forecast traffic volume on Riverview Drive only slightly exceeds the LOS "C" standard and the benefit to be achieved by costly regional improvements is marginal; additional analysis of these two alternatives is needed. If not improved in the Mid-Term Improvements timeframe, then this project will move to Long-Term Improvements.

1) Drayton Boulevard. Extend Drayton Boulevard South of Kimmerling Road. Although improvement is not included in the long-term improvement list, its implementation within the mid-year time frame would result in LOS "C' conditions on Riverview Drive. However, the benefit to be derived is dependent on the location of future growth in the Ranchos and the alignment and construction of

connecting roads.

2) Southern Ranchos Connection. A southern connection between the Gardnerville Ranchos and U.S.
395 is projected to attract only 2,000 daily vehicles with the long-term growth projections. This traffic level would not be likely to justify the cost of such an extension. However, the connection would reduce traffic volume on Riverview Drive to LOS "C" levels. However, the connection may be warranted if additional development occurs south of the Gardnerville Ranchos beyond the long-term planning horizon. The Thoroughfare Plan designates a corridor for a future road connection.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.13.01.2 Ironwood Drive Extension

Continue design and construction of improvements to improve Ironwood Drive as a major collector as development occurs. Implementation: Concurrent with adjacent development.

Discussion: This is consistent with the implementation of the Nevada Northwest LLC Specific Plan.

Long-Term Improvements

Long-term traffic conditions were evaluated assuming that road extensions and improvements would only be implemented within the boundaries of proposed developments. Other assumed improvements based on NDOT planning were also included.

- East Valley Road was assumed to be improved from Toler Avenue north to connect with Johnson Lane.

Improvements to alleviate projected congestion are recommended for implementation for each of the roadways identified.

Goal 10.14: Provide a Safe and Efficient Transportation System

Objective 10.14.01: Implement long-term roadway improvements to provide capacity and mobility for future long-term growth

Implementation Strategies:

10.14.01.01 Stephanie Lane

Stephanie Lane between U.S. 395 and Santa Barbara Drive. Widen Stephanie Way to four lanes east of U.S. 395. Implementation: When traffic volumes on Stephanie Lane reach 8,800 ADT.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.02 Buckeye Road

Design and construct improvements on Buckeye Road to a two-lane major collector between Heybourne Road and East Valley Road. The design of Buckeye Road improvements shall conform to the design standards for Major Collectors. Implementation: Concurrent with adjacent development.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.03 State Route 88

Coordinate with NDOT to design and construct improvements on northbound State Route 88 at U.S. Highway 395 to provide a second left turn lane. Modify the traffic signal as necessary.

Implementation: Monitor peak hour traffic operations at the intersection using procedures described in the *1994 Highway Capacity Manual,* and implement improvements when average vehicle delays exceed 25 seconds (Level of Service "C") during peak hours.

Discussion: Channelization improvements were recently completed to the US Hwy. 395/SR 88 intersection consistent with this policy.

10.14.01.04 State Route 88 intersections

Coordinate with NDOT to annually monitor traffic volumes and intersection delays at critical locations (County Road, Waterloo Lane, Centerville Road, Kimmerling Road). Based on results of monitoring, coordinate with NDOT to conduct traffic studies and determine if localized intersection improvements are warranted. Coordinate with NDOT to implement intersection improvements if required. Implementation: As required by annual monitoring of traffic volumes and operations.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.05 East Valley Road (South of Buckeye Road)

Design and construct improvements to conform to two-lane Major Collector standards on East Valley Road between Toler Lane and Buckeye Road. Implementation: construct improvements concurrent with adjacent development, or, when average daily traffic volumes exceed 1,000 vehicles per day.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.06 U.S. Highway 395, North of Minden

Coordinate with NDOT to annually monitor traffic volumes and intersection delays at critical locations (Jacks Valley Road, Mica Drive, Stephanie Lane, Johnson Lane, Airport Road, Genoa Lane, Muller Lane). Based on results of monitoring, coordinate with NDOT to conduct traffic studies and determine if localized intersection improvements are warranted. Coordinate with NDOT to implement intersection improvements if required. Implementation: As required by annual monitoring of traffic volumes and operations.

Discussion: It is anticipated that Muller Lane will be relocated as to border the specific plan site to the north. Muller Lane west of US Hwy. 395 is anticipated to be relocated to align with the existing 60 foot easement bordering the specific plan to the north. An additional 40 feet of right-of-way will be dedicated to create an overall right-of-way width of 100 feet for Muller Lane at this intersection.

10.14.01.07 East Valley Road, North of Buckeye Road

Construct East Valley Road as a four-lane (two lanes if Buckeye does not proceed) major collector through the Buckeye Creek development and as two-lane major collector from the north boundary of the Buckeye Creek development property to Johnson Lane. The design of East Valley Road improvements shall conform to the design standards for Major Collectors.

Implementation: Concurrent with adjacent development or after construction of 50 percent of total planned housing units in the Buckeye Creek development, concurrent with the next phase of construction of housing units or when average traffic volumes exceed 1,000 vehicles per day.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.08 State Route 756/Centerville Lane/Gilman Avenue

From Waterloo Lane to U.S. Highway 395, develop a three-lane minor arterial. Construct an extension of Centerville Lane/Gilman Avenue as a two-lane major

collector from U.S. Highway 395 to the Ironwood Drive extension within Gardnerville. The design of Centerville Road improvements shall conform to the design standards for Major Collectors. Implementation: Concurrent with adjacent development or when traffic volumes on U.S. Highway 395 on either side of Centerville Road (State Route 756) exceed 24,000 daily vehicles (75 percent of capacity).

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.09 State Route 88

Coordinate with NDOT to design and construct improvements on State Route 88 to provide four through lanes between U.S. Highway 395 and Waterloo Lane. Implementation: When traffic volumes on State Route 88 exceed 9,750 daily vehicles (75 percent of capacity).

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.10 Waterloo Lane

Conduct engineering and alignment studies to design Waterloo Lane as a four-lane Minor Arterial between State Route 88 (opposite Mottsville Lane) and U.S. Highway 395 (at a new intersection with Muller Parkway). The design of Waterloo Lane improvements shall conform to the design standards for Minor Arterials.

Implementation: Concurrent with adjacent development or when traffic volumes on U.S. Highway 395 on any segment between State Route 88 and Elges Lane exceed 24,000 daily vehicle (75 percent of capacity).

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.11 Drayton Boulevard Extension

Design and construct an extension of Centerville Road as a two-lane major collector, south from the intersection with Dresslerville Road, to a new intersection with Kimmerling Drive. The design of Centerville Road improvements shall conform to the design standards for Major Collectors. The intersection with Kimmerling Drive should be designed to allow for a future road extension to the south. Implementation: Concurrent with adjacent development.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.12 East Valley Road or Sawmill Road

Construct East Valley Road or Sawmill Road as a two-lane minor collector from Pinenut Road to Toler Lane. Implementation: When traffic volumes on Sawmill Road exceed 1,000 daily vehicles.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.13 Othello Way, East Gardnerville Area

Construct Othello Way as a two-lane minor collector parallel to US 395 from Pinenut Road to Toler Lane. Implementation: Concurrent with local development.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.14 Johnson Lane

Construct Johnson Lane as a four-lane major collector from U.S. Highway 395 to the ultimate intersection with East Valley Road and Vicky Lane. The design of improvements shall conform to design standards for major collectors. Implementation: Concurrent with adjacent development or when traffic volume on Johnson Lane exceeds 8,800 ADT.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.15 Dresslerville Road between State Route 756/Centerville Lane and Tillman Lane

Widen Dresslerville Road to a four-lane Major Collector east of Centerville Road. Implementation: When traffic volumes on Dresslerville Road reach 8,800 ADT.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.16 State Route 756/Centerville Lane between Waterloo Lane and Dresslerville Road

Widen State Route 756/Centerville Lane to four-lane Major Collector north of Dresslerville Road to Waterloo Extension. Implementation: When traffic volumes on Centerville Road reach 8,800 ADT.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.17 Jacks Valley Road between US 395 and Shawnee Drive

Widen Jacks Valley Road to four-lane Major Collector west of US 395. Implementation: When traffic volumes on Jacks Valley Road reach 8,800 ADT.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.18 County Road - Zerolene Road Connection to the Ironwood Drive Extension

Construct the County Road - Zerolene Road connection to the Ironwood Drive Extension as a minor collector. Implementation: Concurrent with the Ironwood Drive Extension.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.19 Heybourne Road Airport Road to Buckeye Road

Construct Heybourne Road as a two-lane major collector from Airport Road to Buckeye Road.

Implementation: When Highway 395 north of Highway 88 intersection approaches level of service 'D".

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.20 Sixth Street - Ironwood Drive to Heybourne Road/Buckeye Road

Construct Sixth Street as a four-lane major collector from Ironwood Drive Extension to Heybourne Road/Buckeye Road intersection. Implementation: Concurrent with construction of Heybourne Road.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in this policy.

10.14.01.21 Traffic Signals at various intersections

Annually monitor traffic volumes and intersection delays at critical locations on the County road system. Based on results of monitoring, conduct traffic studies and determine if localized intersection improvements are warranted. Implement intersection improvements if required.

Based on year 2015 traffic volume forecasts, the traffic signals are expected to become warranted at the following locations by year 2015:

1. US 395/Johnson Lane
2. US 395/Waterloo Lane Extension
3. U5395/SR208
4 SR 88/Waterloo Lane Extension
5. Centerville Road/ Waterloo Lane Extension
6. Kingsbury Grade/Mottsville Road I Foothill Road

Implementation: As required by annual monitoring of traffic volumes and operations.

Discussion: The Specific Plan will not effect the mentioned intersections.

Goal 10.16: Provide an efficient transportation system.

Objective 10.16.01: Assess impacts of the closure of the Lake Tahoe Airport and take appropriate action where necessary.

Implementation Strategies:

10.16.01.1 Annually assess status of Lake Tahoe Airport.

10.16.01.2 If Lake Tahoe Airport remains open no action required.

Objective 10.16.02: Response to Possible Closure of Lake Tahoe Airport

Implementation Strategies:

10.16.02.1: Address impact to Douglas County Airport.

10.16.02.2: Update Douglas County Airport Master Plan.

Objective 10.16.03: Address impact of recreational operations on commercial and airport operations.

Implementation Strategies:

10.16.03.1: Annually review airport operations.

10.16.03.2: Update Douglas County Airport Master Plan.

10.16.03.3: Identify thresholds for implementation of recommended improvements of the Douglas County Airport Master Plan.

10.16.03.4: Proceed with implementation of improvements as thresholds are approached.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in these policies.

ACCIDENT DATA

Goal 10.17: Provide a safe and efficient transportation system.

Objective 10.17.01: Maintain an up-to-date accident data base to be reviewed annually.

Implementation Strategies:

10.17.01.1: Annually update traffic accident data.
10.17.01.2: Identify high accident locations.

Objective 10.17.02: Analyze identified high accident locations and take appropriate actions.

Implementation Strategies:

10.17.02.1: Review high accident locations in the field.

10.17.02.2: Identify potential areas of deficiencies
a) Operational
b) Physical

10.17.02.3: Identify practical mitigation improvements from "do nothing" to "ultimate improvements".

10.17.02.4: Develop economic analysis of implementing improvements including construction costs, maintenance and operation costs, accident savings, and benefit cost ratio.

10.17.02.5: Rank practical safety improvements.

10.17.02.6: Identify potential funding for safety improvements.

10.17.02.7: Implement improvements which have a high degree of reducing accidents at identified high accident location(s).

Discussion: It is outside the scope of this Specific Plan to address the issues raised in these policies.

STATUS OF DEER ROAD KILLS

Goal 10.18: Provide a safe transportation system

Objective 10.18.01: Maintain an accurate and up-to-date deer kill inventory and take appropriate action where necessary.

Implementation Strategies:

10.18.01.1: Annually update deer road kills within Douglas County.

10.18.01.2: Review deer road kills for development of any patterns different from current migration routes or "deer crossing" posted limits.

l0.18.01.2.a: If new deer road kill patterns develop in non-posted "deer crossing" areas, consider placement of advance "deer crossing" sign (WI 1-3).

10.18.01.2.b: Where crossings are confirmed to a single location, supplement "deer crossing" sign with auxiliary distance sign specifying distance to crossing point.

10.18.01.2.c: Where crossings occur randomly, supplement "deer crossing" sign with auxiliary distance sign specifying length of roadway on which the potential hazard exists.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in these policies.

INVENTORY TRAFFIC CONTROL DEVICES

Goal 10.19: Provide a safe and efficient transportation system.

Objective 10.19.01: Maintain an accurate and up-to-date traffic control device data base.

Implementation Strategies:

10.19.01.1: Annually update traffic control device data base.

10.19.01.2: Identify need for intersection traffic control devices.

Objective 10.19.02: Provide traffic control devices on new transportation facilities or on existing transportation facilities where there is a need.

10.19.02.1: All traffic control devices shall conform to the Manual on Uniform

Traffic Control Devices (MUTCD) latest edition.

10.19.02.2: For new transportation facilities, traffic control devices shall be designed in accordance with the
MUTCD.

10.19.02.3: Stop signs should only be installed at locations that are warranted in accordance with the MUTCD.

10.19.02.4: Yield signs should only be installed at locations that are warranted in accordance with the MUTCD.

10.19.02.5: Signals should not be installed unless one or more of the signals warrants of the MUTCD are met and where an engineering study has shown that installation of the traffic signal will improve the overall safety and/or operation of the intersection.

Discussion: Traffic control devices will be consistent with the policies listed above. Improvement plan drawings will reflect material and installation consistent with these policies as listed in the implementation section of this Specific Plan.

SPEED LIMIT DATA

Goal 10.20: Provide a safe and efficient transportation system.

Objective 10.20.01: Maintain an accurate and up-to-date speed limit data base.

Implementation Strategies:

10.20.01.1: Annually update posted speed limit data.

10.20.01.2: Annually update speed limit studies conducted in Douglas County by the Nevada Department of Transportation.

Objective 10.20.02: Insure adequate speed limit studies are conducted before formal actions are taken.

Implementation Strategies:

10.20.02.1: Conduct speed limit studies at locations when the following actions are being considered:

a) Establishment of speed zone
b) Reviewing continued complaints on speeding

d) High accident location
e) Need for posting advisory safe speed

Objective 10.20.03: All newly constructed roadways should be posted with appropriate speed limits.

Implementation Strategies:

10.20.03.1: New construction of roadways shall be posted for absolute speeds based upon the following factors:

a) Roadway design speed
b) Roadway characteristics
c) Roadway functional classification
d) Traffic characteristics:

1. Traffic volumes
2. Parking or noparking
3. Presence of commercial vehicles
4. Traffic control devices
5. Vehicle-pedestrian conflicts

Discussion: It is outside the scope of this Specific Plan to address the issues raised in these policies.

WEIGHT LIMITS

Goal 10.21.01: Provide and maintain a safe and efficient transportation system.

Objective 10.21.01: Maintain an accurate and up-to-date weight limit data base and take appropriate action where necessary.

10.21.01.1: Annually update weight limitations on Federal, State, and local routes within Douglas County.

10.21.01.2: As new routes are constructed within Douglas County, identify those routes which may have weight restrictions less than the legal roadway weight limits.

l0.21.0l.2.a: Post any routes which have weight restrictions less than the legal roadway weight limit.

10.21.01.3: As new bridge and/or drainage structures are constructed within Douglas County, identify those structures which have weight restrictions less than the legal roadway weight limits.

10.21.01.4: Post any structures which have weight restrictions less than the legal roadway weight limits

Discussion: It is outside the scope of this Specific Plan to address the issues raised in these policies.

EXISTING TRUCK ROUTES

Goal 10.22: Provide and maintain a safe and efficient transportation system.

Objective 10.22.01: Maintain an accurate truck route data base.

Implementation Strategies:

10.22.01.1 Update designated "Not a Truck Route", or "Truck Routes" annually.

10.22.01.2 Emphasis should be placed on designating "Truck Routes" in lieu of "Not a Truck Route".

Objective 10.22.02: Analyze truck usage problem areas and take appropriate action.

Implementation Strategies:

10.22.02.1 Identify streets which primarily serve residential or recreational land uses in which there is a concern about excessive noise or safety due to truck usage.

Discussion: It is anticipated that upon completion of the minor arterial connection with Ironwood Drive or Muller Lane that the road would be designated as a truck route. Residential Uses located along this roadway should be protected by a sound attenuating wall, berms, landscaping, increased setbacks or other structural and non-structural means to mitigate the future noise impacts from the minor arterial. The placement of cross walks along this roadway should also be analyzed for site distance and speed control to protect pedestrians. It is anticipated that this analysis will occur during the design phase of the roadway.

10.22.02.2 Identify noise impacts

10.22.02.3 Identify safety issues

10.22.02.4 Identify alternate routes

10.22.02.5 Identify pavement condition

10.22.02.6 Review ability of structures to accommodate truck traffic

10.22.02.7 Identify potential economic losses due to restricting truck traffic

10.22.02.8 If issues 2.2 thru 2.5 are adequately addressed, post roadway or portion of as "Not a Truck Route".

10.22.02.9 Douglas County may designate truck haul routes for construction traffic as may be necessary to alleviate truck traffic from roadways with structural limitations or to reduce impacts to existing neighborhoods.

Discussion: Under the implementation section of this Specific Plan is a desingated haul route for construction traffic. The haul road prohibits truck traffic on the residential streets north and east of the project site. Trucks will access the site from US Hwy 395/Lucerne Street intersection to the project site.

Objective 10.22.03: Designate "Truck Routes" for areas where "Not a Truck Route" have limited truck access to commercial areas.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in the policies not specifically discussed.

Implementation Strategies:

10.22.03.1 Where trucks are prohibited in specific areas, consider "Truck Routes" to guide commercial vehicles to the best route around such areas.

10.22.03.2 Identify potential routes

10.22.03.3 Identify shortest possible route

10.22.03.4 Study potential routes for suitability for safe usage by commercial vehicles

10.22.03.5 Identify potential load restrictions

10.22.3.5 .a Identify pavement condition

10.22.3.5.b Identify structure limitations

10.22.03.6 If issues 3.3 thru 3.4 are adequately addressed, sign the "Truck Route" to guide commercial vehicles around the restricted area.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in the policies not specifically discussed.

TRAIL SYSTEM

Douglas County should facilitate legal public access to public lands. As community growth occurs on private lands adjacent to public lands, right-of-ways should be provided through the proposed development to assure regional access to public lands.

Goal 10.23: Douglas County will ensure development and maintenance of multi-purpose (hiking, equestrian, bikeway, and off-road bicycle) trail systems throughout Douglas County. This system should provide connection and access to public lands (BLM and National Forest), recreation facilities, facilities of local and regional interest, and public facilities.

Objective 10.23.01: Prepare a comprehensive trails plan and map for Douglas County.

Implementation Strategies

10.23.01.1 Douglas County, in cooperation with the community and Federal and State agencies, shall develop a County-wide Trail Plan and Map within one year of adoption of the Master Plan and on a priority basis shall develop a trailhead access plan to Federal lands.

Discussion: Douglas County has not prepared or adopted a County-wide trail plan. No federal lands are adjacent or near the Specific Plan site. The project has a limited trail system internal to the project which provides for cul-de-sac connections and links to sidewalks and bikeways within the project area.

10.23.0l.l.a The plan shall include provisions for equestrian, hiking, bicycle, and mountain bike users.

10.23.0l.l.b The plan shall evaluate and address trail systems adjacent to river and other water corridors.

Discussion: The applicant will dedicate Martin Slough for open space uses, including the ultimate development of a trail link along the bank of the Slough.

10.23.01.l.c On an interim basis, the County will evaluate individual public and private projects relative to access to public lands to ensure that the overall objective is met.

10.23.0l.l.d The plan shall address means of acquiring, constructing, and maintaining trails including financing mechanisms, safety concerns, and liability issues.

10.23.01.1.e The development code will be revised to implement the plan once adopted.

10.23.01.1.f The plan shall be integrated with the bikeway and pedestrian system contained within the Transportation Plan.

10.23.01.1.g The plan shall establish design criteria and standards including, but not limited to, trail and trailhead requirements, parking, and improvements.

10.23.01.1h The plan will attempt to designate and secure a multi-purpose crossing (overpass or underpass) of Highway 88 and 395 for the movement of people, equipment, and livestock.

Discussion: It is outside the scope of this Specific Plan to address the issues raised in the policies not specifically discussed.

BIKEWAY AND PEDESTRIAN SYSTEMS

Goal 10.24: Adopt and implement a safe comprehensive bikeway and pedestrian trail plan that provides opportunity for non-motorized transportation within the County that meets both recreational and commuter needs.

Objective 10.24.01: Provide adequate pedestrian/biking facilities to serve the needs of County residents.

Implementation Strategies:

10.24.01.1: Designate and construct regional bicycle routes to connect residential areas with major activity centers.

Discussion: It is anticipated that the Martin Slough will ultimately contain the trail links envisioned in this implementation strategy.

10.24.01.2: Designate and construct bicycle and hiking trail systems throughout the County to provide access to the County's recreational trail system as indicated in the Parks and Recreation Element of the Master Plan.

Discussion: The County has not prepared or adopted a trail system.

10.24.01.3: Class 1, II & III Bikeways shall be provided on roadways as indicated in the Transportation Element and as may be further detailed in Community Area Plans.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.24.01.4: Bicycle (Class I Bikeways), pedestrian and equestrian paths (separate from roadways) shall be included in the County's recreational trail system, as indicated in the Recreation Element of this Master Plan.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.24.01.5: Trail systems and bicycle lanes shall be connected at appropriate points to maximize the accessibility of the system to commuter and recreational users.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.24.01.6: Design and maintenance of public bicycle and pedestrian routes shall be encouraged to provide user convenience and safety with cost-effective construction and maintenance. Design of commercial and industrial facilities should include provisions for bicycle and pedestrian facilities, including parking of bicycles.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.24.01.7: Bicycle facilities shall be constructed as designated by roadway functional classification in accordance with the designated roadway sections.

Discussion: Where appropriate, bicycle facilities will be provided.

10.24.01 .7a. The portions of East Valley Road and Heybourne Road designated as major rural collectors shall be improved with a class II bikeway. Both have the potential for future upgrade to minor arterials. If and when traffic volumes require these improvements, provisions should be made for a Class I Bikeway/multi-purpose trail with the improvements.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.24.01.8: Bicycle facilities shall be constructed in accordance with American Association of State Highway and Transportation Officials (AASHTO), "Guide for the Development of Bicycle Facilities", 1991.

Discussion: This will be accomplished as required in the project area.

10.24.01.9: The County shall improve maintenance of existing roads and shoulders commonly used for bicycle travel and provide signage and striping to alert motorists for safety of the bicyclist.

Discussion: It is not within the scope of the Specific Plan to address this issue, other than to provide such facilities within designated routes as needed within the plan area.

10.24.01.10: Regional trail access shall be provided to public lands in cooperation with the Forest Service and Bureau of Land Management through community access points as designated on the Non-Motorized Transportation Plan.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.24.01.11: Pedestrian travel shall be encouraged within communities through the provision of sidewalks in urban communities and trails, where appropriate, throughout the County. This shall be effected through incorporation of the "Walkable Communities" concepts into the Development Code and Engineering Design Manual.

Discussion: All sidewalks proposed within the development are consistent with the "Walkable Communities" concepts. Sidewalks along the minor arterial and along the local street are separated by a five to six foot landscape strip between the sidewalk and the roadway. This landscaped area provide a physical and psychological barrier separating vehicular traffic and pedestrians.

Objective 10.24.02: Douglas County shall develop and adopt a Phasing Plan, based upon available funds, for construction of trails for non-motorized transportation. The Phasing Plan shall be developed as a coordinated effort by the County, the Nevada Department of Transportation, and Town Boards. The Phasing Plan shall be reviewed and updated every year, through the 5- Year Capital Improvements Program.

Objective 10.24.03: Douglas County should identify funding opportunities for the development, enhancement and maintenance of bicycle facilities for successful system implementation.

Discussion: Policies 10.24.03.1 through 10.24.03.8 can only be implemented by Douglas County through policy action and ordinance adoptions. Since it is outside the scope of this Specific Plan to address these policies, they have not been included in this policy analysis for further

discussion.

Goal 10.25: Provide a safe and efficient transportation system.

Objective 10.25.01: Maintain an up to date snow removal policy.

Discussion: Policies 10.25.01.1 through 10.2.02.3 can only be implemented by Douglas County through policy action and ordinance adoptions. Since it is outside the scope of this Specific Plan to address these policies, they have not been included in this policy analysis for further discussion.

SNOWDRIFT FENCING

Discussion: Based upon historical snow drifting problems (or lack there of), it appears there is not a current need for snowdrift fencing on major roadways. Therefore policies 10.26.01.1 through 10.26.01.6 have not been included in this policy analysis since it is outside the scope of this Specific Plan to address.

Goal 10.26: Provide a safe and efficient transportation system.

Objective 10.26.01: Identify need for snowdrift fencing.

LITTER

Goal 10.27: Roadways within Douglas County should be kept aesthetically pleasing.

Objective 10.27.01: Visible litter, trash and debris should be removed from the roadside and the right-of-way.

Discussion: Policies 10.7.01.1 through 10.27.02.2 can only be implemented by Douglas County through policy action and ordinance adoptions. Since it is outside the scope of this Specific Plan to address these policies, they have not been included in this policy analysis for further discussion. However, this Specific Plan has language in the implementation section which encourages the Homeowners Association to maintain a committee which will provide for a volunteer system within the subdivision to clean up trash debris along the roadways.

TRANSIT

As the population of Douglas County increases, there will be increased demand for transportation services, and implementation of some type of transit system may become feasible. A first stage of increasing public transportation service in Douglas County would be the implementation of limited fixed-route service and/or a "dial-a-ride' transit service. Services of this type may be feasible for communities with urbanized populations of 10,000 to 20,000, depending on the availability of funding sources.

Dial-a-ride transit service operates vans within a fixed service area and responds to telephone requests for service. This type of service is most frequently used for transportation for elderly and disabled persons, but is also an appropriate type of general public transit service for urbanized areas of 20,000 to 30,000 persons.

Goal 10.28: Transit

Objective 10.28.01: Provide and promote use of local and regional public transit serving Douglas County.

Implementation Strategies:

10.28.01.1: Conduct a transit needs study to determine the demand for limited fixed route transit service and/or dial-a-ride transit service. The study should consider available funding sources and financial feasibility.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.28.01.2: Establish locations for future park-and-ride lots to provide access to future transit services as well as serve staging points for carpools. The lots would typically provide 20 to 50 parking spaces. Potential locations near residential areas may include:

U.S. Highway 395 at Riverview Drive/Pinenut Road
U.S. Highway 395 north of State Route 88 at Muller Lane
U.S. Highway 395 at Johnson Lane
U.S. Highway 395 at Stephanie Lane
U.S. Highway 395 at Mica Drive
U.S. Highway 395 at Jacks Valley Road
On Kingsbury Grade at Foothill Road

Discussion: The Specific Plan site is not found in this list. A transit site may be dedicated along the entrance to the project area.

10.28.01.3: Coordinate potential transit service to Lake Tahoe with STAGE and with major employers in Lake Tahoe.

Discussion: It is not within the scope of the Specific Plan to address this issue.

Local fixed-route bus services are not recommended until the population of the Minden/Gardnerville urbanized area exceeds 30,000 As the urban area grows in the future, however, fixed-route service may be warranted and feasible as a supplement to dial-a-ride service to serve commute and school trips.

Objective 10.28.02: Preserve the potential to provide improved transit service in the future. Implementation Strategies:

10.28.02.1: Evaluate local transit service needs and alternatives every five years, to determine requirements for dial-a-ride or fixed-route transit service. Opportunities to improve privately operated services such as taxis and Greyhound should also be included in the review of local transit services.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.28.02.2: Establish and preserve a transportation corridor in the vicinity of the former Virginia and Truckee raikoad right-of-way between Minden and the Carson City line, parallel to Heyboume Road.

Discussion: It is not within the scope of the Specific Plan to address this issue.

10.28.02.3 Evaluate the feasibility of providing initial rubber-tire transit service to serve major travel destinations as development occurs along the Heybourne Road corridor. Identify potential private and public funding sources

Discussion: It is not within the scope of the Specific Plan to address this issue.

I. Minden-Gardnerville Community Plan

The following is an excerpt from the Introduction to the Minde/Gardnerville Community Plan:

> *"Several areas are designated for future development and Transfer Development Rights receiving areas. These areas total 992 acres. The areas are located generally north and south of Minden and north and east of Gardnerville. The development of these areas will be dependent upon the preparation and adoption of comprehensive specific plans for the areas which specify densities and uses and mitigates planning and environmental issues. The specific plan must be adopted prior to establishing these areas for actual development and rights must be acquired to support the planned densities.*

The areas should be developed as distinct neighborhoods compatible and complimentary to surrounding neighborhoods. A variety of residential densities should be utilized with the predominate land use being single family. Multiple family uses should be limited to small enclaves spread throughout the community rather than concentrating this use. Housing for seniors and affordable housing should be included within the overall housing mix.

Community support uses should be provided such as parks and church sites. Natural drainage features should be incorporated into the neighborhood designs to enhance open space elements which create linear parks and pathways to connect elements of the existing Towns. Buffering of agricultural lands should be included.'

Goals and Policies

GOAL MG.O1: To preserve and enhance the existing character of the Minden-Gardnerville community.

Policy MG.01.01: The County shall use its Master Plan and development regulations to maintain and enhance the existing character of the community.

Discussion: The purpose of this Specific Plan is to provide for development which will enhance the existing character of the Town.

Policy MG.01.02: The County shall support the expansion of commercial development within the Towns of Minden and Gardnerville in a manner that is compatible with the Towns' existing character.

Discussion: It is the goal of this specific plan to provide for commercial development area that is compatible with the Towns' existing character.

Policy MG.01.03: The County shall work with the Towns of Minden and Gardnerville to review and refine architectural and urban design standards for new development and revitalization projects.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.01.04: The County shall work with the Towns to promote the revitalization of the downtown areas of Minden and Gardnerville, to preserve historic resources, and enhance their cultural and economic value to this community.

Discussion: The Specific Plan does not involve the downtown areas of Minden or Gardnerville. Therefore, it is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.01.05: The County shall encourage all new development to compliment and enhance the distinctive historic character of the Towns.

Discussion: The Specific Plan design guidelines and development plan is constructed to compliment the existing character of Minden. The project includes development of a boulevard look for all streets and roads developed as part of the project, includes full pedestrian improvements, and joint use park and open space facilities similar to other projects within the Towns.

Policy MG.01.06: Douglas County shall use design guidelines and standards to ensure that all new commercial development is compatible with the traditional development style and existing "small town" atmosphere of the Minden-Gardnerville community.

Discussion: The design guideline contained in Douglas County Code do not directly address the unique character of the Town of Minden. This specific plan contains design guidelines which will require cohesive development within the area of the specific plan and establish architectural standards which enhance the traditional development style found in Minden.

Policy MG.01.07: Douglas County shall, in conjunction with the Towns, establish design standards for creation of gateways into Minden-Gardnerville, in order to further define and enhance the image of these urban villages.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.01 .08: Douglas County shall plan for a wide variety of housing types and densities in the Minden-Gardnerville community.

Discussion: The Specific Plan includes a variety mix of housing types as outlined in this policy. Overall density for the residential component of the plan is ten units per acre.

Policy MG.01 .09: Douglas County shall, in conjunction with the Towns, evaluate the possibility of designating areas in the Minden-Gardnerville as community historic districts.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.01.10: Growth areas shall be planned with district neighborhoods in mind. Neighborhoods shall contain a mix of residential homes.

1. **Discussion:** In conjunction with the housing, population and land use elements of the Master Plan, the site has been planned to address concerns regarding the placement of the different housing types in relation to the existing neighborhood to the east. Single family homes sites bordering the existing neighborhood are 8,000 square foot lots; the same size as those found in the adjacent neighborhood. Density increases as the development moves to the west closer towards the commercial areas.

Policy MG.0l.11: Multi-family residential projects within neighborhoods shall be limited to 3 acres or less and shall be intermixed with single-family residential projects.

Discussion: Overall, the project density is 10.00 dwelling units per gross acre. The land use element of the Master Plan allows a maximum density of 3.0 to 12.0 dwelling units per acre (gross). The proposal relocates the existing multifamily area to better utilize commercial land uses near US Hwy. 395. This existing area was greater than three acres in size. The dense multifamily portion of the specific plan is buffered from the existing neighborhood by proposed single family development. In order to attain the goals to preserve open space and conserve land resources, Receiving Areas and multifamily residential areas in particular must be planned for higher densities. Furthermore, these higher density area are an important part of Mindens' revitalization plan. Limiting multifamily neighborhoods to three acres in size is not feasible and is a discriminatory practice.

GOAL MG.02: To focus compatible, high quality commercial and industrial development within the Town of Minden and the Town of Gardnerville.

Policy MG.02.01: Douglas County shall support the location of County-wide commercial uses in the Towns of Minden and Gardnerville, in areas planned for commercial use.

Discussion: This supports the concept proposed in this specific plan of major tourist related land uses, hotels, casinos, restaurants, boutique and factory retail stores in the Town of Minden.

Policy MG.02.02: Douglas County shall use its zoning, project review process, and design guidelines to promote non-residential development that will enhance property values and the aesthetics of the Towns and community.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.02.03: The County shall limit, *subject to the recommendation of the Towns,* the conversion of residences to commercial uses outside areas planned for commercial development in order to preserve the integrity of the neighborhoods and focus commercial development in downtowns Minden and Gardnerville.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.02.04: The area south of Mahogany west of U.S. Highway 88 adjacent to the Carson Valley Swim Center shall be limited to recreational and office commercial uses and be rezoned accordingly.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.02.05: The Eddy Street/Ezell Street neighborhood shall not be zoned commercial until adequate infrastructure and access, including the extension of Ezell Street to Gilman is planned for and improvements constructed.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

GOAL MG.03: To promote appropriate, high quality commercial and industrial development in the Towns of Minden and Gardnerville.

Policy MG.03.01: The County shall promote the development and growth of industries in Minden and Gardnerville that are compatible with existing land uses and in a compact land use form.

Discussion: The specific plan details a conceptual development plan which provides for compatible development and growth. This growth area is located within existing zoned commercial and multifamily areas and in the Receiving Area.

GOAL MG.04: To strengthen Minden's role as a government administrative center for Douglas County.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.04.01: The Town of Minden shall continue its role as the central location for County government's services. The County shall plan to provide

sufficient, centrally located office and meeting space for government operations.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

GOAL MG.05: To ensure the timely provision of community facilities, services, and infrastructure at appropriate levels for the Minden-Gardnerville Community.

Policy MG.05.01: Douglas County shall plan and provide public facilities and services to the urban areas of the Minden-Gardnerville community at established urban levels of service.

Discussion: The project is consistent with the Public Facilities Element of the Master Plan. All facilities will be provided at urban service levels identified in the Master Plan and Development Code.

Policy MG.05.02: Douglas County shall require that all streets in new development be constructed to urban standards.

Discussion: The project is consistent with the Public Facilities Element of the Master Plan. All facilities will be provided at urban service levels identified in the Master Plan and Development Code.

Policy MG.05.03: The County shall work with the Towns to ensure adequate provision of park sites to meet the needs of the growing urban community.

Discussion: Park sites for public recreational uses are outside the scope of this Specific Plan to address.

Policy MG.05.04: The County shall work closely with school authorities in the development, maintenance, and joint operation of Minden-Gardnerville school park sites.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.05.05: The County should plan parks in the Minden-Gardnerville Planning Area consistent with the County's park standards established in the Parks and Recreation Element.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.05.06: Douglas County shall require the timely and orderly provision of water and wastewater systems to serve new urban development in the Minden-

Gardnerville community.

Discussion: Adequate facilities must be in place prior to the construction of any development area within the Specific Plan. These public facilities are currently adjacent to the project site since the site is located in an Urban Service Area.

Policy MG.05.07: Douglas County shall pursue the development of the Ironwood Extension and analyze the need for the Muller Lane Parkway with limited access in the 20-year time frame of the Plan based on the traffic model. If not required, Muller Lane Parkway shall be placed on the Thoroughfare Plan.

Discussion: The traffic study prepared with this specific plan identifies Muller Lane as an important roadway, particularly since Ironwood has limited ability to convey traffic originally contemplated in the Master Plan.

Policy MG.05.08: Douglas County shall coordinate with the State to ensure that any modifications to U.S. Highway 395 through Minden and Gardnerville are compatible with the existing character of the towns and to not decrease the safety or desirability of walking in the towns' commercial centers.

Discussion: The recommendations contained in the traffic study are consistent with this policy.

Policy MG.05.09: Douglas County shall work with the Towns to plan and develop off-street parking.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.05.10: Douglas County shall require the paving of all driveways, parking areas, loading areas, and other high activity areas in new or remodeled non-residential developments in this Community.

Discussion: All parking areas will be paved.

Policy MG.05. 11: The County shall prohibit the construction of privately maintained roadways for subdivisions of more than two units.

Discussion: All of the roadways within the site are proposed to be dedicated to Douglas County or the Town of Minden.

GOAL MG.06: To minimize the risks to the residents of the Minden-Gardnerville community from natural hazards.

Policy MG.06.01: The County shall continue to work with the Town of Minden

and Gardnerville Town Water Company to monitor the quality and quantity of groundwater in the Minden-Gardnerville community and to identify and mitigate negative impacts of human activities on groundwater quality and quantity.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.06.02: Douglas County will work with the Gardnerville Town Water Company and the Town of Minden Utility to expand water systems to serve the needs of the community and the entire Carson Valley region.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

Policy MG.06.03: Douglas County shall evaluate the need for additional policies regarding flood plain and floodway areas in the Minden-Gardnerville community following completion of FEMA investigations.

Discussion: It is outside of the scope of this Specific Plan to address the issues outlined in this policy.

IV. DEVELOPMENT PLAN

A. Introduction

The focus and emphasis driving the Development Plan for Nevada Northwest LLC was architectural motif, integration with the Town and walkability. These elements form the backbone of a distinct community which creates a distinct "sense of place". This is established by details of design, such as the landscape treatment along all local streets and the integrated open space and trail/bikeway network within the development.

The principal land use within Nevada Northwest LLC is commercial. These commercial areas are proposed to be developed with a distinct feel of urban space and intensity and with a European flair. The use of street trees, round-a-bouts, old style European development with integrated open space creates a sense of quality for the residential component of the specific plan.

Each Planning Area has a density based on the types of housing products, site constraints and surrounding amenities. Overall, the individual development areas will be tied into the overall Nevada Northwest LLC community through the use of compatible architectural finish materials, color, landscaping, lighting, and other design elements.

The Design Guidelines is the pictorial summary of all land use designations and the basis for the Development Standards described in Section VI. Commercial Development Areas are limited to the zoning districts in which they are located. Each residential Development Area is designated on the Development Plan and on the statistical summaries which have a target not-to-exceed residential density based on gross acres. Each Development Area has an approximate location, an estimated area in acres and a specific number of permitted dwelling units. During the site plan and tentative map stages of design, it is anticipated that the boundary configurations of each Development Area may vary slightly (not to exceed ten percent of the expanding Development Area) provided, however, that the density per gross acre is maintained.

B. Land Use and Density

1. Park and Open Space Sites

One distinct area is located within the Specific Plan site to accommodate the open space needs of the development. This open space area is identified in the

Conceptual Open Space Plan Figure K. This open space area identified generally as the Martin Slough provides the 25% open space set aside required in Douglas County Code for the Single Family and Multi-Family Residential areas within a planned development. The commercial areas will provide the required 15% of parking areas for landscaping within the commercial area itself. The Martin Slough area consists of approximately 9.8 acres that will be the backbone of a trail system linking all of the specific plan areas. Several other open space amenities are planned as well, including a Community meeting hall with small business center, Olympic size swimming pool, totland, basketball and volleyball court, a putting green and park with barbecue areas.

The open space sites also serve as the backbone to the Specific Plan drainage system. It is anticipated that portions of Slough will be suitable for placement of the bike/walking trail system.

Design and facilities planning of parks shall be to the satisfaction of the Douglas County Community Development Department.

All open space areas within the Specific Plan, not including the Martin Slough area, will be owned and maintained by a Homeowners Association or similar responsible entity, and shall be fully improved by the Nevada Northwest LLC Developer. Such improvements are to include but not be limited to grading, landscaping, installation of irrigation systems, utilities, and park equipment, and the improvement of abutting streets curbs, gutters, walkways, sewer, water, storm drainage and other improvements. The Martin Slough area is offered for dedication to Douglas County for the benefit of Town of Minden. The Town anticipates using the Slough for an eventual linear park and watershed management area.

The type and amount of the specific open space improvements for each development area will be according to the schedule of improvements listed in Douglas County Code Section 20.664.120 C. and will be submitted with the Tentative Subdivision Map or Design Review for each Development Area for approval.

a. Open Space Construction Phasing

Open Space and Drainage improvements will be constructed per the Conceptual Phasing Plan (Figure E). The improvements will be constructed concurrent with building permits or site improvement permits as delineated on the plan.

2. Residential Planning Units

Compatibility between adjacent uses is of paramount importance in determining the specific locations of the land uses for Nevada Northwest LLC. The densities and housing types are arranged to provide for a compatible interface between

uses.

The use of and arrangement of roads, landscaped areas and open spaces was employed to provide open space relief for higher density housing.

a. Single Family Detached Patio Homes

The Single Family Detached Development Patio Home Areas is 21.02 acres in size and is proposed to accommodate higher residential densities in a single family detached setting. Net density is proposed at a target of 5.5 dwellings per gross acre with a total of 116 homes based on zoning. These densities correspond to the Master Plan category of Receiving Area 3 to 12 dwelling units per acre. The actual final development plan area is 26.25 acres, with a realized density of 4.42 units per acre. Single Family, as with all residential uses, are additionally subject to the Nevada Northwest LLC Design Guidelines to assure attractive community design. Areas closest to the existing Winhaven development would be restricted to single story units to provide for the privacy of the existing residents. This restricted area for multi-story buildings is delineated on Figure I.

b. MultiFamily Residential

The MultiFamily Residential land use is adjacent to the Martin Slough area. Density is proposed at 21.66 acres in size with a target of 12 dwelling units per gross acre based on zoning, and the Master Plan category of Receiving Area, 3 to 12 dwelling units per acre would correspond to this category. The intended housing products to be constructed would include stacked two-story multi-family units, between four and twelve units per building.

This location was chosen for multiple family use due to the proximity to the planned commercial areas, the existing Dreyer Ranch uses and the separation from lower density residential uses on and off the property.

3. Population

Nevada Northwest LLC will be developed in multiple phases, creating an incremental population increase over an estimated 15-year build-out cycle. The population increase, approximated using a standard of 2.7 persons per household, results in a resident population of approximately 1053 persons. The population of the Minden/Gardnerville area is expected to grow at a rate of 2.5 to 3 percent annually (DC Master Plan, 1996). Throughout its development phase, the project will represent a relatively consistent proportion of the area's total population. However, the project will contribute a lesser portion of the subregional population by the year 2010. By the year 2010 when the project is completed, the project population will represent approximately 6 percent of the projected population of Gardnerville/Minden.

The approximate number of residents based on 2.7 persons per household delineated by housing product type is estimated below:

RESIDENTIAL PRODUCT TYPE	NO. OF UNITS	POPULATION
Single Family Detached	116	314
Multi-family	274	739
TOTAL	390	1053

C. Circulation

The Nevada Northwest LLC Specific plan relies on, for the most part, the developed existing street network for primary access to US Hwy. 395. These primary points of access are the intersection of S.R. 88/US Hwy. 395, Ironwood Drive/US Hwy. 395, Lucerne Street/US Hwy 395, and the possible realignment of Muller Lane to the northern boundary of the project site.

A traffic analysis was performed by LSC Traffic Engineers which analyzed the impacts associated with Nevada Northwest LLC Specific Plan. The study indicates that the major road system, per the traffic study included in the appendix of this Specific Plan, can accommodate levels of service of C or better within Nevada Northwest LLC at project build-out. Additionally, the study which analyzed build-out traffic and levels of service projected to the year 2015. Based upon the study, project and background growth traffic can be accommodated by the proposed circulation system within Nevada Northwest LLC through the year 2015 and beyond. To maintain level of service standards required by NDOT and Douglas County, signal improvements will need to be made at various affected intersections as well as channelization improvements and signal coordination. The traffic study was prepared as a planning level document. As each development area moves forward with design review or tentative subdivision map plans and applications, a more detailed traffic analysis for each area will be prepared to address specific channelization, road striping and specific signal improvements and coordination.

All rights-of-way within Nevada Northwest LLC shall be offered for dedication to the Town of Gardnerville. The Nevada Northwest LLC Specific Plan identifies those measures to be included within the development of the Nevada Northwest LLC Specific Plan area in order to mitigate transportation impacts of the project.

1. US. Hwy. 395/State Route 88 Intersection

The Specific Plan phasing plan requires the construction complete signal and intersection improvements at this intersection with commencement of Phase 1 improvements within the South Commercial Planning Area.

2. U.S. Hwy. 395/Ironwood Drive/Lucerne Street – after Phase 1?

The Specific Plan requires that Lucerne Street be signalized and that Ironwood Drive be converted to a right in-right out turning movement only with the completion of the connection to Lucerne Street from the Residential Planning Area or with the commencement of any commercial improvements within the South Commercial Planning Area beyond Phase 1. ?

3. U.S. Hwy. 395/Muller Lane

It is anticipated that Muller Lane will be realigned and be placed on the Master Transportation Plan. Should this occur, then the Specific Plan requires that Muller Lane/U.S. Hwy. 395 intersection be signalized and the intersection improvements completed with completion of Phase 1 improvements within either the North Commercial Planning Area or the Residential Planning Area. Should Muller Lane not be realigned, then this proposed road will be modified a local commercial street section with a right in-right out turning movement only restriction with specific channelization improvement. No other improvements to the existing Muller Lane will occur.

4. Residential Streets

Street standards for residential streets and cul-de-sacs will meet Douglas County's urban street standards per the current Design Manual. Local public street rights-of-way shall be offered for dedication to the Town of Minden. All street improvements shall be the responsibility of the applicable Development Area builder.

5. Adjacent Property Access

Access to the property directly adjacent to the south of the North Commercial Planning Area east shall be provided by one street stub connecting to the proposed realigned Muller Lane. Conceptual alignments of these connections are shown on Figure C, "Conceptual Site Plans".

6. Non-Vehicular Circulation

In addition to the roadways, a system of hiking trails, sidewalks and bike lanes have been designed into the overall plan for Nevada Northwest LLC. The objective is to provide a safe and enjoyable system for bicycles and pedestrians to access schools, parks, commercial sites and open space areas. The intent is

to encourage non-vehicular transportation within Nevada Northwest LLC and to provide a recreational and enjoyable experience for walkers, hikers, and cyclists. Construction of the hiking trail as part of the open space improvements within the single family detached development area will occur with the first phase of the Multiresidential development. Maintenance will be provided by a landscape assessment district formed to provide maintenance of all landscaped medians, parkways, and dedicated public open space areas. All other sidewalks and bike lanes will be constructed per the phasing plan. These facilities will be dedicated to Douglas County or the Town of Minden for maintenance.

D. Drainage Plan

The project site is located within the hydrologic basin of the Martin Slough (Slough), a tributary to the East Fork of the Carson River. Commencing at an existing diversion box located near Lampe Drive in Gardnerville, the Slough meanders through the Towns of Gardnerville and Minden collecting storm water and conveying some tailwater generated from adjoining agricultural fields. Along its three mile length upstream of the project site, the Slough is crossed by numerous public streets including U.S. Highway 395, Gilman Avenue, Zerolene Place, Sixth Street and Lucerne Street at the project's southeasterly limits. In addition to the street crossings, at the Chichester Estates project, the Slough is routed through an in-stream detention basin that serves to mitigate storm water impacts from that residential project and as a regional water quality improvement project. At its extreme westerly limits, prior its terminus in the Klauber Ponds, the Slough crosses beneath U.S. Highway 395 just downstream of the project site. Slightly upstream and just below the Lucerne Street crossing, the Slough traverses through that portion of project site proposed as open space and to be zoned as "Public Facilities".

A preliminary plan for collecting storm water generated within the project and conveying it to the Martin Slough system is provided on the plan entitled "Conceptual Grading Plan". This plan depicts possible pipeline alignments, locations of catch basins and discharge points to existing facilities and should be considered a general plan intended only to confirm the viability of such a collection system. A conceptual drainage plan providing additional analysis and recommendations for mitigation of storm water run-off from the project site is provided at Exhibit F to the appendix of this document. During final design efforts for each respective phase of the project, after final building locations and elevations are more defined, a detailed analysis of hydraulic conditions will be conducted and pipe sizes determined. This analysis will be provided to Douglas County and the Town of Minden for their review and approval prior to plan approval.

Based upon the master drainage plan included within this document, including the recommended mitigation measures, the proposed project can be developed

consistent with Douglas County code without significant impacts to downstream or adjoining facilities.

E. Community Water System Plan

Water supply for the project will be provided by the Town of Minden by utilizing its existing supply sources and expanding its distribution system. As shown on the Conceptual Utility Plan, the greatest portion of the project site is located adjacent to and abuts Ironwood Drive and Lucerne Street. There exists within these streets relatively large diameter water distribution mains that convey and distribute water from the Town's existing wells to the remainder of the system. Due west of the site approximately 700 feet, along Ironwood Drive-extended, is the Town's largest production well, Well No. 4. The Town's second largest production well, Well No. 5, lies due east of the site, on the easterly side of the Winhaven development. Currently this area of the Town of Minden's water system is well looped and large volumes of water can readily be distributed without significant pressure losses occurring.

A preliminary estimate of water system demands has been made based upon proposed land uses and their relative densities. This summary is provided in the appendix. Based upon the assumptions underlying these calculations, at buildout, this project will generate and additional daily demand of approximately 305 gallons per minute (gpm). Similarly, at project build-out, it is estimated that the project will require approximately 492 acre-feet annually (afa) of water rights.

A preliminary plan depicting the water distribution system improvement that will be required to provide water service to the proposed uses is shown on the "Conceptual Utility Plan". This plan provides suggested pipeline alignments, valving configurations and a preliminary layout of fire hydrants demonstrating the feasibility of such improvements. As indicated on the plan, due to the site's location, several connections to existing mains will be made and new mains constructed resulting in a well-looped water distribution system thereby minimizing potential pressure losses. This plan represents a "planning level effort" for these facilities and no attempt has been made to provide sizes of the mains that may be required. During final design efforts for the proposed phases a hydraulic model and analysis of the water system capabilities will be conducted to determine water main sizes and confirm fire flows can be delivered at acceptable pressures.

The following mitigation measures will be implemented within the project to minimize and reduce water demands;

1. Interior Water Consumption Reduction Measures

    a. Use of ultra-low flush toilets (1.5 gallons per flush) in all

residential buildings.

b. Use of water-saver type shower heads.

c. Use of low-flow faucet fixtures.

2. Exterior Water Consumption Reduction Measures

a. The use of turf shall be limited and the use of drip irrigated landscaping areas throughout the project.

b. Landscape easements, right-of-way medians, entry statements and all manufactured slopes shall be landscaped with drought tolerant species.

c. Use mulch and other inorganic and organic ground cover extensively in appropriate landscaped areas. Ground covering applied on top of soil improves the water-holding capacity of the soil by reducing evaporation and soil compaction.

d. Group plants of similar water demand to reduce over-irrigation of low-water using plants.

e. Drip irrigation or other water-conserving irrigation will be used where appropriate.

F. Sewage Collection Plan

The project site lies within the adopted Service Area of the Minden-Gardnerville Sanitation District (MGSD). MGSD operates waste treatment and disposal facilities for its service area under a Waste Discharge Permit issued and administered by Nevada Division of Environmental Protection (NDEP). In addition to treatment and disposal facilities, MGSD also operates and maintains public sewer mains within its service area.

A preliminary estimate has been made of sewage generated from proposed uses within this plan. Based upon the assumptions included within these calculations it is estimated that this project, through build-out, will generate an additional 0.23 million gallons per day of sewage. This volume represents approximately 929 equivalent dwelling units (EDU's) and is estimated to constructed over a 20-year period of time. MGSD has historically constructed additional system capacities as required and in compliance with its approved Facilities Plan.

As shown on the Conceptual Utility Plan, this site is located adjacent to Ironwood Drive and U.S. Highway 395 within which exist large diameter sewer interceptors.

These interceptors convey sewage collected upstream of the site to the MGSD's plant located due westerly of the project site. To collect sewage generated within the South Commercial Planning Area, a series of small diameter sewer mains will be required; their general alignment is depicted on this same utility plan. Due to the relative elevations of the existing interceptors and administrative and physical impediments to constructing improvements with the right-of-way of U.S. Highway 395, it is anticipated that these collection system improvements will be connected to the existing interceptor within Ironwood Drive. So as not to disturb recently constructed street improvements, proposed mains will be connected, where possible, to existing stubs for mains. Depending on final design elevations, it may also be necessary to construct a new point of connection to the existing interceptor.

To collect sewage generated within the North Commercial Planning Area a new sewer main will be required. It is proposed and anticipated that this new main will connect to the existing manhole located on the easterly side of U.S. Highway 395 immediately upstream of MGSD's headworks and extended northerly from this point to the proposed Muller Parkway. From this main extension a series of mains will be required throughout both the proposed commercial areas and the residential areas to collect and convey sewage generated within these portions of the plan. The Conceptual Utility Plan referenced above provides a plan of main alignments and demonstrates the general feasibility of collecting sewage generated within this portion of the project. This plan should be considered a "planning level effort". During final design detailed plans, including hydraulic analysis and sizes of proposed mains, will be prepared and submitted to MGSD for their review and approval.

G. Public Utilities and Services

Public Utilities and Services at Nevada Northwest LLC are identified below followed by the responsible servicing agency. The servicing agencies, identified below, have indicated they will be able to supply the project's anticipated demand. Improvements will be made to existing facilities and services as applicable prior to project build-out and occupancy. Subdivision design shall consider appropriate adjacent tract requirements for utilities and shall coordinate alignments and facility sizing according to requirements by the Community Development Department.

UTILITY OR SERVICE	SERVICING AGENCY	IMPLEMENTATION
Telephone	Verizon	Extension of service pursuant to Agency requirements
Electric	Sierra Pacific Power	Extension of service pursuant to Agency requirements

Gas	Southwest Gas	Extension of service pursuant to Agency requirements
Cable	AT&T	Extension of service pursuant to Agency requirements
Sewer	MGSD	Extension of service pursuant to Agency requirements
Water	Town of Minden	Extension of service pursuant to Agency requirements
Refuse Collection	Town of Minden	Extension of service pursuant to Agency requirements
Refuse Disposal	Douglas Disposal	Extension of service pursuant to Agency requirements

H. Grading Concept

The Nevada Northwest LLC Specific Plan site contains flat or gently sloping terrain averaging between one and two percent in slope. These areas are proposed to be graded so as to provide efficient drainage, efficient sanitary sewer operation and balanced cut and fill within phases. Within these Development Areas, grading is anticipated to average less than 5000 cubic yards per acre. These Development Areas are subject to general grading standards applicable to conventional development.

I. Construction and Maintenance Responsibility

Due to the amount of public improvements, open space and landscaped areas provided within Nevada Northwest LLC, provisions for construction and maintenance responsibility of public, semi-public and private open space is essential. Table 1 "Infrastructure Maintenance and Implementation", identifies street improvements, parks, specific types of open space and the party responsible for continued maintenance of the open space area, unless otherwise determined by modification to this Specific Plan. It is anticipated that all landscaped areas along road medians and parkways, park and bike trails would be maintained by a public entity funded through a landscape assessment district. If the public agency is unwilling or unable to accept these areas for maintenance, then a landscape assessment district board should be formed from the property owners in the area to administer private contracts for maintenance. If this cannot be accomplished, then a property owners association will be formed for each

separate development area. Landscape improvements (inside and outside of rights-of-way) within the development area shall be the responsibility of each POA for that area.

Table 1

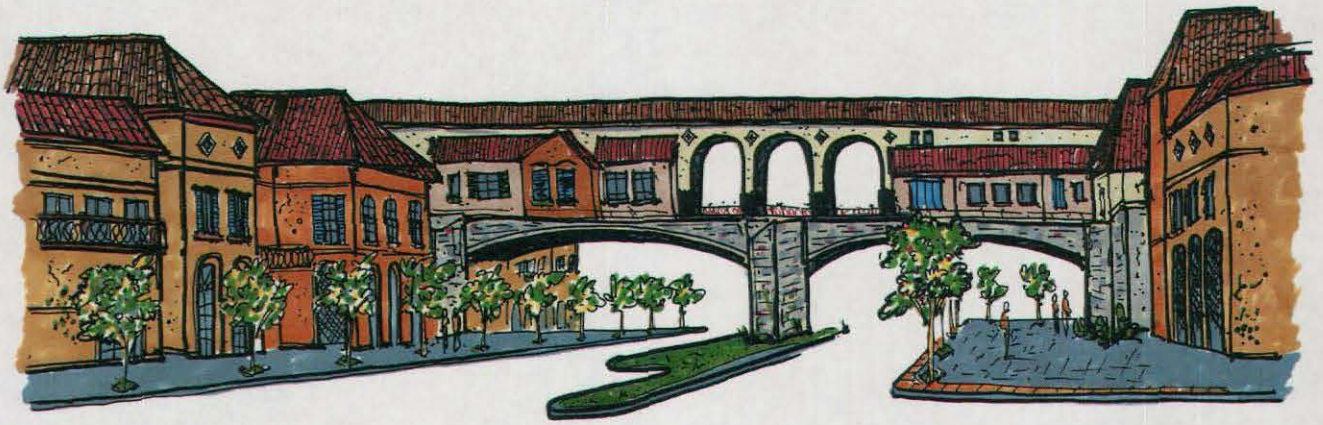
ITEM	IMPROVEMENT RESPONSIBILITY	MAINTENANCE RESPONSIBILITY
1. STREETS		
a. Muller Lane Realigned	DEV	DC
b. Local Streets	DEV	MIN
2. SIDEWALKS		
a. In R/W or Easement	DEV	MIN
3. OPEN SPACE	DEV	LAD
4. LANDSCAPING		
a. In Muller Lane Right-of-way	DEV	LAD
b. In Local Street Easements	DEV	LAD
5. PEDESTRIAN TRAIL	DEV	LAD
6. WATER SYSTEM	DEV	MIN
7. SEWER SYSTEM	DEV	MGSD

KEY TO ABBREVIATIONS:

DEV:	Nevada Northwest LLC Companies	MIN:	Town of Minden
DC:	Douglas County	MGSD:	Minden-Gardnerville Sanitation District
POA:	Property Owners Association	LAD:	Landscape Assessment District

All final improvements are subject to Douglas County's approval and determination during the Development Review application process.

DESIGN CRITERIA / GUIDELINES



Commercial Planning Area

DESIGN CRITERIA / GUIDELINES

COMMERCIAL

Purpose:

The design criteria/guidelines and supporting documents (plans, perspectives, etc.) are intended to provide conceptual sketches for the Commercial Planning Area. It is intended to assist in the visualization of the project's size, density, scale, orientation, and theming. The supporting documents are intended to provide possible solutions that support the project's mission and subsequent goals. The design criteria/guidelines and supporting documents are not intended to limit or mandate the final design, as continued investigation into a project's goals and needs often produces a more effective and coherent design.

Mission Statement:

To create a tourist and retail district that will strengthen the current recreational and shopping district of Minden and give tourists and the residents of Douglas County an exciting place to shop, dine and participate in Nevada's greatest past time.

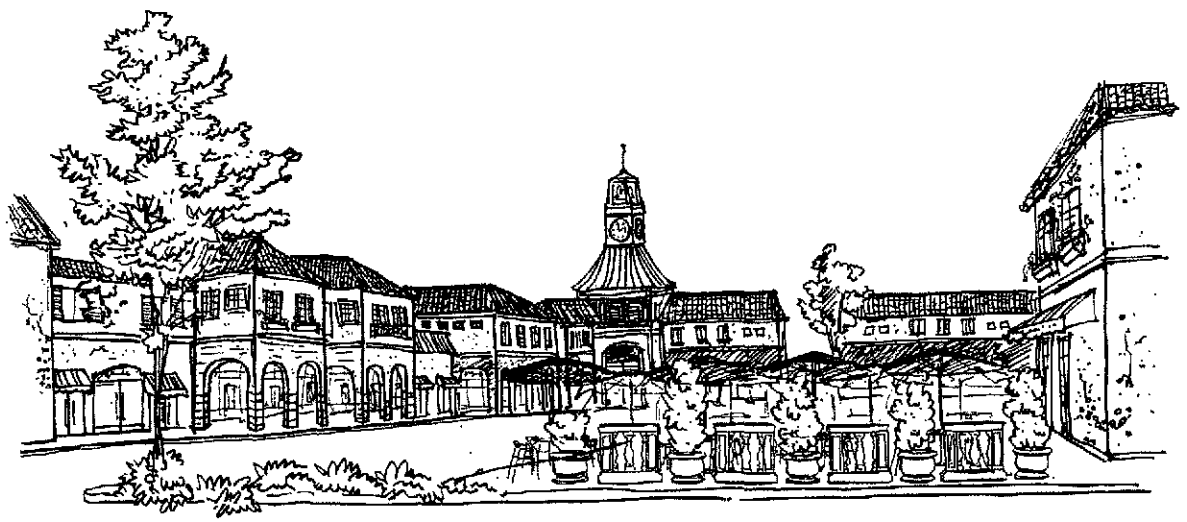
Goals:

- A European village theme is envisioned to capitalize on the diversity of and interest in Europe's history, culture and customs.
- The district will capitalize on the majestic Carson Valley views of the Sierras and will provide a plaza for street festivals, outdoor markets, and outdoor dining.
- A path system will be designed to encourage pedestrians to comfortably walk from one side of the development to the other and beyond.
- Multiple paths into the retail/restaurant village (including links from hotel/casino, surrounding neighborhood, and parking) will increase foot traffic and year-round use.
- Landmarks and visual nodes will be integrated within the district to provide distinguishing elements, meeting places, assist in way finding, and encourage exploration.
- Retail shops and restaurants should be placed in close proximity to one another and linked with shared plazas, planters, and green spaces. Parking directly adjacent to storefronts provide the most convenient access, but would otherwise destroy the character and nature of a European Village. Parking within the retail/restaurant village should be minimized if not eliminated entirely.
- Recreation venues such as trails for bike, skate, and scooter rentals, arcades, miniature golf, and amusement rides should be considered for children as well as adults.
- Future integration of professional offices at the district periphery or above retail would provide added diversity.

Desirable elements

The most desirable qualities and design elements for this project include:

1. Richness of surface and texture;
2. Significant wall articulation (insets, canopies, arcades, colonnades, balconies);
3. Multiple height, pitched roofs;
4. Pedestrian accessibility with parking to separate it from the road way;
5. Articulated mass and bulk; articulated wall surfaces;
6. Courtyards and Plazas;
7. Outside dining;
8. Separation between pedestrians and automobiles;
9. Buildings should not look the same, but instead express respect and complement one another. Similar characteristics should include but are not limited to: Design, style, material, and color;



10. Places for the public to sit or stop. (Fountains, benches, obelisks, terraces, etc.);
11. Visual Complexity (street lamps, trees, lights, kiosks, signs, canopies and other landscaping).

Undesirable Elements

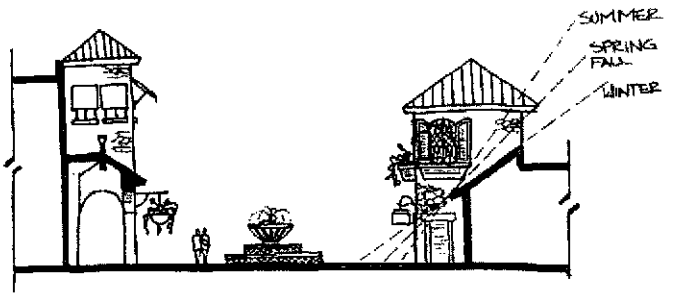
The elements to avoid or minimize include:

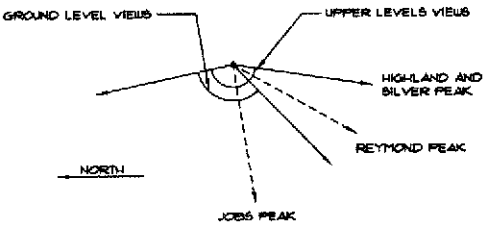
1. Highly reflective surfaces;
2. Large blank, unarticulated wall surfaces;
3. Unpainted concrete precision block walls;
4. Reflective glass;
5. Corrugated metal siding;
6. Plastic siding;
7. Irregular, modernistic window shapes and rhythm;
8. Square "boxlike" buildings;
9. Standing seam metal walls; and
10. Mix of unrelated styles.

Height

Building heights should relate to open spaces to allow maximum sun and ventilation as well as provide protection from prevailing winds, and enhance public views of surrounding mountains. The height of the building should lend itself to a personal scale and enhance the pedestrian feeling to the plaza space as well as the street side of the buildings.

Taller structures should be reserved for distinguishing landmarks and nodes. (i.e. clock towers, monuments, etc.)





MOUNTAIN VIEWS

Massing

Large buildings, which give the appearance of "square box" buildings are generally unattractive and detract from the overall scale and characteristic of the design. There are several ways to increase the visual complexity of the project and reduce the appearance of large buildings.

1. Vary the planes of the exterior walls in depth and/or direction

2. Vary the height of the building so that it appears to be divided into distinct massing elements. Many buildings or appearance thereof add to the diversity.

3. Articulate the different parts of a building's facade by arrangement of façade elements or a change in materials.

4. Use landscaping and architectural detailing at the ground level to lessen the impact of an otherwise bulky building.

5. Avoid blank walls at the ground floor level. Utilize windows, wall articulation, change in material or other features.

Preferred

Scale

Scale, for purposes here, is the relationship between building size and the size of adjoining permanent structures. It is also how the proposed building's size relates to the size of a human being. Large scale building elements will appear imposing if they are situated in a visual environment of a smaller scale.

1. Building scale can be reduced through window patterns, structural bays, roof overhangs, siding, awnings, moldings, fixtures and details.

2. The scale of buildings should be carefully related to adjacent pedestrian areas, streets and buildings.

3. Large dominating buildings should be broken up by: (i) landscape materials; (ii) adding awnings, eaves, windows or other architectural ornamentation; (iii) creating horizontal emphasis; and (iv) use of combinations of complementary colors.

4. Utilize "infill" structures to create transitions in bulk and scale between large buildings and adjacent smaller buildings.

Color

1. The palette of colors can be selected from those found in the natural environment.

2. The dominant color of new buildings should relate to the inherent color of the primary building's finish materials.

3. Large areas of bright white color should be avoided. While subdued colors usually work best as dominant overall color, a bright trim or awning color might be appropriate if it can be shown to enhance the nearby visual environment.

4. The color palette chosen for a building should be compatible with the colors of adjacent buildings.

5. Wherever possible, minimize the number of colors appearing on the building exterior. Small commercial buildings should use no more than four colors, except when the design warrants additional colors.

6. Depending on the overall color scheme, accent colors may be effective in highlighting the dominant color by providing contrast or by harmonizing with the dominant color.

7. Primary colors shall only be used to accent building elements, such as door and window frames and architectural details. Bright or intense colors (but not including fluorescent colors) can also be used to accent appropriate scale and proportion or to promote visual interest in harmony with the immediate environment.

8. This project is of a particular historical character or architectural style, and the exterior color should be in keeping with the buildings proposed character and style.

9. Architectural detailing should complement the façade and tie in with adjacent buildings.

10. Accent colors for trim should be used sparingly and be limited in number for each building. Accent colors on adjacent buildings should be chosen to complement one another.

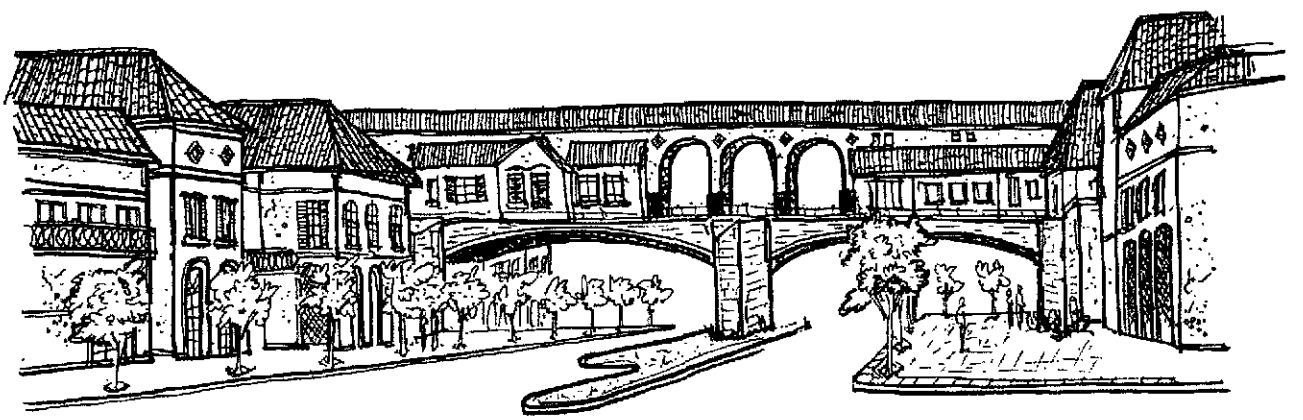
Exterior Walls

1. Buildings shall be designed to avoid a simple "boxlike" structure. Horizontal or vertical wall articulation should be expressed through the use of full roofs, recesses, entries, awnings, second floor setbacks and/or covered arcades and balconies.

2. The following materials are not considered appropriate for primary exterior walls:
    a. Standing seam metal walls;
    b. Plywood (painted or otherwise);
    c. Corrugated fiberglass;
    d. Asphalt shingles;
    e. Illuminated sidings
    f. Plastic laminate;
    g. Unmilled, bare aluminum;
    h. Painted white brick; and
    i. Unpainted concrete block/precision block with smooth finish.

3. Freestanding buildings with walls at or less than 100 ft. from a curb line should not have continuous, visually unbroken walls. The front plane of the wall shall be a maximum 40 ft. in length, at which point horizontal or vertical articulation is required in order to be consistent with these guidelines. This articulation could be established through the use of varying front wall setbacks, multi-planed roofs, second floor setbacks, porches, arcades, awnings recessed entries, balconies, etc.

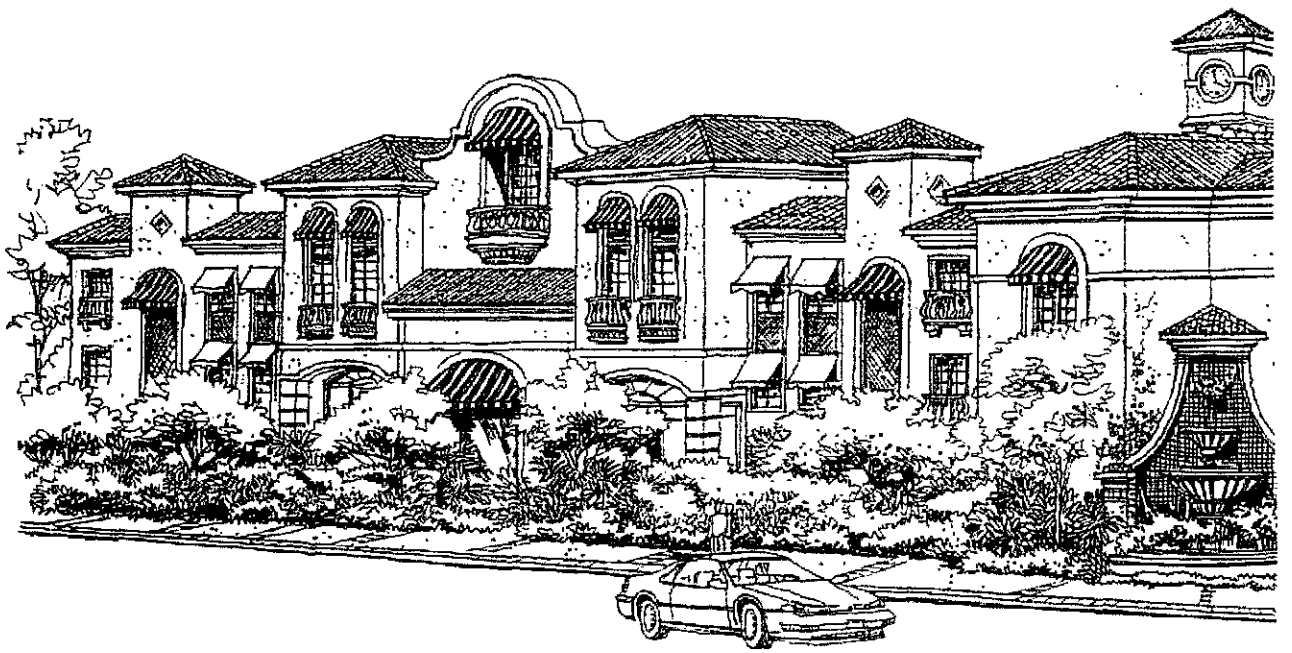
4. Retail commercial storefront construction should provide a minimum 60% open exposure to the street. This exposure can be achieved through the use of windows, glass doors or open facades. Storefronts employing more than 40% solid, opaque walls are generally unacceptable. Retail windows need something behind them, not just blinds.



Roofs

1. The roofline shall not run in a continuous plane for more than 90 ft. without offsetting or jogging the roof plan or the addition of architectural elements such as chimneys, dormers, etc.

2. Nearly vertical roofs will not meet the intent of these guidelines.



Color

The dominant color of new buildings should be similar to the inherent color of earth tones. The following colors are strongly discouraged as primary wall colors;

a. Aquamarine;
b. Bright or hunters orange;
c. Chartreuse;
d. Cherry or "fire engine" red;
e. Chrome yellow;
f. All day-glow colors;
g. Purple
h. Turquoise; and
i. In general no bright colors should be used as a primary wall color.

The following soft earthtone colors are recommended as primary wall colors:

1. Brick;
2. Cobblestone
3. In general any earth tone or true material color should be used as a primary color.

Other colors within the above color scheme may also be acceptable.

Awnings

1. General use of awnings along a row of alike buildings should be restricted to awnings of the same form and location. Color of the awnings should be consistent and a minimum eight-foot vertical clearance to the ground plane is required.

2. Signage painted on the awnings themselves will be restricted to the awning's flap (valance) or to the end panels of angles, curved or box awnings.

3. Internal illumination of awnings should be used conservatively.

Architectural Landscape Design Guidelines

Plazas

Plazas and town squares will play a crucial role in creating the vitality and character of a European village. These spaces will serve as connections between the hotel/casino and the restaurant/retail areas and should provide places to stop and sit as well as encourage movement throughout the village.

1. Landscaping should extend building themes through the use of color, material, and pattern.

2. Signage, kiosks, and banners should be integrated to assist in way finding and add to the visual complexity and color of the plazas.

3. Various forms of seating such as fountains, planters, benches, and steps should be incorporated through out the plazas. There should be ample opportunities to sit in both the sun and shade.

4. Patterns in the plaza floors should be created with material, texture, and color.

5. Street lamps should be consistent with overall theme and should be provide adequate lighting for pedestrian safety and encourage nighttime use.

6. Bicycle parking should be provided and integrated within landscape design.

7. Plaza spaces should be flexible and versatile so they are able to accommodate outdoor dining, open markets, and pedestrian traffic in various modes and speeds.

8. Planters of various sizes should be integrated to accommodate outdoor cafes, rest areas, and green spaces.

Colonnades

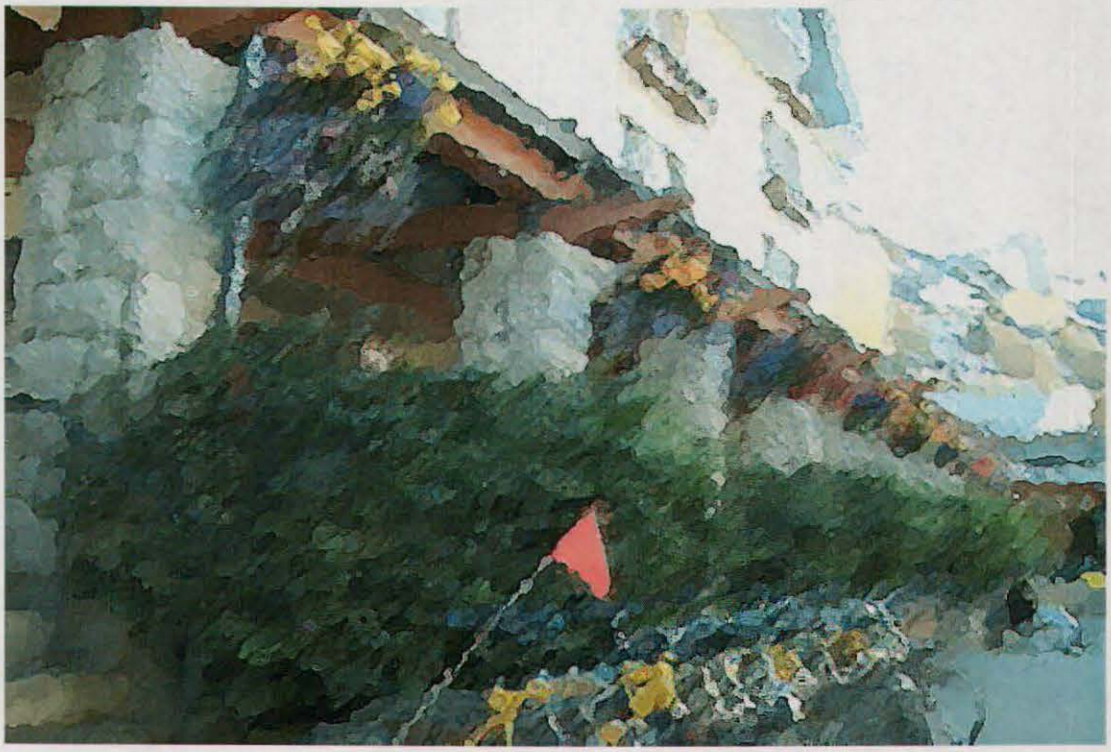
Colonnades and arcades are effective transitions from the plazas to the retail shops. Covered walkways provide shelter in inclement weather and shade in the summer months. These areas especially need careful integration and collaboration between architecture and landscape architecture.

1. Flowers and plants in hanging baskets or pots should be integrated with colonnade structures.

2. Raised walkways would help define arcades from the plaza and provide opportunities for terraces, platforms, and steps that create distinct entries and sitting spaces.

3. Landscaping should be used conservatively in areas where views and connections to the plaza are sought after and in other conditions used to create more intimate walkways.

4. Lighting fixtures should be consistent with overall theme and provide adequate lighting for security.



DESIGN CRITERIA / GUIDELINES

RESIDENTIAL

Mission Statement:

To establish Nevada Northwest LLC as a master planned community that provides an attractive landscaped environment with an "open space and recreational lifestyle" appropriate to a residential community.

To provide a defined "sense of community" by creating unique major project entryways to Nevada Northwest LLC that enhance the community appearance.

To create special streetscape and landscape features along all local streets and main drive isles in parking areas that provide a safe and aesthetically pleasing drive through and from Nevada Northwest LLC.

To provide pedestrian, hiking and biking access that allows for the enjoyment of the open space setting and recreational theme of the Nevada Northwest LLC community.

To utilize landscaping and site planning techniques in a manner which respects environmental conditions.

General Design Principles

Desirable elements

The most desirable qualities and design elements for this project include:

1. Richness of surface and texture;
2. Significant wall articulation (insets, canopies, colonnades, balconies);
3. Multiple height, pitched roofs;
4. Pedestrian accessibility with parking to separate it from the roadway;
5. Articulated mass and bulk;
6. Interesting and articulated wall surfaces;
7. Separation between pedestrians and automobiles;

8. Complementary buildings, buildings do not want to look the same, yet want to express respect to one another. Similar characteristics should include but not limited to: Design, style, material, and color;

9. Visual Complexity (street lamps, trees, lights, kiosks, signs, canopies and other landscaping).

Undesirable Elements

The elements to avoid or minimize include:

1. Highly reflective surfaces;
2. Large blank, unarticulated wall surfaces;
3. Unpainted concrete precision block walls;
4. Reflective glass;
5. Corrugated metal siding;
6. Plastic siding;
7. Irregular, modernistic window shapes and rhythm;
8. Square "boxlike" buildings;
9. Standing seam metal waits; and
10. Mix of unrelated styles.

Height

Building heights should relate to open spaces to allow maximum sun and ventilation as well as provide protection from prevailing winds. Building heights near existing neighborhoods are restricted to single story to preserve the privacy of these existing neighborhoods.

Massing

Large buildings, which give the appearance of "square box" buildings are generally unattractive and detract from the overall scale and characteristic of the design. There are several ways to increase the visual complexity of the project and reduce the appearance of large buildings.

1. Vary the planes of the exterior walls in depth and/or direction

2. Vary the height of the building so that it appears to be divided into distinct massing elements. Many buildings or appearance thereof add to the diversity.

3. Articulate the different pans of a building's facade by arrangement of facade elements or a change in materials.

4. Use landscaping and architectural detailing at the ground level to lessen the impact of an otherwise bulky building.

5. Avoid blank walls at the ground floor level. Utilize windows, wall articulation, change in material or other features.

Scale

Scale, for purposes here, is the relationship between building size and the size of adjoining permanent structures. It is also how the proposed building's size relates to the size of a human being. Large-scale building elements wilt appear imposing if they are situated in a visual environment of a smaller scale.

1. Building scale can be reduced through window patterns, structural bays, roof overhangs, siding, awnings, moldings, fixtures and details.

2. The scale of buildings should be carefully related to adjacent pedestrian areas, streets and buildings.

3. Large dominating buildings should be broken up by: (i) landscape materials; (ii) adding awnings, eaves, windows or other architectural ornamentation; (iii) creating horizontal emphasis; and (iv) use of combinations of complementary colors~

4. Utilize "infill" structures to create transitions in bulk and scale between large buildings and adjacent smaller buildings.

Color

1. The palette of colors can be selected from those found in the natural environment.

2. The dominant color of new buildings should relate to the inherent color of the primary building's finish materials.

3. Large areas of bright white color should be avoided.

4. The color palette chosen for a building should be compatible with the colors of adjacent buildings.

5. Wherever possible, minimize the number of colors appearing on the building exterior.

6. Depending on the overall color scheme, accent colors may be effective in highlighting the dominant color by providing contrast or by harmonizing with the dominant color.

7. Primary colors shall only be used to accent building elements, such as door and window frames and architectural details. Bright or intense colors (but not including fluorescent colors) can also be used to accent appropriate scale and proportion or to promote visual interest in harmony with the immediate environment.

8. This project is of a particular historical character or architectural style, and the exterior color should be in keeping with the buildings proposed character and style.

9. Architectural detailing should complement the facade and tie in with adjacent buildings.

10. Accent colors for trim should be used sparingly and be limited in number for each building. Accent colors on adjacent buildings should be chosen to complement one another.

Architectural Design Guidelines

Exterior Walls

1. The followings material are not considered appropriate for primary exterior walls:

   a Standing seam metal walls;
   b. Plywood (painted or otherwise);
   c. Corrugated fiberglass;
   d- Asphalt shingles;
   e. Illuminated sidings
   f. Plastic laminate;
   g. Unmilled, bare aluminum;
   h. Painted white brick; and
   1. Unpainted concrete block/precision block with smooth finish.

Roofs

1. The rooflines in the differing restricted height areas shall have a minimum build-up plate line established with the planned development application. Above this line, residential structures may have varying roof lines and pitchs.

2. Roof materials will be of the same color and material established at the time of Planned Development application.

Color

The dominant color of new buildings should be similar to the inherent color of earth tones. The following colors are strongly discouraged as primary wall colors;

1. Aquamarine;

2. Bight or hunters orange;

3. Chartreuse;

4. Cherry or "fire engine" red;

5. Chrome yellow;

6. All day-glow colors:

7. Purple

8. Turquoise; and

9. Pastels

10. In central no bright colors should be used as a primary color.

The following soft earthtone colors are recommended as primary wall colors:

1. Brick;

2. Cobblestone

3. In general any earth tone or true material color should be used as a primary color.

Other colors within the above color scheme may also be acceptable.

Streets and Streetscapes

1. Street layouts will consider pedestrian access and connections between long stretches of road and between cul-de-sac termination points.

2. The use of terminal greens and joint use of necessary detention ponds as landscaped are will be considered in the design of the residential areas.

3. "Snout" houses are not permitted. Garages are not permitted to be the dominant feature of the streetscape, and all single family homes must be either rear loaded via an alley or garages accessed from main roads must be recessed from the front building line, preferably with the garage doors not directly facing the street.

4. Road designs will use street profiles with sidewalks buffered by parkways away from the street. The use of chicanes at intersections is encouraged to slow traffic, define on-street parking areas and provide for traffic calming.

LANDSCAPE DESIGN PROGRAM

GENERAL DESIGN

PURPOSE

The Landscape Design Program serves as a unifying design element with transition designed between land uses. It provides basic guidelines for design, selection and implementation of landscaping. The Landscape Design Program provides specific design treatments for each land use. The intent is to enhance the visual quality of the environment, screen views, buffer noise and contribute to the overall aesthetics of the Nevada Northwest Specific Plan.

GENERAL GUIDELINES

The general guidelines listed below are applicable to all land use designations throughout the Specific Plan area.

1. Landscaping should be used to soften, frame and enhance the visual quality of the environment, screen undesirable views and provide visual relief for large expanses of parking and structural exteriors.

2. Landscaping should function to enhance land use and user comfort. These functions may include wind deflection, moderation of heat and glare, muffling noise and reducing soil erosion.

3. Landscaping should be in scale with adjacent structures and be of appropriate size and maturity to accomplish its intended purpose.

4. Landscaping should incorporate multi-layering of plant materials by including trees and shrubs, in addition to grass or ground cover.

5. Vines and climbing plants integrated upon buildings, trellises and perimeter walls are strongly encouraged on otherwise undetailed walls or surfaces.

6. All plant materials should be spaced so that they do not interfere with adequate lighting or restrict access to emergency apparatus such as fire hydrants or fire alarm boxes.

7. Landscaping should allow adequate sight distance for motorists, particularly at neighborhood and project entries.

8. Areas for onsite retention of water should emulate natural forms such as ponds or streams. These features should incorporate the use of earth

berming, native rock or boulders and indigenous wetland or riparian vegetation.

9. All efforts shall be made to incorporate existing trees and other vegetation and natural features into the fabric of the landscape setting. Before final site planning is completed, areas or existing vegetation shall be located for incorporation into the final site plan where practicality and grading allow for preservation.

XERISCAPE/WATER CONSERVATION

1. The Xeriscape concept should be used in the development of all landscaping; plants of similar water use should be grouped to reduce irrigation needs.

2. Use of lawn should be limited to areas for public use, not as groundcover treatment.

3. Soil amendments and surface mulching of landscape areas shall be provided to increase water retention capacity of native soil.

LANDSCAPE ZONE GUIDELINES AND DESIGN THEMES

PURPOSE

Landscape concepts have been organized into landscape "zones" according to their hierarchy as visual elements, specific design and implementation characteristics. The landscape concept for each zone consists of a primary palette of recommended plant materials, recommended design techniques and minimum standards for landscape implementation.

DESIGN THEMES

Zone 1 – Tourist Commercial

The Tourist Commercial land designation is intended to support the Casino, Hotel Lodging, Recreational Vehicles (RV) and support uses. Extensive landscaping will be needed to enhance the Casino atmosphere.

The plant palette for this zone includes a rich variety of native and ornamental plant species. Entry areas and focal points are punctuated with masses of perennial color to enhance the casino resort image during the spring, summer and autumn months. Areas of turf should provide for specific limited recreational

opportunities where appropriate. Ornamental trees and shrub planting should define use areas, complement building architecture and provide seasonal interest.

Zone 2 - Commercial

The Commercial land use designation is intended to provide commercial lands for public use. A major element in developing land within this designation is to provide landscaping that complements the architectural elements of the design guidelines. The Commercial boulevard is a key gateway and circulation component of the plan for this zone. It provides an opportunity for a strong first impression and defining element of the plan.

Zone 3 – Multi-Family

The Multi-Family land designation is intended to provide various types of housing opportunities ranging from single family detached units to townhomes. Emphasis on buffer yards, formal planting yards, pedestrian friendly streetscapes are key elements of this multi-density setting.

Landscape planting in this zone should enhance the identity of the various multi-family projects. Landscape screening with trees and shrubs for privacy is of primary importance. Smaller scale, people friendly spaces such as courtyards or pocket parks create a sense of neighborhoods within the larger framework of the multi family zone. Turf areas should be provided for passive, family oriented recreation. Durable planting of shrubs, trees and perennial color will define spaces, create a sense of identity and provide seasonal interest. Occasional areas of perennial color are included to add detail and interest.

Zone 4 – Residential

The Residential land use designations are intended to provide low density residential housing opportunities.

Private homeowner landscaping should emphasize the use of indigenous and adaptive species with very limited areas of turf or ornamental planting. In this way, the residential areas will blend in color and texture with the surrounding environment. Graded areas should be protected from erosion and re-vegetated with native species.

Zone 5 – Open Space

The Open Space land use designation is intended to provide for and promote the natural character of the area.

V. DESIGN GUIDELINES

A. Purpose and Intent

The purpose of this section of the Specific Plan is to provide design criteria for future potential development of the Nevada Northwest LLC property. Design statements and graphic illustrations are included regarding the following:

1. Community Design Theme
2. Open Space and Recreation

As outlined in Section VII. M., "Design Guidelines Conformance", all development within Nevada Northwest LLC shall consider the applicable Design Guidelines contained in this section, and shall utilize these criteria in the design of each individual planning area as appropriate.

The following pages outline the design guidelines for the commercial and residential areas, as well as the guidelines and plans for the open space areas.

VI. IMPLEMENTATION

A. Purpose and Intent

The purpose and intent of the Implementation Section is to establish direction and procedures for the implementation and administration of the Nevada Northwest LLC Specific Plan including annexation, entitlements, conformance, revisions and alternative financing programs. It also serves as the zoning provisions governing the future development of Nevada Northwest LLC.

These standards were formulated to insure compliance with the spirit and intent of the Douglas County Zoning Code (Title 20). This Specific Plan provides for innovative community design and site planning which is consistent with orderly development along with a logical and timely sequence of governmental review.

B. Development Standards

General Provisions

1) All Douglas County Zoning Regulations in effect at the time of adoption of the Nevada Northwest LLC Specific Plan shall apply, except where expressly addressed and/or modified by the Nevada Northwest LLC Specific Plan. (See Appendix herein for applicable Douglas County zoning requirements.)

2) In addition to the Nevada Northwest LLC Development Standards, development within the project is subject to the applicable Nevada Northwest LLC Design Guidelines contained in Section V of this Specific Plan. All subsequent tentative maps, special use permits, site plans, and planned residential developments etc., shall be reviewed to determine consistency with these Development Standards and Design Guidelines.

3) If any regulation, condition, program or portion of this Specific Plan is held invalid or unconstitutional by any court of competent jurisdiction, such portion shall be deemed a separate, distinct and independent provision, and the invalidity of such provision shall not affect the validity of the remaining provisions hereof.

4) If a situation arises which is not sufficiently addressed in the Specific Plan or is not clearly understandable, then the Community Development Director shall render a determination or appropriate regulation deemed consistent with the intent of the Specific Plan and/or the Douglas County Development Code.

5) The Development Standards of the Nevada Northwest LLC Specific Plan were

established in accordance with Douglas County Code Section 20.612. If, at any time, a conflict arises between the Nevada Northwest LLC Specific Plan Development Standards and the currently adopted Douglas County Code, or any future modification thereof, the Nevada Northwest LLC Specific Plan Development Standards shall prevail and be deemed applicable, unless otherwise provided herein.

6) The development must comply with all applicable subdivision and construction requirements in effect at the time of development, except as modified herein.

7) Construction of drainage facilities shall comply with the requirements of the Douglas County. Maintenance of drainage facilities having regional significance shall be maintained by the Town of Minden.

8) Sewer facilities shall be designed and constructed in accordance with the requirements of the Minden-Gardnerville Sanitation District.

9) Community water system improvements shall be designed and constructed in accordance with the Town of Minden requirements.

10) All improvements within public street rights-of-way and landscape easements shall be installed, maintained and paid for by the responsible party as stated in Section IV., Table 1, Infrastructure Maintenance and Implementation.

11) The project's gross density is computed by dividing the total number of dwelling units in the Specific Plan area by the total number of acres in the Specific Plan area.

12) The residential density is computed by dividing the total number of dwelling units in the zoning district in which it is located by the gross residential acres designated for that zoning district. The gross residential acres of a Planning Area shall be the total number of acres within that Planning Area which are to be developed for residential uses, including but not limited to residential building sites, local streets, driveways, private recreation, landscaping and open space areas for the use of the residents of the Planning Area, including additional publicly and/or privately-owned open space within the individual designated residential Planning Area, minor easements serving the Planning Area and customary uses and structures accessory to residential development. Open Space will be computed by determining the net acreage of the planning areas, which is exclusive of road rights-of-way proposed to be dedicated to a public entity and delineated public and private open space areas. The requirement to provide 25% open space will be determined from the net acreage as described herein. For areas receiving development right transfers, open space requirements are waived per Douglas County Code. The Multifamily development area may use the open space area dedicated along the Martin Slough as credit towards open space requirements.

13) The Residential Planning Area for the single-family patio homes portion must utilize transfer of development rights. To fully realize the planned 116 unit density, all units must be transferred to this single family area. This transfer must be made in compliance with Douglas County Code together with any future amendments. A tentative subdivision map and planned development application must be filed for the entire Residential Planning Area to effect the proper placement and separation of uses. The multifamily development area is approved for 274 dwelling units, subject to review and approval of future building and site designs that demonstrate compliance with Douglas County Code unless otherwise modified in this Specific Plan.

14) Future development in the Residential Planning Area shall comply with the building height restrictions depicted in the Figure entitled "Residential Building Story Restrictions".

15) All commercial building heights shall comply with the zoning district height restrictions per the zoning district in which they are located. Exceptions and variances to building heights in the area zoned Tourist Commercial are approved per Figure J for the heights indicated.

16) Minor modifications to Development Area boundaries may result from final road alignment and/or final subdivision map modifications. Such minor modifications shall be permitted as provided in Section VI. N. 2., "Minor Modifications".

17) Design Review applications are required to be filed and approved prior to construction within the Multifamily, North or South Commercial Planning Areas. Tentative and Final Subdivision Map(s)/ Planned Development applications are required to be filed for the Single Family Planning Area prior to construction within the Development Area.

18) A Landscape Assessment District is required to be formed for maintenance of facilities as outlined in Section IV., Table 1, Infrastructure Maintenance and Implementation.

19) The Water Conveyance Advisory Committee shall review all subsequent development proposals. Piping of irrigation ditches shall comply with Title 20.100.060, 070 & 080, and direction of the Water Conveyance Advisory Committee as may be imposed on future applications.

20) The drainage facilities serving the Specific Plan shall provide for the use and regular maintenance of sand/oil separators.

21) Annexation to the Town of Minden and MGSD is required prior to issuance of a building permit or recording of a final subdivision map or commercial development on any site within the Specific Plan.

22) The development shall adhere to the requirements of the Douglas County "Right to Farm" ordinance.

23) If any historically significant artifacts are encountered during excavation or construction on the site, construction must cease in the area affected and the resource must be cataloged and/or recovered by an Archaeologist. A report of its findings must be filed with the State Historic Preservation Office.

24) Traffic control devices will be constructed consistent with Douglas County Master Plan Policies 10.19.02.1 through 10.19.02.5 and consistent with Title 20 of Douglas County Code.

25) All Single Family Detached homes within the Specific Plan will be fenced and have front yard landscaping (including street trees) as a condition of the issuance of a certificate of occupancy for each unit.

26) Where the Nevada Northwest LLC Development standards are silent or do not address specific needs, Douglas County Code and Douglas County Design Criteria and Improvement Standards, adopted September 17, 1998, and subsequent amendments, shall prevail.

27) The Nevada Northwest LLC Specific Plan is valid for 20 years after the effective date of the ordinance adoption by the Douglas County Commission.

28) Phasing of improvements will comply with the phasing plan Figure E.

29) Future traffic improvements must comply with the recommendations contained within the Traffic Impact Analysis dated July 10, 2001 prepared by LSC Traffic Engineers as well as all approved amendments and updates to the study. Increases in commercial floor area or residential density within the planning areas may require updates to the traffic study, and as a result additional mitigation may be required.

30) Possible wetlands may be encountered at the proposed residential street intersecting Lucerne Street. A wetlands delineation will be conducted in this area, the results of which will be provided with the improvement plans and any required mitigation.

B. Governmental Processing

The Douglas County is responsible for the processing and administration of the Nevada Northwest LLC Specific Plan, including on-going and subsequent

applications prescribed by state and local statutes relating to the development of the Nevada Northwest LLC property.

C. *Master Plan Amendments/Updates*

In conjunction with the processing of the Nevada Northwest LLC Specific Plan, a Master Plan Amendment was required in order to revise locations of land uses and circulation within Nevada Northwest LLC. The adoption of any Amendment to the Master Plan or any Master Plan Update by the County shall not require amendment of the Specific Plan. However, any subsequent discretionary approval or Specific Plan Amendment must be consistent with the Master Plan as amended and/or updated except to the extent that such change in the Master Plan deals with matters with respect to which the Developer shall possess vested rights.

D. *Specific Plan Adoption*

The Nevada Northwest LLC Specific Plan was adopted by Ordinance in accordance with County policy.

The Nevada Northwest LLC Specific Plan has been developed as both a regulatory document as well as a land use policy plan. The development standards have been structured in a format consistent with the Douglas County Zoning Ordinance, incorporating general provisions, permitted uses, development standards, project approval procedures and other zoning related provisions. The remaining sections of the Nevada Northwest LLC Specific Plan are oriented to land use policies and include background and project information, planning policies, design criteria, conceptual plans and infrastructure proposals.

E. *Subdivision*

Development of Nevada Northwest LLC will be implemented through a series of tentative maps, tentative parcel maps and Final Maps, and Design Review applications. Subsequently, in conjunction with the Phasing Plan, each parcel or parcels designated for development purposes will have one or more tentative subdivision maps submitted to create developable lots or parcels. It is intended that the tentative subdivision maps will be followed by final maps at the appropriate times for phased development.

The tentative maps or tentative parcel maps shall be consistent with the Douglas County Development Code.

F. Administrative Review/Staff Review

All development proposals and land uses within Nevada Northwest LLC are subject to Staff Review (also called "Administrative Review") in addition to any required discretionary review by the Douglas County Planning Department, unless otherwise exempted by State or Federal law or the Douglas County Planning Department. This is to ensure compliance with the Nevada Northwest LLC Specific Plan (including Design Guidelines and Development Standards) and applicable sections of the Douglas County Development Code.

Staff Review is a "staff level" review process which may include "over the counter" review or "plan check" review, depending upon the magnitude of the project submittal. Staff Review will not typically require review by the Planning Commission. The Director may, at his or her discretion, forward a Staff Review approval item or a use consistency determination to the Planning Commission for an interpretation of the purpose and intent of the Specific Plan relative to the project under review. Denial of a Staff Review request by the Director may be appealed to the Planning Commission for a decision.

G. Design Review

The Design Review process is a site specific review process aimed at providing high quality development on a given site. The Nevada Northwest LLC Development Standards and Title 20 identify types of projects which require the Design Review process. The Development Standards and Design Guidelines provide the standards and guidelines by which the Douglas County shall evaluate all project submittals. Projects requiring Design Review shall be processed in accordance with Title 20, "Design Review", of the Douglas County Code which is contained in Appendix D of the Specific Plan.

H. Concurrent Processing

When any project involves multiple applications to be processed concurrently and where Staff and Planning Commission review are specified, said applications shall be reviewed and approved by the Planning Commission.

I. Design Guideline Conformance

All proposed development at Nevada Northwest LLC is subject to the Nevada Northwest LLC Design Guidelines. In conjunction with the applicable review process (i.e., Staff Review, Design Review, Special Use Permit, Subdivision, etc.), the Douglas County shall review project submittals for consistency with the

Nevada Northwest LLC Design Guidelines. In addition to any Douglas County required "findings" of approval of a given development application, the following Design Guideline "findings" of approval for development requests shall also be made:

1. The proposed project conforms with the Nevada Northwest LLC Specific Plan including all applicable Development Standards and Design Guidelines.

2. The proposed project is compatible with and enhances the established design theme in the surrounding area, where applicable.

J. Specific Plan Amendments

Because the Nevada Northwest LLC development will be phased over a period of approximately twenty (20) years, it is anticipated that market conditions and development practices may change, thereby necessitating specific plan amendments. Amendments may be requested at any time pursuant to Section 20.612.060 of Douglas County Code. If the amendment is deemed major by the Director, it will be processed in the same manner as the original Specific Plan. Proposed amendments deemed to be Minor Modifications by the Director as defined herein will be processed administratively by the Administrative Review process.

K. Minor Modifications:

The following Minor Modifications to the Specific Plan do not require a Specific Plan Amendment and are subject to review and approval by the Director. The Director, however, shall have the discretion to refer any such request for modification to the Planning Commission for decision.

1) Utility alignments and minor adjustments to phasing of utilities. Minor adjustments may include earlier construction, substitution of oversized facilities in adjacent phases and similar adjustments.

2) Utility service road alignments.

3) Final facility sizing and precise location of water, sewer and storm drainage improvements when directed by the County Engineer.

4) Change in utility and/or infrastructure servicing agency.

5) Arterial road alignment revisions when the centerline moves by less than 200 feet.

6) Collector street alignments including but not limited to off-road connections and 4-way intersections at arterial roads.

7) Decrease in project density.

8) Adjustment of planning area boundaries of less than 250 feet which do not result in an increase in visual impact, a significant reduction of open space or a significant increase of residential areas.

9) Minor landscape, wall material, wall alignment and streetscape design modifications which are consistent with the design guidelines contained in this document.

10) Modifications to Architectural Design Guidelines, such as variations of materials within the particular architectural style and minor variations in colors, excluding hillside building or roof color requirements.

11) Changes in park facilities or conceptual park drawings.

12) Minor revisions to project graphics which do not substantially change the intent of the graphics in the Nevada Northwest LLC Specific Plan.

13) Deletion of unnecessary drainage facilities or infrastructure when approved by the County Engineer.

14) Specific modifications of a similar nature to those listed above, which are deemed minor by the Director, which are in keeping with the spirit and intent of the Specific Plan and which are in conformance with the Master Plan.

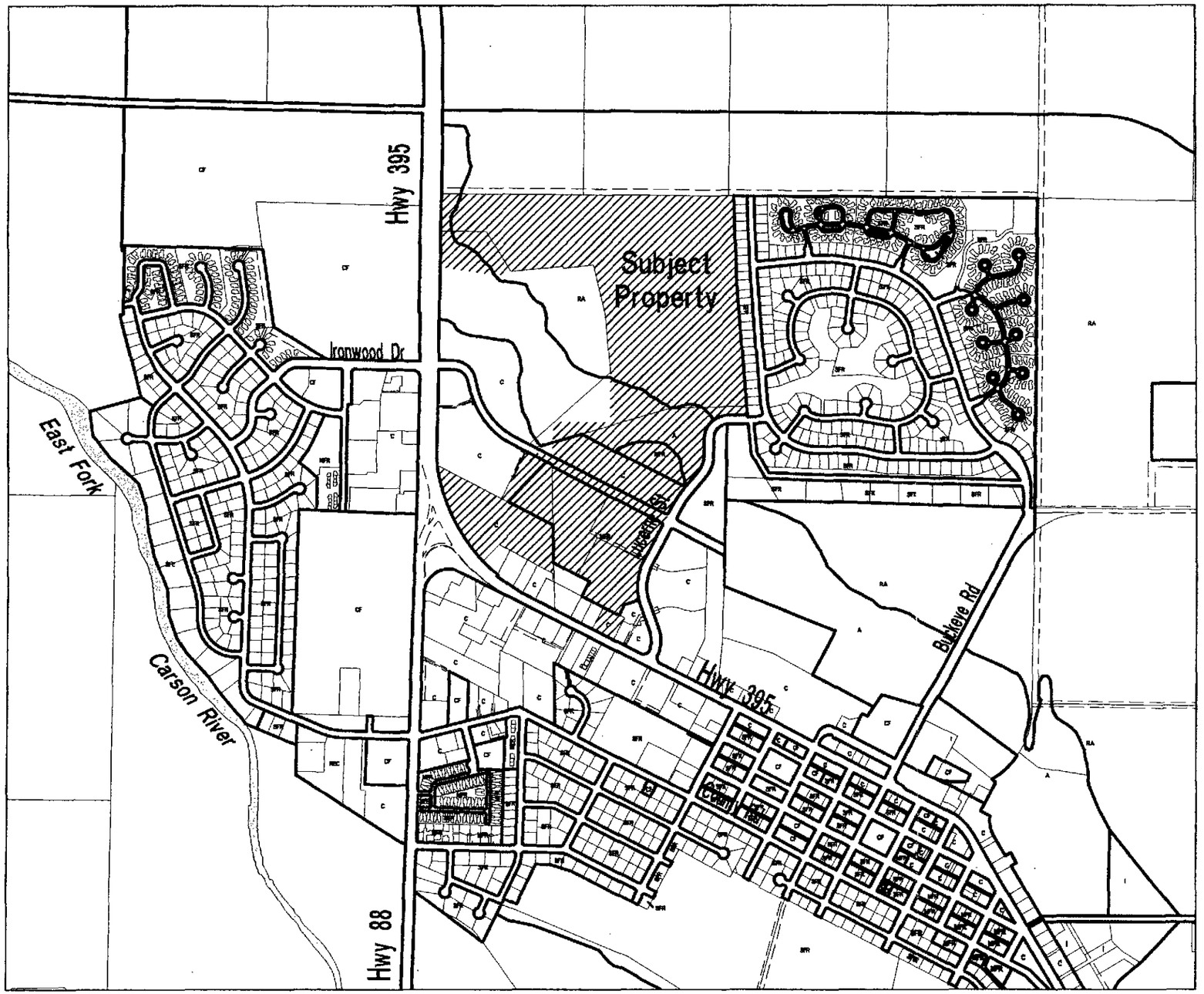
L. Variances

All variance requests shall be processed in accordance with Title 20 of Douglas County unless otherwise approved within this specific plan.

APPENDIX
EXHIBIT A

Nevada Northwest, LLC
Specific Plan

Existing Land Use Map



LEGEND

- A - Agricultural
- C - Commercial
- CF - Community Facility
- I - Industrial
- MFR - Multi-Family Residential
- RA - Receiving Area
- REC - Recreation
- RR - Rural Residential 5 Acres per Unit
- PR - Private Recreation
- SFE - Single-Family Estates 1 to 2 Acres per Unit
- SFR - Single-Family Residential 1 to 6 Units per Acre

M.A.G.I.C.
DOUGLAS COUNTY
Multi-Agency Geographic Information Center

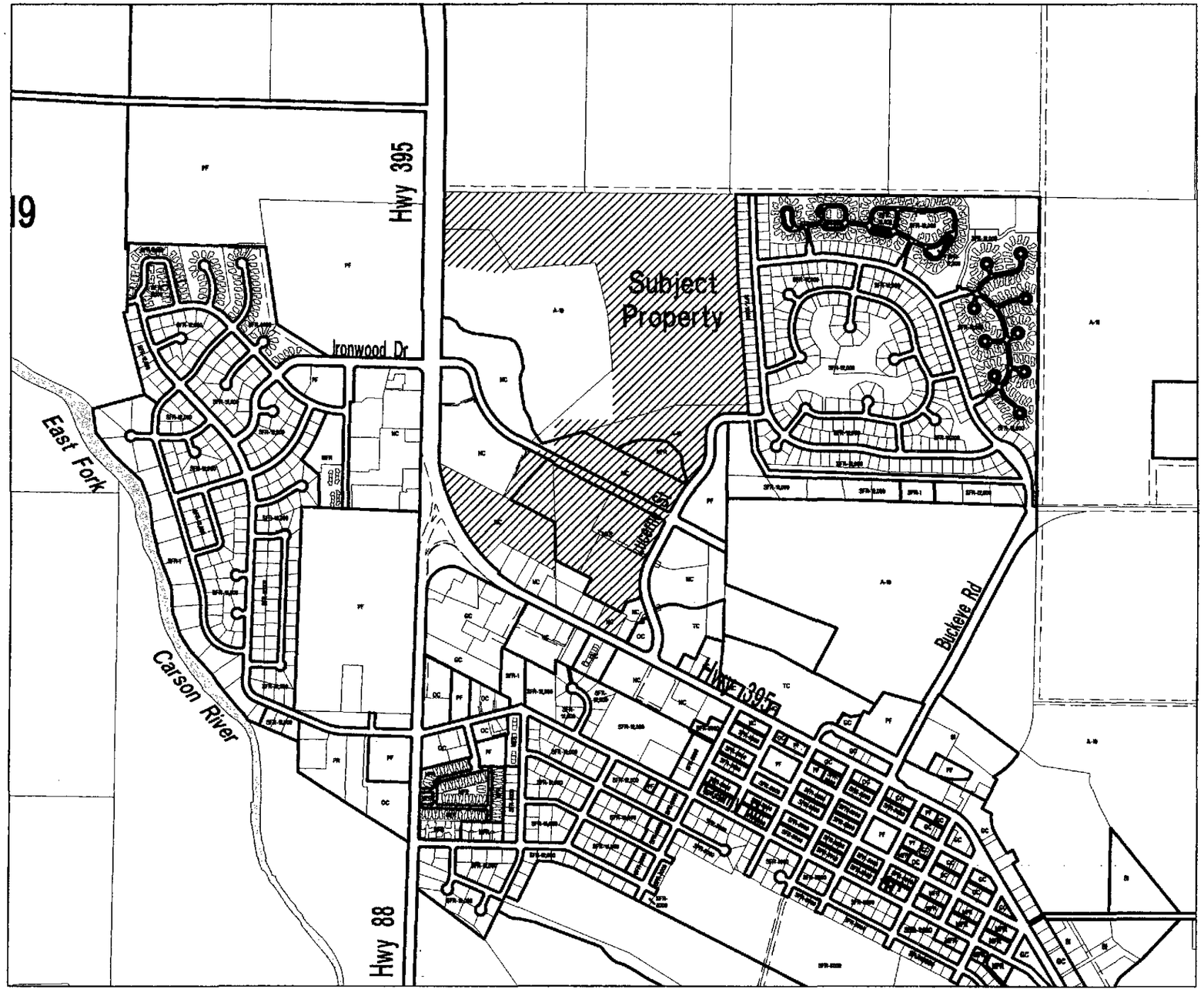
SCALE: 1" = 1,000
DATE: 5/2/01
KR9439

R.O. Anderson ENGINEERING INC

EXHIBIT 1

Nevada Northwest, LLC
Specific Plan

Existing Zoning Map



LEGEND

- A-19 - Agricultural 19 Acres
- GC - General Commercial
- LI - Light Industrial
- MFR - Multi-Family Residential
- MUC - Mixed Use Commercial
- NC - Neighborhood Commercial
- OC - Office Commercial
- PF - Public Facility
- PR - Private Recreation
- RA-10 - Rural Agricultural 10 Acres
- RA-5 - Rural Agricultural 5 Acres
- SFR-1 - Single-Family Residential 1 Acre
- SFR-1/2 - Single-Family Residential 1/2 Acre
- SFR-12,000 - Single-Family Residential 12,000 Square Feet
- SFR-8,000 - Single-Family Residential 8,000 Square Feet
- SI - Service Industrial
- TC - Tourist Commercial

M.A.G.I.C.
DOUGLAS COUNTY
Multi-Agency Geographic Information Center

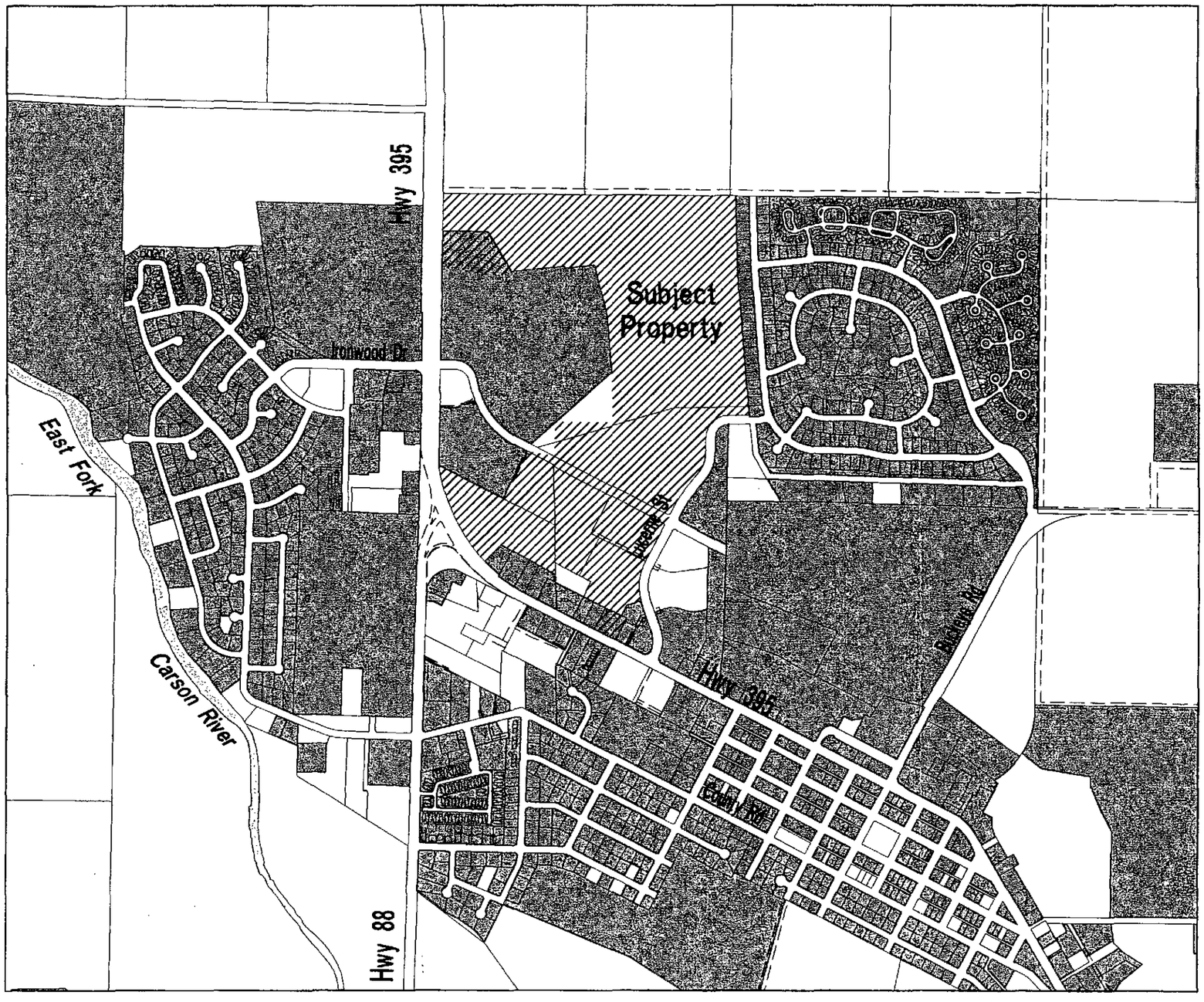
SCALE: 1" = 1,000
DATE: 5/2/01
KR0439

R. Anderson ENGINEERING INC

EXHIBIT 2

Nevada Northwest, LLC
Specific Plan

Improved Properties Map



LEGEND

Improved Properties

The data contained herein has been compiled on a geographic information system for the use of Douglas County. The data does not represent survey delineation and should not be construed as a replacement for the authoritative source, plat maps, deeds, resurveys, etc. No liability is assumed by Douglas County or MAGIC as to the sufficiency or accuracy of the data.

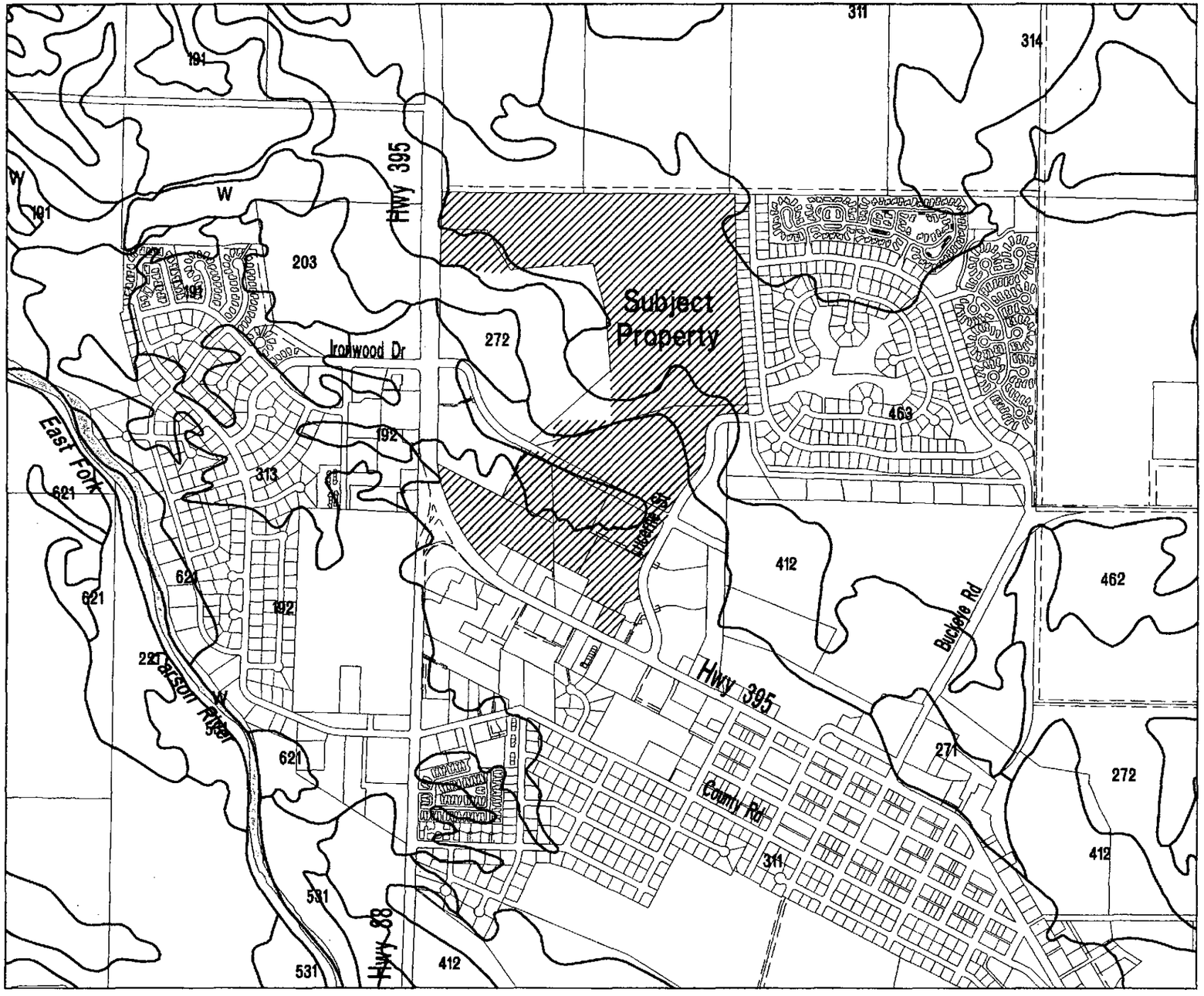
M.A.G.I.C.
DOUGLAS COUNTY
Multi-Agency Geographic Information Center

SCALE: 1" = 1,000
DATE: 5/2/01
XR0438

R Anderson ENGINEERING INC

EXHIBIT 3

Nevada Northwest, LLC
Specific Plan



LEGEND

Soil Map

- 191 - Cradlebaugh Clay Loam, drained, slightly saline-alkali
- 192 - Cradlebaugh Clay Loam, drained, strongly saline-alkali
- 203 - Dangberg Clay, strongly saline-alkali
- 221 - East Fork Variant Loam
- 271 - East Fork Loam
- 272 - East Fork Clay Loam
- 311 - Gardnerville Clay Loam
- 312 - Gardnerville Clay Loam, drained
- 313 - Gardnerville Clay Loam, slightly saline-alkali
- 314 - Gardnerville Clay
- 394 - Haybourne Fine Sandy Loam
- 411 - Henningsen Loam
- 412 - Henningsen Loam, Wet
- 413 - Henningsen Gravelly Loam
- 414 - Henningsen Gravelly Loam, Wet
- 422 - Henningsen Variant Loam
- 461 - Hussman Silty Clay Loam
- 462 - Hussman Clay Loam
- 463 - Hussman Clay
- 531 - Jubilee Loam
- 621 - Nivot Loam
- 781 - Reno Gravelly Sandy Loam
- W - Standing Water

M.A.G.I.C.
DOUGLAS COUNTY
Multi-Agency Geographic Information Center

SCALE: 1" = 1,000
DATE: 5/2/01
KR8438

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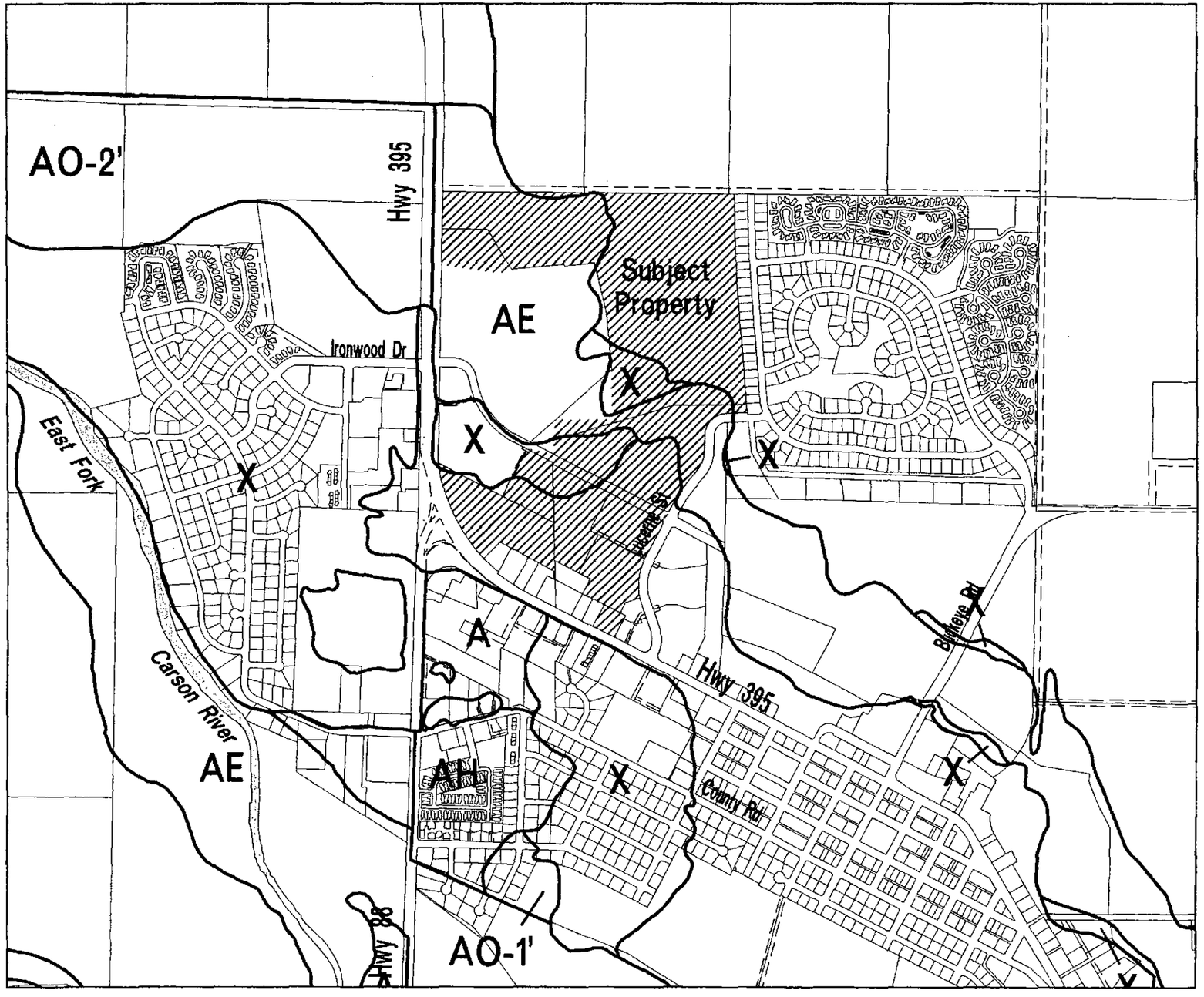
EXHIBIT 4

Nevada Northwest, LLC
Specific Plan

Flood Zone Map



LEGEND

100-YEAR FLOOD ZONES

A - No Base Flood Elevations Determined

AE - Base Flood Elevations Determined

AH - Flood Depths of 1 to 3 Feet

AO - Flood Depths of 1 to 3 Feet, Average Depths Determined

500-YEAR FLOOD ZONE

X - Areas of 500-year Flood

SOURCE: FEMA Flood Insurance Rate Maps - 32005C0235 F 11-8-99

MAGIC
Douglas County
Multi-Agency Geographic Information Center

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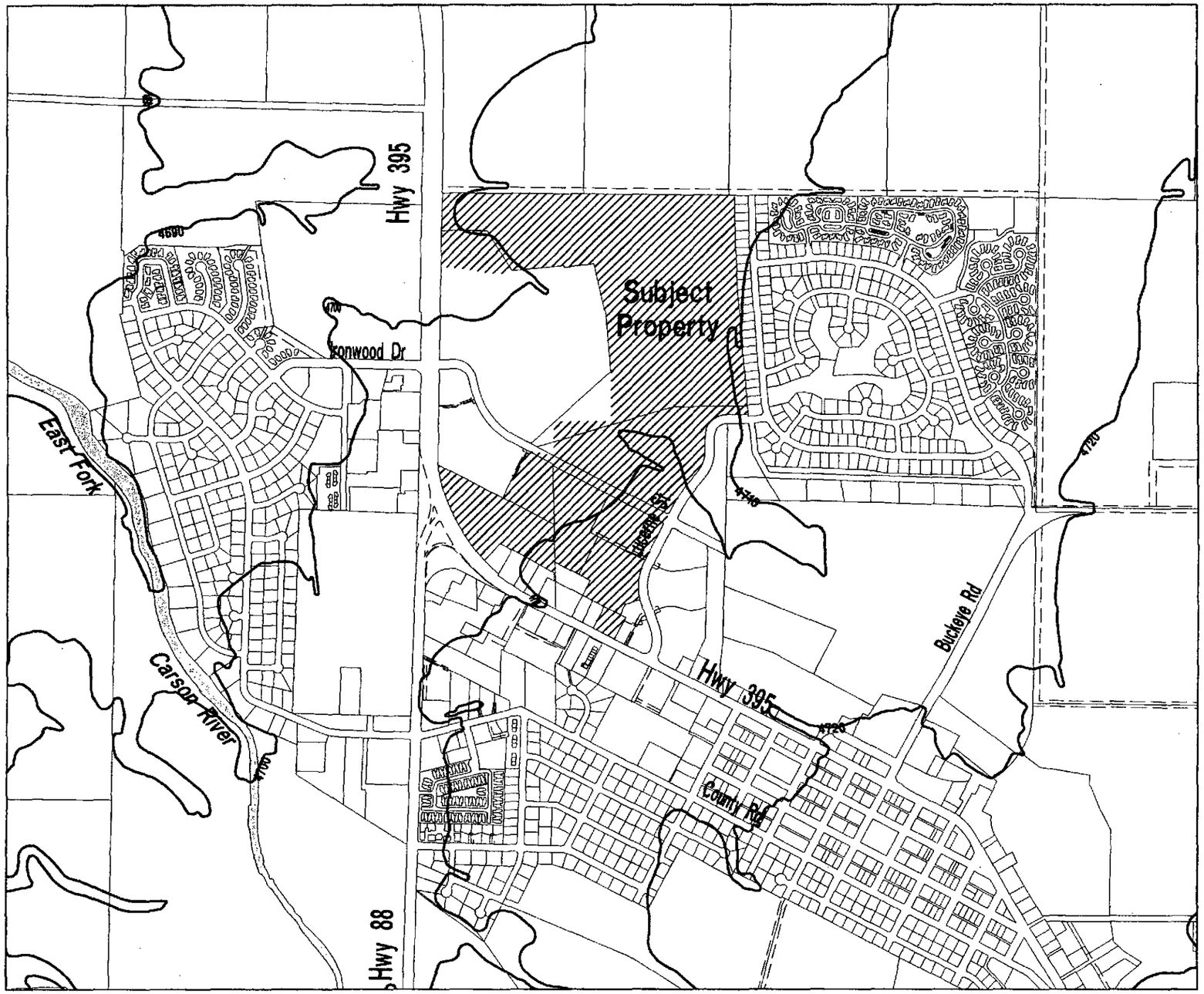
DATE: 5/2/01
KR0439

R O Anderson ENGINEERING INC

EXHIBIT 5

Nevada Northwest, LLC
Specific Plan

Elevation Contour Map



LEGEND

Contour Lines, Internal Variable In Feet Above Sea Level

SOURCE: Digital data compiled by Smartscan from USGS 7.5 minute quads

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DOUGLAS COUNTY
Multi-Agency Geographic Information Center

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DATE: 5/2/01
KR0438

Anderson ENGINEERING INC

EXHIBIT 6

Nevada Northwest, LLC
Specific Plan

Ditch System Map

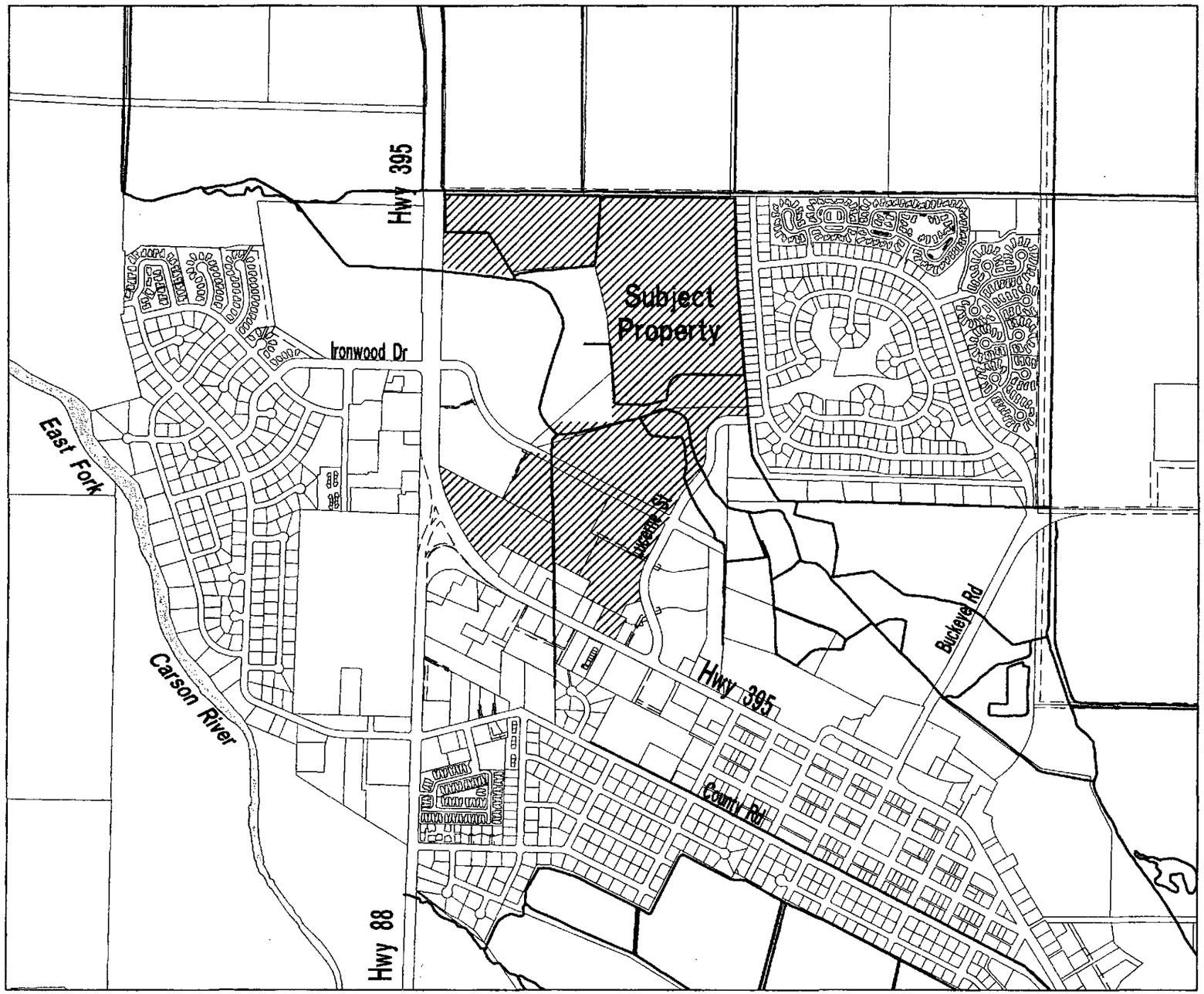

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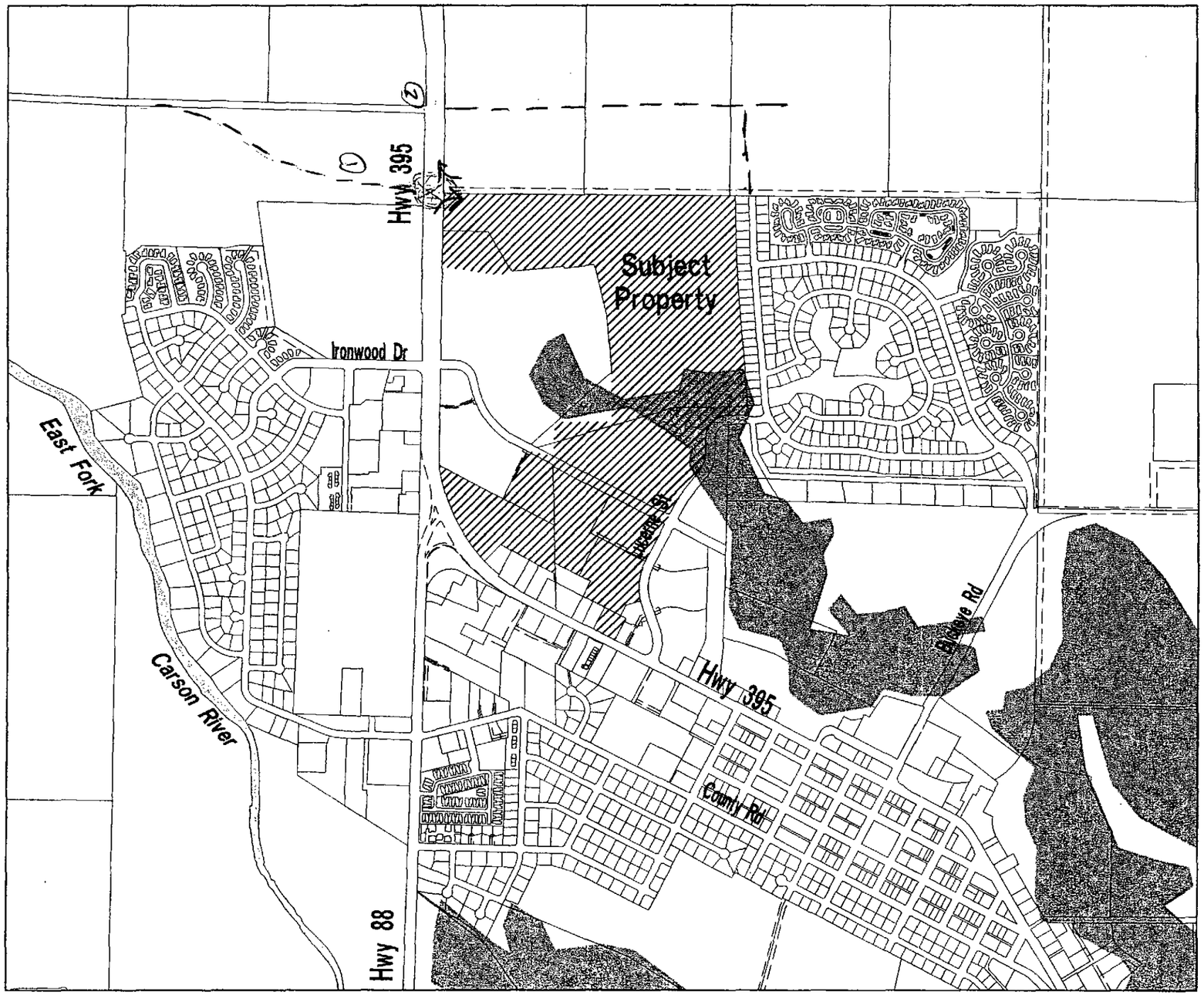
EXHIBIT 7

Nevada Northwest, LLC
Specific Plan

Wetlands Map



LEGEND

Wetlands

SOURCE: SEA Engineers

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EXHIBIT 8

Nevada Northwest, LLC
Specific Plan

Important Farmlands Map

LEGEND

Prime Farmland

Farmland of Statewide and Local Importance

SOURCE: SEA Engineers

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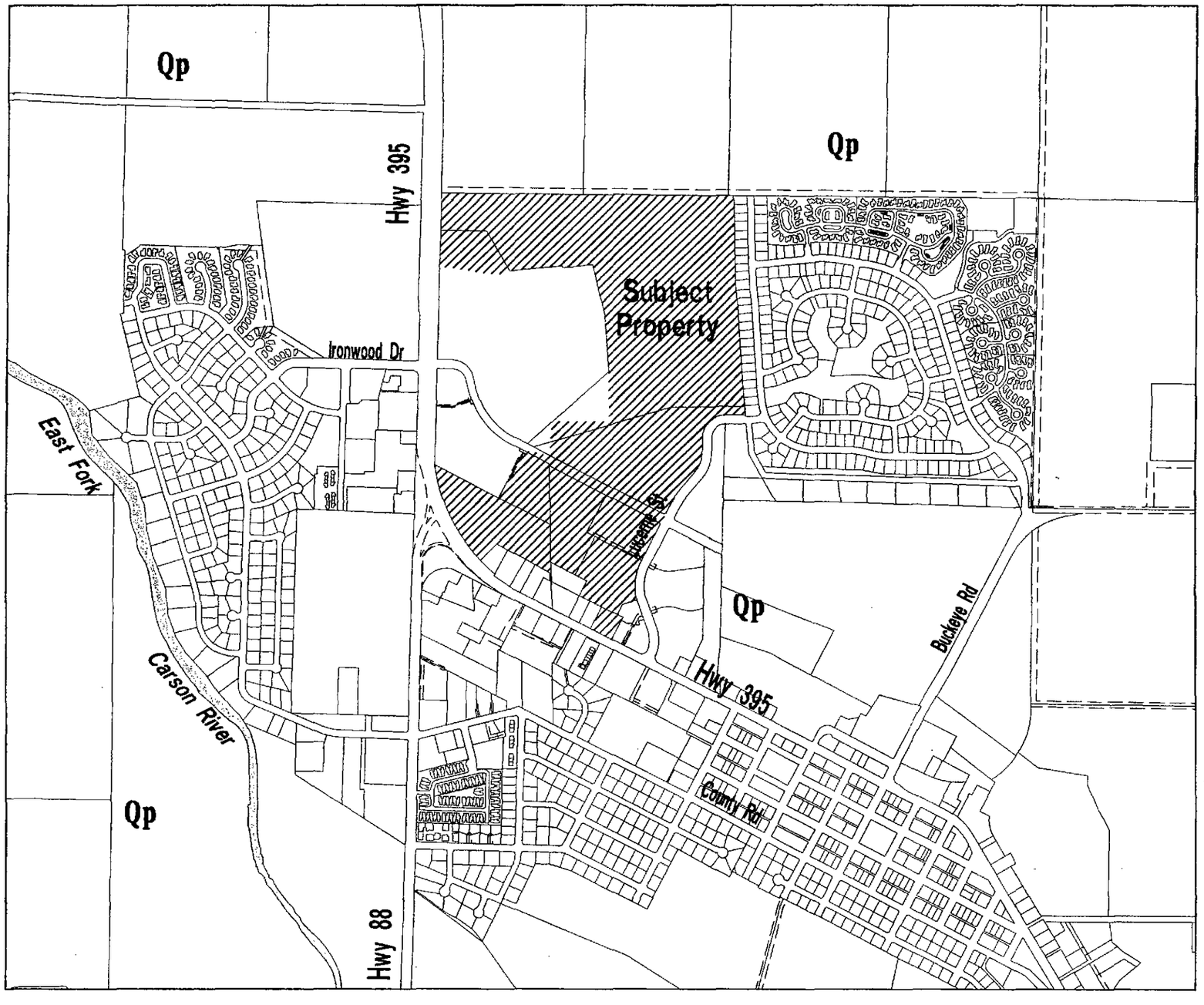
EXHIBIT 10

Nevada Northwest, LLC
Specific Plan

Geologic Features Map



LEGEND

Qp - Alluvium

SOURCE: SEA Engineers

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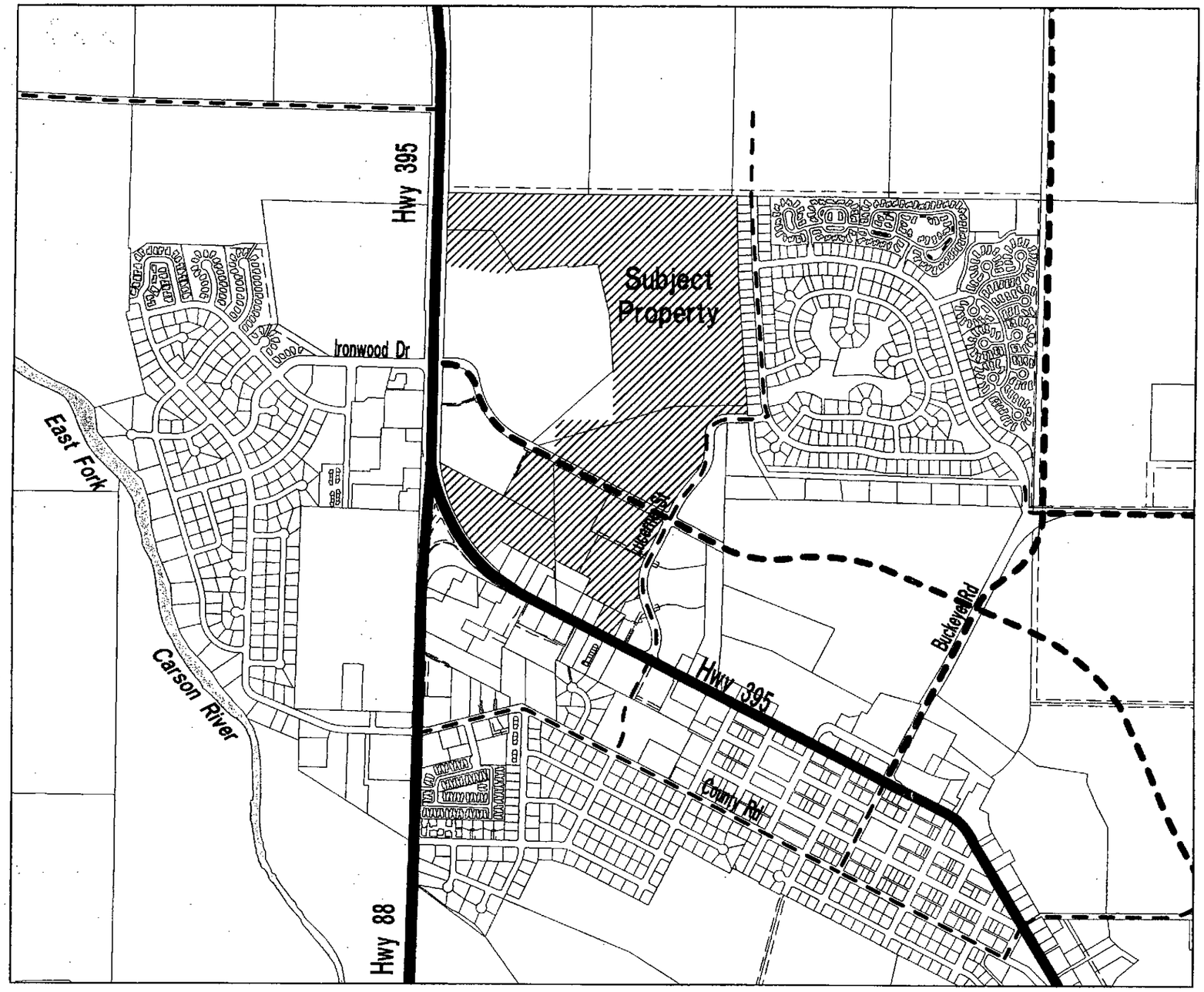
EXHIBIT 11

Nevada Northwest, LLC
Specific Plan

Master Plan Transportation Map



LEGEND

ARTERIAL
Principle
Minor

COLLECTOR
Major
Minor

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Multi-Agency Geographic Information Center

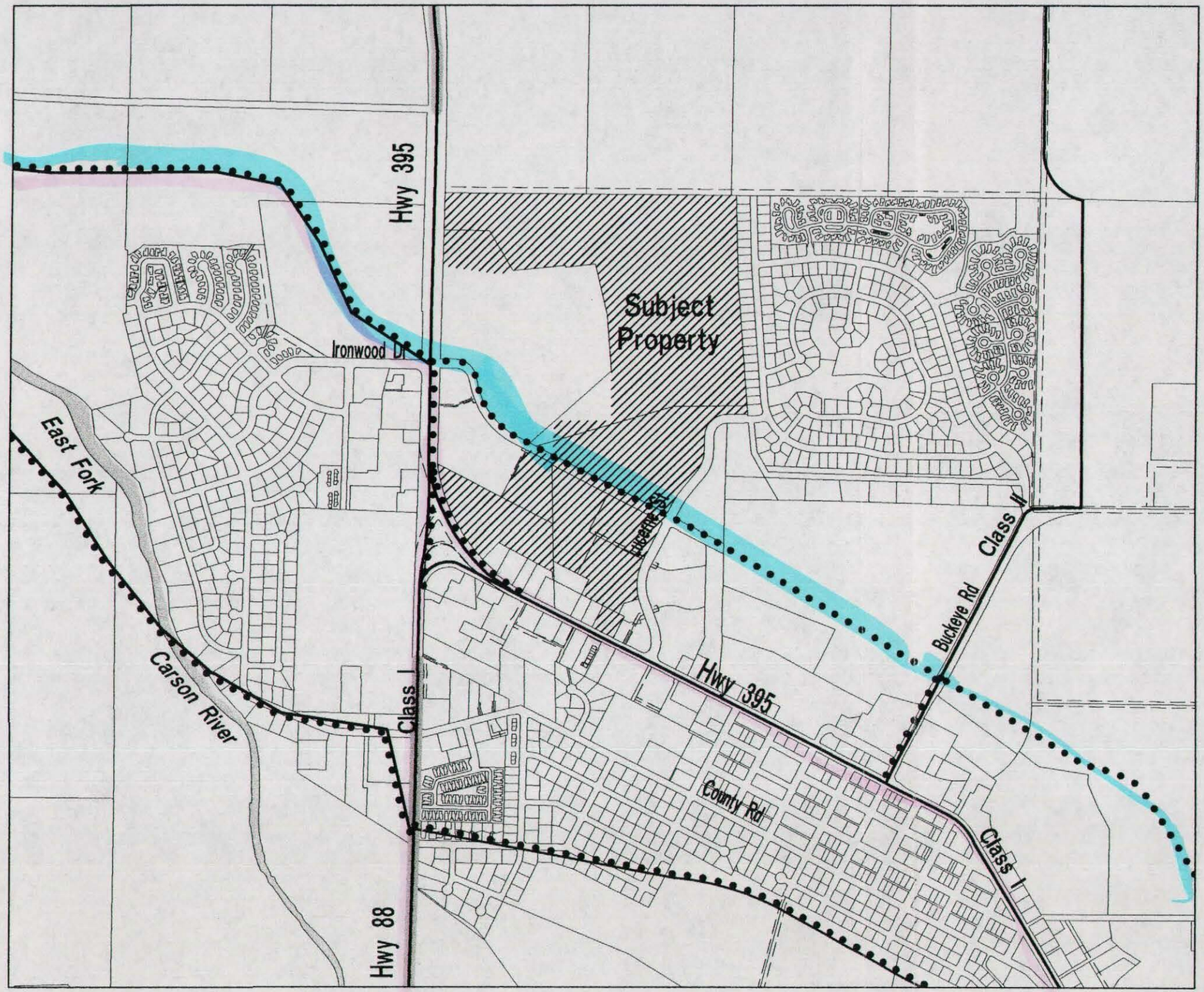
SCALE: 1" = 1,000
DATE: 5/2/01
KR9439

R Anderson ENGINEERING INC

EXHIBIT 12

Nevada Northwest, LLC
Specific Plan

Bikeways and Scenic Corridor Map



LEGEND

- Scenic Corridor
- Multi-Purpose Trail
- Bikeway with Class Designation

The data contained herein has been compiled on a geographic information system for the use of Douglas County. The data does not represent survey delineation and should not be construed as a replacement for the authoritative source, plat maps, deeds, resurveys, etc. No liability is assumed by Douglas County or MAGIC as to the sufficiency or accuracy of the data.

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DOUGLAS COUNTY
Multi-Agency Geographic Information Center

SCALE: 1" = 1000'
DATE: 5/7/01
KR0439

R Anderson ENGINEERING INC

EXHIBIT 13

Class I
Multipurpose

EXHIBIT B
COMMERCIAL ELEVATIONS

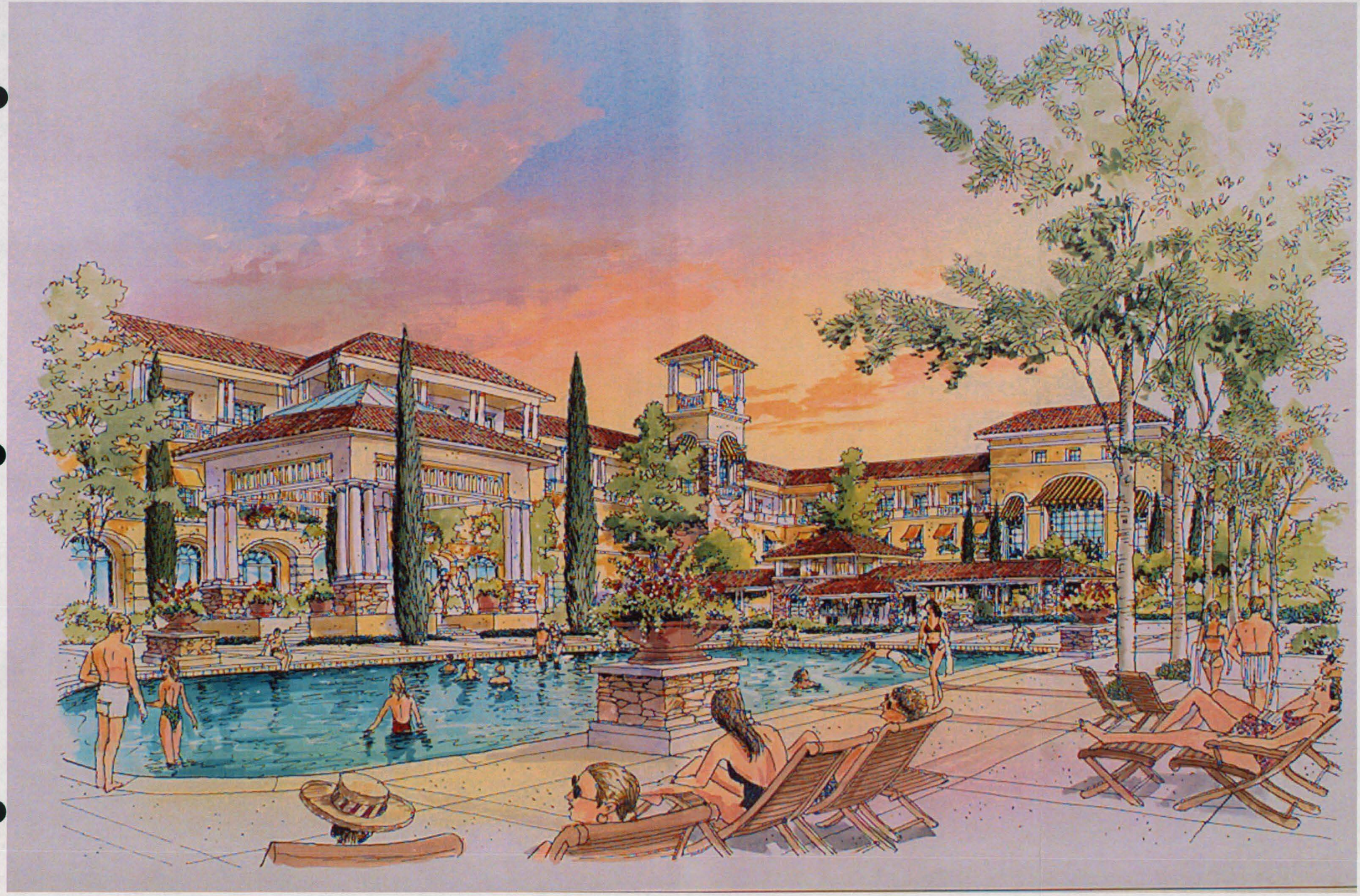


EXHIBIT C
SINGLE FAMILY ELEVATIONS


VAN BARTOSIK 2001

EXHIBIT D
MULTIFAMILY ELEVATIONS


JAN BARTOSIK 20

EXHIBIT E
TRAFFIC IMPACT ANALYSIS

NEVADA NORTHWEST MULTI-USE DEVELOPMENT TRAFFIC IMPACT ANALYSIS

Douglas County, Nevada

Prepared for

R. O. Engineering, Inc.

Prepared by

LSC Transportation Consultants, Inc.

NEVADA NORTHWEST MULTI-USE DEVELOPMENT TRAFFIC IMPACT ANALYSIS

Douglas County, Nevada

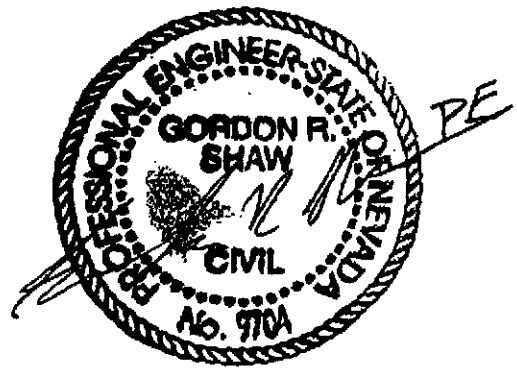
Prepared for

R. O. Anderson Engineering, Inc.
1624 10th Street
Post Office Box 2294
Minden, Nevada 89423

Prepared by

LSC Transportation Consultants, Inc.
2690 Lake Forest Road, Suite C
Post Office Box 5875
Tahoe City, California 96145

July 10, 2001



LSC #017440

Executive Summary

PURPOSE

Nevada Northwest, Inc. is proposing to construct a multi-use development consisting of single-family residential, multi-family residential, neighborhood commercial, and tourist commercial land uses. In order to utilize these land uses, the owner / developer is proposing changes to the existing land use designations. The site is 115.3 acres in size and is located on the east and north side of US 395, west of Lantana Drive and Lucerne Street, in Douglas County, Nevada. This project is currently in a master plan conceptual phase. The exact buildings, square footage, and their locations are not known. This report analyzes the traffic impacts generated by the conceptual plan of the completed development based on the proposed land use areas.

CONCLUSIONS

The findings of the Traffic Impact Analysis are listed below:

1. Traffic in the area will continue to increase with or without the proposed development.
2. Four of the five intersections studied operate at an acceptable level of service during the critical peak hours under existing conditions without the project. Two of the five intersections will operate at an acceptable level of service during the critical peak hours under existing conditions with the project with no mitigation measures. One of the five intersections will operate an acceptable level of service during the critical peak hours under 2015 conditions with the project with no mitigation measures.
3. Additional turning lanes are required at the assumed access points to the development on the future extension of Muller Lane Parkway and the access approach at the intersection of US 395 / SR 88.
4. Safe walking conditions will exist for pedestrians. Transit service is provided within a quarter mile from the site by the Douglas Area Rapid Transit (DART). No trip reduction was accounted for DART ridership.
5. Intersection sight distance is not part of this analysis since this site is in a conceptual phase and exact access locations have not been identified.
6. Signal warrants are met at the intersections of US 395 / Muller Lane Parkway, US 395 / Ironwood Drive, and US 395 / Lucerne Street.
7. The proposed mixed-use project is expected to generate 21,486 average daily weekday trips and 2,028 trips occurring during the weekday PM peak-hour. Traffic generated by the Nevada Northwest development will have a significant impact on the adjacent roadways.

RECOMMENDATIONS

The following recommendations are made to mitigate project traffic impacts:

1. Signalization of US 395/Muller Lane is required in order to provide adequate level of service at this intersection in existing and future conditions. With the future construction of Muller Lane Parkway to the east of US 395, signalization, additional turn lanes, and acceleration and deceleration lanes should be implemented. An acceleration/deceleration lane on US 395 southbound between Muller Lane Parkway and Ironwood Drive would be required by NDOT standards. Signalization of this intersection brings the level of service to acceptable standards without further mitigation in the existing and future conditions. However, an associated eastbound right turn lane of a minimum of 125 feet is also recommended.

2. Signalization of US 395 / Ironwood Drive is one option to obtain adequate level of service for this intersection. This unsignalized intersection has warranted a signal since 1998. Eastbound lane striping is recommended with the implementation of the signal. Signalization of this intersection brings the level of service to acceptable standards without further mitigation with this project in the existing and future conditions. Another option would be to convert the Ironwood Drive/US 395 to right-in / right-out or left-in / right-out movements. This also provides an acceptable level of service in existing and future conditions. Any required signing, striping, or traffic control improvements should comply with Douglas County and Nevada Department of Transportation requirements.

3. The intersection of US 395 / SR 88 will require restriping of the northeast-bound through lane on SR 88 and the southwest-bound left turn lane on US 395. Striping of the site access approach will also be required. Furthermore, appropriate modifications to the existing signal system's controller cabinet will be required. There are two options identified in this report for mitigation with the project in existing and future conditions. Option one would require that there be a left turn lane, through lane, and an exclusive "free" right turn lane for the proposed access to the site. This option will bring the existing with project conditions to a level of service of LOS "D." However, the intersection will again fall below standards in the year 2015 with a LOS "E." Option two would provide dual northwest-bound left turn lanes. This option will raise the level of service to a LOS "C" in the existing and 2015 with project scenarios.

4. The intersection of US 395 / Lucerne Street currently functions well, but fails in the existing and 2015 with project scenarios strictly due to the left turn movement on Lucerne Street. There are two options presented in this report that can provide mitigation. Option one consists of signalizing the intersection. Under this option,

the level of service will continue to operate at LOS "A" with the project in 2015. Option two is the conversion to right-in / right-out. With the construction and extension of Ironwood Drive to the east this is a feasible solution. This option maintains a LOS "C" with the project in 2015.

5. If Ironwood Drive / US 395 intersection is signalized, it should be coordinated with the Muller Lane and SR 88 signals. If the intersection of US 395 / Lucerne Street is signalized, it should be actuated-coordinated with the SR 88 signal. Underground fiberoptic connections between Muller Lane and Lucerne Street is recommended. A signal progression study is needed for US 395, however, this is outside of the scope of this report. A signal contractor is needed to complete the coordination with the US 395/SR 88 traffic signal.

6. Drivers to and from the Windhaven subdivision will be impacted by increased traffic on external roadways providing access to US 395. However, internal cut-through traffic within the subdivision is not anticipated. Residents will have alternate routes to travel to and from their destinations as more cross-circulation and parallel travel ways are constructed. With construction of Muller Lane between US 395 and Heybourne Road, the extension of Lantana Drive to Muller Lane, and the extension of Ironwood Drive, traffic volumes within the subdivision would redistribute and increase local traffic on the northern end of Lantana Drive. This impact is a result of the extension of Muller Lane, as called for in the Douglas County *Master Plan*, and is not part of this development.

Table of Contents

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Chapter 1
Introduction

The purpose of this traffic engineering study is to determine the impacts of the traffic generated by this proposed development on the surrounding roadway infrastructure. This study will determine if mitigation is required to keep the roadways operating safely and at capacity levels acceptable under the current code. This report is based on local ordinances, and provides a complete analysis of the intersections identified for analysis. The existing, existing plus project, and future traffic conditions with the project are analyzed and discussed in detail in the subsequent sections. This report examines the full build out of the site-generated traffic volumes, as well as the operational analyses of study intersections located within the study area. This report documents the findings and conclusions of a Traffic Impact Analysis conducted for a proposed site plan for property located in Douglas County, Nevada.

SCOPE OF STUDY

This traffic engineering study documents the existing and proposed conditions, traffic data, safety analysis, and capacity in accordance with the requirements of the Douglas County ordinances.

The scope of the study is defined by LSC Transportation Consultants, Inc. and the *Douglas County Design Criteria and Improvement Standards* (Section 2.14.4). This scope was developed based on the number of intersections that will experience a reasonable increase in traffic during the peak traffic hour. The identified study area is shown in Figure 1. The following intersections were identified for analysis:

1. US 395 / Muller Lane
2. US 395 / Ironwood Drive
3. US 395 / SR 88
4. US 395 / Lucerne Street
5. Ironwood Drive / Lucerne Street

The result of this traffic study is used to develop recommendations to mitigate project traffic impacts. As defined in Section 2.14.4 of the *Douglas County Design Criteria and Improvement Standards* this analysis considers three scenarios:

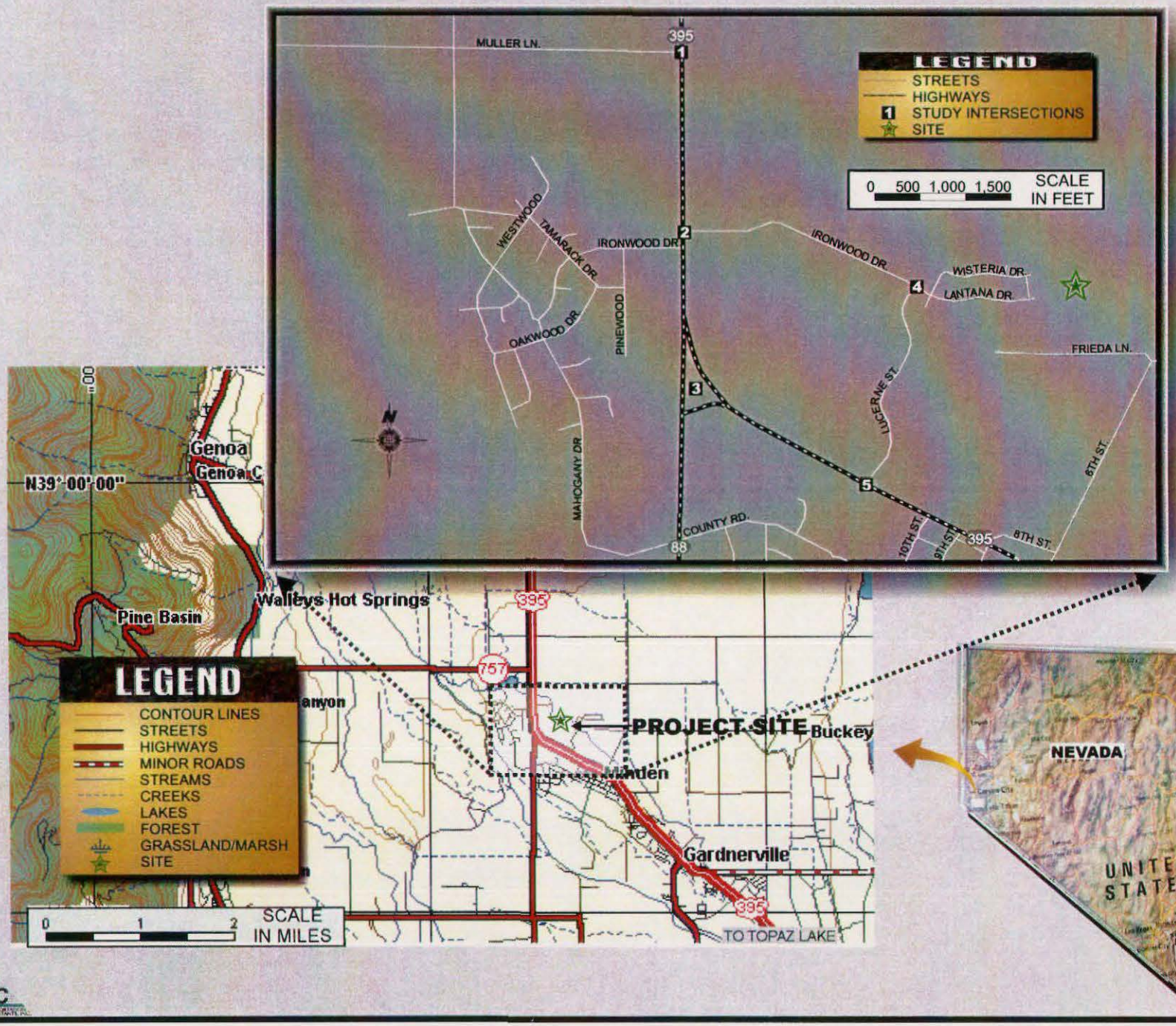
1. Existing AM and PM peak hour traffic conditions
2. Existing conditions plus project (at project buildout)
3. Douglas County Master Plan Build-out (Year 2015) plus project

This Traffic Impact Analysis is prepared for submission to Douglas County. Traffic related issues addressed in this report are consistent with Douglas County requirements. The issues are:

1. Existing traffic conditions
2. Site generated traffic volumes and their distribution
3. Future project generated traffic and conditions
4. Capacity analysis of the existing and the future situations
5. Safety analysis of the existing and future conditions
6. Recommendations for mitigation of traffic impacts and conclusions

F I G U R E 1

NEVADA NORTHWEST DEVELOPMENT SITE AND LOCATION



Chapter 2
Existing Conditions

The existing infrastructure and operational traffic conditions in the vicinity of the site were documented. The purpose of this section is to provide a foundation for comparison to project conditions and future conditions. Roadway conditions were studied to confirm that the roadway is currently operating in a safe and efficient manner. The following discussion presents information regarding the project site, turn volumes, and traffic conditions in the study area.

EXISTING INFRASTRUCTURE

The roadways providing access to the site area are US 395, Ironwood Drive, State Route 88, Lucerne Street, and Lantana Drive. The Thoroughfare Plan (Figure III-8) in the Douglas County *Master Plan* shows Muller Lane Parkway extended to the east of US 395 in future conditions. For the purposes of this report, Muller Lane is assumed to be extended east of US 395 and re-aligned adjacent to the north edge of the Nevada Northwest Development property line. Data was gathered on these roadways for the purpose of analyzing the capacity of the existing roadway system. The pertinent information regarding these roadways are described below.

Muller Lane Parkway (SR 757) is a major collector that lies on an east/west alignment connecting Foothill Road (Highway 206) to the west with US 395 to the east. With the extension of this roadway, as planned in the Douglas County Master Plan, this roadway will pass directly to the north of the site and connect to Heybourne Road. It is a two lane roadway with a posted speed limit of 55 miles per hour. It is signed as the preferred connection between US 395 and the Kingsbury Grade (SR 207) access to the southern portions of the Lake Tahoe basin. This highway is within the jurisdiction of the Nevada Department of Transportation (NDOT).

U.S. Highway 395 (US 395) runs in a north/south direction to the west of the project site and bends easterly on the south side of the site in Minden, locally connecting Carson City and Reno to the north with Gardnerville to the south. It is primarily a four lane highway with two lanes in each direction, a substantial median, and left/right turn pockets. The speed limit varies along the site frontage from 25 miles per hour on the south side to 55 miles per hour on the northwest side. This highway is within the jurisdiction of NDOT.

Ironwood Drive is a major collector east of US 395 and runs in a east/west direction. It connects US 395 to Lucerne Street internal to the site with future plans to extend it further east as part of future development. It is a two lane roadway with a raised center median and left/right turn lanes. This roadway is in the jurisdiction of Douglas County.

State Route 88 (SR 88) runs in a north/south direction and terminates at US 395 adjacent to the southwest corner of the site. SR 88 connects US 395 to Mottsville and Kingsbury Grade (SR 207), which is considered the secondary access to the Lake Tahoe basin, and also continues south and west into California. Northbound dual left turn lanes have been implemented at the intersection of US 395 and SR 88. This highway is within the jurisdiction of the Nevada Department of Transportation (NDOT).

Lucerne Street is a local neighborhood road running north/south and connects US 395 to Lantana Drive (residential road) on the southeast side of the site. This roadway is in the jurisdiction of Douglas County.

Lantana Street is a local neighborhood road that runs in a north/south direction and is an internal residential street to the Windhaven Subdivision located directly east of the site. This roadway is in the jurisdiction of Douglas County.

KEY INTERSECTION CHARACTERISTICS

The **US Highway 395 / Muller Lane** intersection is currently an unsignalized "T" intersection with stop sign control on the eastbound Muller Lane approach. The eastbound approach consists of one shared left/right lane; however, the approach is flared to allow for right turn movements with a queue of one to two vehicles. This intersection is analyzed as a four-legged intersection in the future conditions. It currently has a southbound right-turn lane for deceleration, south and northbound left turn lanes, and right-of-way for additional lanes in all directions.

The **US Highway 395 / Ironwood Drive** intersection is currently an unsignalized four-legged intersection with stop sign control on the Ironwood Drive approaches. There are existing left and right turn lanes on the southbound, northbound, and westbound approaches of the intersection. The eastbound approach does not have roadway striping, but is wide enough to accommodate future turn lanes.

The **US Highway 395 / State Route 88** intersection is a signalized "T" intersection with dual left turn lanes on SR 88 and separated right turn lanes on southbound US 395 and northbound SR 88. This signalized intersection has protected phasing and was constructed to provide access to the site. Future through and left turn lanes into the site are constructed.

The **US Highway 395 / Lucerne Street** intersection is an unsignalized "T" intersection with a left turn lane on US 395 southbound and left/right turn lanes on the stop controlled Lucerne Street approach.

The **Ironwood Drive / Lucerne Street** intersection is an unsignalized "T" intersection with a left turn lane on the eastbound approach of the stop controlled Ironwood Drive. This

intersection is planned to become a four-legged intersection as Ironwood is developed to the east.

At the direction of the Douglas County Public Works Department, the project area is defined as the vicinity of the site encompassed by these intersections. The operation of these intersections is controlled either by signals or stop signs. The existing lane configurations are shown in Figure 2.

EXISTING TRAFFIC

Existing traffic volume data is the basis for the analysis of the capacity and safety of the roadway. According to the 1999 Annual Traffic Report (Nevada Department of Transportation, 1999), annual average daily traffic (AADT) on US 395 in 1999 was 25,200 on the west side of the project site (500 feet south of Muller Lane), 23,000 on the south side of the development (400 feet south of SR 88), and 12,800 on SR 88 at Woodfords Road. Traffic volumes on US 395 over the most-recent five-year period for which data is available has been growing at an annual average rate of 3.1 percent north of SR 88 and 1.9 percent south of SR 88. Muller Lane AADT was 1,400 during 1999, with a five-year average annual growth rate of 6.6 percent. SR 88 volume has been growing at a rate comparable to that of US 395 at 3.2 percent. Table 1 presents historical AADT's for these locations, along with the corresponding annual growth rates.

TABLE 1: Annual Average Daily Traffic Volumes at Selected Locations

Location	Year					Annual Change				Average Annual Change
	1995	1996	1997	1998	1999	94-95	95-96	96-97	97-98	
Muller Lane 200' West of US 395	1,200	1,250	1,300	1,450	1,400	4.2%	4.0%	11.5%	-3.4%	6.6%
US-395 0.1 mile South of Muller Lane	22,020	23,300	23,800	24,100	25,200	5.8%	2.1%	1.3%	4.6%	3.1%
SR 88 at Woodfords Road	10,770	10,700	11,600	11,800	12,800	-0.6%	8.4%	1.7%	8.5%	3.2%
US-395 400' South SR 88	21,050	21,700	22,200	22,300	23,000	3.1%	2.3%	0.5%	3.1%	1.9%

Source: 1999 Annual Traffic Report, Nevada Department of Transportation — Nevada NW Traffic Tables.wb3

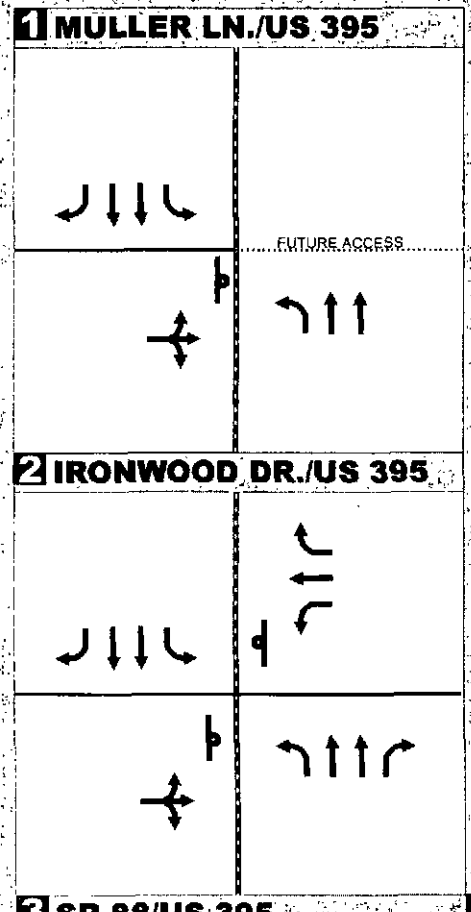
Existing Traffic Volumes

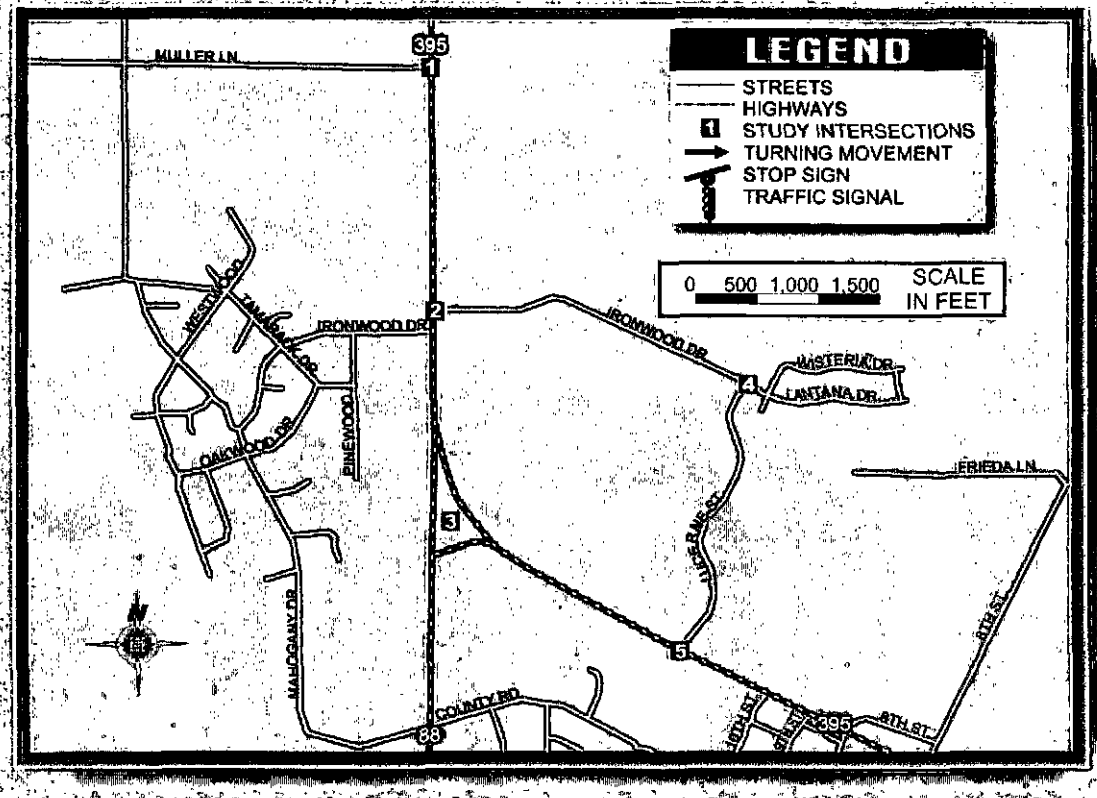
Traffic volume data was gathered for the major intersections in the site vicinity. During the months of May, June, and July, 2001, personnel from LSC Transportation Consultants, Inc. conducted counts at the study area intersections to determine the traffic turning movements and volumes. These counts were conducted during the weekday AM (6:30-8:30) and PM (4:00-6:00) peak hours in 15 minute increments to establish the peak hour (see Appendix A).

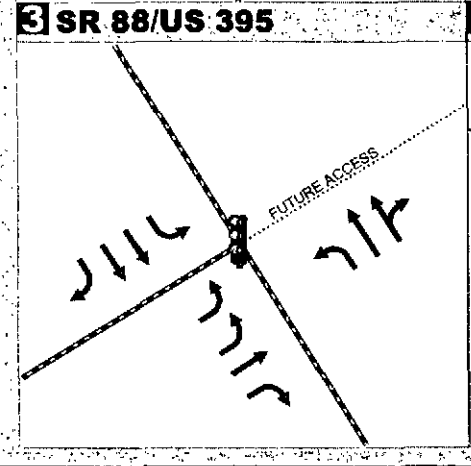
In order to conservatively estimate the peak-season, peak-hour traffic volumes, the observed turning movement counts were factored to estimate peak day-of-week and peak-month volumes (See Table 2). Permanent count stations located on US 395 south of the site

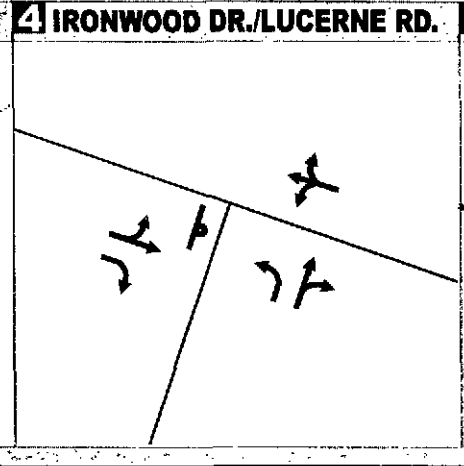
F I G U R E 2

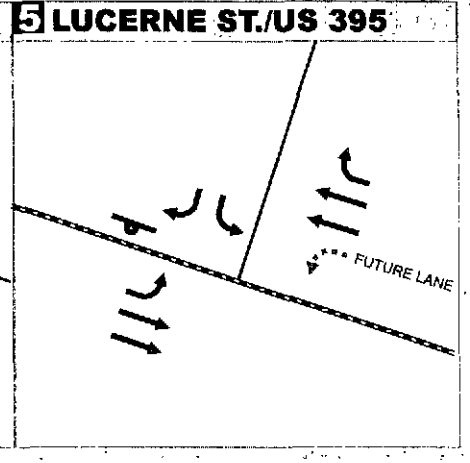
LANE CONFIGURATIONS











indicate that the area roadways experience the highest traffic volumes on Fridays during the month of August. Using this monthly and day-of-week data from the Nevada Department of Transportation (NDOT), the observed AM and PM peak-hour turning movement volumes were factored to represent a peak-season, peak-day (using a factor of 1.25 based upon the ratio of observed counts to peak traffic volumes). Estimated peak-season traffic volumes are shown in Figure 3. The existing peak hour traffic volumes for the critical intersections are shown in Figure 4.

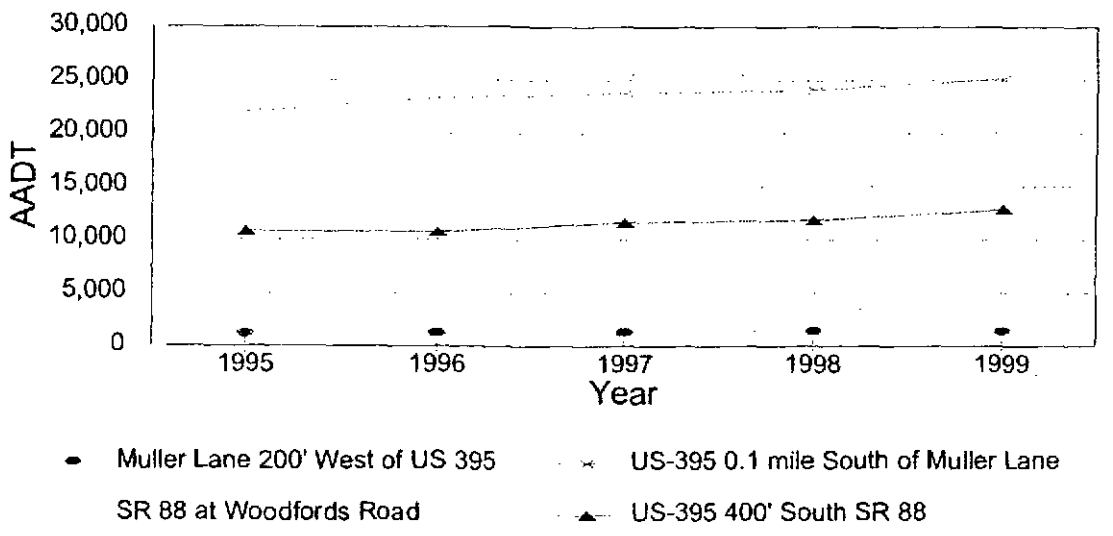
Table 2: US-395 Traffic Volumes (0.65 Miles South of Carson/Washoe County Line)

Day of Week		Month	
Sunday	24,336	Jan	26,286
Monday	30,821	Feb	26,597
Tuesday	32,271	March	29,725
Wednesday	32,931	April	30,694
Thursday	33,298	May	30,949
Friday	35,375	June	34,046
Saturday	29,326	July	34,603
		August	36,061
Avg. Weekday	32,939	September	33,856
Avg. Weekend	26,831	October	32,319
		November	29,806
		December	29,386
Max	35,375	Max	36,061
		Avg Month	31,194
Wed to Fri Factor	1.07	May to August Factor	1.17
Wed to Sat Factor	0.89		
Total Weekday Factor	1.25		
Total Weekend Factor	1.04		

Nevada NW Traffic Tables.wb3

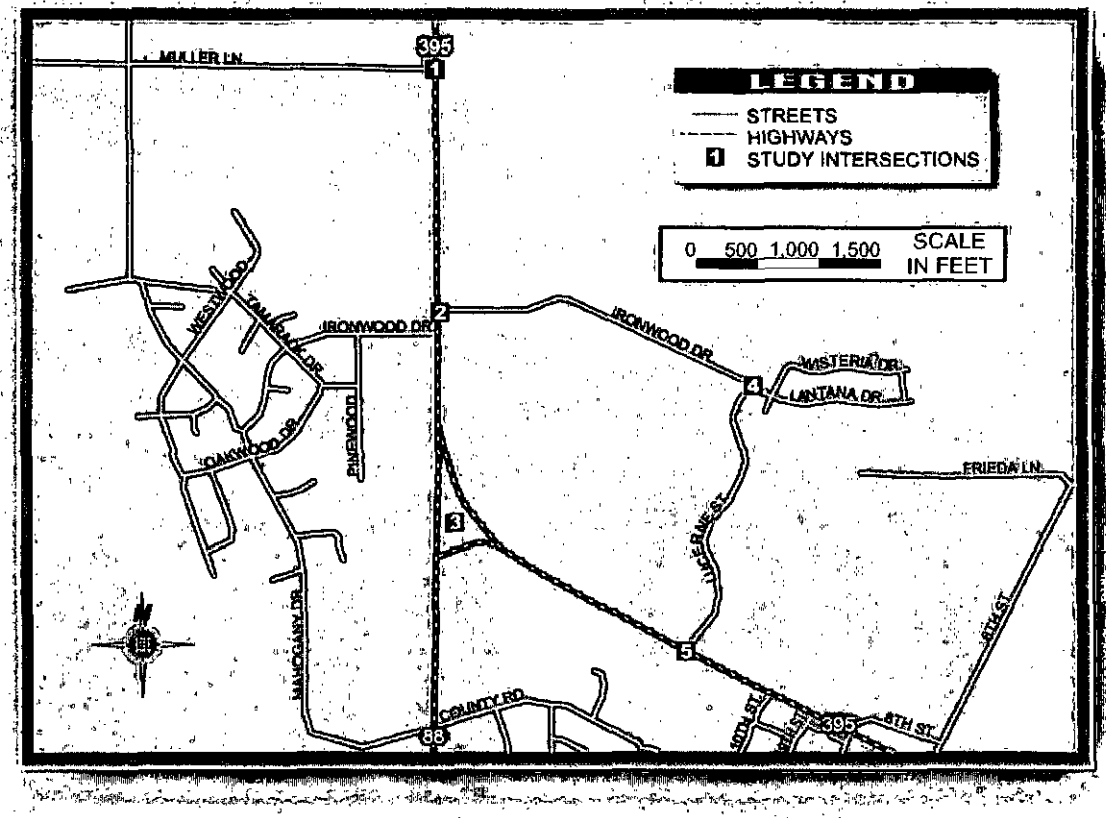
Figure 3

Annual Average Daily Traffic



F I G U R E 4

EXISTING NO PROJECT PEAK SEASON PEAK HOUR TRAFFIC VOLUMES



1 MULLER LN./US 395

1,428 23 ↰ | ↱ 0	0 ↰ ← 0 ↱ 0
24 ↰ 0 → 42 ↱	23 ↰ | ↱ 137 1,038

2 IRONWOOD DR./US 395

1,141 44 ↰ | ↱ 48	61 ↰ ← 5 ↱ 3
45 ↰ 2 → 35 ↱	55 ↰ | ↱ 21 886

3 SR 88/US 395

0 0 ↰ | ↱ 0	91 ↰ ← 87 ↱ 37
0 ↰ 291 → 112 ↱	235 ↰ | ↱ 849 0

4 IRONWOOD DR./LUCERNE RD.

← 52
↱ 7

28 →
71 ↱

84 ↰
↱ 12

5 LUCERNE ST./US 395

35 ↰ 32 ↱

34 ↰
← 1,022

22 ↰
1,013 →

Chapter 3
Proposed Conditions

The proposed development will add traffic to the roadway system. The project location, the size of the project, and when it will be completed, are all important elements that need to be considered to determine the impacts of this development on safety and capacity. It is also important to examine how the project will operate with the existing transportation system, estimate how much new traffic will be generated, and predict where traffic generated by the site will be distributed. This section will also address any funded infrastructure changes planned by other agencies or developers. All of the above elements are important in assessing the traffic impacts of this project.

PROJECT DESCRIPTION

Nevada Northwest, Inc. is proposing to construct a multi-use development consisting of single-family residential, multi-family residential, neighborhood commercial, and tourist commercial land uses. In order to utilize these land uses, the owner / developer is proposing changes to the existing land use designations. The site is currently zoned Agricultural (A-19), Neighborhood Commercial (NC), and Multi-Family Residential. The proposed development is requesting zoning changes to some of the parcels.

The Nevada Northwest Development is proposed for nine parcels of undeveloped land totaling 115.3 acres. The site is located on the east and north side of US 395, west of Lantana Drive and Lucerne Street, in Douglas County, Nevada. This project is currently in a conceptual phase. The exact buildings, square footage, and their locations are not presently determined. It is assumed that a full traffic engineering study will be required by Douglas County at each phase of this development. Figure 1 is a site vicinity map showing the location of the site in relation to the surrounding area. Completion of site construction and initial occupancy is not currently determined.

Access

Properly located access points are essential to allow for the safe and orderly movement of traffic in and out of a site. Recognizing this fact, Douglas County and has enacted ordinances to assure their proper placement.

Access to and from the site is not currently specified in the conceptual site plan. However, potential access locations can be assumed based on the configuration of the site plan and already implemented turn lanes, curb cuts, and approaches. The assumed proposed accesses are as follows:

- Four full accesses from Ironwood Drive on the north and south side of the road are assumed access. Left turn lanes are currently available for the north side of Ironwood Drive with 75 feet of storage length. Driveway spacing adheres to current standards. The driveways will be built to comply with all other Douglas County Standards.

- Two full access from the future, re-aligned Muller Lane Parkway both on the south side of the road are also assumed. Left turn lanes will probably be constructed with these accesses. Driveway spacing shall adhere to current standards. The driveways will be built to comply with all other Douglas County Standards.

- Full access to the site from the intersection of US 395 and SR 88. This access has already been constructed with protected signal heads, pedestrian heads, handicap ramps, and curb and gutter. A protected left turn lane on southbound US 395 has already been constructed and signalized. Detection loops will be required for the site access. A northbound through lane on SR 88 has already been implemented, however, restriping will be required.

- Two full accesses from Lucerne Street. There are two driveway curb cuts accessing the site that have already been constructed. Driveway spacing adheres to current standards. The driveways will be built to comply with all other Douglas County Standards.

Intersection spacing requirements are met at all newly proposed access locations. The existing intersections of Ironwood Drive / US 395 and Lucerne Street / US 395 are assisting access intersections.

Future Traffic Volumes

The year 2015 AM and PM peak-season, peak-hour traffic volumes were estimated based on ADT volumes obtained from the *Douglas County Transportation Plan* (April 18, 1996). As shown in Table 3, the Transportation Plan presents 1995 counts and Year 2015 Build-out ADT's for various locations near the project site. Using the Transportation Plan's straight-line extrapolation method, a factor representing the change from existing Year 2000 ADT's to estimated Year 2015 (Build-out) ADT's were calculated. This factor is used to estimate the Year 2015 peak-season traffic volumes shown in Figure 5.

TABLE 3: Douglas County Daily Traffic Volumes - Master Plan Buildout

	Year					Factor
	1995 (1)	2000 (2)	2005 (2)	2010 (2)	2015 (1)	2000 to 2015
Muller Lane W. of US 395	1,070	1,568	2,065	2,563	3,060	2.0
US 395 N. of SR 88	20,450	22,078	23,705	25,333	26,960	1.2
US 395 S. of Genoa Lane	20,545	22,026	23,508	24,989	26,470	1.2

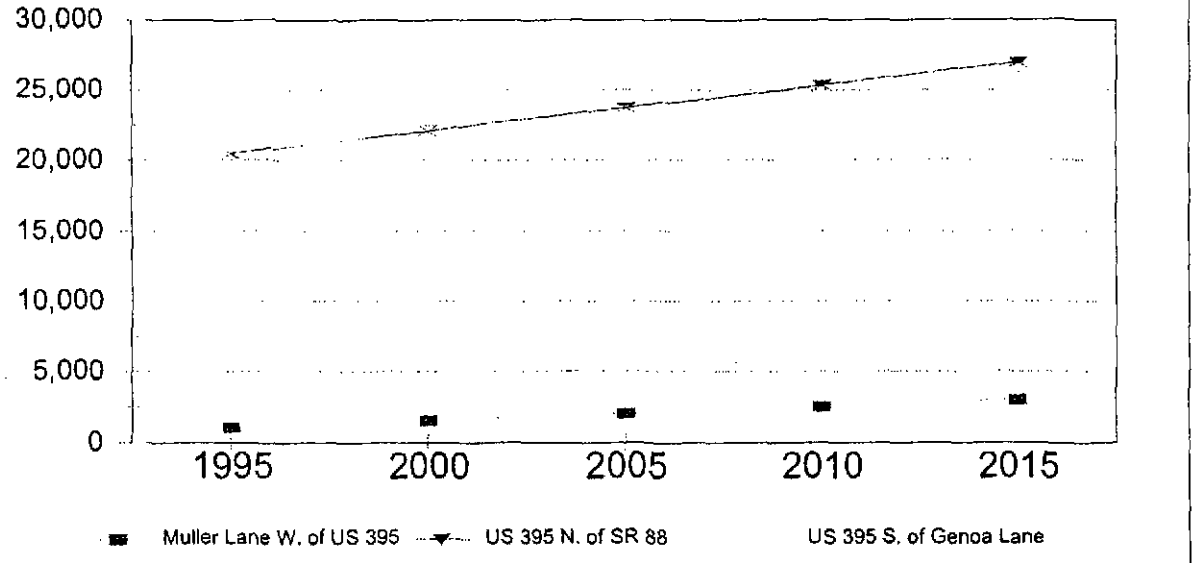
Note 1: From Douglas County Transportation Plan (April 18, 1996) Daily Traffic Volumes - Year 2015
Note 2: Straightline estimates.

Nevada NW Traffic Tables.wb3

1999. 395 S of Muller
25,200. = 2010 in MP

Figure 5

Daily Traffic Volumes



TRIP GENERATION, ASSIGNMENT, AND DISTRIBUTION

Trip Generation

Trip generation estimates were prepared for the proposed development. These estimates are based on similar developments nationwide. The first step in the analysis of future traffic impacts is to prepare an estimate of the number of trips generated by the proposed project. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Daily vehicle-trip ends (DVTE) and peak-hour vehicle-trip ends (PHVTE) need to be determined in order to analyze the potential impacts from the proposed development.

The daily vehicle-trip ends and peak-hour trip generation rates are estimated using the Institute of Transportation Engineers *Trip Generation Manual, 6th Edition* (1997) for the appropriate mix of land uses proposed at the project site. As shown in Table 4, the total average daily vehicle-trips generated by the project on a peak weekday is estimated to be 21,486 one-way vehicle-trips. The total estimated future traffic through the study area intersections are highest during a the PM peak hours on a weekday. This is due to the higher volume of background traffic on Friday (peak weekday) versus Saturday (peak weekend day). Therefore, peak weekday PM peak-hours on a Friday produce the highest combined forecast traffic volumes with the proposed project. The peak weekday PM peak-hours are used for the remainder of this study to represent the highest periods of total traffic.

Since this development is proposing a non-ITE available land use (a casino) special consideration was applied regarding trip generation. Included in Appendix B is an article presented in the *ITE Journal (May 1992)* with regards to casino trip generation. Since the square footage of the proposed casino is not yet known, the largest casino studied in Table 1 of the article was used to compare the trip generation rates with the ITE land use code 820 (shopping center / retail). Utilizing the Area D acreage and floor-to-area ratio for the land use code 820, the results of that comparison showed a difference of one PM peak hour trip. Therefore, the trip generation estimates for the tourist commercial portion of this development are conservative.

Pass-By Trips

For a proposed project of this scale and muti-use land uses, it is necessary to consider the effect of "pass by" trips. Pass-by trips represent vehicles that are already on the regional roadways prior to the development of the site, which (with the development of the site) can be expected to make either intermediate stops on the way from an origin to a primary trip destination, or to substitute a trip to the proposed development for an existing trip to a more remote location. Pass-by trips are drawn from the passing traffic stream and are included in the site driveway movements, but are not included in the through-volumes passing a given site access point on an adjacent road. Pass-by percentages for various land uses are available in the *Institute of Transportation Engineers Trip Generation Handbook*

(October 1998 Edition). As depicted in the *ITE Trip Generation Handbook*, and shown in Table 4, the total project generated trips may be reduced by utilizing pass-by percentages for applicable land uses. ITE identifies a reduction of 34% from the primary trips for the land use code 820 (shopping center). However, when considering the AADT on the adjacent roadways, the ITE recommended pass-by reduction of 34% for this land use would result in an unrealisticly high proportion of US 395 traffic stopping at the project land uses. Therefore, the pass-by percentage was reduced to 18%, based on the future no-project AADT of the adjacent roadways, to result in a reasonable diversion of roadway traffic.

Diverted Linked Trips

Diverted linked trips are trips that would not normally pass directly by the proposed site and deviate from their normal route by utilizing other roadways to gain access or visit the site. They are attracted from the traffic volume on roadways within the vicinity of the site and add traffic to roadways near the site, but may not add traffic to the area's major travel routes.

Due to the location and population of the area, this proposed site does not have many alternate routes to attract diverted linked trips. Therefore, the recommended diverted linked reduction percentage of 26.4% for land use code 820, as specified in the *ITE Handbook*, was reduced in half to 13.2% for conservative purposes.

Internally Captured Trips

Internally captured trips are specifically identified for multi-use developments. The internal trip generation of multi-use sites are directly related to the mix of on-site land uses which are usually a combination of shopping centers/retail, office, residential, restaurant, entertainment, and hotel/motel. When these land uses are combined within a single development area, the land uses will interact with each other and attract each other's trip generation. This results in a reduction in the primary trips from the *ITE Trip Generation Manual*, since the land uses are utilizing and generating trips on-site.

For this development, the multi-family dwelling units were combined with the single family dwelling units as one variable for the internally captured trip analysis (See Appendix A). This residential variable was compared to the shopping center / retail variable and the casino variable. The analysis may be found in Appendix B. The resulting reduction percentage for the internally captured trips for the three land uses (casino, residential, retail) is 24%.

Alternative Land Use Generation

An alternative land use plan for the project site would be for Parcel A to remain as a residential receiving zone, with a density of 6 single-family dwelling units per acre. A trip generation analysis of this alternative land use is presented in Appendix A. As shown, total average daily traffic generation under this scenario (after the consideration of pass-by,

SF = 114 247
MFK = 274
148
59
207

TABLE 4: Trip Generation of the Proposed Nevada NW Development

Land Use	Land Use Code	Quantity	Unit	Weekday PM Pk-Hr Trip Rates: Total	In	Out	Daily Trip Rate	Total Weekday PM Pk-Hr Trips: Total	In	Out	Daily Trips
Proposed Zoning											
Area A											
Single-Family Residential	210	42	DU	1.01	0.65	0.36	9.57	42	27	15	402
Neighborhood Commercial	820	371	KSF	Trips based on natural log equation.				1,492	716	776	15,837
Multi-Family Residential	220	59	DU	0.62	0.42	0.2	6.63	37	25	12	391
Pass-by Trip Reduction								269	129	140	2,851
Internally Linked Trip Reduction								377	184	193	3,991
Diverted Link Trip Reduction								197	95	102	2,090
Subtotal								*728*	*360*	*368*	*7,698*
Area B											
Single-Family Residential	210	42	DU	1.01	0.65	0.36	9.57	42	27	15	402
Neighborhood Commercial	820	166	KSF	Trips based on natural log equation.				877	421	456	9,443
Multi-Family Residential	220	148	DU	0.62	0.42	0.2	6.63	92	62	30	981
Pass-by Trip Reduction								158	76	82	1,700
Internally Linked Trip Reduction								243	122	120	2,598
Diverted Link Trip Reduction								116	56	60	1,246
Subtotal								*495*	*256*	*238*	*5,282*
Area D											
Tourist Commercial	820	492	KSF	Trips based on natural log equation.				1,797	863	934	18,989
Pass-by Trip Reduction								323	155	168	3,418
Internally Linked Trip Reduction								431	207	224	4,557
Diverted Link Trip Reduction								237	114	123	2,507
Subtotal								*805*	*387*	*418*	*8,507*
Total Trip Generation for Proposed Zoning:								***2,028***	***1,003***	***1,025***	***21,486***

Note 1: KSF = 1,000 square feet floor area, DU = dwelling unit

Nevada NW Trip Gen.wb3

diverted, and internally linked trip reductions) would equal 15,585, while total peak-hour traffic generation would equal 1,489. In comparison with the proposed land use net external trip generation, as presented in Table 4, this alternative land use would generate 29 percent fewer ADT and total peak-hour trips.

Trip Assignment

The project traffic turning movements were not calculated at the site accesses since the site accesses are not known at this conceptual phase of this development. As the exact land uses become more evident with future proposals of development to this property, the turning movements at each access will be calculated by applying the directional distribution of traffic identified above to the estimated peak-hour weekday vehicle-trips. Future accesses to the proposed development are assumed to be proposed off of Ironwood Drive and Lucerne Street. Additional accesses are also assumed to be proposed at the existing intersections of US 395 / SR 88 and US 395 / Muller Lane. Reconfiguration of these intersections will be required for the additional approaches.

The Douglas County Thoroughfare Plan calls for the extension of Muller Lane to the east. This has been taken into account in the future conditions of this analysis. Realignment of this proposed extension of Muller Lane to abut the northern property lines of this development has also been assumed in this analysis.

Trip Distribution

The distribution of traffic arriving and leaving the development, along with associated distribution of traffic at the key intersections, will depend on the site's location relative to other activity centers in the area and the regional access routes. Demographics of the surrounding areas were reviewed in order to forecast the distribution of vehicles accessing the proposed development. For the proposed casino portion of the development, the land owner has stated that there will be a shuttle bus transporting many of his clients to and from South Lake Tahoe. The area surrounding the project site was divided into four separate residential areas or travel zones, based upon the assumed path of travel to and from the project site:

- **Southwest** - persons traveling to/from South Lake Tahoe, Stateline, and the Foothills South area, as well as Alpine County, California.

- **Northwest** - persons traveling to/from Genoa and Foothills North area.

- **South and Southeast** - persons traveling on US 395 to/from areas south of the project site such as Minden, Gardnerville and surrounding locations, as well as more remote locations such as Mono County, California and the Crescent Valley.

- **North and Northeast** - persons traveling on US 395 to/from areas north of the project site such as Carson City and the northern portion of Douglas County.

The population was then weighted according to each residential area's propensity to access the commercial development. Vehicles are assumed to be more likely to visit the development when similar commercial land uses are not available locally and if the travel distance is reasonable. For instance, persons residing to the south of the site (where commercial development is relatively limited) can be expected to have a higher propensity to travel to the site than persons living in Carson City (where there are many other major retail developments).

For the residential portion of the site, commuting to from the density of employment centers have been taken into account based on the population of the surrounding areas. There are four possible access routes by which each of the four residential groups might travel to or from the site. The route used from each of the residential areas was determined, based upon the relative travel time provided by the various potential routes. As shown in Table 5, the following regional access route distribution is calculated:

➢ Muller Lane West	20%
➢ Muller Lane East	12%
➢ SR 88	14%
➢ US 395 Southeast	25%
➢ US 395 North	29%

The project generated trips were then assigned to appropriate routes, based upon this distribution pattern. Figure 6 shows the project generated peak season, PM peak hour trips distributed through the study area intersections.

TABLE 5: Trip Distribution

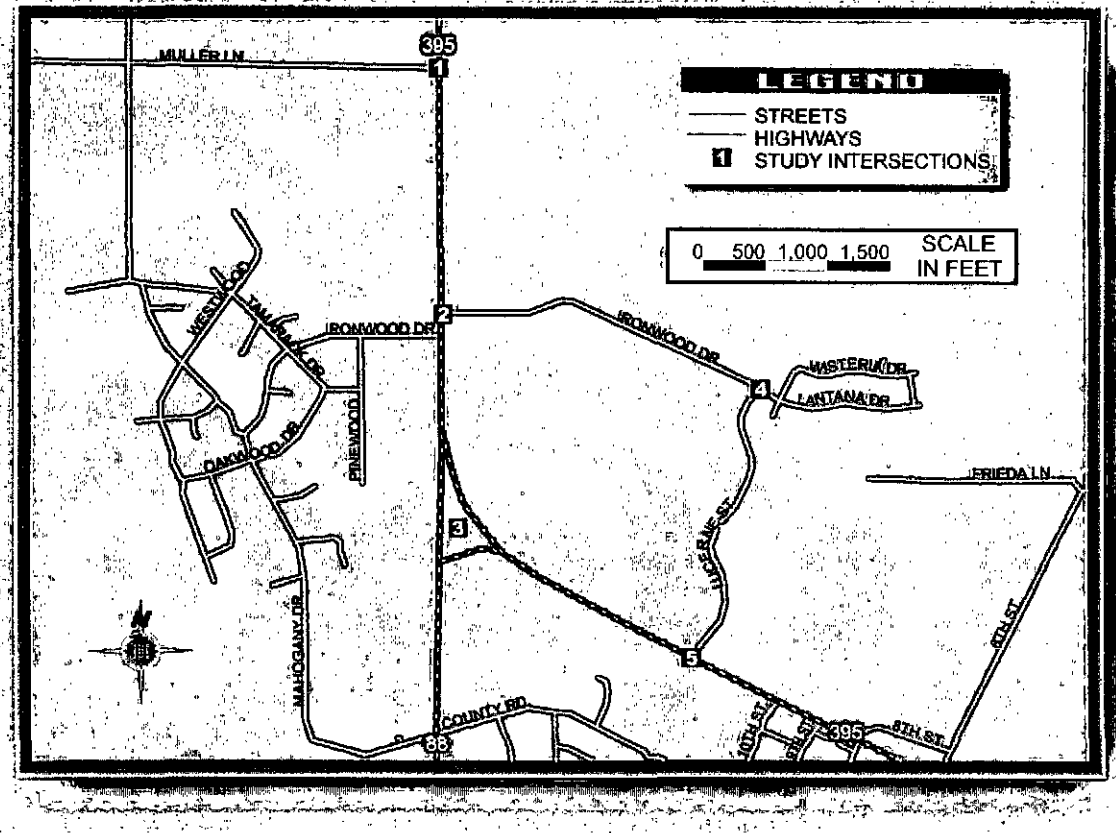
Residential Area	Population Estimate	Weight: Propensity to Access Development on Project Site (0 to 1)	Weighted Population	Percent of Total	Percent by Access Route: Muller Lane West	Muller Lane East	SR 88 South	US 395 South	US 395 North	Total
To Southwest										
City of South Lake Tahoe, CA (1)	23,050	0.4	9,220	19.0%	--	--	--	--	--	--
Stateline/Kingsbury/Zephyr Cove/Roundhill, NV (2)	8,691	0.4	3,477	7.2%	--	--	--	--	--	--
Foothills South Area of Uninc. Douglas County (2)	958	0.7	670	1.4%	--	--	--	--	--	--
Subtotal	*32,699*	--	*13,367*	*27.5%*	*66%*	*0%*	*28%*	*6%*	*0%*	*100%*
To Northwest										
Genoa, NV (3)	240	0.8	192	0.4%	--	--	--	--	--	--
Unincorporated Douglas Co. Along Foothills North (2)	314	0.8	251	0.5%	--	--	--	--	--	--
Subtotal	*554*	--	*443*	*0.9%*	*50%*	*0%*	*0%*	*0%*	*50%*	*100%*
To South and Southeast										
Minden, NV (3)	2,650	1	2,650	5.5%	--	--	--	--	--	--
Gardnerville, NV (3)	3,280	0.8	2,624	5.4%	--	--	--	--	--	--
Smith Valley, Lyon County, NV (3)	1,889	0.2	378	0.8%	--	--	--	--	--	--
Douglas County: Pinenut and Topaz Areas (2)	1,813	0.4	725	1.5%	--	--	--	--	--	--
Unincorporated Douglas Co. Around Minden/G'Ville (2)	18,224	0.7	12,757	26.2%	--	--	--	--	--	--
Mineral County, NV (3)	6,450	0.1	645	1.3%	--	--	--	--	--	--
Alpine County, CA (1)	1,193	0.2	239	0.5%	--	--	--	--	--	--
Mono County, CA (1)	10,812	0.1	1,081	2.2%	--	--	--	--	--	--
Subtotal	*46,311*	--	*21,099*	*43.4%*	*3%*	*28%*	*15%*	*54%*	*0%*	*100%*
To North and Northeast										
Carson City (3)	52,620	0.2	10,524	21.6%	--	--	--	--	--	--
Unincorporated Douglas Co. Along 395 North (2)	8,233	0.3	2,470	5.1%	--	--	--	--	--	--
Dayton Division, Lyon County (3)	7,167	0.1	717	1.5%	--	--	--	--	--	--
Subtotal	*68,020*	--	*13,711*	*28.2%*	*0%*	*0%*	*0%*	*0%*	*100%*	*100%*
Total Study Area	**147,584**	--	**48,619**	**100.0%**	**19.9%**	**12.2%**	**14.2%**	**25.1%**	**28.7%**	***100%***

Note 1: January 1, 1999, California State Department of Finance, Demographic Research Unit
Note 2: Based on 1995 estimate of population forecast to 1999 per *Douglas County Master Plan* (April, 1996).
Note 3: July 1, 1999, Nevada State Demographer

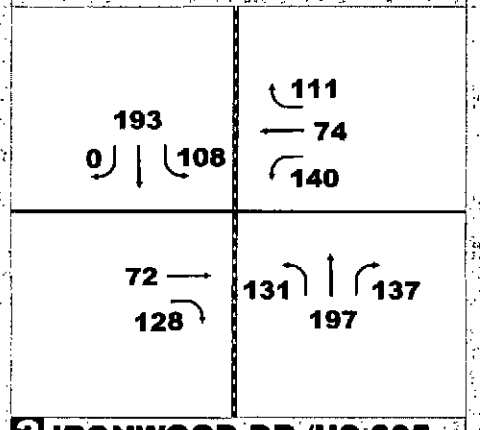
Nevada NW Traffic Tables.wb3

FIGURE 6

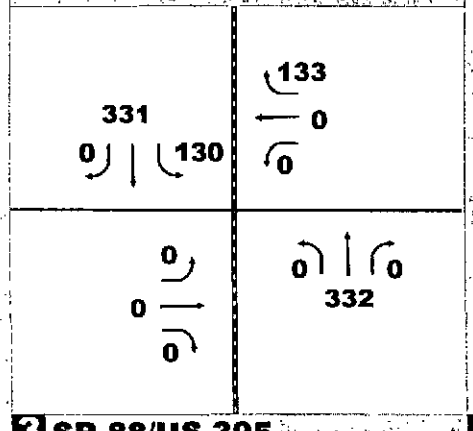
PEAK HOUR PROJECT GENERATED TRAFFIC VOLUMES



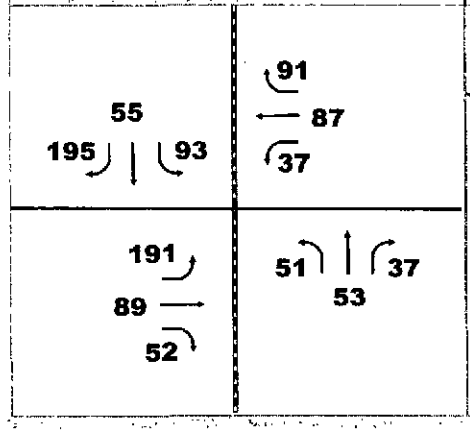
1 MULLER LN./US 395



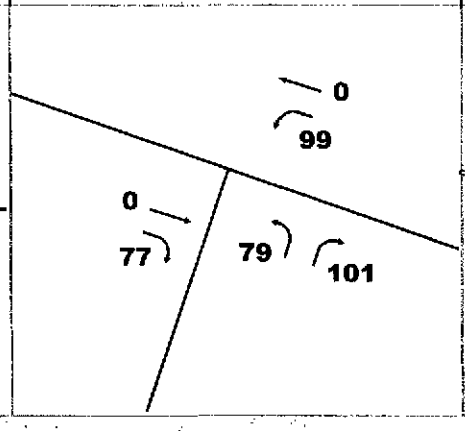
2 IRONWOOD DR./US 395



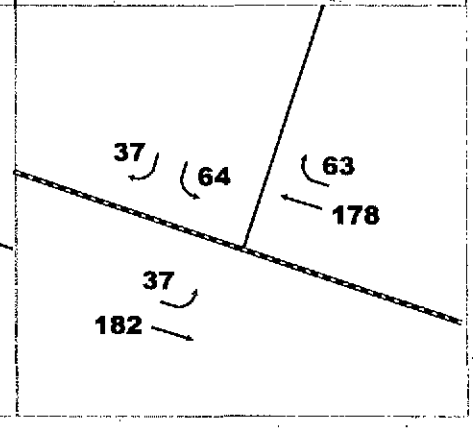
3 SR 88/US 395



4 IRONWOOD DR./LUCERNE RD.



5 LUCERNE ST./US 395



Chapter 4
Level of Service

DESCRIPTION

Traffic operations were assessed in terms of level of service (LOS). LOS is a concept that was developed by transportation engineers to quantify the level of operation of intersections and roadways (Highway Capacity Manual, Reference 1). LOS measures are classified in grades "A" through "F" indicating a range of operation. LOS "A" signifies the best level of operation, while "F" represents the worst. At LOS "F", a signalized intersection is considered to have failed. For signalized intersections, LOS is primarily measured in terms of average delay. Volume to capacity ratio (V/C) is used as an additional measure for quantifying the capacity utilization/design adequacy of the intersection. Recent research has indicated that an intersection can operate at an acceptable level of service even though the (V/C) ratio exceeds 1. Therefore, a signalized intersection can operate at an acceptable LOS even if entering traffic volumes at that intersection exceed its theoretical capacity. Such situations occur primarily when unbalanced heavy demands occur on one or two approaches.

LOS at unsignalized intersections is also classified in grades "A" through "F." These grades of LOS are quantified in terms of average delay per vehicle. A LOS "A" reflects full freedom of operation for a driver while a LOS "F" represents operational failure. The criteria is based on the theory of gap acceptance for side street stop sign controlled approaches. The all-way stop controlled intersections LOS also reflects delay to the motorist and relates this delay to volumes handled on the various approaches.

A detailed description of LOS criteria is provided in Appendix C.

Applicable roadway standards are provided in the Douglas County Design Criteria and Improvement Standards (September 17, 1998):

> *"A traffic LOS C or better, in the context of providing a safe, efficient and convenient transportation system, shall be maintained through mitigation of impacts from all conditions on all County, Town, and District maintained arterial, and collector roads and at County road intersections, except as noted in Implementation Strategies 10.11.01.2 and 10.11.01.3 of the Douglas County Master Plan."*

The Douglas County Master Plan also establishes traffic capacity and levels of service criteria for various types of highways, and an operational level of service for signalized intersections. To meet the goals of the Douglas County Master Plan (1996), peak-period traffic flow should not exceed:

- Level of Service "C" on all County, Town, and District maintained principal arterial roads (Implementation Strategy 10.11.01.1)

- Level of Service "D" on all NDOT maintained principal arterial roads (Implementation Strategy 10.11.01.2)

ANALYSIS METHODOLOGY

Traffic impacts were estimated to determine the extent of change in traffic conditions caused by the development of this project. In order to make this determination, the following assumptions were employed:

- The proposed development will be built-out and in full operation under existing traffic and future traffic conditions.

- Existing background traffic on the study area's major roadways will grow by the factors presented in Table 3. These figure were discussed in the Future Traffic Volumes section of Chapter 3 of this report and agrees with the Douglas County Master Plan. present yr = 2010.

- Traffic generation estimates for the project have been prepared for the existing and future years of 2001 and 2015 as stated in Section 2.14.4 of the Douglas County Design Criteria and Improvement Standards. These estimates were prepared for the PM peak hour of the surrounding street system.

- Geometric design changes at the major intersections and background traffic volumes on the surrounding street system have been determined prior to adding the traffic impacts of the proposed project. This was done to establish a baseline for measurement of the incremental impact of the project at the time of its development. Background traffic volume estimates were prepared for the years of 2001 and 2015.

- Cumulative traffic impacts of the proposed project were then determined by superimposing the project-generated traffic onto the background traffic and the PM peak traffic was analyzed.

- Roadway improvements have been addressed at appropriate intersections to maintain acceptable levels of operation. This procedure was conducted for non-project and project-related impacts.

The level of service for a two way stop controlled (TWSC) intersection is defined by each minor movement and not for the intersection as a whole. Hence, for TWSC intersections, the worst case turning movement controls the LOS and delay (seconds/vehicle) for the intersection. The current LOS at the study area's intersection have been evaluated for the

previously defined peak hours by utilizing the "Traffix" software package, based upon the procedures presented in the *Highway Capacity Manual* (Federal Highways Administration, 2000). The Traffix output and calculations are provided in Appendix D for further reference.

LEVEL OF SERVICE ANALYSIS

Roadways and intersections in the project area were evaluated to determine existing operational conditions for the peak-day, peak-hour during the peak-season. Using the traffic count data presented as part of this study, it is possible to evaluate the Level-of-Service (LOS) provided during peak periods on the various intersections serving the study area. The 2000 HCM Operations Method for signalized intersections and the 2000 HCM Unsignalized Method for unsignalized intersections methodologies presented in the *Highway Capacity Manual* were used to conduct this analysis. Appendix D shows detailed LOS calculations performed for this project. Table 6 summarizes the results of the LOS analysis for existing and future conditions. Existing conditions volumes with site generated trips are shown in Figure 7. Figure 8 shows future conditions in 2015 with project trip generation included.

Existing Conditions Level of Service

This traffic engineering study analyzes the worst case scenario for the existing and future conditions with the site generated vehicular trips. As shown in Table 6, the existing level of service conditions without the proposed project are within Douglas County LOS standards for four of the five study area intersections. The intersection of Muller Lane Parkway / US 395 falls below the Douglas County required LOS "D" to a LOS "E" with 42.6 seconds of delay on the eastbound approach without the proposed project. All other study area intersections are within the Douglas County requirements.

Existing With Project Level of Service

With the site generated vehicular trips added to the existing roadway infrastructure, two more intersections fail. As stated above, the intersection of Muller Lane Parkway / US 395 is already at a LOS "E." This intersection falls to a LOS "F" with the proposed project as an unsignalized intersection. The intersections of US 395 / Ironwood Drive and US 395 / Lucerne Street would both operate at LOS "F." With peak-hour delays in excess of 180 seconds, the analysis methodologies cannot be calculated accurately due to the large volume of through traffic during these peak-hours. This is caused by inadequate frequency of acceptable gaps for turning movements. All other study area intersections are within the Douglas County requirements. The mitigation measures needed to correct the deficient intersections are discussed in Chapter 5.

2015 With Project Level of Service

With the site generated trips added to the future 2015 traffic volumes, all study area intersections fail the Douglas County LOS requirements with the exception of the intersection of Ironwood Drive / Lucerne Street. As stated above, delay in excess of 180 seconds cannot be calculated accurately. The mitigation measures needed to correct the deficient intersections are discussed in Chapter 5.

TABLE 6: Nevada Northwest (Ironwood / US 395) Development Level of Service (LOS) Summary

INTERSECTION / CRITICAL APPROACH	Signalized/ Unsignalized	Existing Without Project PM Peak-Hour LOS	Existing Without Project PM Peak-Hour Approach / Average Delay	Existing With Project PM Peak-Hour LOS	Existing With Project PM Peak-Hour Approach / Average Delay	Year 2015 Plus Project PM Peak-Hour LOS	Year 2015 Plus Project PM Peak-Hour Approach / Average Delay
Existing Configuration:							
US 395 & Muller Lane	Unsignalized						
Eastbound Approach		E	42.6	F	Over 180 *	F	Over 180 *
US 395 & Ironwood Drive	Unsignalized						
Eastbound Approach		C	24.0	F	Over 180 *	F	Over 180 *
US 395 & SR 88	Signalized						
Entire Intersection		B	14.4	E	60.3	F	73.2
US 395 & Lucerne	Unsignalized						
Southbound Approach		D	34.7	F	Over 180 *	F	Over 180 *
Ironwood & Lucerne	Unsignalized						
Eastbound Approach		A	9.5	B	11.6	B	12.2
Configuration Improvements:							
US 395 & Muller Lane							
Singalize Intersection	Signalized	A	3.6	C	26.6	C	32.3
Eastbound Right Turn Lane of 125' Min							
Acceleration Lane Recommended on US 395 Southbound							
US 395 & Ironwood Drive							
Option 1: Singalize Intersection	Signalized	NMR	NMR	C	20.3	C	24.1
Option 2: Right-In / Right-Out EB/WB	Unsignalized	NMR	NMR	B	11.1	B	12.1
Stripe Eastbound Approach							
US 395 & SR 88							
Option 1: Free RTL on SB Approach	Signalized	NMR	NMR	D	41.0	E	64.6
Option 2: Dual Lefts on WB Approach		NMR	NMR	C	26.2	C	32.1
Stripe Southbound Approach / Access							
US 395 & Lucerne							
Option 1: Signalize Intersection	Signalized	NMR	NMR	A	5.0	A	5.5
Option 2: Right-In / Right-Out Only	Unsignalized	NMR	NMR	C	16.5	C	20.0
Option 2: Reroute Traffic Using Future Ironwood							

* Delay over 180 seconds cannot be calculated accurately.

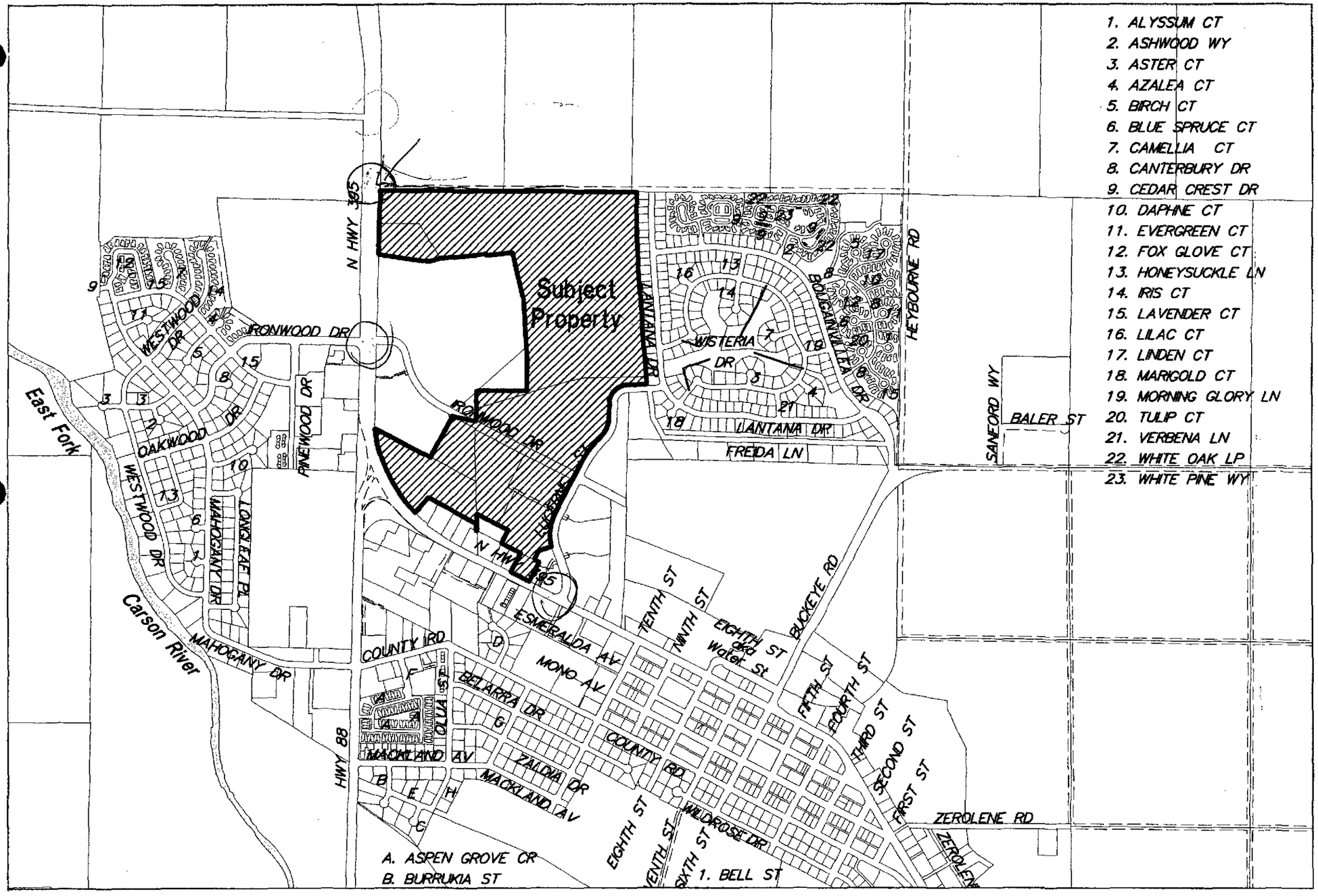
NR = No Mitigation Required

Data Based on Acutaled Signal Timing. Coordinated Signal Timing, Atucated-Coordinated Signal Timing Recommended with Fiberoptics

Source: Highway Capacity Manual 2000 & Traffix Version 7.5 R1 Nevada NW Traffic Tables.wb3

Nevada Northwest, LLC
Specific Plan

Area Boundary Map



1. ALYSSUM CT
2. ASHWOOD WY
3. ASTER CT
4. AZALEA CT
5. BIRCH CT
6. BLUE SPRUCE CT
7. CAMELLIA CT
8. CANTERBURY DR
9. CEDAR CREST DR
10. DAPHNE CT
11. EVERGREEN CT
12. FOX GLOVE CT
13. HONEYSUCKLE LN
14. IRIS CT
15. LAVENDER CT
16. LILAC CT
17. LINDEN CT
18. MARIGOLD CT
19. MORNING GLORY LN
20. TULIP CT
21. VERBENA LN
22. WHITE OAK LP
23. WHITE PINE WY

M.A.G.I.C.
Douglas County
Multi-Agency Geographic Information Center

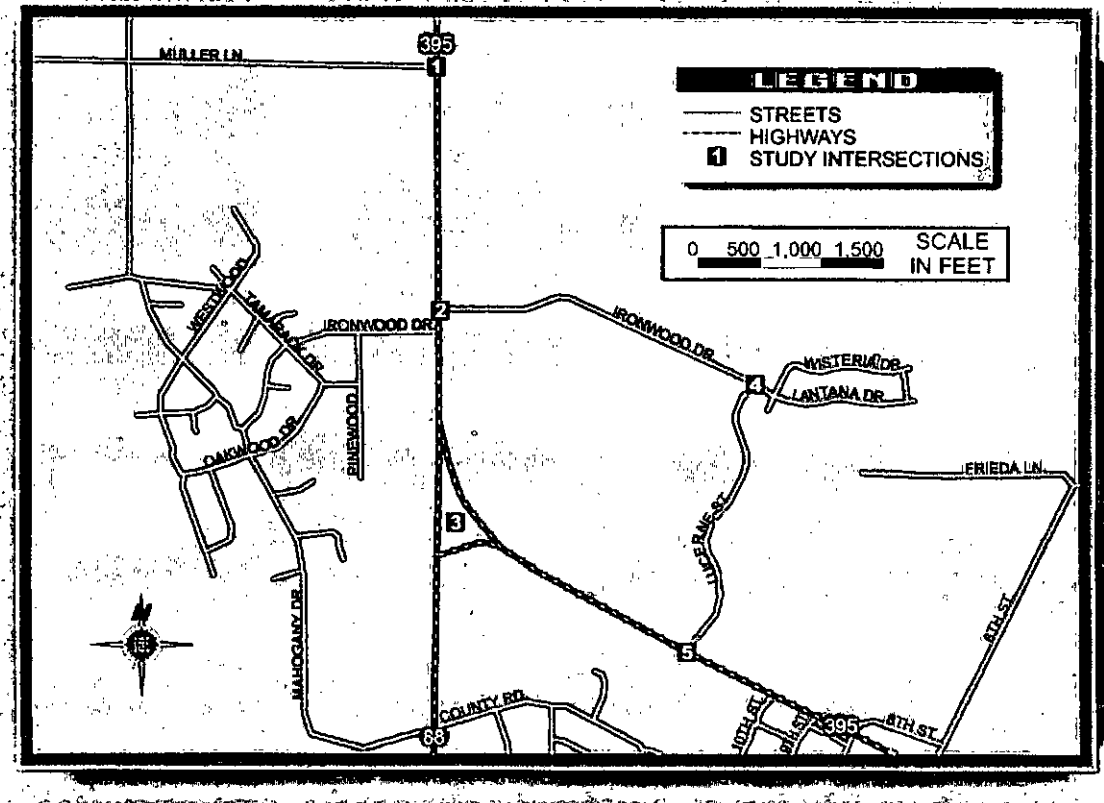
SCALE: 1" = 1/ MILE
DATE: 5/8/01
KR0439

R. Anderson ENGINEERING INC

EXHIBIT 9

FIGURE 7

EXISTING PLUS PROJECT PEAK SEASON PEAK HOUR TRAFFIC VOLUMES



1 MULLER LN./US 395

395 S

1,621
23 | 108

MLW

111
74
140

24
72
170
MLE

154 | 137
1,235
395 N

2 IRONWOOD DR./US 395

395 S

1,472
44 | 178

IW

194
5
3

45
2
35
IW

55 | 21
1,218
395 N

3 SR 88/US 395

55
195 | 93

91
584
1,036

191
390
164

256 | 886
53

4 IRONWOOD DR./LUCERNE RD.

I W

52
106

IE

28
148

163 | 113
L E W

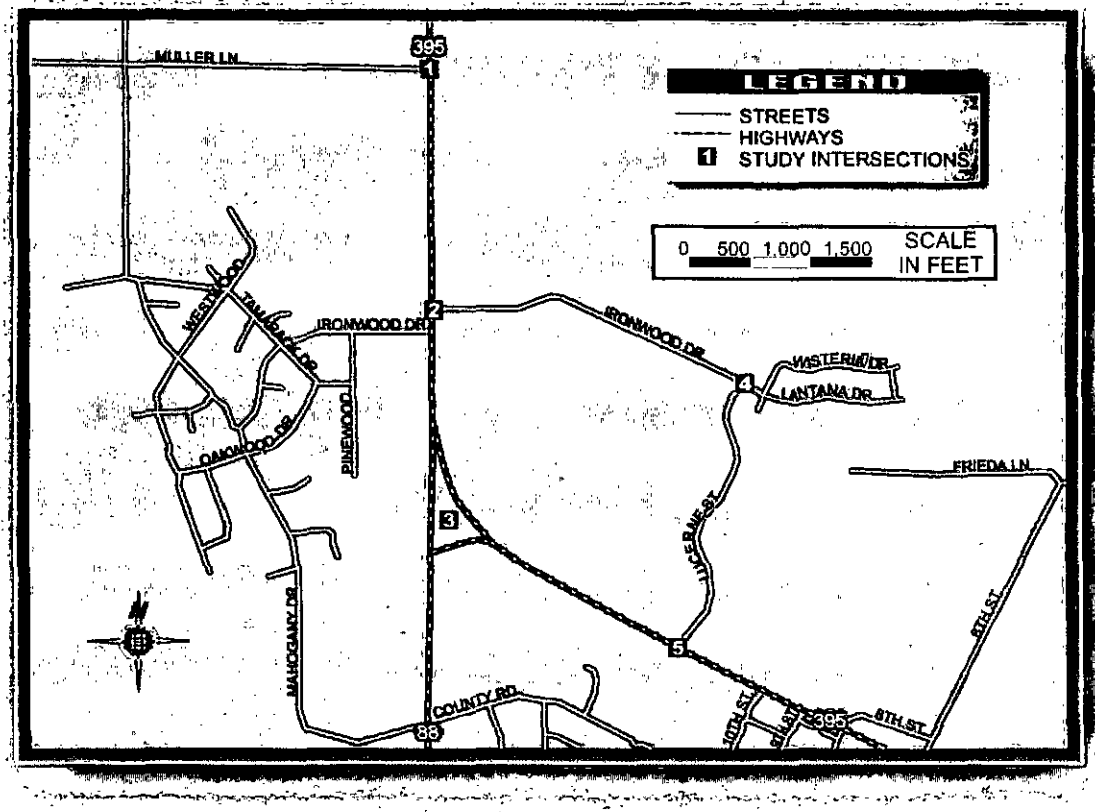
5 LUCERNE ST./US 395

72 | 96 | 97
1,200

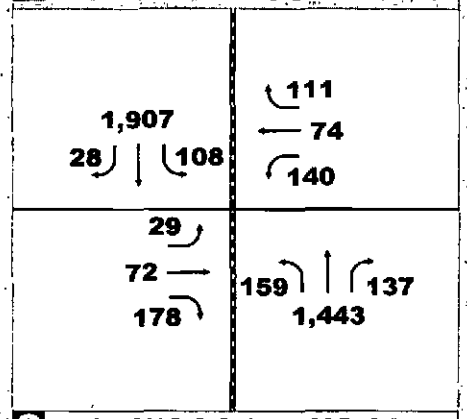
59
1,195

FIGURE 8

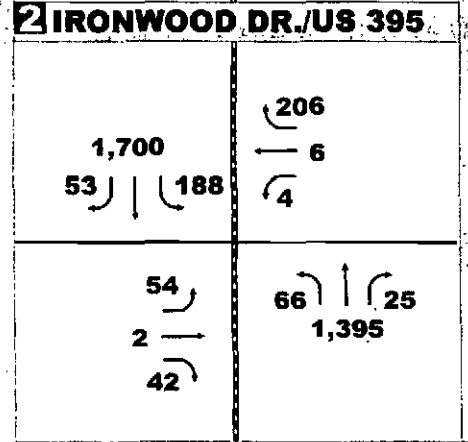
2015 PLUS PROJECT PEAK SEASON PEAK HOUR TRAFFIC VOLUMES



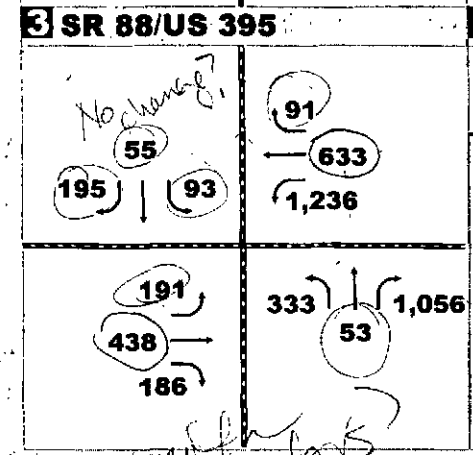
1 MULLER LN./US 395



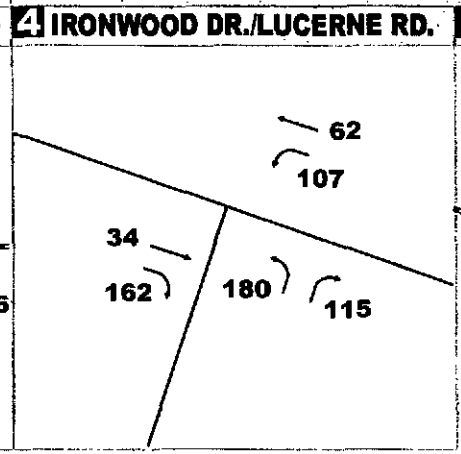
2 IRONWOOD DR./US 395



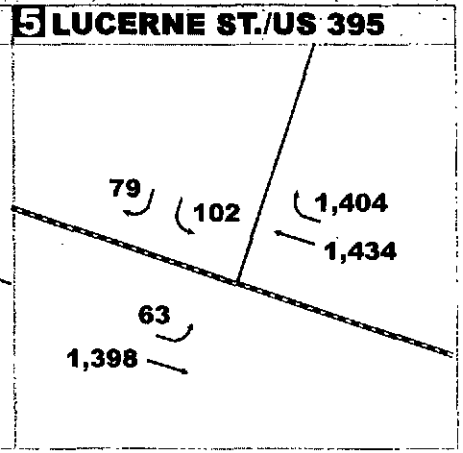
3 SR 88/US 395



4 IRONWOOD DR./LUCERNE RD.



5 LUCERNE ST./US 395



MITIGATION MEASURES

The key intersections and were analyzed for capacity based upon procedures presented in the Highway Capacity Manual. Intersection improvements are necessary to maintain the required Douglas County level of service standards with this proposed project implemented. A variety of alternate intersection designs were considered in order to mitigate the impacts of the project.

US 395 / Muller Lane Parkway

Due to high through volumes on US 395, the minor street approach fails the Douglas County level of service standards under existing conditions prior to the impact of the project. This failure is worsened by the addition of project traffic and future growth. The signalization of US 395 / Muller Lane intersection is required in order to provide adequate level of service. Signalizing this intersection brings the level of service to a LOS "A" under existing conditions and LOS "C" under existing and 2015 conditions with the project implemented.

Acceleration lanes should be used on high speed, high volume roads, or when entering vehicles do not have sufficient gaps to enter traffic safely during the peak hour. Deceleration lanes allow vehicles a safe area in which to slow prior to making a turn, thereby reducing the accident potential with through traffic. A deceleration lane / right turn lane on US 395 southbound already exists and provides adequate length. However, an acceleration lane of 1,170 feet in length for US 395 southbound would also be required by NDOT standards. (Both of these lane lengths assume no change from the existing posted speed limits.) Due to the proximity of the relocated Muller Lane Parkway intersection to the Ironwood Drive intersection, a continuous southbound left-turn acceleration/deceleration lane is required between these two intersections along US 395.

Signalization of this intersection brings the level of service to acceptable standards without further mitigation in the existing and future conditions (See Table 6). However, an associated eastbound right turn lane with a minimum length of 125 feet is also recommended since there are nearly double the number of right turn movements opposed to left turn movements. The left turn movements justify the need for a signal, however, it is the right turn movements creating the longer queue lengths. Thus, the traffic turning movements at this intersection justify a right turn lane and a shared or separated left-through lane(s).

US 395/Ironwood Drive

Due to high through volumes on US 395, the minor street approach exceeds the Douglas County level of service standards under existing conditions with the project and under 2015conditions. Signal warrants were already met based on signal warrant analyses submitted to Douglas County in September 1999 and November 1998. The signalization of US 395 / Ironwood Drive meets signal warrants for this project as well.

There are two options for mitigation presented in this report. Option one is the signalization of the intersection. This unsignalized intersection is required for signalization based on current conditions and level of service standards. Turn lanes already exist and function adequately on all legs of the intersection, however, the eastbound approach does not currently have lane striping. Eastbound lane striping would be recommended with the implementation of the signal. Signalization of this intersection brings the level of service to acceptable standards without further mitigation with this project in the existing and future conditions (See Table 6).

Option two converts the minor legs of the intersection (Ironwood Drive) to right-in / right-out/left-in movements only. This enhances the level of service to LOS "B" in the existing and 2015 conditions with the project implemented, and would require traffic that would otherwise make left-turn movements out of Ironwood Drive onto US 395 to use other nearby signalized intersections (such as the SR 88/US 395 intersection).

US 395/SR 88

This signalized intersection currently functions well. The intersection has been built to accommodate the proposed site access. Signal heads, a southwest-bound left turn lane on US 395, a northeast-bound through lane on SR 88, pedestrian heads, video detection, and handicap ramps have already been implemented.

This intersection will require restriping of the northeast-bound through lane on SR 88 and the southwest-bound left turn lane on US 395. Striping of the site access approach will also be required. Furthermore, appropriate modifications to the existing signal system's controller cabinet will be required. There are two options identified in this report for mitigation with the project in existing and future conditions.

Option one for future improvements would include a left turn lane, through lane, and an exclusive "free" right turn lane on the proposed site access approach. This option will bring the existing plus project conditions to a level of service of LOS "D." However, the intersection will again fall below standards in the year 2015 with a LOS "E."

Option two recommends dual northwest-bound left turn lanes from US 395 onto SR 88. This option will raise the level of service to a LOS "C" in the existing and 2015 with project scenarios.

US 395 / Lucerne Street

Under worst-case conditions, this unsignalized intersection currently operates at LOS "D" with 34.7 seconds of delay. However, this intersection fails in the existing plus project and 2015 plus project scenarios, strictly due to the left turn movement on the minor leg (Lucerne Street). There are two options presented in this report that can adequately mitigate this deficiency.

Option one consists of signalizing the intersection. Although this would provide much more capacity than is necessary for future plus project conditions under worst-case conditions, the level of service will continue to operate at LOS "A" with the project in 2015. However, as development occurs on the southwest side of the intersection, future turning movements may further justify signal installation. A signal warrant is met during the peak hours in existing and 2015 with project conditions.

Option two would prohibit left turn movements onto US 395 from Lucerne Street. Converting this approach to a right-in / right-out/left-in may prove to be a viable and cost effective solution with the construction and extension of Ironwood Drive to the east. The Douglas County *Master Plan* indicates that Ironwood Drive will connect back into US 395 further south of the site, thereby providing an alternate route for traffic exiting towards the southeast. This option maintains a LOS "C" with the project in 2015.

Ironwood Drive / Lucerne Street

This unsignalized intersection will operate at an acceptable level of service with or without this project in existing and 2015 conditions. No mitigation is required.

OTHER TRANSPORTATION CONSIDERATIONS

Site Access and Traffic Circulation

The preliminary site plan has not yet been developed, however, preliminary access plans assume that access to the site will be provided as stated in the Access section of Chapter 3. Specific site development plans should provide further information on interior street access, parking areas, left turn lane lengths, and on-site circulation between parking areas and turning radii for delivery trucks and emergency vehicles. Ironwood Drive currently has left turn lanes for potential access locations. These left turn lanes may be a too short at 75 feet of storage for the proposed site. However, adequate turning lane space is available to accommodate any deficiencies found in further analysis when the final site plans are submitted.

Since this site is located directly west of a residential subdivision, the impacts of this proposed development were considered. The existing primary route for the residents in the Windhaven Subdivision near the project is: Lantana Drive to Lucerne Street to US 395

with the option of using Ironwood Drive for those traveling northbound. This project will be built with accesses on Ironwood Drive, hence, creating more delay for the residents. However, with the construction of Muller Avenue, Lantana Drive will extend north to Muller Lane and give residents northbound access to US 395 and Heybourne Road. The same reasoning is applied to Lucerne Street with the extension of Ironwood Drive to the east. With the extension of Ironwood Drive to the east and the connection to US 395, southeast-bound traffic will have alternate routes as well. Residents will have alternate routes to travel to and from their destinations as more cross-circulation and parallel travel ways are constructed. Furthermore, the project will have site accesses to major collectors and state highways. Therefore, internal cut-through traffic is not anticipated. The level of service at the access points to the Windhaven development will not be impacted by this project.

Parking

Since this project is in a conceptual phase, the detailed plan for parking facilities needed for a parking analysis is not yet available. Therefore, the actual number of spaces required is not known. A parking analysis will need to be done in the future, as specific land use plans are developed. Parking supply and design should conform to the Douglas County requirements.

Intersection Sight Distance

Drivers preparing to enter a highway from a driveway or intersection must be able to see and react to oncoming traffic in both directions in a safe manner. Adequate "entering sight distance" enables drivers to identify gaps providing adequate time to pull into the through lane and accelerate. Intersection sight requirements are defined in the Access Management System and Standards (Nevada Department of Transportation, July 1999). All intersections currently have adequate sight distance.

Acceleration Lanes/Deceleration Lanes

Acceleration lanes should be used on high speed (45 mph or greater), high volume (10,000 movements per day or more, based on a 20 year projection) roads, when required by a traffic study, or when entering vehicles do not have a sufficient gap to enter traffic safely during the peak hour. Tapers should be 25:1 for speeds 45 miles per hour and higher. Deceleration lanes allow vehicles, which are turning into an intersection, a safe area in which to slow prior to making the turn, thereby reducing the accident potential with through traffic. The deceleration lane should be 645 feet in length with a 20:1 taper ratio for the highway design speed of 70 miles per hour.

An adequate deceleration lane currently exists at the Muller Lane intersection (Southbound). Acceleration and deceleration lanes should be provided on US 395 when the extension of Muller Lane occurs fro both northbound and southbound directions.

Signal Timing

According to the Access Management System and Standards (Nevada Department of Transportation, July 1999), traffic signals should be programmed to coincide with the posted speed limit and have a progression bandwidth of greater than 45 percent. As the proposed traffic signal at the US 395/Muller Lane intersection is at the end of a series of progressed signals, and as only 25 percent of the total cycle length is required to be non-green time on US 395, it can be concluded that the 45 percent bandwidth requirement can be maintained, as long as the signal is coordinated with the US 395/SR 88 traffic signal. If provided, the Ironwood Drive / US 395 signal should be coordinated with the signals to the north and south. If the intersection of US 395 / Lucerne Street is signalized, it should be actuated-coordinated with the signal to the north (SR 88). Underground fiberoptic connections between Muller Lane and Lucerne Street is recommended. A signal progression study is needed for US 395, however, this is outside of the scope of this report. A signal contractor is needed to complete the coordination with the US 395/SH 88 traffic signal.

Transit, Pedestrian, and Bicycle Facilities / Improvements

Some pedestrian traffic was observed near the proposed site. The proposed project can be expected to generate a fair amount of pedestrian movement within the project site as well as to commercial properties to the west as well as the remainder of Minden to the southeast. Sidewalk currently exists for pedestrian movement around the site. Internal pedestrian improvements will be required as the final site plans are developed. A detached sidewalk already exists on the south side of Ironwood Drive, the west side of Lucerne Street, and the northeast side of US 395.

Bibliography

Access Management System and Standards, Nevada Department of Transportation, July 1999

Douglas County Master Plan, April 18, 1996

Douglas County Transportation Plan, April 18, 1996

Douglas County Design Criteria and Improvement Standards, September 17, 1998

Highway Capacity Manual, Special Report 209, Third Edition, Transportation Research Board, 1998

Trip Generation Handbook: An ITE Proposed Recommended Practice, Institute of Transportation Engineers, October 1998

Trip Generation, 6th Edition, Institute of Transportation Engineers, 1997

APPENDIX A
TRAFFIC COUNTS

Muller Lane/395 Commercial Development Traffic Impact Analysis
Intersection: 395 / Muller Lane
Tuesday, May 23rd

Movement #	2	3	4	6	7	8	10	11	12	14	15	16		
Direction	Southbound			Westbound			Northbound			Eastbound			Totals	
Time	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	15-Min	1-Hour
7:00 - 7:15	10	201	–	–	–	–	–	310	1	6	–	6	534	
7:15 - 7:30	8	265	–	–	–	–	–	306	27	15	–	3	624	
7:30 - 7:45	5	289	–	–	–	–	–	341	6	11	–	9	661	
7:45 - 8:00	10	218	–	–	–	–	–	285	7	8	–	8	536	2355
8:00 - 8:15	6	185	–	–	–	–	–	208	5	6	–	6	416	2237
8:15 - 8:30	12	169	–	–	–	–	–	205	8	8	–	6	408	**2021**
8:30 - 8:45	4	174	–	–	–	–	–	234	7	12	–	4	435	1795
8:45 - 9:00	8	184	–	–	–	–	–	224	11	7	–	5	439	1698
A.M. Peak Hour	33	973	0	0	0	0	0	1242	41	40	0	26	2355	
A.M. Peak Hour Factor	0.83	0.84	–	–	–	–	–	0.91	0.38	0.67	–	0.72	0.89	
3:30 - 3:45	5	311	–	–	–	–	–	276	7	14	–	6	619	
3:45 - 4:00	6	283	–	–	–	–	–	259	5	8	–	10	571	
4:00 - 4:15	4	314	–	–	–	–	–	269	10	15	–	7	619	
4:15 - 4:30	9	352	–	–	–	–	–	242	5	7	–	7	622	2431
4:30 - 4:45	3	375	–	–	–	–	–	248	6	15	–	4	651	2463
4:45 - 5:00	6	341	–	–	–	–	–	229	5	9	–	5	595	**2487**
5:00 - 5:15	5	360	–	–	–	–	–	319	7	11	–	8	710	2578
5:15 - 5:30	11	332	–	–	–	–	–	233	6	6	–	5	593	2549
P.M. Peak Hour	23	1428	0	0	0	0	0	1038	23	42	0	24	2578	
P.M. Peak Hour Factor	0.64	0.95	–	–	–	–	–	0.81	0.82	0.70	–	0.75	0.91	

Peak Season Factor
Peak-Season Peak-Hour

Muller-395 Commercial Traffic Counts.wb3

Petra Traffic Count Data

Counted by: LSC
Weather: Sunny

File Name : untitled2
Site Code : 00000000
Start Date : 07/06/200
Page No : 1

Groups Printed- Vehicles and Trucks

	Future Site Access Southbound				*US 395 (NB) Westbound*				*SR 88 Northbound*				*US 395 (SB) Eastbound*				
Start Time	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Right	Thru	Left	Peds	Int. Total
Factor	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	
16:30	0	0	0	0	0	87	229	0	208	0	48	0	27	81	0	0	680
16:45	0	0	0	0	1	115	230	0	206	0	34	0	48	71	0	0	705
Total	0	0	0	0	1	202	459	0	414	0	82	0	75	152	0	0	1385
17:00	0	0	0	0	0	128	238	0	221	0	63	0	31	84	0	0	765
17:15	0	0	0	0	0	114	225	0	236	0	78	0	31	74	0	0	758
17:30	0	0	0	0	0	142	278	0	181	3	42	0	21	70	0	0	737
17:45	0	0	0	0	0	113	258	0	211	0	52	0	29	63	0	0	726
Total	0	0	0	0	0	497	999	0	849	3	235	0	112	291	0	0	2986
18:00	0	0	0	0	0	104	243	0	209	0	43	0	24	70	0	0	693
18:15	0	0	0	0	0	95	203	0	151	0	35	0	28	74	0	0	586
Grand Total	0	0	0	0	1	898	1904	0	1623	3	395	0	239	587	0	0	5650
Apprch %	0.0	0.0	0.0	0.0	0.0	32.0	67.9	0.0	80.3	0.1	19.5	0.0	28.9	71.1	0.0	0.0	
Total %	0.0	0.0	0.0	0.0	0.0	15.9	33.7	0.0	28.7	0.1	7.0	0.0	4.2	10.4	0.0	0.0	

	Future Site Access Southbound					*US 395 (NB) Westbound*					*SR 88 Northbound*					*US 395 (SB) Eastbound*					
tart Time	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Right	Thru	Left	Peds	App. Total	Int. Total
ak Hour From 16:30 to 18:15 - Peak 1 of 1																					
tersectio n	17:00																				
lume	0	0	0	0	0	0	497	999	0	1496	849	3	235	0	1087	112	291	0	0	403	2986
cent	0.0	0.0	0.0	0.0		0.0	33.2	66.8	0.0		78.1	0.3	21.6	0.0		27.8	72.2	0.0	0.0		
Volume	0	0	0	0	0	0	497	999	0	1496	849	3	235	0	1087	112	291	0	0	403	2986
Volume	0	0	0	0	0	0	128	238	0	366	221	0	63	0	284	31	84	0	0	115	765
Peak Factor																					0.976
High Int.	4:15:00 PM					17:30					17:15					17:00					
Volume	0	0	0	0	0	0	142	278	0	420	236	0	78	0	314	31	84	0	0	115	
Peak Factor										0.890					0.865					0.876	

Intersection: Lucerne/Ironwood
Location: Minden, NV
North/South Street: Lucerne Street
East/West Street: Ironwood

Date: June 27, 2001
Day: Wednesday
Name: John
Project #: 017440

Counter Movement #:		2	3	4	6	7	8	10	11	12	14	15	16		
Time Period		Southbound			Westbound			Northbound			Eastbound				
Beginning	Ending	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total	Hourly
07:00 AM	07:15 AM	15	6	0	0	0	0	0	2	0	2	0	10	35	238
07:15 AM	07:30 AM	23	10	0	0	0	0	0	4	0	2	0	28	93	223
07:30 AM	07:45 AM	28	8	0	0	0	0	0	9	0	3	1	16	65	172
07:45 AM	08:00 AM	12	5	0	0	0	0	0	4	5	1	0	18	45	127
08:00 AM	08:15 AM	9	3	0	0	0	0	0	3	1	1	0	3	20	137
08:15 AM	08:30 AM	17	7	0	0	0	0	0	4	0	4	0	10	42	
08:30 AM	08:45 AM	5	3	0	0	0	0	0	2	2	4	0	4	20	
08:45 AM	09:00 AM	10	19	0	0	0	0	0	8	1	5	0	12	55	
Peak Hour		78	29	0	0	0	0	0	19	46	8	1	57		
Peak Hour Factor		0.70	0.73	--	--	--	--	--	0.53	0.28	0.67	0.25	0.79		–

Counter Movement #:		2	3	4	6	7	8	10	11	12	14	15	16		
Time Period		Southbound			Westbound			Northbound			Eastbound				
Beginning	Ending	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Right	Thru	Left	Total	Hourly
04:00 PM	04:15 PM	20	5	0	0	0	0	0	17	2	4	0	12	60	225
04:15 PM	04:30 PM	10	5	0	0	0	0	1	10	1	4	0	21	52	234
04:30 PM	04:45 PM	23	10	0	0	0	0	0	6	0	1	1	13	54	253
04:45 PM	05:00 PM	15	5	0	0	0	0	0	16	2	3	0	18	59	254
05:00 PM	05:15 PM	15	12	0	0	0	0	0	13	2	1	0	26	69	238
05:15 PM	05:30 PM	27	7	0	0	0	0	0	15	1	4	0	17	71	
05:30 PM	05:45 PM	14	4	0	0	0	0	0	8	2	1	0	26	55	
05:45 PM	06:00 PM	8	7	0	0	0	0	0	8	1	2	0	17	43	
Peak Hour		71	28	0	0	0	0	0	52	7	12	0	84		
Peak Hour Factor		0.66	0.58	--	--	--	--	--	0.81	0.88	0.75	--	0.81		–

Traffic Counts.wb3

APPENDIX B
TRIP GENERATION INFORMATION

Alternative Land Use Generation: Trip Generation of the Proposed Nevada NW Development

Land Use	Land Use Code	Quantity	Unit	Weekday PM Pk-Hr Trip Rates Total	In	Out	Daily Trip Rate	Total Weekday PM Pk-Hr Trips Total	In	Out	Daily Trips
Proposed Zoning											
Area A											
Single-Family Residential (6 DU/acre)	210	247	DU	1.01	0.65	0.36	9.57	249	161	88	2,364
Internally Linked Trip Reduction								60	39	21	567
Subtotal								*189*	*122*	*67*	*1,797*
Area B											
Single-Family Residential	210	42	DU	1.01	0.65	0.36	9.57	42	27	15	402
Neighborhood Commercial	820	166	KSF	Trips based on natural log equation.				877	421	456	9,443
Multi-Family Residential	220	148	DU	0.62	0.42	0.2	6.63	92	62	30	981
Pass-by Trip Reduction								158	76	82	1,700
Internally Linked Trip Reduction								243	122	120	2,598
Diverted Link Trip Reduction								116	56	60	1,246
Subtotal								*495*	*256*	*238*	*5,282*
Area D											
Tourist Commercial	820	492	KSF	Trips based on natural log equation.				1,797	863	934	18,989
Pass-by Trip Reduction								323	155	168	3,418
Internally Linked Trip Reduction								431	207	224	4,557
Diverted Link Trip Reduction								237	114	123	2,507
Subtotal								*805*	*387*	*418*	*8,507*
Total Trip Generation for Proposed Zoning:								***1,489***	***765***	***724***	***15,585***

Note 1: KSF = 1,000 square feet floor area, DU = dwelling unit

Nevada NW Trip Gen2.wb3

116 SF ?

Trip Generation Rates for Las Vegas Area Hotel-Casinos

KENNETH W. ACKERET AND ROBERT C. HOSEA III

The hotel-casinos of Las Vegas are known throughout the world. From the standpoint of size (number of rooms and casino square footage) and recreational attraction, this sort of development represents a unique land use for which trip generation rates have not been established or published. Thus, the evaluations of site traffic impacts for either new hotel-casinos or expansions to existing properties have been faced with the challenge of accurately predicting the number of vehicle trips that will be generated.

The goal of this study was to compile existing driveway count data obtained and documented in various traffic impact reports prepared within the Las Vegas area (Clark County, Nevada) and to use this information to prepare data plots and trip generation equations similar to those found in the ITE trip generation report.[1] To accomplish this task, the following independent variable characteristics were correlated to driveway count data from 1985 through 1990 for various hotel properties:

- Number of hotel rooms in the property
- Casino floor square footage
- Average number of employees

Data Collection

Manual driveway traffic counts and site characteristics shown in Table 1 were collected with the cooperation of the Clark County Department of Public Works, Traffic Management Division; the University of Nevada Las Vegas, Transportation Research Center; and from the records of SEA Consulting Engineers, as well as other traffic consultants in the Las Vegas area.[2-22]

The compiled count data and property characteristics in Table 1 were divided into three groups. Properties were segregated into the following groups in an effort to identify any unique characteristics that may exist resulting from their location within the Las Vegas area.

Strip Hotels and Casinos (S). This category represents all properties located along the Las Vegas "strip," which is defined as that area along Las Vegas Boulevard (a total length of 5.2 miles or 8.4 km) between Sahara Avenue and Sunset Road. All of these properties are located within the unincorporated Las Vegas urban area. These properties are primarily an attraction for typical Las Vegas gaming tourists.

Outlying Areas (O). This category includes relatively small, rural hotel-casinos located outside of the Las Vegas metropolitan area, chiefly along Interstate 15, which links the Southern California area to Las Vegas.

Local Casinos (L). Off-strip hotel-casinos with approximately 200 to 300 rooms are included in this group. These properties are generally located along arterial roadways within the Las Vegas urban area, and they primarily attract Las Vegas residents.

Conversion Factors

To convert from	to	multiply by
sq ft	m^2	0.0929
mi	km	1.609

Data Evaluation

The data in Table 1 represent manual vehicle counts reported for access driveways to each hotel-casino property. The count observations were made during 15-minute intervals on weekdays during peak hour traffic (7 a.m. to 9 a.m. and 4 p.m. to 6 p.m.). The average weekday morning and afternoon peak hour used for these counts was that determined for the street traffic adjacent to each respective hotel-casino. Therefore, it is important to realize that the following evaluations do not necessarily reflect the peak-hour rates of the hotel-casino traffic generator.

In order to account for seasonal variations in the count data, the peak-hour volumes in Table 1 were adjusted to reflect a 100 percent room occupancy. This adjustment was made by dividing the driveway counts by the hotel occupancy rate on the day of the count. While these occupancy rates vary throughout holiday seasons, and especially during holiday periods, the average mid-week Las Vegas hotel occupancy rates have been relatively constant from year to year (81.4 percent for the 1988[23] calendar year and 81.6 percent for 1989[24]).

The evaluated vehicle trip data in Table 1 represent 17 different hotel-casinos. However, in order to increase the number of data points for evaluation, counts from two properties (the Stardust and Riviera hotel-casinos) that have undergone major casino floor expansions or room additions were used. With this latter data included, a total of 21 afternoon peak-hour observations were available for comparison to the independent variables referred to previously (casino floor space, number of hotel rooms, and average number of employees).

The information contained in Table 1 was evaluated using a spreadsheet program to plot the data, determine directional distributions, and perform linear regression analysis. The linear regression analysis was calculated using the following three formulas found in ITE's *Trip Generation*[1]:

$$T = C_1 X + C_2 \quad (1)$$

$$1/T = C_1 1/X + C_2 \quad (2)$$

$$\text{Ln}(T) = C_1 \text{Ln}(X) + C_2 \quad (3)$$

where:

T = Average vehicle trip ends (dependent variable),

X = Number of hotel rooms, average number of employees, or casino square footage (independent variables), and

C_1, C_2 = Coefficients (determined from regression analysis).

Because of the limited number of hotel-casino counts available for the local and outlying hotel-casino categories, the data were evaluated for either "all hotels" or "strip hotels." The best-fit relationship was found for each independent variable by comparing the coefficients of determination, R^2. As the value of R^2 approaches 1.0, the relationship between the number of trips and the independent variable(s) becomes more favorable. The resulting best-fit relationships are given in Table 2 for the single-variant relationships. The single-variant equations, directional distribution, and data plots for all hotels are presented in Figures 1 through 6 in a format similar to that found in the ITE trip generation report.[1] In addition, multi-variant regression analysis was performed on the data set for various combinations of independent variables. The best-fit relationship was found for the four combinations of the three independent variables. These equations and associated R^2 values are presented in Table 3 for the multi-variant relationships.

To further supplement the single-variant regression analysis, an average trip rate was determined for the three independent variables. For comparison purposes, the rate equation was also plotted on Figures 1 through 6.

Conclusions

Based upon the available hotel-casino vehicle trip data, the analyses of the vehicle volumes, and the resulting single-variant and multi-variant trip generation equations, the following conclusions can be drawn concerning the trip generation rates for Las Vegas area hotel-casinos.

The single-variant relationships of the form $T = C_1 X + C_2$ had the best correlations. The variable incorporating the average number of employees was found to have the strongest correlation between the three independent variables evaluated. For general planning purposes, when the number of employees is known from social and economic projections for a given hotel-casino land use

Table 1. Hotel-casino trip and site characteristics.

Type	Hotel	Hotel Occupancy[a] (%)	Count	AM Peak Hour[b] In	AM Peak Hour[b] Out	AM Peak Hour[b] Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Number of Hotel Rooms	Casino Floor Sq Ft	Avg. No. of Emp.
S	Caesars Palace[2]	95	1989	724	361	1,085	876	857	1,733	1,500	93,000	3,000
S	Circus-Circus[3]	100	1988	568	599	1,167	883	915	1,798	3,154	110,979	3,500
S	El Rancho[4]	79	1987	—	—	—	171	154	325	438	31,794	250
S	Excalibur[5,c]	96	1990	—	—	—	859	1,527	2,386	4,032	105,540	4,000
S	Frontier[6]	93	1989	225	160	385	263	230	493	176	53,825	1,500
L	Gold Coast[7]	93	1988	404	227	631	961	716	1,677	297	71,000	2,030
O	Goldstrike[8]	79	1990	—	—	—	157	126	283	300	27,608	500
S	Hacienda[9]	91	1990	142	125	267	280	253	533	780	17,500	800
S	Imperial Palace[10]	92	1985	231	173	404	257	362	619	1,492	35,788	1,400
L	King 8[11]	61	1988	107	92	199	134	125	259	298	4,138	300
O	Nevada Landing[12]	79	1990	—	—	—	161	139	300	300	35,700	600
S	Riviera[13]	100	1985	—	—	—	275	223	498	1,196	40,000	1,615
S	Riviera[14]	100	1986	—	—	—	229	241	470	1,196	75,350	1,100
S	Riviera[15]	100	1988	508	322	830	495	437	932	2,136	75,350	2,000
S	Riviera[16]	98	1990	427	213	640	491	512	1,003	2,136	75,350	2,000
S	Sahara[17]	82	1990	—	—	—	403	325	728	1,500	26,956	1,600
L	Sam's Town[18]	80	1987	—	—	—	704	699	1,403	204	62,884	1,150
S	Sands[19]	92	1989	238	144	382	274	324	598	720	26,000	1,500
S	Stardust[20]	90	1986	355	299	654	448	524	972	1,365	18,500	1,900
S	Stardust[21]	97	1989	392	344	736	533	578	1,111	1,302	49,993	2,000
S	Westward Ho[22]	99	1987	140	164	304	172	203	375	780	34,457	900

S = Strip Hotel & Casino; O = Outlying Area Hotel & Casino; L = Local Hotel & Casino.

Note: Numbers appearing after hotel name refer to reference citations.

[a]Hotel room occupancy at time of driveway counts as reported by owner.
[b]Adjusted counts to 100 percent room occupancy.
[c]PM peak hour from Monday, Labor Day 1990.

area, Figures 3 and 4 may be used in a manner similar to the methods applied in *Trip Generation* to determine the anticipated number of vehicle trip ends. In using Figures 3 and 4 it is important to recognize that the results are based upon 100 percent room occupancy and should therefore be adjusted to reflect the average room occupancy rate for the hotel-casino land use area being evaluated.

The evaluation of directional split data shows that the morning peak hour has a greater number of vehicles arriving than departing (58 percent enter, 42 percent exit), while during the afternoon peak hour the directional split is almost equal (49 percent enter, 51 percent exit).

Multi-variant relationships, including all three independent variables, resulted in the strongest correlations. The strip hotel data had the best overall relationships, with R^2 values of 0.949 (morning peak hour) and 0.929 (afternoon peak hour) for the three independent variables. Of all the relationships analyzed, those incorporating the independent variable of the average number of employees demonstrated the strongest correlations with respect to the anticipated number of vehicle trip ends. However, it is important to recognize that even though the average number of employees will result in the best single-variant and multi-variant correlations to the number of vehicle trip ends, this variable ~~may be~~ difficult to precisely determine from an owner during the early development stages of a hotel-casino project when a site impact report needs to be

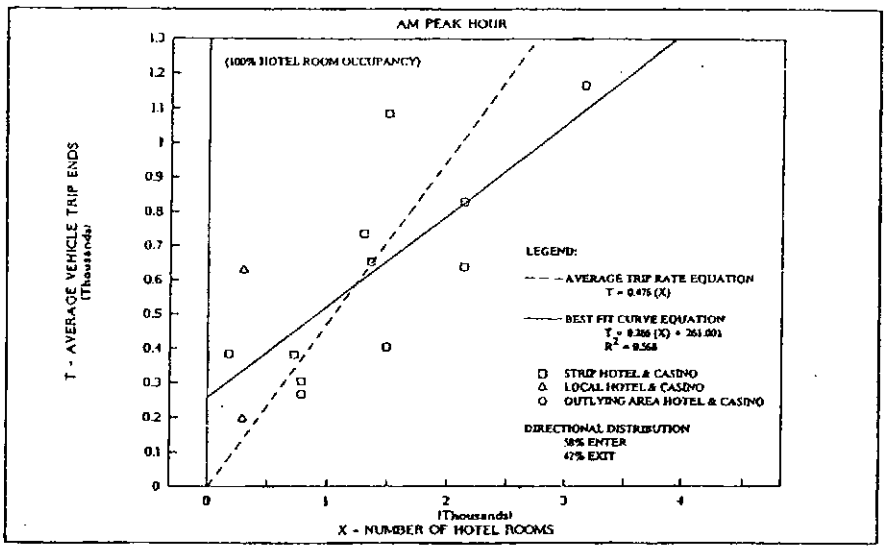


Figure 1. Average vehicle trip ends per hotel room, morning peak hour.

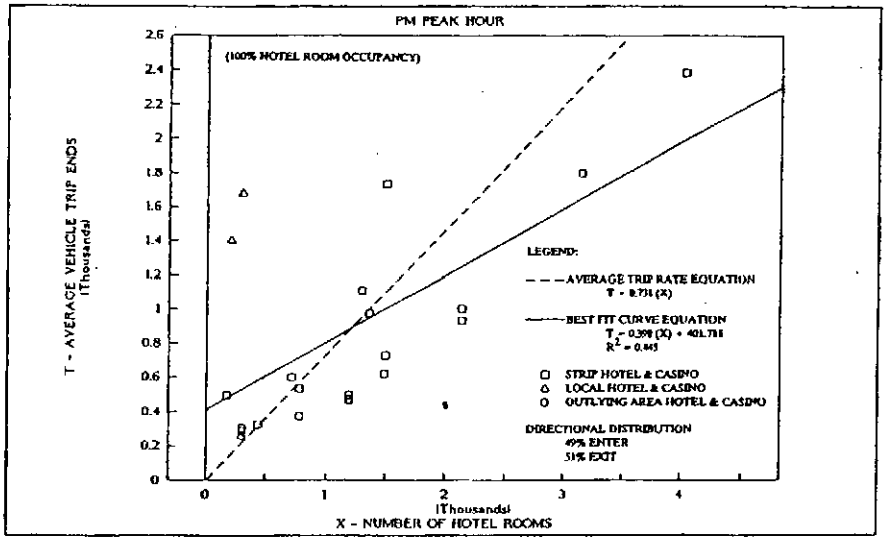


Figure 2. Average vehicle trip ends per hotel room, afternoon peak hour.

Table 2. Trip generation equations single variant relationships (100 percent hotel room occupancy).

	All Hotel-Casinos Average Vehicle Trip Ends (T)		Strip Hotel/Casinos Average Vehicle Trip Ends (T)	
Independent Variable	AM	PM	AM	PM
Trips Per Hotel Room (X)				
Rate Equation	$T = 0.476\ (X)$	$T = 0.731\ (X)$	$T = 0.441\ (X)$	$T = 0.610\ (X)$
Fitted Curve Equation	$T = 0.266\ (X) + 261.001$	$T = 0.398\ (X) + 401.711$	$T = 0.290\ (X) + 213.221$	$T = 0.514\ (X) + 143.206$
Coefficient of Determination (R^2)	0.568	0.445	0.608	0.745
Trips Per Employees (X)				
Rate Equation	$T = 0.337\ (X)$	$T = 0.550\ (X)$	$T = 0.334\ (X)$	$T = 0.501\ (X)$
Fitted Curve Equation	$T = 0.342\ (X) - 10.334$	$T = 0.545\ (X) + 9.205$	$T = 0.369\ (X) - 64.984$	$T = 0.578\ (X) - 139.629$
Coefficient of Determination (R^2)	0.927	0.799	0.935	0.923
Trips Per 1,000 square feet of Casino (X)				
Rate Equation	$T = 11.540\ (X)$	$T = 17.258\ (X)$	$T = 11.602\ (X)$	$T = 16.744\ (X)$
Fitted Curve Equation	$T = 8.216\ (X) + 170.239$	$T = 15.905\ (X) + 69.054$	$T = 8.406\ (X) + 171.646$	$T = 14.727\ (X) + 109.757$
Coefficient of Determination (R^2)	0.748	0.631	0.722	0.595

T = Trip ends at 100 percent room occupancy

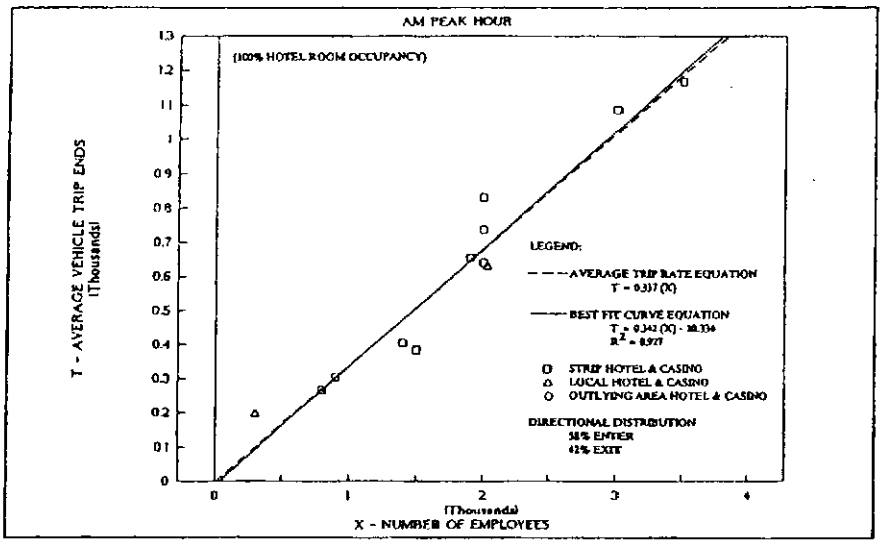


Figure 3. Average vehicle trip ends per hotel employee, morning peak hour.

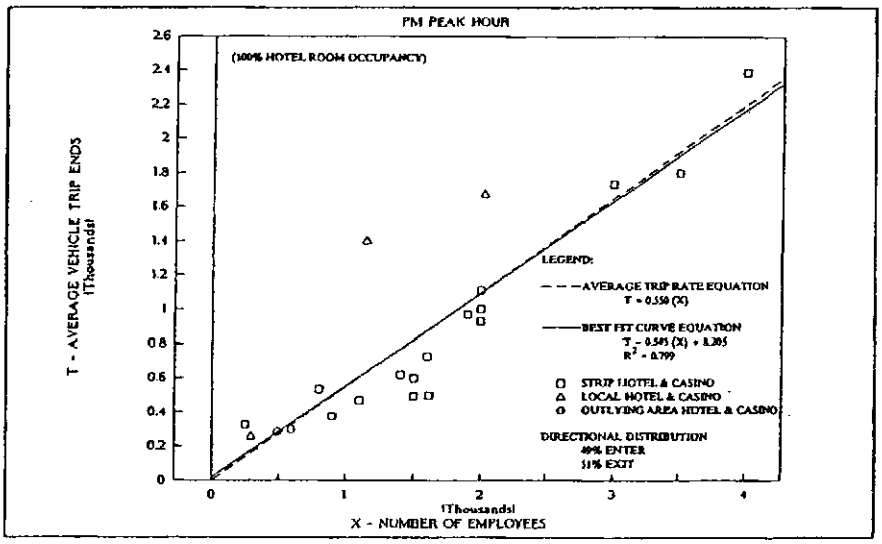


Figure 4. Average vehicle trip ends per hotel employee, afternoon peak hour.

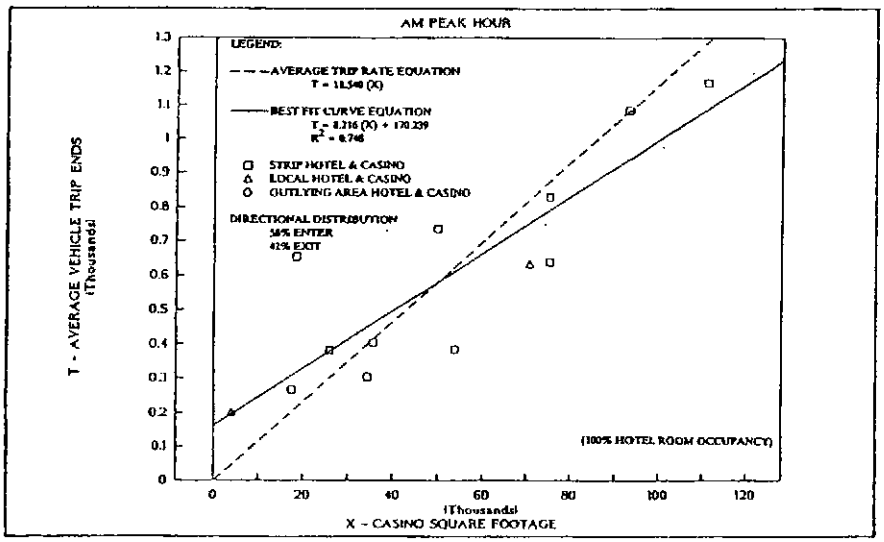


Figure 5. Average vehicle trip ends per 1,000 sq ft of casino floor area, a.m. peak hour.

prepared. Since the number of proposed hotel rooms and the casino floor space is more precisely known during the planning stages of either a new project or property expansion, it is recommended that vehicle trip-end projections for site impact reports be made based on these two more readily known variables, as given in Table 3. In using the equations contained in Table 3, it is important to recognize that the results are based on 100 percent room occupancy for the facility and must be adjusted to reflect the appropriate room occupancy rate for the project being evaluated.

Since the number of employees correlates so well with the number of trip ends for individual hotel-casinos, further study of this relationship is recommended as it relates to seasonal variations, hotel occupancy rates, and regional hotel-casino land use zones.

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Table 3. Trip generation equations Multi-variant Relationships (100 percent hotel room occupancy).

Independent Variables	All Hotel/Casinos Average Vehicle Trip Ends (T)		Strip Hotel/Casinos Average Vehicle Trip Ends (T)	
	AM	PM	AM	PM
	Trips Per Hotel Rooms (X), 1,000 square feet of Casino (Y)			
Fitted Curve Equation	T = 0.115 (X) + 6.181 (Y) + 131.216	T = 0.147 (X) + 12.607 (Y) + 60.405	T = 0.128 (X) + 5.937 (Y) + 123.909	T = 0.386 (X) + 5.529 (Y) + 33.990
Coefficient of Determination (R^2)	0.809	0.665	0.778	0.782
	Trips Per Hotel Rooms (X), Employees (Y)			
Fitted Curve Equation	T = 0.047 (X) + 0.308 (Y) − 9.282	T = −0.160 (X) + 0.681 (Y) − 18.313	Ln(T) = 0.131 Ln(X) + 0.966 Ln(Y) − 1.791	T = 0.087 (X) + 0.503 (Y) − 132.538
Coefficient of Determination (R^2)	0.936	0.820	0.948	0.929
	Trips Per Employees (X), 1,000 square feet of Casino (Y)			
Fitted Curve Equation	T = 0.325 (X) + 0.529 (Y) − 6.618	T = 0.439 (X) + 4.326 (Y) − 43.152	T = 0.346 (X) + 0.707 (Y) − 59.229	T = 0.562 (X) + 0.656 (Y) − 145.676
Coefficient of Determination (R^2)	0.928	0.815	0.936	0.924
	Trips Per Hotel Rooms (X), Employees (Y), 1,000 square feet of Casino (Z)			
Fitted Curve Equation	T = 0.047 (X) + 0.296 (Y) + 0.396 (Z) − 6.511	T = 0.158 (X) + 0.576 (Y) + 4.271 (Z) − 68.771	Ln(T) = 0.132 Ln(X) + 0.913 Ln(Y) + 0.048 Ln(Z) − 1.591	T = 0.085 (X) + 0.500 (Y) + 0.175 (Z) − 134.264
Coefficient of Determination (R^2)	0.937	0.836	0.949	0.929

T = Trip ends at 100 percent room occupancy.

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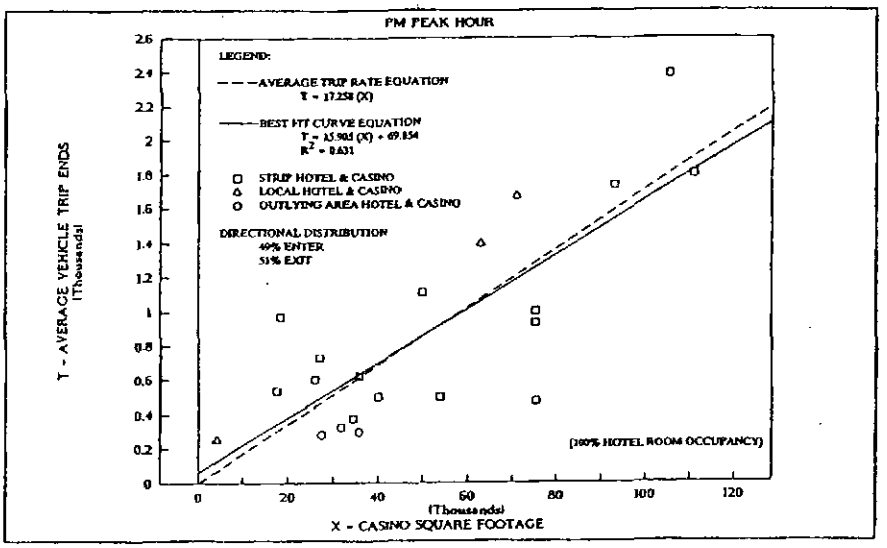

Figure 6. Average vehicle trip ends per 1,000 sq ft of casino floor area, afternoon peak hour.

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Analyst RLB
Date 7.6.2001

MULTI-USE DEVELOPMENT
TRIP GENERATION
AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt Nevada NW
Time Period PM Pk Hr

38+38 > 72

*THIS ASSUMES ALL RESIDENTIAL TRIPS REMAIN INTERNAL

LAND USE A

ITE LU Code Residential
Size 291 units (MF/SF)

	Total	Internal	External
Enter	141	88	53
Exit	72	72	0
Total	213	160	53
%	100%	75%	25%

Exit to External: 0
Enter from External: 53

53% 38 Demand — 38 Balanced — 9% 102 Demand
31% 44 Demand — 44 Balanced — 12% 148 Demand
53% 38 Demand — 38 Balanced — 9% 81 Demand
31% 44 Demand — 44 Balanced — 12% 104 Demand

LAND USE B

ITE LU Code 820 Neighborhood Commercial
Size 537,000 s.f.

	Total	Internal	External
Enter	1,137	211	926
Exit	1,232	231	1,001
Total	2369	442	1927
%	100%	19%	81%

Exit to External: 1001
Enter from External: 926

LAND USE C

ITE LU Code 820 Tourist Commercial
Size 492,000 s.f.

	Total	Internal	External
Enter	934	225	709
Exit	863	217	646
Total	1,797	442	1355
%	100%	25%	75%

Enter from External: 709
Exit to External: 646

20% 227 Demand — 173 Balanced — 20% 173 Demand
20% 246 Demand — 187 Balanced — 20% 187 Demand

Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	53	926	709	1,688
Exit	0	1,001	646	1,647
Total	53	1,927	1355	3,335
Single-Use Trip Gen. Est.	213	2,369	1,797	4,379

Source: Kaku Associates, Inc.

INTERNAL CAPTURE: 24%

APPENDIX C
LEVEL OF SERVICE DESCRIPTION

Appendix C
Level of Service Descriptions

The concept of level of service is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and/or passengers. A level-of-service definition generally describes these conditions in terms of such factors as speed and travel time, freedom to maneuver, traffic interruptions, comfort and convenience, and safety. Six levels of service are defined for each type of facility for which analysis procedures are available. They are given letter designations, from A to F, with level-of-service A representing the best operating conditions and level-of-service F the worst.

Level-Of-Service Definitions

In general, the various levels of service are defined as follows for uninterrupted flow facilities:

- Level-of-service A represents free flow. Individual users are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to maneuver within the traffic stream is extremely high. The general level of comfort and convenience provided to the motorist, passenger, or pedestrian is excellent.

- Level-of-service B is in the range of stable flow, but the presence of other users in the traffic stream begins to be noticeable. Freedom to select desired speeds is relatively unaffected, but there is a slight decline in the freedom to maneuver within the traffic stream from LOS A. The level of comfort and convenience provided is somewhat less than at LOS A, because the presence of others in the traffic stream begins to affect individual behavior.

- Level-of-service C is in the range of stable flow, but marks the beginning of the range of flow in which the operation of individual users becomes significantly affected by interactions with others in the traffic stream. The selection of speed is now affected by the presence of others, and maneuvering within the traffic stream requires substantial vigilance on the part of the user. The general level of comfort and convenience declines noticeably at this level.

- Level-of-service D represents high-density, but stable, flow. Speed and freedom to maneuver are severely restricted, and the driver or pedestrian experiences a generally poor level of comfort and convenience. Small increases in traffic flow will generally cause operational problems at this level.

- Level-of-service E represents operating conditions at or near the capacity level. All speeds are reduced to a low, but relatively uniform value. Freedom to maneuver within the traffic stream is extremely difficult, and it is generally accomplished by forcing a vehicle or pedestrian to "give way" to accommodate such maneuvers. Comfort and convenience levels are extremely poor, and driver or pedestrian frustration is generally high. Operations at this level are usually unstable, because small increases in flow or minor perturbations within the traffic stream will cause breakdowns.

- Level-of-service F is used to define forced or breakdown flow. This condition exists wherever the amount of traffic approaching a point exceeds the amount which can traverse the point. Queues form behind such locations. Operations within the queue are characterized by stop-and-go waves, and they are extremely unstable. Vehicles may progress at reasonable speeds for several hundred feet or more, then be required to stop in a cyclic fashion. Level-of-service F is used to describe the operating conditions within the queue, as well as the point of the breakdown. It should be noted, however, that in many cases operating conditions of vehicles or pedestrians discharged from the queue may be quite good. Nevertheless, it is the point at which arrival flow exceeds discharge flow which causes the queue to form, and level-of-service F is an appropriate designation for such points.

APPENDIX D
CAPACITY CALCULATIONS

Nevada Northwest
Traffic Impact Analysis Data
017440

Scenario Report

Scenario:	Existing - PM
Command:	Existing
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

Nevada Northwest
Traffic Impact Analysis Data
017440

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	23	1038	0	0	1428	23	24	0	42	0	0	0	2578
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	23	1038	0	0	1428	23	24	0	42	0	0	0	2578
#2 ironwood/395													
Base	55	886	21	48	1141	44	45	2	35	3	5	61	2346
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	55	886	21	48	1141	44	45	2	35	3	5	61	2346
#3 SR88/395													
Base	235	0	849	0	0	0	0	291	112	999	497	0	2983
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	235	0	849	0	0	0	0	291	112	999	497	0	2983
#4 Lucerne/395													
Base	0	0	0	32	0	35	22	1013	0	0	1022	34	2158
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	32	0	35	22	1013	0	0	1022	34	2158
#5 Lucerne/Ironwood													
Base	7	52	0	0	28	71	84	0	12	0	0	0	254
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	7	52	0	0	28	71	84	0	12	0	0	0	254

Nevada Northwest
Traffic Impact Analysis Data
017440

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	E	42.6	0.000	E	42.6	0.000	+ 0.000 V/C
# 2 ironwood/395	C	24.0	0.000	C	24.0	0.000	+ 0.000 V/C
# 3 SR88/395	B	14.4	0.775	B	14.4	0.775	+ 0.000 D/V
# 4 Lucerne/395	D	34.7	0.000	D	34.7	0.000	+ 0.000 V/C
# 5 Lucerne/Ironwood	A	9.5	0.000	A	9.5	0.000	+ 0.000 V/C

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #1 Muller/395

Average Delay (sec/veh): 42.6 Worst Case Level Of Service: E

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	2	0	1	1	0	2	0	1	0	1	0	0	1	1	0	1	0	1
Volume Module: >> Count Date: 23 May 2001 << PM																				
Base Vol:	23	1038		0		0	1428		23		24		0		42	0		0		0
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	23	1038		0		0	1428		23		24		0		42	0		0		0
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Volume:	23	1038		0		0	1428		23		24		0		42	0		0		0
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
Final Vol.:	23	1038		0		0	1428		23		24		0		42	0		0		0
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx					6.8	xxxx		6.9	xxxxx	xxxx	xxxxx			
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx					3.5	xxxx		3.3	xxxxx	xxxx	xxxxx			
Capacity Module:																				
Cnflict Vol:	1451	xxxx	xxxxx	xxxx	xxxx	xxxxx					1762	xxxx		714	xxxx	xxxx	xxxxx			
Potent Cap.:	473	xxxx	xxxxx	xxxx	xxxx	xxxxx					67	xxxx		378	xxxx	xxxx	xxxxx			
Move Cap.:	473	xxxx	xxxxx	xxxx	xxxx	xxxxx					65	xxxx		378	xxxx	xxxx	xxxxx			
Level Of Service Module:																				
Stopped Del:	13.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx		15.7	xxxxx	xxxx	xxxxx							
LOS by Move:	B	*	*	*	*	*	*	*		C	*	*	*							
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT				LT - LTR - RT									
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	65	xxxx	xxxxx		xxxx	xxxx	xxxxx							
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	89.8	xxxx	xxxxx		xxxxx	xxxx	xxxxx							
Shared LOS:	*	*	*	*	*	*	F	*	*		*	*	*							
ApproachDel:	xxxxxx			xxxxxx			42.6				xxxxxx									
ApproachLOS:	*			*			E				*									

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #1 Muller/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			12 feet			14 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:											#36	
Dist(miles):											0.200	
Speed (mph):											45.00	
SignalIndex:											#3	
Cycle Time:											57 secs	
InitVolume:										235	497	
Saturation:										3628	3610	
ArrivalType:										3	3	
G/C:										0.08	0.78	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:										0.084	0.776	
gq1:										3.38	1.76	
gq2:										0.23	0.28	
gq:										3.62	2.04	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:											0.450	
beta:											0.690	
ta (secs):											16.000	
F:											0.168	
f:										1.000	1.000	
vcmax:										1760	1126	
vcmin:										1000	1000	
tp:										5.6	1.5	
p:											0.125	

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.125/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	1451	xxxxx	xxxxx	0	xxxxx	xxxxx	1993	0	714	0	0	0
UpstreamSat:	0	xxxxx	xxxxx	3616	xxxxx	xxxxx	3616	3616	0	3616	3616	3616
UpstreamAdj:	1.00	x.xxx	x.xxx	0.88	x.xxx	x.xxx	0.88	0.875	1.000	0.88	0.875	0.875
ConflictVol:	1451	xxxxx	xxxxx	0	xxxxx	xxxxx	1762	0	714	0	0	0

*** Computation 5: Capactiy for Subject Movement During Unblocked Period

InitPotCap:	473	xxxxx	xxxxx	0	xxxxx	xxxxx	77	0	378	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	0.88	x.xxx	x.xxx	0.88	0.875	1.000	0.88	0.875	0.875
PotentCap:	473	xxxxx	xxxxx	0	xxxxx	xxxxx	67	0	378	0	0	0

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 ironwood/395

Average Delay (sec/veh): 24.0 Worst Case Level Of Service: C

Approach:	North Bound					South Bound					East Bound					West Bound				
Movement:	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R	L	-	T	-	R
Control:	Uncontrolled					Uncontrolled					Stop Sign					Stop Sign				
Rights:	Include					Include					Include					Include				
Lanes:	1	0	2	0	1	1	0	2	0	1	0	1	0	0	1	1	0	1	0	1
Volume Module: >> Count Date: 2 Jul 2001 << PM																				
Base Vol:	55	886		21		48	1141		44		45		2		35	3		5		61
Growth Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
Initial Bse:	55	886		21		48	1141		44		45		2		35	3		5		61
User Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Adj:	1.00	1.00		1.00		1.00	1.00		1.00		1.00		1.00		1.00	1.00		1.00		1.00
PHF Volume:	55	886		21		48	1141		44		45		2		35	3		5		61
Reduct Vol:	0	0		0		0	0		0		0		0		0	0		0		0
Final Vol.:	55	886		21		48	1141		44		45		2		35	3		5		61
Critical Gap Module:																				
Critical Gp:	4.1	xxxx	xxxxx			4.1	xxxx	xxxxx			7.5	6.5			6.9	7.5	6.5			6.9
FollowUpTim:	2.2	xxxx	xxxxx			2.2	xxxx	xxxxx			3.5	4.0			3.3	3.5	4.0			3.3
Capacity Module:																				
Cnflict Vol:	1185	xxxx	xxxxx			0	xxxx	xxxxx			664	1411			571	456	1449			0
Potent Cap.:	596	xxxx	xxxxx			0	xxxx	xxxxx			216	86			469	304	82			0
Move Cap.:	596	xxxx	xxxxx			0	xxxx	xxxxx			191	78			469	257	74			0
Level Of Service Module:																				
Stopped Del:	11.6	xxxx	xxxxx			0.0	xxxx	xxxxx			xxxxx	xxxx			13.3	19.2	57.0			0.0
LOS by Move:	B	*		*		*	*		*		*	*			B	C	F			*
Movement:	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT	LT	-	LTR	-	RT
Shared Cap.:	xxxx	xxxx		xxxxx		xxxx	xxxx		xxxxx		180	xxxx		xxxxx		xxxx	xxxx		xxxxx	
Shrd StpDel:	xxxxx	xxxx		xxxxx		xxxxx	xxxx		xxxxx		32.0	xxxx		xxxxx		xxxxx	xxxx		xxxxx	
Shared LOS:	*	*		*		*	*		*		D	*		*		*	*		*	
ApproachDel:	xxxxxx					xxxxxx					24.0					5.0				
ApproachLOS:	*					*					C					A				

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 ironwood/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			14 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:											#36	
Dist(miles):											0.200	
Speed (mph):											45.00	
SignalIndex:											#3	
Cycle Time:												57 secs
InitVolume:										235	497	
Saturation:										3628	3610	
ArrivalType:										3	3	
G/C:										0.08	0.78	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:										0.084	0.776	
gq1:										3.38	1.76	
gq2:										0.23	0.28	
gq:										3.62	2.04	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:											0.450	
beta:											0.690	
ta (secs):											16.000	
F:											0.168	
f:										3.507	7.203	
vcmax:										6173	8110	
vcmin:										1000	1000	
tp:										21.8	0.0	
p:											0.382	
*** Computation 3: Platoon Event Periods												
pdom/psubo:		0.382/0.000/Unconstrained										
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1185	xxxxx	xxxxx	907	xxxxx	xxxxx	1793	2254	571	1664	2277	443
UpstreamSat:	0	xxxxx	xxxxx	3616	xxxxx	xxxxx	3616	3616	0	3616	3616	3616
UpstreamAdj:	1.00	x.xxx	x.xxx	0.62	x.xxx	x.xxx	0.62	0.618	1.000	0.62	0.618	0.618
ConflictVol:	1185	xxxxx	xxxxx	0	xxxxx	xxxxx	664	1411	571	456	1449	0
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	596	xxxxx	xxxxx	0	xxxxx	xxxxx	350	139	469	493	132	0
UpstreamAdj:	1.00	x.xxx	x.xxx	0.62	x.xxx	x.xxx	0.62	0.618	1.000	0.62	0.618	0.618
PotentCap:	596	xxxxx	xxxxx	0	xxxxx	xxxxx	216	86	469	304	82	0

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #3 SR88/395

Cycle (sec): 57 Critical Vol./Cap. (X): 0.775
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 14.4
Optimal Cycle: 52 Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0 1	0 1	1	0 1	0 1	1	0 2	0 1	1	0 1	1 0
Volume Module: >> Count Date: 6 Jul 2001 << PM												
Base Vol:	235	0	849	0	0	0	0	291	112	999	497	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	0	849	0	0	0	0	291	112	999	497	0
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	235	0	0	0	0	0	0	291	0	999	497	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	235	0	0	0	0	0	0	291	0	999	497	0
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	235	0	0	0	0	0	0	291	0	999	497	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.01	0.95	0.95
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	2.00	0.00
Final Sat.:	3628	1900	1900	1900	1900	1900	1900	3505	1900	1926	3610	0
Capacity Analysis Module:												
Vol/Sat:	0.06	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.00	0.52	0.14	0.00
Crit Moves:	****							****		****		
Green/Cycle:	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.11	0.00	0.67	0.78	0.00
Volume/Cap:	0.78	0.00	0.00	0.00	0.00	0.00	0.00	0.78	0.00	0.78	0.18	0.00
Delay/Veh:	37.4	0.0	0.0	0.0	0.0	0.0	0.0	34.5	0.0	9.5	1.7	0.0
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	37.4	0.0	0.0	0.0	0.0	0.0	0.0	34.5	0.0	9.5	1.7	0.0
DesignQueue:	7	0	0	0	0	0	0	8	0	12	4	0

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Exclude			Include			Exclude			Include	
% RT Prtct:		100			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	xxxxx	1.07	1.00	xxxxx
Hev Veh Adj:	0.97	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0.97	xxxxx	1.00	1.00	xxxxx
Grade Adj:	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	xxxxx	1.00	1.00	xxxxx
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	xxxxx
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	xxxxx
Area Adj:	1.00	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	xxxxx	1.00	1.00	xxxxx
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
LT Adj:	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	1.00	1.00	1.00	1.00	1.00	1.00	0.97	1.00	1.01	1.00	1.00
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.95	1.00	1.00	1.00	1.00	1.00	1.00	0.92	1.00	1.01	0.95	0.95
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #4 Lucerne/395

****

Average Delay (sec/veh): 34.7 Worst Case Level Of Service: D

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Volume Module: >> Count Date: 28 Jun 2001 << PM												
Base Vol:	0	0	0	32	0	35	22	1013	0	0	1022	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	32	0	35	22	1013	0	0	1022	34
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	32	0	35	22	1013	0	0	1022	34
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	32	0	35	22	1013	0	0	1022	34
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1590	xxxx	528	1056	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	100	xxxx	500	667	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	98	xxxx	500	667	xxxx	xxxxx	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	58.7	xxxx	12.7	10.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	B	B	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			34.7			xxxxxx			xxxxxx		
ApproachLOS:	*			D			*			*		

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #4 Lucerne/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	14 feet	14 feet	12 feet

Time Period: 0.25 hour

Upstream Signals:		
Link Index:	#9	
Dist(miles):	0.200	
Speed (mph):	35.00	
SignalIndex:	#3	
Cycle Time:	57 secs	
InitVolume:	0	291
Saturation:	1900	3505
ArrivalType:	0	3
G/C:	0.00	0.11
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection		
P:	0.000	0.107
gq1:	0.00	4.23
gq2:	0.00	0.38
gq:	0.00	4.61
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons		
alpha:	0.500	
beta:	0.667	
ta (secs):	20.571	
F:	0.127	
f:	0.000	0.281
vcmax:	0	459
vcmin:	0	2000
tp:	0.0	0.0
p:	0.000	
*** Computation 3: Platoon Event Periods		
pdom/psubo:	0.000/0.000/Unconstrained	

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	0	0	0	1590	0	528	1056	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamSat:	3505	3505	0	3505	3505	3505	3505	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	0	0	0	1590	0	528	1056	xxxxx	xxxxx	0	xxxxx	xxxxx

*** Computation 5: Capactiy for Subject Movement During Unblocked Period

InitPotCap:	0	0	0	100	0	500	667	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
PotentCap:	0	0	0	100	0	500	667	xxxxx	xxxxx	0	xxxxx	xxxxx

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #5 Lucerne/Ironwood

****

Average Delay (sec/veh): 9.5 Worst Case Level Of Service: A

****

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	0	1	0		0	0	0	1	0		1	0	0	1	0		0	0	0	0	0	
Volume Module: >> Count Date: 27 Jun 2001 << PM																								
Base Vol:	7		52		0		0		28		71		84		0		12		0		0		0	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	7		52		0		0		28		71		84		0		12		0		0		0	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	7		52		0		0		28		71		84		0		12		0		0		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Final Vol.:	7		52		0		0		28		71		84		0		12		0		0		0	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx							6.4	xxxx		6.2	xxxxx	xxxx	xxxxx					
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx							3.5	xxxx		3.3	xxxxx	xxxx	xxxxx					
Capacity Module:																								
Cnflict Vol:	99	xxxx	xxxxx	xxxx	xxxx	xxxxx							130	xxxx		64	xxxx	xxxx	xxxxx					
Potent Cap.:	1507	xxxx	xxxxx	xxxx	xxxx	xxxxx							870	xxxx		1007	xxxx	xxxx	xxxxx					
Move Cap.:	1507	xxxx	xxxxx	xxxx	xxxx	xxxxx							866	xxxx		1007	xxxx	xxxx	xxxxx					
Level Of Service Module:																								
Stopped Del:	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx							9.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*		*	*	*							A	*		*	*	*						
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							xxxx	xxxx		1007	xxxx	xxxx	xxxxx					
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							xxxxx	xxxx		8.6	xxxxx	xxxx	xxxxx					
Shared LOS:	*	*		*	*	*							*	*		A		*	*					
ApproachDel:	xxxxxx			xxxxxx									9.5					xxxxxx						
ApproachLOS:	*			*									A					*						

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #5 Lucerne/Ironwood

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

EXISTING NO PROJECT

Nevada Northwest
Traffic Impact Analysis Data
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Scenario Report

Scenario:	Existing w/ Proj. - PM
Command:	Existing w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

Nevada Northwest
Traffic Impact Analysis Data
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Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Nevada NW	1.00	Mixed Use	1003.00	1025.00	1003	1025	2028	100
	Zone 1 Subtotal					1003	1025	2028	100.0
TOTAL						1003	1025	2028	100.0

Nevada Northwest
Traffic Impact Analysis Data
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Trip Distribution Report
Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	4	5	6
Zone					
1	30.0	20.0	14.0	24.0	12.0

Nevada Northwest
Traffic Impact Analysis Data
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Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	23	1038	0	0	1428	23	24	0	42	0	0	0	2578
Added	131	197	137	108	193	0	0	72	128	140	74	111	1291
Total	154	1235	137	108	1621	23	24	72	170	140	74	111	3869
#2 ironwood/395													
Base	55	886	21	48	1141	44	45	2	35	3	5	61	2346
Added	0	332	0	130	331	0	0	0	0	0	0	133	926
Total	55	1218	21	178	1472	44	45	2	35	3	5	194	3272
#3 SR88/395													
Base	235	0	849	0	0	0	0	291	112	999	497	0	2983
Added	51	53	37	93	55	195	191	89	52	37	87	91	1031
Total	286	53	886	93	55	195	191	380	164	1036	584	91	4014
#4 Lucerne/395													
Base	0	0	0	32	0	35	22	1013	0	0	1022	34	2158
Added	0	0	0	64	0	37	37	182	0	0	178	63	561
Total	0	0	0	96	0	72	59	1195	0	0	1200	97	2719
#5 Lucerne/Ironwood													
Base	7	52	0	0	28	71	84	0	12	0	0	0	254
Added	99	0	0	0	0	77	79	0	101	0	0	0	356
Total	106	52	0	0	28	148	163	0	113	0	0	0	610

Nevada Northwest
Traffic Impact Analysis Data
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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	D	32.9	0.000	F	OVRFL	0.000	+ 0.000 V/C
# 2 ironwood/395	F	243.9	0.000	F	OVRFL	0.000	+ 0.000 V/C
# 3 SR88/395	C	25.1	0.798	E	60.3	1.009	+35.216 D/V
# 4 Lucerne/395	D	34.7	0.000	F	335.5	0.000	+ 0.000 V/C
# 5 Lucerne/Ironwood	A	9.5	0.000	B	11.6	0.000	+ 0.000 V/C

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1 Muller/395

****

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F

****

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	2	0	1		1	0	2	0	1		0	1	0	0	1		1	0	1	0	1	
Volume Module: >> Count Date: 23 May 2001 << PM																								
Base Vol:	23	1038		0			0	1428		23			24		0		42		0		0		0	
Growth Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	23	1038		0			0	1428		23			24		0		42		0		0		0	
Added Vol:	131	197		137			108	193		0			0		72		128		140		74		111	
PasserByVol:	0	0		0			0	0		0			0		0		0		0		0		0	
Initial Fut:	154	1235		137			108	1621		23			24		72		170		140		74		111	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	154	1235		137			108	1621		23			24		72		170		140		74		111	
Reduct Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
Final Vol.:	154	1235		137			108	1621		23			24		72		170		140		74		111	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx				4.1	xxxx	xxxxx				7.5	6.5			6.9		7.5	6.5			6.9	
FollowUpTim:	2.2	xxxx	xxxxx				2.2	xxxx	xxxxx				3.5	4.0			3.3		3.5	4.0			3.3	
Capacity Module:																								
Cnflict Vol:	1644	xxxx	xxxxx				1175	xxxx	xxxxx				2757	3553			811		2542	3426			338	
Potent Cap.:	399	xxxx	xxxxx				543	xxxx	xxxxx				9	5			327		13	7			599	
Move Cap.:	399	xxxx	xxxxx				543	xxxx	xxxxx				0	3			327		0	3			599	
Level Of Service Module:																								
Stopped Del:	19.6	xxxx	xxxxx				13.3	xxxx	xxxxx				xxxxx	xxxx			27.3		0.0	xxxx			12.4	
LOS by Move:	C	*		*			B	*		*			*	*			D		*	F			B	
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx				xxxx	xxxx	xxxxx				0	xxxx	xxxxx				xxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx				xxxxx	xxxx	xxxxx			
Shared LOS:	*	*		*			*	*		*			*	*			*		*	*			*	
ApproachDel:	xxxxxx						xxxxxx						xxxxxx						2773.3					
ApproachLOS:	*						*						F						F					

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #1 Muller/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			12 feet			14 feet	
Time Period: 0.25 hour												

Upstream Signals:												
Link Index:											#36	
Dist(miles):											0.200	
Speed (mph):											45.00	
SignalIndex:											#3	
Cycle Time:											110	secs
InitVolume:										286	584	
Saturation:										3628	2972	
ArrivalType:										3	3	
G/C:										0.08	0.43	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:										0.078	0.432	
gq1:										7.99	12.27	
gq2:										0.68	3.00	
gq:										8.60	15.28	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:											0.450	
beta:											0.690	
ta (secs):											16.000	
F:											0.168	
f:										1.000	1.000	
vcmax:										2879	2792	
vcmin:										1000	1000	
tp:										13.9	22.1	
p:											0.327	
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.327/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1451	xxxxx	xxxxx	0	xxxxx	xxxxx	1993	0	714	0	0	0
UpstreamSat:	0	xxxxx	xxxxx	3188	xxxxx	xxxxx	3188	3188	0	3188	3188	3188
UpstreamAdj:	1.00	x.xxx	x.xxx	0.67	x.xxx	x.xxx	0.67	0.673	1.000	0.67	0.673	0.673
ConflictVol:	1451	xxxxx	xxxxx	0	xxxxx	xxxxx	1412	0	714	0	0	0
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	473	xxxxx	xxxxx	0	xxxxx	xxxxx	131	0	378	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	0.67	x.xxx	x.xxx	0.67	0.673	1.000	0.67	0.673	0.673
PotentCap:	473	xxxxx	xxxxx	0	xxxxx	xxxxx	88	0	378	0	0	0

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #2 ironwood/395

****

Average Delay (sec/veh): 8950.7 Worst Case Level Of Service: F

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2 0 1			1 0 2 0 1			0 1 0 0 1			1 0 1 0 1		
Volume Module: >> Count Date: 2 Jul 2001 << PM												
Base Vol:	55	886	21	48	1141	44	45	2	35	3	5	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	886	21	48	1141	44	45	2	35	3	5	61
Added Vol:	0	332	0	130	331	0	0	0	0	0	0	133
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	1218	21	178	1472	44	45	2	35	3	5	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	55	1218	21	178	1472	44	45	2	35	3	5	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	55	1218	21	178	1472	44	45	2	35	3	5	194
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx	3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	1516	xxxx	xxxxx	872	xxxx	xxxxx	2429	3175	736	2277	3202	123
Potent Cap.:	446	xxxx	xxxxx	658	xxxx	xxxxx	14	9	366	19	9	767
Move Cap.:	446	xxxx	xxxxx	658	xxxx	xxxxx	2	6	366	9	5	767
Level Of Service Module:												
Stopped Del:	14.2	xxxx	xxxxx	12.5	xxxx	xxxxx	xxxxx	xxxx	15.9	537.4	1165	11.3
LOS by Move:	B	*	*	B	*	*	*	*	C	F	F	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	2	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	15604	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	F	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8950.7			47.6		
ApproachLOS:	*			*			F			E		

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 ironwood/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			14 feet			12 feet	
Time Period: 0.25 hour												

Upstream Signals:		
Link Index:	#36	
Dist(miles):	0.200	
Speed (mph):	45.00	
SignalIndex:	#3	
Cycle Time:	110	secs
InitVolume:	286 584	
Saturation:	3628 2972	
ArrivalType:	3 3	
G/C:	0.08 0.43	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection		
P:	0.078 0.432	
gq1:	7.99 12.27	
gq2:	0.68 3.00	
gq:	8.60 15.28	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons		
alpha:	0.450	
beta:	0.690	
ta (secs):	16.000	
F:	0.168	
f:	4.269 8.464	
vcmax:	12288 23630	
vcmin:	1000 1000	
tp:	0.0 0.0	
p:	0.000	
*** Computation 3: Platoon Event Periods		
pdom/psubo:	0.000/0.000/Unconstrained	

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	1185	xxxxx	xxxxx	907	xxxxx	xxxxx	1793	2254	571	1664	2277	443
UpstreamSat:	0	xxxxx	xxxxx	3188	xxxxx	xxxxx	3188	3188	0	3188	3188	3188
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	1185	xxxxx	xxxxx	907	xxxxx	xxxxx	1793	2254	571	1664	2277	443

*** Computation 5: Capactiy for Subject Movement During Unblocked Period

InitPotCap:	596	xxxxx	xxxxx	759	xxxxx	xxxxx	52	42	469	65	41	568
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
PotentCap:	596	xxxxx	xxxxx	759	xxxxx	xxxxx	52	42	469	65	41	568

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR88/395

Cycle (sec): 110 Critical Vol./Cap. (X): 1.009
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 60.3
Optimal Cycle:OPTIMIZED Level Of Service: E

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module: >> Count Date: 6 Jul 2001 << PM												
Base Vol:	235	0	849	0	0	0	0	291	112	999	497	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	235	0	849	0	0	0	0	291	112	999	497	0
Added Vol:	51	53	37	93	55	195	191	89	52	37	87	91
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	286	53	886	93	55	195	191	380	164	1036	584	91
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	286	53	0	93	55	195	191	380	0	1036	584	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	286	53	0	93	55	195	191	380	0	1036	584	91
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	286	53	0	93	55	195	191	380	0	1036	584	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.98	0.90	0.90
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.73	0.27
Final Sat.:	3628	1845	1900	1805	1900	1615	1870	3505	1900	1870	2972	463
Capacity Analysis Module:												
Vol/Sat:	0.08	0.03	0.00	0.05	0.03	0.12	0.10	0.11	0.00	0.55	0.20	0.20
Crit Moves:	****					****		****		****		
Green/Cycle:	0.08	0.07	0.00	0.13	0.12	0.12	0.22	0.11	0.00	0.55	0.43	0.43
Volume/Cap:	1.01	0.41	0.00	0.41	0.24	1.01	0.45	1.01	0.00	1.01	0.45	0.45
Delay/Veh:	106.4	50.9	0.0	45.4	44.4	115.4	37.6	97.7	0.0	55.0	22.3	22.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	106.4	50.9	0.0	45.4	44.4	115.4	37.6	97.7	0.0	55.0	22.3	22.3
DesignQueue:	16	3	0	5	3	11	9	21	0	33	21	3

Nevada Northwest
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Exclude			Include			Exclude			Include	
% RT Prtct:		100			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	1.00	xxxxx	1.00	1.00	1.00	1.07	1.00	xxxxx	1.07	1.00	1.00
Hev Veh Adj:	0.97	0.97	xxxxx	1.00	1.00	1.00	0.97	0.97	xxxxx	0.97	0.97	0.97
Grade Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Area Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	0.98	0.98
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	0.97	1.00	0.95	1.00	0.85	0.98	0.97	1.00	0.98	0.95	0.95
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.98	0.90	0.90
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #4 Lucerne/395

****

Average Delay (sec/veh): 335.5 Worst Case Level Of Service: F

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Volume Module: >> Count Date: 28 Jun 2001 << PM												
Base Vol:	0	0	0	32	0	35	22	1013	0	0	1022	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	32	0	35	22	1013	0	0	1022	34
Added Vol:	0	0	0	64	0	37	37	182	0	0	178	63
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	96	0	72	59	1195	0	0	1200	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	96	0	72	59	1195	0	0	1200	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	96	0	72	59	1195	0	0	1200	97
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	1964	xxxx	649	1297	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	56	xxxx	418	541	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	52	xxxx	418	541	xxxx	xxxxx	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	575.6	xxxx	15.4	12.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	C	B	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			335.5			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Nevada Northwest
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #4 Lucerne/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			14 feet			12 feet	
Time Period: 0.25 hour												

Upstream Signals:												
Link Index:							#9					
Dist(miles):							0.200					
Speed (mph):							35.00					
SignalIndex:							#3					
Cycle Time:							110 secs					
InitVolume:							93	380				
Saturation:							1805	3505				
ArrivalType:							3	3				
G/C:							0.13	0.11				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.127	0.107				
gq1:							4.95	10.64				
gq2:							0.27	1.29				
gq:							5.22	11.82				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.500					
beta:							0.667					
ta (secs):							20.571					
F:							0.127					
f:							2.114	0.367				
vcmax:							1940	1030				
vcmin:							2000	2000				
tp:							0.0	0.0				
p:							0.000					
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	0	0	1590	0	528	1056	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamSat:	3171	3171	0	3171	3171	3171	3171	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	0	0	0	1590	0	528	1056	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	100	0	500	667	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
PotentCap:	0	0	0	100	0	500	667	xxxxx	xxxxx	0	xxxxx	xxxxx

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #5 Lucerne/Ironwood

****

Average Delay (sec/veh): 11.6 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		0 0 0	1 0		1 0 0	1 0		0 0 0	0 0	
Volume Module: >> Count Date: 27 Jun 2001 << PM												
Base Vol:	7	52	0	0	28	71	84	0	12	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	52	0	0	28	71	84	0	12	0	0	0
Added Vol:	99	0	0	0	0	77	79	0	101	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	106	52	0	0	28	148	163	0	113	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	106	52	0	0	28	148	163	0	113	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	106	52	0	0	28	148	163	0	113	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	176	xxxx	xxxxx	xxxx	xxxx	xxxxx	366	xxxx	102	xxxx	xxxx	xxxxx
Potent Cap.:	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx	638	xxxx	959	xxxx	xxxx	xxxxx
Move Cap.:	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx	601	xxxx	959	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	959	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.3	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	A	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.6			xxxxxx		
ApproachLOS:	*			*			B			*		

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Lucerne/Ironwood

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
Pedestrian Walk Speed: 4.00 feet/sec				
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Nevada Northwest
Traffic Impact Analysis Data
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Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: Nevada NW													
1	Muller/395	131	197	137	108	193	0	0	72	128	140	74	111
2	ironwood/395	0	332	0	130	331	0	0	0	0	0	0	133
3	SR88/395	51	53	37	93	55	195	191	89	52	37	87	91
4	Lucerne/395	0	0	0	64	0	37	37	182	0	0	178	63
5	Lucerne/Ironw	99	0	0	0	0	77	79	0	101	0	0	0

EXISTING PLUS PROJECT

Nevada Northwest
Traffic Impact Analysis Data
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Scenario Report

Scenario:	Future w/ Proj. - PM
Command:	Future w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	2015

Nevada Northwest
Traffic Impact Analysis Data
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Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Nevada NW	1.00	Mixed Use	1003.00	1025.00	1003	1025	2028	100
	Zone 1 Subtotal					1003	1025	2028	100.0
TOTAL						1003	1025	2028	100.0

Nevada Northwest
Traffic Impact Analysis Data
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Trip Distribution Report
Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	4	5	6
Zone					
1	30.0	20.0	14.0	24.0	12.0

Nevada Northwest
Traffic Impact Analysis Data
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Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	28	1246	0	0	1714	28	29	0	50	0	0	0	3094
Added	131	197	137	108	193	0	0	72	128	140	74	111	1291
Total	159	1443	137	108	1907	28	29	72	178	140	74	111	4385
#2 ironwood/395													
Base	66	1063	25	58	1369	53	54	2	42	4	6	73	2815
Added	0	332	0	130	331	0	0	0	0	0	0	133	926
Total	66	1395	25	188	1700	53	54	2	42	4	6	206	3741
#3 SR88/395													
Base	282	0	1019	0	0	0	0	349	134	1199	596	0	3580
Added	51	53	37	93	55	195	191	89	52	37	87	91	1031
Total	333	53	1056	93	55	195	191	438	186	1236	683	91	4611
#4 Lucerne/395													
Base	0	0	0	38	0	42	26	1216	0	0	1226	41	2590
Added	0	0	0	64	0	37	37	182	0	0	178	63	561
Total	0	0	0	102	0	79	63	1398	0	0	1404	104	3151
#5 Lucerne/Ironwood													
Base	8	62	0	0	34	85	101	0	14	0	0	0	305
Added	99	0	0	0	0	77	79	0	101	0	0	0	356
Total	107	62	0	0	34	162	180	0	115	0	0	0	661

Nevada Northwest
Traffic Impact Analysis Data
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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	F	108.1	0.000	F	OVRFL	0.000	+ 0.000 V/C
# 2 ironwood/395	F	OVRFL	0.000	F	OVRFL	0.000	+ 0.000 V/C
# 3 SR88/395	D	39.5	0.924	F	92.4	1.127	+52.892 D/V
# 4 Lucerne/395	F	74.8	0.000	F	754.1	0.000	+ 0.000 V/C
# 5 Lucerne/Ironwood	A	9.7	0.000	B	12.2	0.000	+ 0.000 V/C

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #1 Muller/395

****

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 2	0 1		1 0 2	0 1		0 1 0	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 23 May 2001 << PM												
Base Vol:	23 1038	0		0 1428	23		24	0	42	0	0	0
Growth Adj:	1.20 1.20	1.20		1.20 1.20	1.20		1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	28 1246	0		0 1714	28		29	0	50	0	0	0
Added Vol:	131 197	137		108 193	0		0	72	128	140	74	111
In-Process:	0 0	0		0 0	0		0	0	0	0	0	0
Initial Fut:	159 1443	137		108 1907	28		29	72	178	140	74	111
User Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159 1443	137		108 1907	28		29	72	178	140	74	111
Reduct Vol:	0 0	0		0 0	0		0	0	0	0	0	0
Final Vol.:	159 1443	137		108 1907	28		29	72	178	140	74	111
Critical Gap Module:												
Critical Gp:	4.1 xxxx xxxxx			4.1 xxxx xxxxx			7.5	6.5	6.9	7.5	6.5	6.9
FollowUpTim:	2.2 xxxx xxxxx			2.2 xxxx xxxxx			3.5	4.0	3.3	3.5	4.0	3.3
Capacity Module:												
Cnflict Vol:	1934 xxxx xxxxx			1368 xxxx xxxxx			3194	4121	953	2931	3997	399
Potent Cap.:	308 xxxx xxxxx			451 xxxx xxxxx			4	2	263	6	3	537
Move Cap.:	308 xxxx xxxxx			451 xxxx xxxxx			0	1	263	0	1	537
Level Of Service Module:												
Stopped Del:	28.4 xxxx xxxxx			15.5 xxxx xxxxx			xxxxx	xxxx	43.3	0.0	xxxx	13.4
LOS by Move:	D *	*		C *	*		*	*	E	*	F	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx xxxx xxxxx			xxxx xxxx xxxxx			0	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx xxxx xxxxx			xxxxx xxxx xxxxx			xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	* *	*		* *	*		*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			9329.8		
ApproachLOS:	*			*			F			F		

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #1 Muller/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			12 feet			14 feet	
Time Period: 0.25 hour												

Upstream Signals:												
Link Index:											#36	
Dist(miles):											0.200	
Speed (mph):											45.00	
SignalIndex:											#3	
Cycle Time:											140	secs
InitVolume:										333	683	
Saturation:										3628	3038	
ArrivalType:										3	3	
G/C:										0.08	0.48	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:										0.081	0.479	
gq1:										11.80	16.40	
gq2:										1.19	4.76	
gq:										11.40	21.16	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:											0.450	
beta:											0.690	
ta (secs):											16.000	
F:											0.168	
f:										1.000	1.000	
vcmax:										3180	2975	
vcmin:										1000	1000	
tp:										17.6	29.8	
p:											0.338	
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.338/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1741	xxxxx	xxxxx	0	xxxxx	xxxxx	2392	0	857	0	0	0
UpstreamSat:	0	xxxxx	xxxxx	3231	xxxxx	xxxxx	3231	3231	0	3231	3231	3231
UpstreamAdj:	1.00	x.xxx	x.xxx	0.66	x.xxx	x.xxx	0.66	0.662	1.000	0.66	0.662	0.662
ConflictVol:	1741	xxxxx	xxxxx	0	xxxxx	xxxxx	1963	0	857	0	0	0
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	366	xxxxx	xxxxx	0	xxxxx	xxxxx	57	0	305	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	0.66	x.xxx	x.xxx	0.66	0.662	1.000	0.66	0.662	0.662
PotentCap:	366	xxxxx	xxxxx	0	xxxxx	xxxxx	37	0	305	0	0	0

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #2 ironwood/395

****

Average Delay (sec/veh): OVERFLOW Worst Case Level Of Service: F

****

Approach:	North Bound				South Bound				East Bound				West Bound			
Movement:	L	- T	- R		L	- T	- R		L	- T	- R		L	- T	- R	
Control:	Uncontrolled				Uncontrolled				Stop Sign				Stop Sign			
Rights:	Include				Include				Include				Include			
Lanes:	1	0 2	0	1	1	0 2	0	1	0	1	0	0	1	1	0	1	0	1
Volume Module: >> Count Date: 2 Jul 2001 << PM																		
Base Vol:	55	886	21		48	1141	44		45	2	35		3	5	61			
Growth Adj:	1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20		1.20	1.20	1.20			
Initial Bse:	66	1063	25		58	1369	53		54	2	42		4	6	73			
Added Vol:	0	332	0		130	331	0		0	0	0		0	0	133			
In-Process:	0	0	0		0	0	0		0	0	0		0	0	0			
Initial Fut:	66	1395	25		188	1700	53		54	2	42		4	6	206			
User Adj:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			
PHF Adj.:	1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00		1.00	1.00	1.00			
PHF Volume:	66	1395	25		188	1700	53		54	2	42		4	6	206			
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0			
Final Vol.:	66	1395	25		188	1700	53		54	2	42		4	6	206			
Critical Gap Module:																		
Critical Gp:	4.1	xxxx	xxxxx		4.1	xxxx	xxxxx		7.5	6.5	6.9		7.5	6.5	6.9			
FollowUpTim:	2.2	xxxx	xxxxx		2.2	xxxx	xxxxx		3.5	4.0	3.3		3.5	4.0	3.3			
Capacity Module:																		
Cnflict Vol:	1753	xxxx	xxxxx		1074	xxxx	xxxxx		2846	3704	850		2662	3737	213			
Potent Cap.:	362	xxxx	xxxxx		551	xxxx	xxxxx		7	4	308		9	4	670			
Move Cap.:	362	xxxx	xxxxx		551	xxxx	xxxxx		0	2	308		0	2	670			
Level Of Service Module:																		
Stopped Del:	17.1	xxxx	xxxxx		14.9	xxxx	xxxxx	xxxxx	xxxx	18.5			0.0	3836	12.7			
LOS by Move:	C	*	*		B	*	*	*	*	C			*	F	B			
Movement:	LT -	LTR -	RT		LT -	LTR -	RT	LT -	LTR -	RT			LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx		xxxx	xxxx	xxxxx	0	xxxx	xxxxx			xxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx		xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*		*	*	*	*	*	*			*	*	*			
ApproachDel:	xxxxxx				xxxxxx			xxxxxx					118.8					
ApproachLOS:	*				*			F					F					

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 ironwood/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	14 feet	14 feet	12 feet

Time Period: 0.25 hour

Upstream Signals:												
Link Index:										#36		
Dist(miles):										0.200		
Speed (mph):										45.00		
SignalIndex:										#3		
Cycle Time:										140	secs	
InitVolume:										333	683	
Saturation:										3628	3038	
ArrivalType:										3	3	
G/C:										0.08	0.48	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:										0.081	0.479	
gq1:										11.80	16.40	
gq2:										1.19	4.76	
gq:										11.40	21.16	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:										0.450		
beta:										0.690		
ta (secs):										16.000		
F:										0.168		
f:										4.142	8.254	
vcmax:										13171	24554	
vcmin:										1000	1000	
tp:										0.0	0.0	
p:										0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.000/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	1422	xxxxx	xxxxx	1088	xxxxx	xxxxx	2151	2705	685	1996	2732	532
UpstreamSat:	0	xxxxx	xxxxx	3231	xxxxx	xxxxx	3231	3231	0	3231	3231	3231
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	1422	xxxxx	xxxxx	1088	xxxxx	xxxxx	2151	2705	685	1996	2732	532
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	485	xxxxx	xxxxx	649	xxxxx	xxxxx	28	22	395	36	21	498
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
PotentCap:	485	xxxxx	xxxxx	649	xxxxx	xxxxx	28	22	395	36	21	498

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR88/395

Cycle (sec): 140 Critical Vol./Cap. (X): 1.127
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 92.4
Optimal Cycle:OPTIMIZED Level Of Service: F

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module: >> Count Date: 6 Jul 2001 << PM												
Base Vol:	235	0	849	0	0	0	0	291	112	999	497	0
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	282	0	1019	0	0	0	0	349	134	1199	596	0
Added Vol:	51	53	37	93	55	195	191	89	52	37	87	91
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	333	53	1056	93	55	195	191	438	186	1236	683	91
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	333	53	0	93	55	195	191	438	0	1236	683	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	53	0	93	55	195	191	438	0	1236	683	91
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	333	53	0	93	55	195	191	438	0	1236	683	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.98	0.91	0.91
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.76	0.24
Final Sat.:	3628	1845	1900	1805	1900	1615	1870	3505	1900	1870	3038	405
Capacity Analysis Module:												
Vol/Sat:	0.09	0.03	0.00	0.05	0.03	0.12	0.10	0.12	0.00	0.66	0.22	0.22
Crit Moves:	****					****		****		****		
Green/Cycle:	0.08	0.07	0.00	0.12	0.11	0.11	0.22	0.11	0.00	0.59	0.48	0.48
Volume/Cap:	1.13	0.43	0.00	0.43	0.27	1.13	0.47	1.13	0.00	1.13	0.47	0.47
Delay/Veh:	155.5	65.0	0.0	58.4	58.2	169.2	48.6	147	0.0	98.2	24.7	24.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	155.5	65.0	0.0	58.4	58.2	169.2	48.6	147	0.0	98.2	24.7	24.7
DesignQueue:	24	4	0	6	4	14	12	31	0	48	29	4

Nevada Northwest
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Exclude			Include			Exclude			Include	
% RT Prtct:		100			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx	
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	1.00	xxxxx	1.00	1.00	1.00	1.07	1.00	xxxxx	1.07	1.00	1.00
Hev Veh Adj:	0.97	0.97	xxxxx	1.00	1.00	1.00	0.97	0.97	xxxxx	0.97	0.97	0.97
Grade Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Area Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	0.98	0.98
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	0.97	1.00	0.95	1.00	0.85	0.98	0.97	1.00	0.98	0.95	0.95
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.98	0.91	0.91
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 Lucerne/395

****

Average Delay (sec/veh): 754.1 Worst Case Level Of Service: F

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Stop Sign			Stop Sign			Uncontrolled			Uncontrolled		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Volume Module: >> Count Date: 28 Jun 2001 << PM												
Base Vol:	0	0	0	32	0	35	22	1013	0	0	1022	34
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	0	0	38	0	42	26	1216	0	0	1226	41
Added Vol:	0	0	0	64	0	37	37	182	0	0	178	63
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	102	0	79	63	1398	0	0	1404	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	102	0	79	63	1398	0	0	1404	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	102	0	79	63	1398	0	0	1404	104
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.8	xxxx	6.9	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	2282	xxxx	754	1508	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	34	xxxx	356	450	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	31	xxxx	356	450	xxxx	xxxxx	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	1322	xxxx	18.0	14.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	F	*	C	B	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			754.1			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

Nevada Northwest
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Lucerne/395

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			14 feet			12 feet	
Time Period: 0.25 hour												

Upstream Signals:												
Link Index:							#9					
Dist(miles):							0.200					
Speed (mph):							35.00					
SignalIndex:							#3					
Cycle Time:							140 secs					
InitVolume:							93	438				
Saturation:							1805	3505				
ArrivalType:							3	3				
G/C:							0.12	0.11				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.121	0.111				
gq1:							6.34	15.56				
gq2:							0.34	2.22				
gq:							6.68	15.52				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.500					
beta:							0.667					
ta (secs):							20.571					
F:							0.127					
f:							1.761	0.353				
vcmax:							1900	1087				
vcmin:							2000	2000				
tp:							0.0	0.0				
p:							0.000					
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	0	0	1907	0	634	1267	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamSat:	3208	3208	0	3208	3208	3208	3208	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	0	0	0	1907	0	634	1267	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	62	0	427	555	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
PotentCap:	0	0	0	62	0	427	555	xxxxx	xxxxx	0	xxxxx	xxxxx

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #5 Lucerne/Ironwood

****

Average Delay (sec/veh): 12.2 Worst Case Level Of Service: B

****

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	0	1	0		0	0	0	1	0		1	0	0	1	0		0	0	0	0	0	
Volume Module: >> Count Date: 27 Jun 2001 << PM																								
Base Vol:	7	52	0				0	28	71				84	0	12				0	0	0			
Growth Adj:	1.20	1.20	1.20				1.20	1.20	1.20				1.20	1.20	1.20				1.20	1.20	1.20			
Initial Bse:	8	62	0				0	34	85				101	0	14				0	0	0			
Added Vol:	99	0	0				0	0	77				79	0	101				0	0	0			
In-Process:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	107	62	0				0	34	162				180	0	115				0	0	0			
User Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
PHF Volume:	107	62	0				0	34	162				180	0	115				0	0	0			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Final Vol.:	107	62	0				0	34	162				180	0	115				0	0	0			
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx							6.4	xxxx		6.2	xxxxx	xxxx	xxxxx					
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx							3.5	xxxx		3.3	xxxxx	xxxx	xxxxx					
Capacity Module:																								
Cnflict Vol:	196	xxxx	xxxxx	xxxx	xxxx	xxxxx							392	xxxx		115	xxxx	xxxx	xxxxx					
Potent Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx							616	xxxx		943	xxxx	xxxx	xxxxx					
Move Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx							580	xxxx		943	xxxx	xxxx	xxxxx					
Level Of Service Module:																								
Stopped Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx							14.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*	*	*	*	*							B	*	*	*	*	*						
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							xxxx	xxxx		943	xxxx	xxxx	xxxxx					
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							xxxxx	xxxx		9.3	xxxxx	xxxx	xxxxx					
Shared LOS:	*	*	*	*	*	*							*	*		A	*	*	*					
ApproachDel:	xxxxxx			xxxxxx									12.2				xxxxxx							
ApproachLOS:	*			*									B				*							

Nevada Northwest
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #5 Lucerne/Ironwood

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

Nevada Northwest
Traffic Impact Analysis Data
017440

Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: Nevada NW													
1	Muller/395	131	197	137	108	193	0	0	72	128	140	74	111
2	ironwood/395	0	332	0	130	331	0	0	0	0	0	0	133
3	SR88/395	51	53	37	93	55	195	191	89	52	37	87	91
4	Lucerne/395	0	0	0	64	0	37	37	182	0	0	178	63
5	Lucerne/Ironw	99	0	0	0	0	77	79	0	101	0	0	0

2015 PLUS PROJECT

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Scenario Report

Scenario:	Existing w/ Proj. - PM
Command:	Existing w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Nevada NW	1.00	Mixed Use	1003.00	1025.00	1003	1025	2028	100
	Zone 1 Subtotal					1003	1025	2028	100.0
TOTAL						1003	1025	2028	100.0

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Trip Distribution Report
Trip Distribution
Percent Of Trips Default

	To Gates				
Zone	1	2	4	5	6
1	30.0	20.0	14.0	24.0	12.0

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	23	1038	0	0	1428	23	24	0	42	0	0	0	2578
Added	131	197	137	108	193	0	0	72	128	140	74	111	1291
Total	154	1235	137	108	1621	23	24	72	170	140	74	111	3869
#2 ironwood/395													
Base	55	886	21	48	1141	44	45	2	35	3	5	61	2346
Added	0	332	0	130	331	0	0	0	0	0	0	133	926
Total	55	1218	21	178	1472	44	45	2	35	3	5	194	3272
#3 SR88/395													
Base	235	0	849	0	0	0	0	291	112	999	497	0	2983
Added	51	53	37	93	55	195	191	89	52	37	87	91	1031
Total	286	53	886	93	55	195	191	380	164	1036	584	91	4014
#4 Lucerne/395													
Base	0	0	0	32	0	35	22	1013	0	0	1022	34	2158
Added	0	0	0	64	0	37	37	182	0	0	178	63	561
Total	0	0	0	96	0	72	59	1195	0	0	1200	97	2719
#5 Lucerne/Ironwood													
Base	7	52	0	0	28	71	84	0	12	0	0	0	254
Added	99	0	0	0	0	77	79	0	101	0	0	0	356
Total	106	52	0	0	28	148	163	0	113	0	0	0	610

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	A	5.8	0.521	C	26.6	0.876	+20.820 D/V
# 2 ironwood/395	B	11.1	0.518	C	20.3	0.772	+ 9.222 D/V
# 3 SR88/395	C	25.1	0.798	D	41.0	0.901	+15.979 D/V
# 4 Lucerne/395	A	2.9	0.420	A	5.0	0.582	+ 2.065 D/V
# 5 Lucerne/Ironwood	A	9.5	0.000	B	11.6	0.000	+ 0.000 V/C

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #1 Muller/395

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Cycle (sec):	75	Critical Vol./Cap. (X):	0.876
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	26.6
Optimal Cycle:	91	Level Of Service:	C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0 2	0	1	1 0 2	0	1	1 0 1	0	1	1 0 1	0	1
Volume Module: >> Count Date: 23 May 2001 << PM												
Base Vol:	23 1038		0	0 1428		23	24		0	42	0	0	0
Growth Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
Initial Bse:	23 1038		0	0 1428		23	24		0	42	0	0	0
Added Vol:	131	197	137	108	193	0	0	72		128	140	74	111
PasserByVol:	0	0	0	0	0	0	0	0		0	0	0	0
Initial Fut:	154 1235		137	108 1621		23	24		72	170	140	74	111
User Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
PHF Volume:	154 1235		137	108 1621		23	24		72	170	140	74	111
Reduct Vol:	0	0	0	0	0	0	0	0		0	0	0	0
Reduced Vol:	154 1235		137	108 1621		23	24		72	170	140	74	111
PCE Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
MLF Adj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
Final Vol.:	154 1235		137	108 1621		23	24		72	170	140	74	111
Saturation Flow Module:													
Sat/Lane:	1900 1900		1900	1900 1900		1900	1900	1900		1900	1900	1900	1900
Adjustment:	0.95 0.95		0.85	0.95 1.01		0.85	0.95	1.00		0.85	0.95	1.07	0.85
Lanes:	1.00 2.00		1.00	1.00 2.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
Final Sat.:	1805 3610		1615	1805 3852		1615	1805	1900		1615	1805	2027	1615
Capacity Analysis Module:													
Vol/Sat:	0.09 0.34		0.08	0.06 0.42		0.01	0.01	0.04		0.11	0.08	0.04	0.07
Crit Moves:	****				****					****	****		
Green/Cycle:	0.10 0.49		0.49	0.09 0.48		0.48	0.03	0.12		0.12	0.09	0.17	0.17
Volume/Cap:	0.88 0.70		0.17	0.70 0.88		0.03	0.39	0.32		0.88	0.88	0.21	0.39
Delay/Veh:	68.8 15.9		10.7	46.2 22.5		10.3	39.6	31.0		65.4	71.7	26.8	28.3
User DelAdj:	1.00 1.00		1.00	1.00 1.00		1.00	1.00	1.00		1.00	1.00	1.00	1.00
AdjDel/Veh:	68.8 15.9		10.7	46.2 22.5		10.3	39.6	31.0		65.4	71.7	26.8	28.3
DesignQueue:	6	29	3	4	40	0	1	3		6	5	3	4

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Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 Muller/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0 2	0 1		1 0 2	0 1		1 0 1	0 1		1 0 1	0 1	
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	12	12	12	14	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx	
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.07	1.00	1.00	1.00	1.00	1.00	1.07	1.00
Hev Veh Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	1.00	0.85	0.95	1.07	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #2 ironwood/395

Cycle (sec):	65	Critical Vol./Cap. (X):	0.772
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	20.3
Optimal Cycle:	68	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	2	0 1	0 1	0	0 1	1 0	1	0 1
Volume Module: >> Count Date: 2 Jul 2001 << PM												
Base Vol:	55	886	21	48	1141	44	45	2	35	3	5	61
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	55	886	21	48	1141	44	45	2	35	3	5	61
Added Vol:	0	332	0	130	331	0	0	0	0	0	0	133
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	55	1218	21	178	1472	44	45	2	35	3	5	194
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	55	1218	21	178	1472	44	45	2	35	3	5	194
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	55	1218	21	178	1472	44	45	2	35	3	5	194
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	55	1218	21	178	1472	44	45	2	35	3	5	194
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.02	0.85	0.95	1.00	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.96	0.04	1.00	1.00	1.00	1.00
Final Sat.:	1805	3610	1615	1805	3852	1615	1740	77	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.34	0.01	0.10	0.38	0.03	0.03	0.03	0.02	0.00	0.00	0.12
Crit Moves:		****		****				****				****
Green/Cycle:	0.04	0.44	0.44	0.13	0.52	0.52	0.03	0.03	0.03	0.16	0.16	0.16
Volume/Cap:	0.73	0.77	0.03	0.77	0.73	0.05	0.77	0.77	0.65	0.01	0.02	0.77
Delay/Veh:	61.0	18.0	10.5	42.2	13.4	7.6	75.9	75.9	55.1	23.2	23.3	40.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	61.0	18.0	10.5	42.2	13.4	7.6	75.9	75.9	55.1	23.2	23.3	40.1
DesignQueue:	2	27	0	6	28	1	2	0	1	0	0	6

Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 ironwood/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	LT	LT	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	14	12	12	12	12
CrosswalkWid.		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	4	4	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.07	1.00	1.00	1.07	1.00	1.00	1.00	1.00
Hev Veh Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	0.95	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	1.00	0.85	0.95	1.07	0.85	0.95	1.02	0.85	0.95	1.00	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.02	0.85	0.95	1.00	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR88/395

Cycle (sec): 110 Critical Vol./Cap. (X): 0.901
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 41.0
Optimal Cycle: 124 Level Of Service: D

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Ignore						Ignore						Ignore						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Lanes:	2	0	1	0	1		1	0	1	0	1		1	0	2	0	1		1	0	1	1	0	
Volume Module: >> Count Date: 6 Jul 2001 << PM																								
Base Vol:	235	0	849				0	0	0				0	291	112				999	497	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	235	0	849				0	0	0				0	291	112				999	497	0			
Added Vol:	51	53	37				93	55	195				191	89	52				37	87	91			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	286	53	886				93	55	195				191	380	164				1036	584	91			
User Adj:	1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	1.00			
PHF Adj:	1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	1.00			
PHF Volume:	286	53	0				93	55	0				191	380	0				1036	584	91			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	286	53	0				93	55	0				191	380	0				1036	584	91			
PCE Adj:	1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	0.00				1.00	1.00	1.00			
Final Vol.:	286	53	0				93	55	0				191	380	0				1036	584	91			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	0.95	0.97	1.00				0.95	1.00	1.00				0.98	0.92	1.00				0.98	0.90	0.90			
Lanes:	2.00	1.00	1.00				1.00	1.00	1.00				1.00	2.00	1.00				1.00	1.73	0.27			
Final Sat.:	3628	1845	1900				1805	1900	1900				1870	3505	1900				1870	2972	463			
Capacity Analysis Module:																								
Vol/Sat:	0.08	0.03	0.00				0.05	0.03	0.00				0.10	0.11	0.00				0.55	0.20	0.20			
Crit Moves:	****							****						****					****					
Green/Cycle:	0.09	0.04	0.00				0.08	0.03	0.00				0.25	0.12	0.00				0.61	0.48	0.48			
Volume/Cap:	0.90	0.67	0.00				0.67	0.90	0.00				0.41	0.90	0.00				0.90	0.41	0.41			
Delay/Veh:	76.8	72.1	0.0				61.5	134	0.0				34.9	69.7	0.0				28.2	18.4	18.4			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	76.8	72.1	0.0				61.5	134	0.0				34.9	69.7	0.0				28.2	18.4	18.4			
DesignQueue:	16	3	0				5	3	0				9	21	0				28	19	3			

Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Exclude			Include			Exclude			Include	
% RT Prtct:		100			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	1.00	xxxxx	1.00	1.00	xxxxx	1.07	1.00	xxxxx	1.07	1.00	1.00
Hev Veh Adj:	0.97	0.97	xxxxx	1.00	1.00	xxxxx	0.97	0.97	xxxxx	0.97	0.97	0.97
Grade Adj:	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Area Adj:	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0.98	0.98
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	0.97	1.00	0.95	1.00	1.00	0.98	0.97	1.00	0.98	0.95	0.95
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.95	0.97	1.00	0.95	1.00	1.00	0.98	0.92	1.00	0.98	0.90	0.90
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Lucerne/395

Cycle (sec):	35	Critical Vol./Cap. (X):	0.582
Loss Time (sec):	8 (Y+R = 4 sec)	Average Delay (sec/veh):	5.0
Optimal Cycle:	31	Level Of Service:	A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 1	1 0
Volume Module: >> Count Date: 28 Jun 2001 << PM												
Base Vol:	0	0	0	32	0	35	22	1013	0	0	1022	34
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	32	0	35	22	1013	0	0	1022	34
Added Vol:	0	0	0	64	0	37	37	182	0	0	178	63
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	96	0	72	59	1195	0	0	1200	97
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	96	0	72	59	1195	0	0	1200	97
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	96	0	72	59	1195	0	0	1200	97
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	96	0	72	59	1195	0	0	1200	97
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.01	1.00	1.00	0.94	0.94
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.85	0.15
Final Sat.:	0	0	0	1805	0	1615	1805	3852	0	0	3303	267
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.05	0.00	0.04	0.03	0.31	0.00	0.00	0.36	0.36
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.09	0.00	0.09	0.06	0.68	0.00	0.00	0.62	0.62
Volume/Cap:	0.00	0.00	0.00	0.58	0.00	0.49	0.58	0.46	0.00	0.00	0.58	0.58
Delay/Veh:	0.0	0.0	0.0	20.5	0.0	17.7	24.5	2.7	0.0	0.0	4.3	4.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	20.5	0.0	17.7	24.5	2.7	0.0	0.0	4.3	4.3
DesignQueue:	0	0	0	2	0	1	1	8	0	0	10	1

Nevada Northwest With Improvements
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Lucerne/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Lane Group:	xxxx xxxx xxxx			L xxxx		R	L	T	xxxx	xxxx RT		RT
#LnsInGrps:	0	0	0	1	0	1	1	2	0	0	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	14	12	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	xxxx xxxx xxxx			1 xxxx xxxx			1 xxxx xxxx			xxxx xxxx xxxx		
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	xxxx xxxx xxxxx			1.00 xxxx		1.00	1.00 1.07 xxxxx			xxxx 1.00		1.00
Hev Veh Adj:	xxxx xxxx xxxxx			1.00 xxxx		1.00	1.00 1.00 xxxxx			xxxx 1.00		1.00
Grade Adj:	xxxx xxxx xxxxx			1.00 xxxx		1.00	1.00 1.00 xxxxx			xxxx 1.00		1.00
Parking Adj:	xxxx xxxx xxxxx			xxxx xxxx		1.00	xxxx 1.00 xxxxx			xxxx 1.00		1.00
Bus Stp Adj:	xxxx xxxx xxxxx			xxxx xxxx		1.00	xxxx 1.00 xxxxx			xxxx 1.00		1.00
Area Adj:	xxxx xxxx xxxxx			1.00 xxxx		1.00	1.00 1.00 xxxxx			xxxx 1.00		1.00
RT Adj:	xxxx xxxx xxxxx			xxxx xxxx		0.85	xxxx xxxx xxxxx			xxxx 0.99		0.99
LT Adj:	xxxx xxxx xxxxx			0.95 xxxx		xxxxx	0.95 xxxx xxxxx			xxxx xxxx		xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.07	1.00	1.00	0.99	0.99
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.01	1.00	1.00	0.94	0.94
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00

Nevada Northwest With Improvements
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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #5 Lucerne/Ironwood

****

Average Delay (sec/veh): 11.6 Worst Case Level Of Service: B

****

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	0	1	0		0	0	0	1	0		1	0	0	1	0		0	0	0	0	0	
Volume Module: >> Count Date: 27 Jun 2001 << PM																								
Base Vol:	7		52		0		0		28		71		84		0		12		0		0		0	
Growth Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
Initial Bse:	7		52		0		0		28		71		84		0		12		0		0		0	
Added Vol:	99		0		0		0		0		77		79		0		101		0		0		0	
PasserByVol:	0		0		0		0		0		0		0		0		0		0		0		0	
Initial Fut:	106		52		0		0		28		148		163		0		113		0		0		0	
User Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	106		52		0		0		28		148		163		0		113		0		0		0	
Reduct Vol:	0		0		0		0		0		0		0		0		0		0		0		0	
Final Vol.:	106		52		0		0		28		148		163		0		113		0		0		0	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx							6.4	xxxx		6.2	xxxxx	xxxx	xxxxx					
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx							3.5	xxxx		3.3	xxxxx	xxxx	xxxxx					
Capacity Module:																								
Cnflict Vol:	176	xxxx	xxxxx	xxxx	xxxx	xxxxx							366	xxxx		102	xxxx	xxxx	xxxxx					
Potent Cap.:	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx							638	xxxx		959	xxxx	xxxx	xxxxx					
Move Cap.:	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx							601	xxxx		959	xxxx	xxxx	xxxxx					
Level Of Service Module:																								
Stopped Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx							13.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*	*	*	*	*							B	*	*	*	*	*						
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							xxxx	xxxx		959	xxxx	xxxx	xxxxx					
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							xxxxx	xxxx		9.3	xxxxx	xxxx	xxxxx					
Shared LOS:	*	*	*	*	*	*							*	*		A	*	*	*					
ApproachDel:	xxxxxx			xxxxxx									11.6				xxxxxx							
ApproachLOS:	*			*									B				*							

Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #5 Lucerne/Ironwood

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	

Pedestrian Walk Speed: 4.00 feet/sec

LaneWidth:	12 feet	12 feet	12 feet	12 feet

Time Period: 0.25 hour

Upstream Signals:

Link Index:	#15	
Dist(miles):	0.000	
Speed (mph):	0.00	
SignalIndex:	#4	
Cycle Time:	0 secs	
InitVolume:	0	0
Saturation:	0	0
ArrivalType:	0	0
G/C:	0.00	0.00

*** Computation 1: Time for Queue to Clear at Each Upstream Intersection

P:	0.000	0.000
gq1:	0.00	0.00
gq2:	0.00	0.00
gq:	0.00	0.00

*** Computation 2: Time Intersection Blocked Because of Upstream Platoons

alpha:	0.000	
beta:	0.000	
ta (secs):	0.000	
F:	0.000	
f:	0.000	0.000
vcmax:	0	0
vcmin:	0	0
tp:	0.0	0.0
p:	0.000	

*** Computation 3: Platoon Event Periods

pdom/psubo: 0.000/0.000/Unconstrained

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	99	xxxxx	xxxxx	0	xxxxx	xxxxx	130	0	64	0	0	0
UpstreamSat:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	0	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	99	xxxxx	xxxxx	0	xxxxx	xxxxx	130	0	64	0	0	0

*** Computation 5: Capactiy for Subject Movement During Unblocked Period

InitPotCap:	1507	xxxxx	xxxxx	0	xxxxx	xxxxx	870	0	1007	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
PotentCap:	1507	xxxxx	xxxxx	0	xxxxx	xxxxx	870	0	1007	0	0	0

Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: Nevada NW													
1	Muller/395	131	197	137	108	193	0	0	72	128	140	74	111
2	ironwood/395	0	332	0	130	331	0	0	0	0	0	0	133
3	SR88/395	51	53	37	93	55	195	191	89	52	37	87	91
4	Lucerne/395	0	0	0	64	0	37	37	182	0	0	178	63
5	Lucerne/Ironw	99	0	0	0	0	77	79	0	101	0	0	0

EXISTING PLUS PROJECT WITH IMPROVEMENTS (OPTION 1)

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Scenario Report

Scenario:	Future w/ Proj. - PM
Command:	Future w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	2015

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Nevada NW	1.00	Mixed Use	1003.00	1025.00	1003	1025	2028	100
	Zone 1 Subtotal					1003	1025	2028	100.0
TOTAL						1003	1025	2028	100.0

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Trip Distribution Report
Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	4	5	6
Zone					
1	30.0	20.0	14.0	24.0	12.0

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	28	1246	0	0	1714	28	29	0	50	0	0	0	3094
Added	131	197	137	108	193	0	0	72	128	140	74	111	1291
Total	159	1443	137	108	1907	28	29	72	178	140	74	111	4385
#2 ironwood/395													
Base	66	1063	25	58	1369	53	54	2	42	4	6	73	2815
Added	0	332	0	130	331	0	0	0	0	0	0	133	926
Total	66	1395	25	188	1700	53	54	2	42	4	6	206	3741
#3 SR88/395													
Base	282	0	1019	0	0	0	0	349	134	1199	596	0	3580
Added	51	53	37	93	55	195	191	89	52	37	87	91	1031
Total	333	53	1056	93	55	195	191	438	186	1236	683	91	4611
#4 Lucerne/395													
Base	0	0	0	38	0	42	26	1216	0	0	1226	41	2590
Added	0	0	0	64	0	37	37	182	0	0	178	63	561
Total	0	0	0	102	0	79	63	1398	0	0	1404	104	3151
#5 Lucerne/Ironwood													
Base	8	62	0	0	34	85	101	0	14	0	0	0	305
Added	99	0	0	0	0	77	79	0	101	0	0	0	356
Total	107	62	0	0	34	162	180	0	115	0	0	0	661

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	A	6.5	0.591	C	32.3	0.927	+25.837 D/V
# 2 ironwood/395	B	12.8	0.595	C	24.1	0.825	+11.347 D/V
# 3 SR88/395	D	39.2	0.933	E	64.6	1.034	+25.391 D/V
# 4 Lucerne/395	A	3.1	0.491	A	5.5	0.642	+ 2.367 D/V
# 5 Lucerne/Ironwood	A	9.7	0.000	B	12.2	0.000	+ 0.000 V/C

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Muller/395

Cycle (sec): 95 Critical Vol./Cap. (X): 0.927
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 32.3
Optimal Cycle:OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2	0 1	1 0	2	0 1	1 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 23 May 2001 << PM												
Base Vol:	23	1038	0	0	1428	23	24	0	42	0	0	0
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	28	1246	0	0	1714	28	29	0	50	0	0	0
Added Vol:	131	197	137	108	193	0	0	72	128	140	74	111
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	1443	137	108	1907	28	29	72	178	140	74	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	1443	137	108	1907	28	29	72	178	140	74	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	1443	137	108	1907	28	29	72	178	140	74	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	159	1443	137	108	1907	28	29	72	178	140	74	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	3610	1615	1805	3852	1615	1805	1900	1615	1805	2027	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.40	0.08	0.06	0.50	0.02	0.02	0.04	0.11	0.08	0.04	0.07
Crit Moves:	****				****				****	****		
Green/Cycle:	0.10	0.55	0.55	0.08	0.53	0.53	0.04	0.12	0.12	0.08	0.16	0.16
Volume/Cap:	0.93	0.73	0.16	0.73	0.93	0.03	0.42	0.32	0.93	0.93	0.22	0.42
Delay/Veh:	90.6	17.7	10.7	59.5	28.3	10.5	48.7	39.1	86.1	95.1	34.8	36.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	90.6	17.7	10.7	59.5	28.3	10.5	48.7	39.1	86.1	95.1	34.8	36.7
DesignQueue:	8	38	3	5	54	1	1	3	8	7	3	5

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

****

Intersection #1 Muller/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0 2 0 1			1 0 2 0 1			1 0 1 0 1			1 0 1 0 1		
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	12	12	12	14	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.07	1.00	1.00	1.00	1.00	1.00	1.07	1.00
Hev Veh Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	1.00	0.85	0.95	1.07	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

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2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

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Intersection #2 ironwood/395

****

Cycle (sec): 75 Critical Vol./Cap. (X): 0.825
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 24.1
Optimal Cycle:OPTIMIZED Level Of Service: C

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Split Phase			Split Phase		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	2 0	1	0 1	0 0	1	1 0	1 0	1
Volume Module: >> Count Date: 2 Jul 2001 << PM												
Base Vol:	55	886	21	48	1141	44	45	2	35	3	5	61
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	66	1063	25	58	1369	53	54	2	42	4	6	73
Added Vol:	0	332	0	130	331	0	0	0	0	0	0	133
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	66	1395	25	188	1700	53	54	2	42	4	6	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	66	1395	25	188	1700	53	54	2	42	4	6	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	66	1395	25	188	1700	53	54	2	42	4	6	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	66	1395	25	188	1700	53	54	2	42	4	6	206
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.02	0.85	0.95	1.00	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	0.97	0.03	1.00	1.00	1.00	1.00
Final Sat.:	1805	3610	1615	1805	3852	1615	1752	65	1615	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.39	0.02	0.10	0.44	0.03	0.03	0.03	0.03	0.00	0.00	0.13
Crit Moves:		****		****			****					****
Green/Cycle:	0.05	0.47	0.47	0.13	0.55	0.55	0.04	0.04	0.04	0.15	0.15	0.15
Volume/Cap:	0.80	0.82	0.03	0.82	0.80	0.06	0.82	0.82	0.70	0.01	0.02	0.82
Delay/Veh:	77.2	20.7	10.8	53.1	16.0	7.9	89.4	89.4	65.6	26.9	26.9	50.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	77.2	20.7	10.8	53.1	16.0	7.9	89.4	89.4	65.6	26.9	26.9	50.3
DesignQueue:	3	34	1	7	36	1	2	0	2	0	0	7

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2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #2 ironwood/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0 2	0 1		1 0 2	0 1		0 1 0	0 1		1 0 1	0 1	
Lane Group:	L	T	R	L	T	R	LT	LT	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	14	12	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1 xxxx	xxxx		1 xxxx	xxxx		4	4	xxxx	1 xxxx	xxxx	
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00 1.00	1.00		1.00 1.07	1.00		1.00 1.07	1.00		1.00 1.00	1.00	
Hev Veh Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Grade Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Parking Adj:	xxxx xxxx	1.00		xxxx xxxx	1.00		xxxx xxxx	1.00		xxxx xxxx	1.00	
Bus Stp Adj:	xxxx xxxx	1.00		xxxx xxxx	1.00		xxxx xxxx	1.00		xxxx xxxx	1.00	
Area Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
RT Adj:	xxxx xxxx	0.85		xxxx xxxx	0.85		xxxx xxxx	0.85		xxxx xxxx	0.85	
LT Adj:	0.95 xxxx	xxxxx		0.95 xxxx	xxxxx		0.95 0.95	xxxxx		0.95 xxxx	xxxxx	
PedBike Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
HCM Sat Adj:	0.95 1.00	0.85		0.95 1.07	0.85		0.95 1.02	0.85		0.95 1.00	0.85	
Usr Sat Adj:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
MLF Sat Adj:	1.00 0.95	1.00		1.00 0.95	1.00		1.00 1.00	1.00		1.00 1.00	1.00	
Fnl Sat Adj:	0.95 0.95	0.85		0.95 1.01	0.85		0.95 1.02	0.85		0.95 1.00	0.85	
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00		1.00 1.00	1.00	

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

****

Intersection #3 SR88/395

****

Cycle (sec): 130 Critical Vol./Cap. (X): 1.034
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 64.6
Optimal Cycle:OPTIMIZED Level Of Service: E

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Ignore			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1 0	1	1 0	1 0	1	1 0	2 0	1	1 0	1 1	0
Volume Module: >> Count Date: 6 Jul 2001 << PM												
Base Vol:	235	0	849	0	0	0	0	291	112	999	497	0
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	282	0	1019	0	0	0	0	349	134	1199	596	0
Added Vol:	51	53	37	93	55	195	191	89	52	37	87	91
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	333	53	1056	93	55	195	191	438	186	1236	683	91
User Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	333	53	0	93	55	0	191	438	0	1236	683	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	53	0	93	55	0	191	438	0	1236	683	91
PCE Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	333	53	0	93	55	0	191	438	0	1236	683	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.97	1.00	0.95	1.00	1.00	0.98	0.92	1.00	0.98	0.91	0.91
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	1.00	1.76	0.24
Final Sat.:	3628	1845	1900	1805	1900	1900	1870	3505	1900	1870	3038	405
Capacity Analysis Module:												
Vol/Sat:	0.09	0.03	0.00	0.05	0.03	0.00	0.10	0.12	0.00	0.66	0.22	0.22
Crit Moves:	****				****			****		****		
Green/Cycle:	0.09	0.04	0.00	0.07	0.03	0.00	0.24	0.12	0.00	0.64	0.52	0.52
Volume/Cap:	1.03	0.69	0.00	0.69	1.03	0.00	0.43	1.03	0.00	1.03	0.43	0.43
Delay/Veh:	118.4	84.4	0.0	72.5	196	0.0	42.8	110	0.0	58.6	19.3	19.3
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	118.4	84.4	0.0	72.5	196	0.0	42.8	110	0.0	58.6	19.3	19.3
DesignQueue:	22	4	0	6	4	0	11	29	0	39	25	3

****

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		1 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	1	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Exclude			Include			Exclude			Include	
% RT Prtct:		100			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	1.00	xxxxx	1.00	1.00	xxxxx	1.07	1.00	xxxxx	1.07	1.00	1.00
Hev Veh Adj:	0.97	0.97	xxxxx	1.00	1.00	xxxxx	0.97	0.97	xxxxx	0.97	0.97	0.97
Grade Adj:	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Area Adj:	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	xxxxx	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	0.98	0.98
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	0.97	1.00	0.95	1.00	1.00	0.98	0.97	1.00	0.98	0.95	0.95
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	0.95	0.97	1.00	0.95	1.00	1.00	0.98	0.92	1.00	0.98	0.91	0.91
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	1.00

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #4 Lucerne/395

Cycle (sec): 40 Critical Vol./Cap. (X): 0.642
Loss Time (sec): 8 (Y+R = 4 sec) Average Delay (sec/veh): 5.5
Optimal Cycle:OPTIMIZED Level Of Service: A

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	0 0	0	0 0	1	0 0	0 1	1	0 2	0 0	0	0 1	1 0
Volume Module: >> Count Date: 28 Jun 2001 << PM												
Base Vol:	0	0	0	32	0	35	22	1013	0	0	1022	34
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	0	0	38	0	42	26	1216	0	0	1226	41
Added Vol:	0	0	0	64	0	37	37	182	0	0	178	63
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	102	0	79	63	1398	0	0	1404	104
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	102	0	79	63	1398	0	0	1404	104
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	102	0	79	63	1398	0	0	1404	104
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	0	0	0	102	0	79	63	1398	0	0	1404	104
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.01	1.00	1.00	0.94	0.94
Lanes:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	2.00	0.00	0.00	1.86	0.14
Final Sat.:	0	0	0	1805	0	1615	1805	3852	0	0	3327	246
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.06	0.00	0.05	0.03	0.36	0.00	0.00	0.42	0.42
Crit Moves:				****			****				****	
Green/Cycle:	0.00	0.00	0.00	0.09	0.00	0.09	0.05	0.71	0.00	0.00	0.66	0.66
Volume/Cap:	0.00	0.00	0.00	0.64	0.00	0.56	0.64	0.51	0.00	0.00	0.64	0.64
Delay/Veh:	0.0	0.0	0.0	26.2	0.0	22.3	32.1	2.8	0.0	0.0	4.7	4.7
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	0.0	0.0	0.0	26.2	0.0	22.3	32.1	2.8	0.0	0.0	4.7	4.7
DesignQueue:	0	0	0	2	0	2	1	10	0	0	12	1

2015 Nevada Northwest With Improvements
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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #4 Lucerne/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	0 0 0 0 0			1 0 0 0 1			1 0 2 0 0			0 0 1 1 0		
Lane Group:	xxxx xxxx xxxx			L	xxxx	R	L	T	xxxx	xxxx	RT	RT
#LnsInGrps:	0	0	0	1	0	1	1	2	0	0	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	14	12	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	xxxx xxxx xxxx			1	xxxx	xxxx	1	xxxx	xxxx	xxxx	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.07	xxxxx	xxxx	1.00	1.00
Hev Veh Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Grade Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	1.00	xxxxx	xxxx	1.00	1.00
Area Adj:	xxxx	xxxx	xxxxx	1.00	xxxx	1.00	1.00	1.00	xxxxx	xxxx	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	0.99	0.99
LT Adj:	xxxx	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	xxxx	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.07	1.00	1.00	0.99	0.99
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	1.00	0.95	0.95
Fnl Sat Adj:	1.00	1.00	1.00	0.95	1.00	0.85	0.95	1.01	1.00	1.00	0.94	0.94
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	0.00	0.00	0.00	1.00	0.00	1.00	1.00	1.00	0.00	0.00	1.00	1.00

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #5 Lucerne/Ironwood

****

Average Delay (sec/veh): 12.2 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0	1 0		0 0 0	1 0		1 0 0	1 0		0 0 0	0 0	
Volume Module: >> Count Date: 27 Jun 2001 << PM												
Base Vol:	7	52	0	0	28	71	84	0	12	0	0	0
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	8	62	0	0	34	85	101	0	14	0	0	0
Added Vol:	99	0	0	0	0	77	79	0	101	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	107	62	0	0	34	162	180	0	115	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	107	62	0	0	34	162	180	0	115	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	107	62	0	0	34	162	180	0	115	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	196	xxxx	xxxxx	xxxx	xxxx	xxxxx	392	xxxx	115	xxxx	xxxx	xxxxx
Potent Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx	616	xxxx	943	xxxx	xxxx	xxxxx
Move Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx	580	xxxx	943	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	7.8	xxxx	xxxxx	xxxxx	xxxx	xxxxx	14.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	943	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.3	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	A	*	*	*
ApproachDel:	xxxxxx			xxxxxx			12.2			xxxxxx		
ApproachLOS:	*			*			B			*		

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #5 Lucerne/Ironwood

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:		#15										
Dist(miles):		0.000										
Speed (mph):		0.00										
SignalIndex:		#4										
Cycle Time:		0 secs										
InitVolume:	0	0										
Saturation:	0	0										
ArrivalType:	0	0										
G/C:	0.00	0.00										
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:	0.000	0.000										
gq1:	0.00	0.00										
gq2:	0.00	0.00										
gq:	0.00	0.00										
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:		0.000										
beta:		0.000										
ta (secs):		0.000										
F:		0.000										
f:	0.000	0.000										
vcmax:	0	0										
vcmin:	0	0										
tp:	0.0	0.0										
p:		0.000										
*** Computation 3: Platoon Event Periods												
pdom/psubo:		0.000/0.000/Unconstrained										
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	119	xxxxx	xxxxx	0	xxxxx	xxxxx	155	0	76	0	0	0
UpstreamSat:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	0	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
ConflictVol:	119	xxxxx	xxxxx	0	xxxxx	xxxxx	155	0	76	0	0	0
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	1482	xxxxx	xxxxx	0	xxxxx	xxxxx	841	0	991	0	0	0
UpstreamAdj:	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx	1.00	1.000	1.000	1.00	1.000	1.000
PotentCap:	1482	xxxxx	xxxxx	0	xxxxx	xxxxx	841	0	991	0	0	0

2015 Nevada Northwest With Improvements
Traffic Impact Analysis Data
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Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: Nevada NW													
1	Muller/395	131	197	137	108	193	0	0	72	128	140	74	111
2	ironwood/395	0	332	0	130	331	0	0	0	0	0	0	133
3	SR88/395	51	53	37	93	55	195	191	89	52	37	87	91
4	Lucerne/395	0	0	0	64	0	37	37	182	0	0	178	63
5	Lucerne/Ironw	99	0	0	0	0	77	79	0	101	0	0	0

2015 WITH PROJECT WITH IMPROVEMENTS (OPTION 1)

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Scenario Report

Scenario:	Existing w/ Proj. - PM
Command:	Existing w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Nevada NW	1.00	Mixed Use	1003.00	1025.00	1003	1025	2028	100
	Zone 1 Subtotal					1003	1025	2028	100.0
TOTAL						1003	1025	2028	100.0

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Trip Distribution Report
Trip Distribution
Percent Of Trips Default

	To Gates				
Zone	1	2	4	5	6
1	30.0	20.0	14.0	24.0	12.0

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	23	1038	0	0	1428	23	24	0	42	0	0	0	2578
Added	131	197	137	187	114	0	0	72	128	140	74	111	1291
Total	154	1235	137	187	1542	23	24	72	170	140	74	111	3869
#2 ironwood/395													
Base	0	945	21	0	1189	44	0	0	82	0	0	69	2350
Added	0	332	0	52	331	0	0	0	0	0	0	133	848
Total	0	1277	21	52	1520	44	0	0	82	0	0	202	3198
#3 SR88/395													
Base	235	0	849	0	0	0	0	291	112	999	497	0	2983
Added	51	53	37	157	55	195	191	89	52	37	87	91	1095
Total	286	53	886	157	55	195	191	380	164	1036	584	91	4078
#4 Lucerne/395													
Base	0	0	0	0	0	67	0	1035	0	0	1022	34	2158
Added	0	0	0	0	0	37	37	246	0	0	178	63	561
Total	0	0	0	0	0	104	37	1281	0	0	1200	97	2719
#5 Lucerne/Ironwood													
Base	7	52	0	0	28	71	84	0	12	0	0	0	254
Added	37	63	0	0	0	77	79	0	37	0	0	0	293
Total	44	115	0	0	28	148	163	0	49	0	0	0	547

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	A	5.7	0.492	C	29.3	0.804	+23.595 D/V
# 2 ironwood/395	B	12.6	0.000	B	11.1	0.000	+ 0.000 V/C
# 3 SR88/395	B	13.9	0.577	C	26.2	0.809	+12.265 D/V
# 4 Lucerne/395	B	13.3	0.000	C	16.5	0.000	+ 0.000 V/C
# 5 Lucerne/Ironwood	A	9.5	0.000	B	11.3	0.000	+ 0.000 V/C

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Muller/395

Cycle (sec):	95	Critical Vol./Cap. (X):	0.804
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	29.3
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 23 May 2001 << PM												
Base Vol:	23	1038	0	0	1428	23	24	0	42	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	23	1038	0	0	1428	23	24	0	42	0	0	0
Added Vol:	131	197	137	187	114	0	0	72	128	140	74	111
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	154	1235	137	187	1542	23	24	72	170	140	74	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	154	1235	137	187	1542	23	24	72	170	140	74	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	154	1235	137	187	1542	23	24	72	170	140	74	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	154	1235	137	187	1542	23	24	72	170	140	74	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	3610	1615	1805	3852	1615	1805	1900	1615	1805	2027	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.34	0.08	0.10	0.40	0.01	0.01	0.04	0.11	0.08	0.04	0.07
Crit Moves:	****				****				****	****		
Green/Cycle:	0.11	0.46	0.46	0.14	0.50	0.50	0.04	0.13	0.13	0.10	0.19	0.19
Volume/Cap:	0.80	0.74	0.18	0.74	0.80	0.03	0.36	0.29	0.80	0.80	0.19	0.36
Delay/Veh:	62.8	22.5	15.0	50.0	22.5	12.2	48.0	37.9	59.7	65.1	32.5	34.1
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	62.8	22.5	15.0	50.0	22.5	12.2	48.0	37.9	59.7	65.1	32.5	34.1
DesignQueue:	7	38	4	9	46	1	1	3	8	7	3	5

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 Muller/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	12	12	12	14	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:	Include			Include			Include			Include		
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.07	1.00	1.00	1.00	1.00	1.00	1.07	1.00
Hev Veh Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	1.00	0.85	0.95	1.07	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 ironwood/395

Average Delay (sec/veh): 11.1 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2	0	1	0 1 1	0	1	0 0 0	0	1	0 0 0	0	1
Volume Module: >> Count Date: 2 Jul 2001 << PM												
Base Vol:	0 945		21	0 1189		44	0	0	82	0	0	69
Growth Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0 945		21	0 1189		44	0	0	82	0	0	69
Added Vol:	0 332		0	52 331		0	0	0	0	0	0	133
PasserByVol:	0 0		0	0 0		0	0	0	0	0	0	0
Initial Fut:	0 1277		21	52 1520		44	0	0	82	0	0	202
User Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00 1.00	1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0 1277		21	52 1520		44	0	0	82	0	0	202
Reduct Vol:	0 0		0	0 0		0	0	0	0	0	0	0
Final Vol.:	0 1277		21	52 1520		44	0	0	82	0	0	202
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		4.1 xxxx	xxxxx	xxxxx	xxxx		6.9	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx xxxx	xxxxx		2.2 xxxx	xxxxx	xxxxx	xxxx		3.3	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx xxxx	xxxxx		857 xxxx	xxxxx	xxxx	xxxx		0	xxxx	xxxx	43
Potent Cap.:	xxxx xxxx	xxxxx		642 xxxx	xxxxx	xxxx	xxxx		0	xxxx	xxxx	830
Move Cap.:	xxxx xxxx	xxxxx		642 xxxx	xxxxx	xxxx	xxxx		0	xxxx	xxxx	830
Level Of Service Module:												
Stopped Del:	xxxxx xxxx	xxxxx		10.6 xxxx	xxxxx	xxxxx	xxxx		0.0	xxxxx	xxxx	10.7
LOS by Move:	* *	*		B *	*	*	*		*	*	*	B
Movement:	LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT		LT - LTR	- RT	
Shared Cap.:	xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx		xxxx xxxx	xxxxx	
Shrd StpDel:	xxxxx xxxx	xxxxx		11.1 xxxx	xxxxx		xxxxx xxxx	xxxxx		xxxxx xxxx	xxxxx	
Shared LOS:	* *	*		B *	*		* *	*		* *	*	
ApproachDel:	xxxxxx			xxxxxx			0.0			10.7		
ApproachLOS:	*			*			A			B		

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #2 ironwood/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			14 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:					#5						#36	
Dist(miles):					0.200						0.200	
Speed (mph):					45.00						45.00	
SignalIndex:					#1						#3	
Cycle Time:					95 secs						60 secs	
InitVolume:				140	1542					286	584	
Saturation:				1805	3852					3628	2972	
ArrivalType:				3	3					3	3	
G/C:				0.10	0.50					0.10	0.32	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:				0.096	0.498					0.097	0.320	
gq1:				6.66	19.09					4.27	8.01	
gq2:				0.56	12.74					0.37	1.96	
gq:				7.22	31.84					4.63	9.97	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:					0.400						0.450	
beta:					0.714						0.690	
ta (secs):					16.000						16.000	
F:					0.179						0.168	
f:				3.182	1.251					4.145	8.464	
vcmax:				4366	4808					8613	21119	
vcmin:				2000	2000					1000	1000	
tp:				9.7	47.8					0.0	0.0	
p:					0.606						0.000	
*** Computation 3: Platoon Event Periods												
pdom/psubo:				0.606/0.000/Unconstrained								
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	595	0	0	473
UpstreamSat:	3682	xxxxx	xxxxx	3188	xxxxx	xxxxx	3513	3513	3682	3513	3513	3188
UpstreamAdj:	0.39	x.xxx	x.xxx	1.00	x.xxx	x.xxx	0.39	0.394	0.394	0.39	0.394	1.000
ConflictVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	0	0	0	473
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	0	0	0	543
UpstreamAdj:	0.39	x.xxx	x.xxx	1.00	x.xxx	x.xxx	0.39	0.394	0.394	0.39	0.394	1.000
PotentCap:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	0	0	0	543

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR88/395

Cycle (sec): 60 Critical Vol./Cap. (X): 0.809
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 26.2
Optimal Cycle:OPTIMIZED Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Protected						Protected						Protected						Protected					
Rights:	Ignore						Include						Ignore						Include					
Min. Green:	0	0	0				0	0	0				0	0	0				0	0	0			
Lanes:	2	0	1	0	1		1	0	1	0	1		1	0	2	0	1		2	0	1	1	0	
Volume Module: >> Count Date: 6 Jul 2001 << PM																								
Base Vol:	235	0	849				0	0	0				0	291	112				999	497	0			
Growth Adj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
Initial Bse:	235	0	849				0	0	0				0	291	112				999	497	0			
Added Vol:	51	53	37				157	55	195				191	89	52				37	87	91			
PasserByVol:	0	0	0				0	0	0				0	0	0				0	0	0			
Initial Fut:	286	53	886				157	55	195				191	380	164				1036	584	91			
User Adj:	1.00	1.00	0.00				1.00	1.00	1.00				1.00	1.00	0.00				1.00	1.00	1.00			
PHF Adj:	1.00	1.00	0.00				1.00	1.00	1.00				1.00	1.00	0.00				1.00	1.00	1.00			
PHF Volume:	286	53	0				157	55	195				191	380	0				1036	584	91			
Reduct Vol:	0	0	0				0	0	0				0	0	0				0	0	0			
Reduced Vol:	286	53	0				157	55	195				191	380	0				1036	584	91			
PCE Adj:	1.00	1.00	0.00				1.00	1.00	1.00				1.00	1.00	0.00				1.00	1.00	1.00			
MLF Adj:	1.00	1.00	0.00				1.00	1.00	1.00				1.00	1.00	0.00				1.00	1.00	1.00			
Final Vol.:	286	53	0				157	55	195				191	380	0				1036	584	91			
Saturation Flow Module:																								
Sat/Lane:	1900	1900	1900				1900	1900	1900				1900	1900	1900				1900	1900	1900			
Adjustment:	0.95	0.97	1.00				0.95	1.00	0.85				0.98	0.92	1.00				0.95	0.90	0.90			
Lanes:	2.00	1.00	1.00				1.00	1.00	1.00				1.00	2.00	1.00				2.00	1.73	0.27			
Final Sat.:	3628	1845	1900				1805	1900	1615				1870	3505	1900				3628	2972	463			
Capacity Analysis Module:																								
Vol/Sat:	0.08	0.03	0.00				0.09	0.03	0.12				0.10	0.11	0.00				0.29	0.20	0.20			
Crit Moves:	****								****					****					****					
Green/Cycle:	0.10	0.06	0.00				0.19	0.15	0.15				0.17	0.13	0.00				0.35	0.32	0.32			
Volume/Cap:	0.81	0.47	0.00				0.47	0.19	0.81				0.61	0.81	0.00				0.81	0.61	0.61			
Delay/Veh:	39.6	30.3	0.0				22.8	22.7	42.9				26.8	35.4	0.0				21.6	18.3	18.3			
User DelAdj:	1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00				1.00	1.00	1.00			
AdjDel/Veh:	39.6	30.3	0.0				22.8	22.7	42.9				26.8	35.4	0.0				21.6	18.3	18.3			
DesignQueue:	9	2	0				4	2	6				5	11	0				24	14	2			

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L - T - R			L - T - R			L - T - R			L - T - R		
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		2 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	2	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Exclude			Include			Exclude			Include	
% RT Prtct:		100			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx	
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	1.00	xxxxx	1.00	1.00	1.00	1.07	1.00	xxxxx	1.07	1.00	1.00
Hev Veh Adj:	0.97	0.97	xxxxx	1.00	1.00	1.00	0.97	0.97	xxxxx	0.97	0.97	0.97
Grade Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Area Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	0.98	0.98
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	0.97	1.00	0.95	1.00	0.85	0.98	0.97	1.00	0.98	0.95	0.95
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Fnl Sat Adj:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.95	0.90	0.90
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Lucerne/395

Average Delay (sec/veh): 16.5 Worst Case Level Of Service: C

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	0		0	0	0	0	1		0	1	1	0	0		0	0	1	1	0	
Volume Module: >> Count Date: 28 Jun 2001 << PM																								
Base Vol:	0	0	0	0	0		0	0	67	0	0		0	1035	0	0	0		0	1022	34	0	0	
Growth Adj:	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
Initial Bse:	0	0	0	0	0		0	0	67	0	0		0	1035	0	0	0		0	1022	34	0	0	
Added Vol:	0	0	0	0	0		0	0	37	37	0		246	0	0	0	0		178	63	0	0	0	
PasserByVol:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Initial Fut:	0	0	0	0	0		0	0	104	37	0		1281	0	0	0	0		1200	97	0	0	0	
User Adj:	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
PHF Adj:	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00	1.00	
PHF Volume:	0	0	0	0	0		0	0	104	37	0		1281	0	0	0	0		1200	97	0	0	0	
Reduct Vol:	0	0	0	0	0		0	0	0	0	0		0	0	0	0	0		0	0	0	0	0	
Final Vol.:	0	0	0	0	0		0	0	104	37	0		1281	0	0	0	0		1200	97	0	0	0	
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		6.9		4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx										
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		3.3		2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx										
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx		649		1297	xxxx	xxxxx	xxxx	xxxx	xxxxx										
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		418		541	xxxx	xxxxx	xxxx	xxxx	xxxxx										
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		418		541	xxxx	xxxxx	xxxx	xxxx	xxxxx										
Level Of Service Module:																								
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		16.5		11.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx										
LOS by Move:	*	*	*	*	*		C		B	*	*	*	*	*										
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx												
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx												
Shared LOS:	*	*	*	*	*	*	B	*	*	*	*	*												
ApproachDel:	xxxxxx			16.5			xxxxxx			xxxxxx														
ApproachLOS:	*			C			*			*														

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #4 Lucerne/395

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			14 feet			14 feet			12 feet		
Time Period: 0.25 hour												

Upstream Signals:												
Link Index:							#9					
Dist(miles):							0.200					
Speed (mph):							35.00					
SignalIndex:							#3					
Cycle Time:							60 secs					
InitVolume:							157	380				
Saturation:							1805	3505				
ArrivalType:							3	3				
G/C:							0.19	0.13				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.185	0.134				
gq1:							4.25	5.63				
gq2:							0.41	0.68				
gq:							4.66	6.32				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.500					
beta:							0.667					
ta (secs):							20.571					
F:							0.127					
f:							1.000	0.367				
vcmax:							847	742				
vcmin:							2000	2000				
tp:							0.0	0.0				
p:							0.000					
*** Computation 3: Platoon Event Periods												
pdom/psubo:							0.000/0.000/Unconstrained					
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	0	0	0	0	528	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamSat:	3008	3008	0	3008	3008	3008	3008	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	0	0	0	0	0	528	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	0	0	500	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
PotentCap:	0	0	0	0	0	500	0	xxxxx	xxxxx	0	xxxxx	xxxxx

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

****

Intersection #5 Lucerne/Ironwood

****

Average Delay (sec/veh): 11.3 Worst Case Level Of Service: B

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	1 0 0 1 0			0 0 0 1 0			1 0 0 1 0			0 0 0 0 0		
Volume Module: >> Count Date: 27 Jun 2001 << PM												
Base Vol:	7	52	0	0	28	71	84	0	12	0	0	0
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	7	52	0	0	28	71	84	0	12	0	0	0
Added Vol:	37	63	0	0	0	77	79	0	37	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	44	115	0	0	28	148	163	0	49	0	0	0
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	44	115	0	0	28	148	163	0	49	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	44	115	0	0	28	148	163	0	49	0	0	0
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	176	xxxx	xxxxx	xxxx	xxxx	xxxxx	305	xxxx	102	xxxx	xxxx	xxxxx
Potent Cap.:	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx	691	xxxx	959	xxxx	xxxx	xxxxx
Move Cap.:	1412	xxxx	xxxxx	xxxx	xxxx	xxxxx	675	xxxx	959	xxxx	xxxx	xxxxx
Level Of Service Module:												
Stopped Del:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	12.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	959	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	9.0	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	A	*	*	*
ApproachDel:	xxxxxx			xxxxxx			11.3			xxxxxx		
ApproachLOS:	*			*			B			*		

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #5 Lucerne/Ironwood

****

Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
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Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: Nevada NW													
1	Muller/395	131	197	137	187	114	0	0	72	128	140	74	111
2	ironwood/395	0	332	0	52	331	0	0	0	0	0	0	133
3	SR88/395	51	53	37	157	55	195	191	89	52	37	87	91
4	Lucerne/395	0	0	0	0	0	37	37	246	0	0	178	63
5	Lucerne/Ironw	37	63	0	0	0	77	79	0	37	0	0	0

EXISTING PLUS PROJECT WITH IMPROVEMENTS (OPTION 2)

Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Scenario Report

Scenario:	Existing w/ Proj. - PM
Command:	Existing w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Future

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
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Scenario Report

Scenario:	Future w/ Proj. - PM
Command:	Future w/ Project
Volume:	PM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	PM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	2015

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
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Trip Generation Report
PM Trip Generation from ITE Trip Generation Manual
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Nevada NW	1.00	Mixed Use	1003.00	1025.00	1003	1025	2028	100
	Zone 1 Subtotal					1003	1025	2028	100.0
TOTAL						1003	1025	2028	100.0

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Trip Distribution Report
Trip Distribution
Percent Of Trips Default

	To Gates				
Zone	1	2	4	5	6
1	30.0	20.0	14.0	24.0	12.0

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Turning Movement Report
PM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 Muller/395													
Base	28	1246	0	0	1714	28	29	0	50	0	0	0	3094
Added	131	197	137	187	114	0	0	72	128	140	74	111	1291
Total	159	1443	137	187	1828	28	29	72	178	140	74	111	4385
#2 ironwood/395													
Base	0	1134	25	0	1427	53	0	0	98	0	0	83	2820
Added	0	332	0	52	331	0	0	0	0	0	0	133	848
Total	0	1466	25	52	1758	53	0	0	98	0	0	216	3668
#3 SR88/395													
Base	282	0	1019	0	0	0	0	349	134	1199	596	0	3580
Added	51	53	37	157	55	195	191	89	52	37	87	91	1095
Total	333	53	1056	157	55	195	191	438	186	1236	683	91	4675
#4 Lucerne/395													
Base	0	0	0	0	0	80	0	1242	0	0	1226	41	2590
Added	0	0	0	0	0	37	37	246	0	0	178	63	561
Total	0	0	0	0	0	117	37	1488	0	0	1404	104	3151
#5 Lucerne/Ironwood													
Base	8	62	0	0	34	85	101	0	14	0	0	0	305
Added	37	63	0	0	0	77	79	0	37	0	0	0	293
Total	45	125	0	0	34	162	180	0	51	0	0	0	598

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
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Impact Analysis Report
Level Of Service

Intersection	Base LOS	Base Del/ Veh	Base V/ C	Future LOS	Future Del/ Veh	Future V/ C	Change in
# 1 Muller/395	A	6.5	0.591	C	33.1	0.902	+26.615 D/V
# 2 ironwood/395	B	14.2	0.000	B	12.2	0.000	+ 0.000 V/C
# 3 SR88/395	B	16.4	0.658	C	32.1	0.879	+15.614 D/V
# 4 Lucerne/395	C	15.4	0.000	C	20.0	0.000	+ 0.000 V/C
# 5 Lucerne/Ironwood	A	9.7	0.000	B	11.8	0.000	+ 0.000 V/C

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 Muller/395

Cycle (sec):	95	Critical Vol./Cap. (X):	0.902
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	33.1
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 23 May 2001 << PM												
Base Vol:	23	1038	0	0	1428	23	24	0	42	0	0	0
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	28	1246	0	0	1714	28	29	0	50	0	0	0
Added Vol:	131	197	137	187	114	0	0	72	128	140	74	111
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	159	1443	137	187	1828	28	29	72	178	140	74	111
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	159	1443	137	187	1828	28	29	72	178	140	74	111
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	159	1443	137	187	1828	28	29	72	178	140	74	111
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Vol.:	159	1443	137	187	1828	28	29	72	178	140	74	111
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	1805	3610	1615	1805	3852	1615	1805	1900	1615	1805	2027	1615
Capacity Analysis Module:												
Vol/Sat:	0.09	0.40	0.08	0.10	0.47	0.02	0.02	0.04	0.11	0.08	0.04	0.07
Crit Moves:	****				****				****	****		
Green/Cycle:	0.10	0.50	0.50	0.13	0.53	0.53	0.04	0.12	0.12	0.09	0.17	0.17
Volume/Cap:	0.90	0.81	0.17	0.81	0.90	0.03	0.41	0.31	0.90	0.90	0.22	0.41
Delay/Veh:	83.6	23.0	13.3	58.8	26.4	10.9	48.3	38.8	79.3	87.8	34.4	36.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	83.6	23.0	13.3	58.8	26.4	10.9	48.3	38.8	79.3	87.8	34.4	36.2
DesignQueue:	8	43	4	9	52	1	1	3	8	7	3	5

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 Muller/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	1 0	2 0	1	1 0	2 0	1	1 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	1	2	1	1	2	1	1	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	12	12	14	12	12	12	12	12	14	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		0			0			0			0	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:		Include			Include			Include			Include	
% RT Prtct:		0			0			0			0	
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx	1	xxxx	xxxx
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.00	1.00	1.00	1.00	1.07	1.00	1.00	1.00	1.00	1.00	1.07	1.00
Hev Veh Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.95	1.00	0.85	0.95	1.07	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	1.00	0.95	1.00	1.00	0.95	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.95	0.95	0.85	0.95	1.01	0.85	0.95	1.00	0.85	0.95	1.07	0.85
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < < Actuated > > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

2015 Nevada Northwest With Improvements 2
Traffic Impact Analysis Data
017440

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 ironwood/395

Average Delay (sec/veh): 12.2 Worst Case Level Of Service: B

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Uncontrolled			Uncontrolled			Stop Sign			Stop Sign		
Rights:	Include			Include			Include			Include		
Lanes:	0 0 2	0	1	0 1 1	0	1	0 0 0	0	1	0 0 0	0	1
Volume Module: >> Count Date: 2 Jul 2001 << PM												
Base Vol:	0	945	21	0	1189	44	0	0	82	0	0	69
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	0	1134	25	0	1427	53	0	0	98	0	0	83
Added Vol:	0	332	0	52	331	0	0	0	0	0	0	133
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	1466	25	52	1758	53	0	0	98	0	0	216
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	1466	25	52	1758	53	0	0	98	0	0	216
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	1466	25	52	1758	53	0	0	98	0	0	216
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	xxxxx	xxxx	6.9	xxxxx	xxxx	6.9
FollowUpTim:	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	xxxxx	xxxx	3.3	xxxxx	xxxx	3.3
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	986	xxxx	xxxxx	xxxx	xxxx	0	xxxx	xxxx	7
Potent Cap.:	xxxx	xxxx	xxxxx	549	xxxx	xxxxx	xxxx	xxxx	0	xxxx	xxxx	836
Move Cap.:	xxxx	xxxx	xxxxx	549	xxxx	xxxxx	xxxx	xxxx	0	xxxx	xxxx	836
Level Of Service Module:												
Stopped Del:	xxxxx	xxxx	xxxxx	11.6	xxxx	xxxxx	xxxxx	xxxx	0.0	xxxxx	xxxx	10.8
LOS by Move:	*	*	*	B	*	*	*	*	*	*	*	B
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	12.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	B	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			0.0			10.8		
ApproachLOS:	*			*			A			B		

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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 ironwood/395

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:	0%			0%			0%			0%		
Grade:	0%			0%			0%			0%		
Peds/Hour:	0			0			0			0		
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:	12 feet			14 feet			14 feet			12 feet		
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:				#5						#36		
Dist(miles):				0.200						0.200		
Speed (mph):				45.00						45.00		
SignalIndex:				#1						#3		
Cycle Time:				95 secs						70 secs		
InitVolume:				140	1828					333	683	
Saturation:				1805	3852					3628	3038	
ArrivalType:				3	3					3	3	
G/C:				0.09	0.53					0.10	0.36	
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:				0.086	0.526					0.104	0.364	
gq1:				6.74	21.37					5.75	10.01	
gq2:				0.57	19.29					0.58	2.91	
gq:				7.30	40.66					6.34	12.92	
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:				0.400						0.450		
beta:				0.714						0.690		
ta (secs):				16.000						16.000		
F:				0.179						0.168		
f:				2.652	1.235					4.022	8.254	
vcmax:				3657	4756					10028	22728	
vcmin:				2000	2000					1000	1000	
tp:				8.1	0.0					0.0	0.0	
p:				0.085						0.000		
*** Computation 3: Platoon Event Periods												
pdom/psubo:	0.085/0.000/Unconstrained											
*** Computation 4: Conflicting Flows During Each Unblocked Period												
InitCnflVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	713	0	0	567
UpstreamSat:	3706	xxxxx	xxxxx	3231	xxxxx	xxxxx	3544	3544	3706	3544	3544	3231
UpstreamAdj:	0.91	x.xxx	x.xxx	1.00	x.xxx	x.xxx	0.91	0.915	0.915	0.91	0.915	1.000
ConflictVol:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	434	0	0	567
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	576	0	0	472
UpstreamAdj:	0.91	x.xxx	x.xxx	1.00	x.xxx	x.xxx	0.91	0.915	0.915	0.91	0.915	1.000
PotentCap:	0	xxxxx	xxxxx	0	xxxxx	xxxxx	0	0	526	0	0	472

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Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #3 SR88/395

Cycle (sec): 70 Critical Vol./Cap. (X): 0.879
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 32.1
Optimal Cycle:OPTIMIZED Level Of Service: C

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Protected		
Rights:	Ignore			Include			Ignore			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2	0	1	0 1	1	0	1	0 1		1	0 2	0 1
Volume Module: >> Count Date: 6 Jul 2001 << PM												
Base Vol:	235	0	849	0	0	0	0	291	112	999	497	0
Growth Adj:	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20	1.20
Initial Bse:	282	0	1019	0	0	0	0	349	134	1199	596	0
Added Vol:	51	53	37	157	55	195	191	89	52	37	87	91
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	333	53	1056	157	55	195	191	438	186	1236	683	91
User Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
PHF Volume:	333	53	0	157	55	195	191	438	0	1236	683	91
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	333	53	0	157	55	195	191	438	0	1236	683	91
PCE Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00
Final Vol.:	333	53	0	157	55	195	191	438	0	1236	683	91
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.95	0.91	0.91
Lanes:	2.00	1.00	1.00	1.00	1.00	1.00	1.00	2.00	1.00	2.00	1.76	0.24
Final Sat.:	3628	1845	1900	1805	1900	1615	1870	3505	1900	3628	3038	405
Capacity Analysis Module:												
Vol/Sat:	0.09	0.03	0.00	0.09	0.03	0.12	0.10	0.12	0.00	0.34	0.22	0.22
Crit Moves:	****					****		****		****		
Green/Cycle:	0.10	0.06	0.00	0.18	0.14	0.14	0.17	0.14	0.00	0.39	0.36	0.36
Volume/Cap:	0.88	0.48	0.00	0.48	0.21	0.88	0.62	0.88	0.00	0.88	0.62	0.62
Delay/Veh:	51.2	35.1	0.0	26.8	27.2	60.1	30.9	45.7	0.0	26.6	19.2	19.2
User DelAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
AdjDel/Veh:	51.2	35.1	0.0	26.8	27.2	60.1	30.9	45.7	0.0	26.6	19.2	19.2
DesignQueue:	12	2	0	5	2	7	6	15	0	32	18	2

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Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #3 SR88/395

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HCM Ops Adjusted Lane Utilization Module:												
Lanes:	2 0 1	0 1		1 0 1	0 1		1 0 2	0 1		2 0 1	1 0	
Lane Group:	L	T	R	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	1	1	1	1	1	1	2	1	2	2	2
HCM Ops Input Saturation Adj Module:												
Lane Width:	14	12	16	12	12	12	14	12	16	14	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		3			0			3			3	
Grade:		0%			0%			0%			0%	
Parking/Hr:		No			No			No			No	
Bus Stp/Hr:		0			0			0			0	
Area Type:	< < < < < < < < < < < < < < < Other > > > > > > > > > > > > > > >											
Cnft Ped/Hr:		0			0			0			0	
ExclusiveRT:	Exclude			Include			Exclude			Include		
% RT Prtct:	100			0			0			0		
HCM Ops f(lt) Adj Case Module:												
f(lt) Case:	1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx		1 xxxx	xxxx	
HCM Ops Saturation Adj Module:												
Ln Wid Adj:	1.07	1.00	xxxxx	1.00	1.00	1.00	1.07	1.00	xxxxx	1.07	1.00	1.00
Hev Veh Adj:	0.97	0.97	xxxxx	1.00	1.00	1.00	0.97	0.97	xxxxx	0.97	0.97	0.97
Grade Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
Parking Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx	xxxx	1.00	1.00
Area Adj:	1.00	1.00	xxxxx	1.00	1.00	1.00	1.00	1.00	xxxxx	1.00	1.00	1.00
RT Adj:	xxxx	xxxx	xxxxx	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx	xxxx	0.98	0.98
LT Adj:	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx	0.95	xxxx	xxxxx
PedBike Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
HCM Sat Adj:	0.98	0.97	1.00	0.95	1.00	0.85	0.98	0.97	1.00	0.98	0.95	0.95
Usr Sat Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Sat Adj:	0.97	1.00	1.00	1.00	1.00	1.00	1.00	0.95	1.00	0.97	0.95	0.95
Fnl Sat Adj:	0.95	0.97	1.00	0.95	1.00	0.85	0.98	0.92	1.00	0.95	0.91	0.91
Delay Adjustment Factor Module:												
Coordinated:	< < < < < < < < < < < < < < < No > > > > > > > > > > > > > > >											
Signal Type:	< < < < < < < < < < < < < Actuated > > > > > > > > > > > > >											
DelAdjFctr:	1.00	1.00	0.00	1.00	1.00	1.00	1.00	1.00	0.00	1.00	1.00	1.00

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 Lucerne/395

****

Average Delay (sec/veh): 20.0 Worst Case Level Of Service: C

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Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Stop Sign						Stop Sign						Uncontrolled						Uncontrolled					
Rights:	Include						Include						Include						Include					
Lanes:	0	0	0	0	0		0	0	0	0	1		0	1	1	0	0		0	0	1	1	0	
Volume Module: >> Count Date: 28 Jun 2001 << PM																								
Base Vol:	0	0	0	0	0		67	0	1035	0			0	1022	34									
Growth Adj:	1.20	1.20	1.20	1.20	1.20		1.20	1.20	1.20	1.20			1.20	1.20	1.20									
Initial Bse:	0	0	0	0	0		80	0	1242	0			0	1226	41									
Added Vol:	0	0	0	0	0		37	37	246	0			0	178	63									
PasserByVol:	0	0	0	0	0		0	0	0	0			0	0	0									
Initial Fut:	0	0	0	0	0		117	37	1488	0			0	1404	104									
User Adj:	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.00	1.00	1.00									
PHF Adj:	1.00	1.00	1.00	1.00	1.00		1.00	1.00	1.00	1.00			1.00	1.00	1.00									
PHF Volume:	0	0	0	0	0		117	37	1488	0			0	1404	104									
Reduct Vol:	0	0	0	0	0		0	0	0	0			0	0	0									
Final Vol.:	0	0	0	0	0		117	37	1488	0			0	1404	104									
Critical Gap Module:																								
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		6.9	4.1	xxxx	xxxxx			xxxxx	xxxx	xxxxx									
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		3.3	2.2	xxxx	xxxxx			xxxxx	xxxx	xxxxx									
Capacity Module:																								
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx		752	1507	xxxx	xxxxx			xxxx	xxxx	xxxxx									
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		357	450	xxxx	xxxxx			xxxx	xxxx	xxxxx									
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		357	450	xxxx	xxxxx			xxxx	xxxx	xxxxx									
Level Of Service Module:																								
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		20.0	13.0	xxxx	xxxxx			xxxxx	xxxx	xxxxx									
LOS by Move:	*	*	*	*	*		C	B	*	*			*	*	*									
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx		xxxxx	xxxx	xxxx	xxxxx			xxxx	xxxx	xxxxx									
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx		xxxxx	13.7	xxxx	xxxxx			xxxxx	xxxx	xxxxx									
Shared LOS:	*	*	*	*	*		*	B	*	*			*	*	*									
ApproachDel:	xxxxxx			20.0				xxxxxx					xxxxxx											
ApproachLOS:	*			C				*					*											

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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Lucerne/395

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Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
HevVeh:		0%			0%			0%			0%	
Grade:		0%			0%			0%			0%	
Peds/Hour:		0			0			0			0	
Pedestrian Walk Speed: 4.00 feet/sec												
LaneWidth:		12 feet			14 feet			14 feet			12 feet	
Time Period: 0.25 hour												

Upstream Signals:		
Link Index:	#9	
Dist(miles):	0.200	
Speed (mph):	35.00	
SignalIndex:	#3	
Cycle Time:	70 secs	
InitVolume:	157	438
Saturation:	1805	3505
ArrivalType:	3	3
G/C:	0.18	0.14
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection		
P:	0.182	0.142
gq1:	4.98	7.51
gq2:	0.47	1.07
gq:	5.46	8.58
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons		
alpha:	0.500	
beta:	0.667	
ta (secs):	20.571	
F:	0.127	
f:	1.000	0.353
vcmax:	946	852
vcmin:	2000	2000
tp:	0.0	0.0
p:	0.000	
*** Computation 3: Platoon Event Periods		
pdom/psubo:	0.000/0.000/Unconstrained	

*** Computation 4: Conflicting Flows During Each Unblocked Period

InitCnflVol:	0	0	0	0	0	634	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamSat:	3057	3057	0	3057	3057	3057	3057	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
ConflictVol:	0	0	0	0	0	634	0	xxxxx	xxxxx	0	xxxxx	xxxxx

*** Computation 5: Capactiy for Subject Movement During Unblocked Period

InitPotCap:	0	0	0	0	0	427	0	xxxxx	xxxxx	0	xxxxx	xxxxx
UpstreamAdj:	1.00	1.000	1.000	1.00	1.000	1.000	1.00	x.xxx	x.xxx	1.00	x.xxx	x.xxx
PotentCap:	0	0	0	0	0	427	0	xxxxx	xxxxx	0	xxxxx	xxxxx

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Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Lucerne/Ironwood

Average Delay (sec/veh): 11.8 Worst Case Level Of Service: B

Approach:	North Bound						South Bound						East Bound						West Bound					
Movement:	L	-	T	-	R		L	-	T	-	R		L	-	T	-	R		L	-	T	-	R	
Control:	Uncontrolled						Uncontrolled						Stop Sign						Stop Sign					
Rights:	Include						Include						Include						Include					
Lanes:	1	0	0	1	0		0	0	0	1	0		1	0	0	1	0		0	0	0	0	0	
Volume Module: >> Count Date: 27 Jun 2001 << PM																								
Base Vol:	7	52		0			0	28		71			84		0		12		0		0		0	
Growth Adj:	1.20	1.20		1.20			1.20	1.20		1.20			1.20		1.20		1.20		1.20		1.20		1.20	
Initial Bse:	8	62		0			0	34		85			101		0		14		0		0		0	
Added Vol:	37	63		0			0	0		77			79		0		37		0		0		0	
PasserByVol:	0	0		0			0	0		0			0		0		0		0		0		0	
Initial Fut:	45	125		0			0	34		162			180		0		51		0		0		0	
User Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Adj:	1.00	1.00		1.00			1.00	1.00		1.00			1.00		1.00		1.00		1.00		1.00		1.00	
PHF Volume:	45	125		0			0	34		162			180		0		51		0		0		0	
Reduct Vol:	0	0		0			0	0		0			0		0		0		0		0		0	
Final Vol.:	45	125		0			0	34		162			180		0		51		0		0		0	
Critical Gap Module:																								
Critical Gp:	4.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx							6.4	xxxx			6.2	xxxxx	xxxx	xxxxx				
FollowUpTim:	2.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx							3.5	xxxx			3.3	xxxxx	xxxx	xxxxx				
Capacity Module:																								
Cnflict Vol:	196	xxxx	xxxxx	xxxx	xxxx	xxxxx							331	xxxx			115	xxxx	xxxx	xxxxx				
Potent Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx							668	xxxx			943	xxxx	xxxx	xxxxx				
Move Cap.:	1389	xxxx	xxxxx	xxxx	xxxx	xxxxx							651	xxxx			943	xxxx	xxxx	xxxxx				
Level Of Service Module:																								
Stopped Del:	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx							12.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx						
LOS by Move:	A	*		*	*	*							B	*		*	*	*						
Movement:	LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT		LT	-	LTR	-	RT	
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx							xxxx	xxxx			943	xxxx	xxxx	xxxxx				
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx							xxxxx	xxxx			9.0	xxxxx	xxxx	xxxxx				
Shared LOS:	*	*		*	*	*							*	*			A	*	*	*				
ApproachDel:	xxxxxx			xxxxxx									11.8						xxxxxx					
ApproachLOS:	*			*									B						*					

2015 Nevada Northwest With Improvements 2
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Lucerne/Ironwood

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Approach:	North Bound	South Bound	East Bound	West Bound
Movement:	L - T - R	L - T - R	L - T - R	L - T - R
HevVeh:	0%	0%	0%	0%
Grade:	0%	0%	0%	0%
Peds/Hour:	0	0	0	0
LaneWidth:	12 feet	12 feet	12 feet	12 feet

Pedestrian Walk Speed: 4.00 feet/sec
Time Period: 0.25 hour

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Project Trips Report
PM

Node	Intersection	Northbound L	Northbound T	Northbound R	Southbound L	Southbound T	Southbound R	Eastbound L	Eastbound T	Eastbound R	Westbound L	Westbound T	Westbound R
Zone #1: Nevada NW													
1	Muller/395	131	197	137	187	114	0	0	72	128	140	74	111
2	ironwood/395	0	332	0	52	331	0	0	0	0	0	0	133
3	SR88/395	51	53	37	157	55	195	191	89	52	37	87	91
4	Lucerne/395	0	0	0	0	0	37	37	246	0	0	178	63
5	Lucerne/Ironw	37	63	0	0	0	77	79	0	37	0	0	0

APPENDIX E
SIGNAL WARRANT

SUMMARY OF SIGNAL WARRANT ANALYSIS

09/15/99

US-395 @ IRONWOOD DR.

A *Traffic Signal Warrant Study* was conducted at the intersection of US-395 and Ironwood Dr.. The data collected represents an average weekday traffic pattern. Because the 85th percentile speeds of the major street traffic exceeds 40 MPH, the volume warrants are 70% of the stated minimum vehicular volume requirements. The warrant analysis for a traffic signal installation is given in detail in the Manual on Uniform Traffic Devices. Evaluation of data at this intersection provided the following results.

WARRANT 1 - This warrant is met when for each of any eight hours of an average day, the total approach traffic for the *Major Street* exceeds 420 VPH, and the *Minor Street* approach traffic exceeds 105 VPH. **The Major and Minor street approach volume requirements are satisfied for two of the specified 8 hour periods.**
This warrant is not met .

WARRANT 2 - This warrant is met when for each of any eight hours of an average day, the total approach traffic for the *Major Street* exceeds 630 VPH and the *Minor Street* approach traffic exceeds 53 VPH. **The Major and Minor street approach volume requirements are satisfied for eight of the specified 8 hour period. Note: if 57% of right turns were excluded, this warrant would not meet.**
This warrant is met .

WARRANT 3 - This warrant is met when the pedestrian volume crossing the *Major Street* at an intersection or mid block during an average weekday is 100 or more for each hour of any four hour period; or 190 or more during any one hour period. **No pedestrians were observed.**
This warrant is not met.

WARRANT 4 - This warrant is met when at an established school crossing, the number of adequate gaps in the traffic stream during the period when children are using the crossing is less than the number of minutes in the same period.
This warrant does not apply.

WARRANT 5 - This warrant is met when progressive movement control is needed on a two way street where adjacent traffic signals do not effectively regulate platooning and speed control for the proposed traffic signal location.
This warrant does not apply.

WARRANT 6 - This warrant is satisfied when five or more reported accidents, of types susceptible to correction by traffic signal control, have occurred in a consecutive 12-month period. In addition, there must exist a volume of vehicular and pedestrian traffic not less than 80 % of the requirements specified in either warrants one, two, or three. **There was only one correctable accident at this junction.**
This warrant is not met.

WARRANT 7 - This warrant is met when the common intersection of two or more major routes (1) have a total existing or projected entering volume of at least 1,000 vehicles during the peak hour of a typical weekday; or (2) has a total existing or projected entering volume of at least 1,000 vehicles for each of any 5 hours of a Saturday and/or Sunday.
This warrant does not apply.

WARRANT 8 - This warrant is met when warrants one and two are satisfied within 80 % or more of the stated minimum vehicular volume requirements.
This warrant is not met.

WARRANT 9 - This warrant is met when for each of any four hours of an average day, the *Minor Street* approach volume requirements are satisfied. **The Minor Street approach volumes were satisfied for seven of the 8 hours. Note: if 32% of right turns were excluded, this warrant would not meet.**
This warrant is met.

WARRANT 10 - This warrant is met when for one hour of the day, the total delay experienced by the approach traffic on a *Minor Street* controlled by a stop sign equals or exceeds five vehicle hours for a two lane approach. Additionally, the volume on the same *Minor Street* must equal or exceed 150 VPH for two moving lanes of traffic, and the total approach traffic for an intersection with four approaches must equal or exceed 800 VPH.
This warrant is not met.

WARRANT 11 - This warrant is met when for any one hour period, the *Minor Street* approach volume requirement is satisfied. The **Minor Street approach volume was met for three of the 8 peak hours. Note: if 26% of right turns were excluded, this warrant would not meet.**
This warrant is met.

CONCLUSION - This study indicates that a traffic signal installation is justifiable at this intersection based on meeting warrants 2, 9, and 11. Because the traffic increased less than 2% over last year, this study produced the same results as the study conducted in November 1998. If you excluded 57% of right turns from the minor street, none of the warrants would meet. The configuration of the minor street allows for these turns to be made without causing significant delays. It is for these reasons a signal is not recommended.

The recommendations in this report, are based on the application of the data collected to standard evaluation criteria. Final recommendations by the Chief Traffic Engineer must consider conditions unique to the area, which may include other criteria in addition to the standard evaluation criteria.

WARRANT ANALYSIS FOR TRAFFIC SIGNAL

US-395 @ IRONWOOD DR.

WARRANT - 1 ANALYSIS - MINIMUM VEHICULAR VOLUME

START TIME	7:00	11:00	12:00N	13:00	14:00	15:00	17:00	18:00	REQ.
MINOR VOLUME	98	105	118	95	116	81	79	86	105 VPH
MINOR LEFT TURNS	30	32	36	29	35	24	24	26	--
MINOR RIGHT TURNS	58	62	70	56	69	48	47	51	--
MAJOR VOLUME	1,982	1,531	1,539	1,604	1,830	2,019	2,196	1,369	420 VPH
WARRANT MET?	NO	YES	YES	NO	YES	NO	NO	NO	MUST MEET 8-HOUR PERIOD
NUMBER OF 1 - HOUR PERIODS MEETING THE WARRANTS:									3

** WARRANT 1 IS NOT MET **

WARRANT - 2 ANALYSIS - INTERRUPTION OF CONTINUOUS TRAFFIC

START TIME	7:00	11:00	12:00N	13:00	14:00	15:00	17:00	18:00	REQ.
MINOR VOLUME	98	105	118	95	116	81	79	86	53 VPH
MINOR LEFT TURNS	30	32	36	29	35	24	24	26	--
MINOR RIGHT TURNS	58	62	70	56	69	48	47	51	--
MAJOR VOLUME	1,982	1,531	1,539	1,604	1,830	2,019	2,196	1,369	630 VPH
WARRANT MET?	YES	YES	YES	YES	YES	YES	YES	YES	MUST MEET 8-HOUR PERIOD
NUMBER OF 1 - HOUR PERIODS MEETING THE WARRANTS:									8

** WARRANT 2 IS MET **

WARRANT - 5 ANALYSIS - ACCIDENT EXPERIENCE

80 % OF WARRANT 1 OR 2 IS MET:	YES
SIGNAL WOULD BE CONDUCIVE TO PROGRESSIVE TRAFFIC FLOW: UNKNOWN	N/A
TRIALS OF OTHER REMEDIES HAVE FAILED TO REDUCE ACCIDENTS: UNKNOWN	N/A
NUMBER OF ACCIDENTS CORRECTABLE BY A SIGNAL - (MUST EXCEED 4)	1

** WARRANT 5 IS NOT MET **

WARRANT 8 ANALYSIS - COMBINATION OF WARRANTS

80 % OF WARRANTS 1 AND 2 ARE MET:	NO
TRIALS OF OTHER REMEDIES HAVE FAILED TO REDUCE DELAYS: UNKNOWN	N/A

** WARRANT 8 IS NOT MET **

WARRANT - 9 ANALYSIS - FOUR-HOUR VOLUME

START TIME	7:00	11:00	12:00N	13:00	14:00	15:00	17:00	18:00	REQ.
MINOR VOLUME	98	105	118	95	116	81	79	86	--
MINOR LEFT TURNS	30	32	36	29	35	24	24	26	--
MINOR RIGHT TURNS	58	62	70	56	69	48	47	51	--
MAJOR VOLUME	1,982	1,531	1,539	1,604	1,830	2,019	2,196	1,369	--
MINOR REQRMT.	80	80	80	80	80	80	80	80	<---
WARRANT MET?	YES	YES	YES	YES	YES	YES	NO	YES	MUST MEET 4-HOUR PERIOD
NUMBER OF 1 - HOUR PERIODS MEETING THE WARRANTS:									7

** WARRANT 9 IS MET **

WARRANT - 10 ANALYSIS - PEAK- HOUR DELAY

START TIME	7:00	11:00	12:00N	13:00	14:00	15:00	17:00	18:00	REQ.
MINOR VOLUME	98	105	118	95	116	81	79	86	150 VPH
MINOR LEFT TURNS	30	32	36	29	35	24	24	26	--
MINOR RIGHT TURNS	58	62	70	56	69	48	47	51	--
MAJOR VOLUME	1,982	1,531	1,539	1,604	1,830	2,019	2,196	1,369	--
TOTAL VOLUME	2,140	1,701	1,695	1,738	1,898	2,150	2,305	1,470	600 VPH
WARRANT MET?	NO	NO	NO	NO	NO	NO	NO	NO	MUST MEET 1-HOUR PERIOD
TOTAL 1-HOUR PERIODS MEETING THE ABOVE WARRANTS:									0
THE TOTAL DELAY EXPERIENCED BY THE MINOR STREET APPROACH TRAFFIC EXCEEDS 5 VEHICLE-HOURS:									NO

** WARRANT 10 IS NOT MET **

WARRANT 11 ANALYSIS - PEAK-HOUR VOLUME

START TIME	7:00	11:00	12:00N	13:00	14:00	15:00	17:00	18:00	REQ.
MINOR VOLUME	98	105	118	95	116	81	79	86	--
MINOR LEFT TURNS	30	32	36	29	35	24	24	26	--
MINOR RIGHT TURNS	58	62	70	56	69	48	47	51	--
MAJOR VOLUME	1,982	1,531	1,539	1,604	1,830	2,019	2,196	1,369	--
MINOR REQRMT.	100	100	100	100	100	100	100	100	<--
WARRANT MET?	NO	YES	YES	NO	YES	NO	NO	NO	MUST MEET 1-HOUR PERIOD
NUMBER OF 1 - HOUR PERIODS MEETING THE WARRANTS:									3

** WARRANT 11 IS MET **

APPROACH VOLUME COUNT
US-395 @ IRONWOOD DR.
SEPTEMBER 1999

	IRONWOOD WB MINOR STREET	IRONWOOD EB MINOR STREET	US-395 NB MAJOR STREET	US-395 SB MAJOR STREET	TOTAL APPROACHES MINOR STREET	TOTAL APPROACHES MAJOR STREET	TOTAL OF ALL APPROACHES
TIME - AM							
M - 1:00							
1:00 - 2:00							
2:00 - 3:00							
3:00 - 4:00							
4:00 - 5:00							
5:00 - 6:00							
6:00 - 7:00							
7:00 - 8:00	98	60	1,111	871	158	1,982	2,140
8:00 - 9:00							
9:00 - 10:00							
10:00 - 11:00							
11:00 - N	105	65	739	792	170	1,531	1,701
TIME - PM							
N - 1:00	118	36	830	709	156	1,539	1,695
1:00 - 2:00	98	39	774	830	134	1,604	1,738
2:00 - 3:00	116	52	882	948	168	1,830	1,998
3:00 - 4:00	81	50	919	1,100	131	2,019	2,150
4:00 - 5:00							
5:00 - 6:00	79	30	880	1,316	109	2,196	2,305
6:00 - 7:00	89	15	568	801	101	1,369	1,470
7:00 - 8:00							
8:00 - 9:00							
9:00 - 10:00							
10:00 - 11:00							
11:00 - M							
TOTAL	778	349	6,703	7,367	1,127	14,070	15,197

The shaded area represents the hourly vehicle counts used to determine the minimum vehicular volume requirements.

MAJOR STREET 8 HOUR AVG. 1,311

TOTAL APPROACH 8 HOUR AVG. 1,415

Need sites for detention ponds. Where? Who will maintain? Do we need this before or condition SAP.

100 year 6 hour flood way?

APPENDIX F
DRAINAGE REPORT

CONCEPTUAL DRAINAGE REPORT

FOR THE

NEVADA NORTHWEST SPECIFIC PLAN

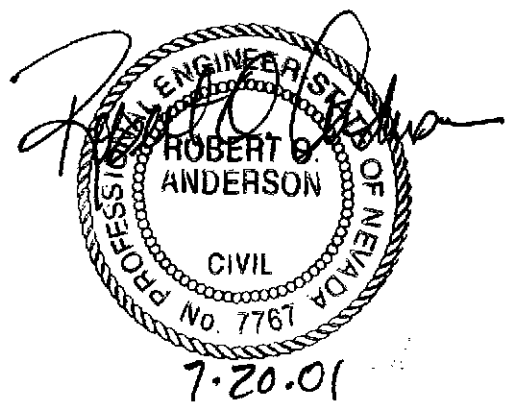
Prepared for:

NEVADA NORTHWEST, LLC
1245 "B" Centerville Lane
Gardnerville, Nevada 89410

Prepared by:

R.O. ANDERSON ENGINEERING, INC.
P.O. Box 2229
Minden, Nevada 89423
(775) 782-2322
(775) 782-7084 Facsimile

July 20, 2001



1.0 INTRODUCTION

i. Site Location Map:

The project site is generally located at the intersection of U.S. Highway 395 and State Route 88 in Minden, Nevada. It is more particular location is within a portion of Section 30, Township 13 North, Range 20 East, M.D.M. The site's relative location to other facilities within the area is more fully depicted on Figure 1 – Vicinity Map.

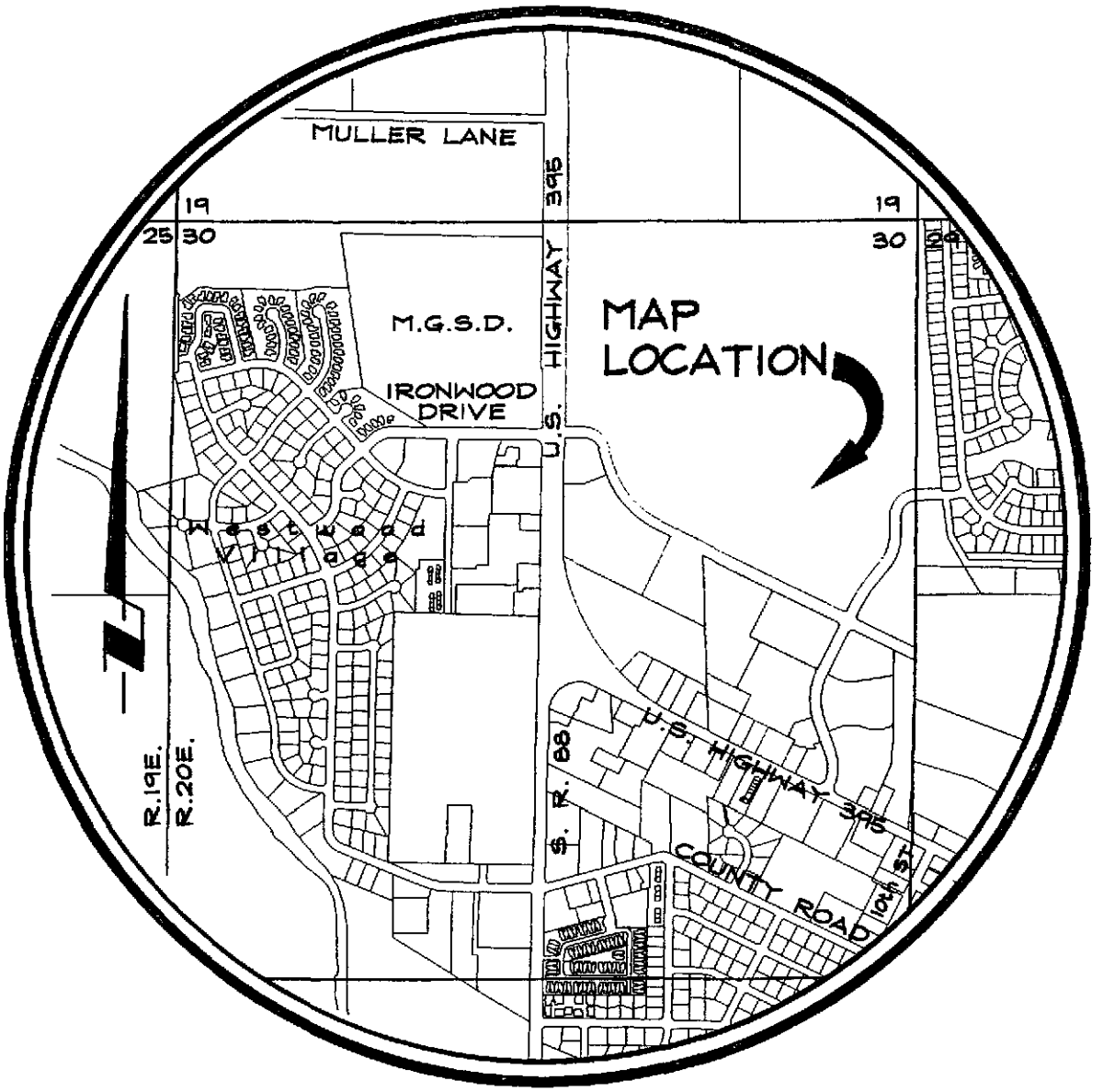
Surrounding land uses include agricultural lands to the north; U.S. Highway 395, commercial and public facilities to the west; the Winhaven residential development on the east, and general commercial development along the south boundary.

ii. Site Description:

Areas of the project site have historically been utilized as agricultural fields and flood irrigated. As such, they were leveled to have minimal slopes and generally slope from east to west.

Within the South Commercial Planning Area, the Dreyer ditch bisects the property flowing in a northwest direction to the Martin Slough. This ditch conveys irrigation water to the Dreyer Ranch and is also utilized to capture and convey storm water from a substantial portion of the Town of Minden.

Similarly, along the westerly project boundary in the North Commercial/Residential Planning Area an irrigation ditch extends from where it enters the property at Lucerne Street northerly to the north property line and then follows the north property line westerly to approximately the midpoint of the property. From this location the irrigation ditch flows southerly to irrigate the northwesterly portion of the project site.



VICINITY MAP

NO SCALE

FIGURE #1

The Martin Slough traverses through that portion of the property that is planned for public facilities. The Slough conveys irrigation waters and storm water from significant portions of the Towns of Minden and Gardnerville to its terminus at the Klauber Ponds located westerly of U.S. Highway 395. From its origination point near Lampe Park in Gardnerville, the length of the Slough to U.S. Highway 395 on the westerly limits of the project site is approximately three miles.

The project site is constrained by special flood hazard areas inundated by 100-year flood within the Martin Slough. Specifically, there exists a portion of the site within the AE Zone that is defined as "Areas where base flood elevations were determined." In addition, other portions of the site are within areas designated by Federal Emergency Management Agency (FEMA) as "Other Flood Areas", and are solely confined to those areas designated as being within the "Shaded X" zone. The Shaded X zone is defined by FEMA as "Areas of the 500-year flood; areas of 100-year flood with average depths less than 1-foot or with drainage areas less than one square mile; and areas protected by levees from 100-year flood." The extent of these flood plain areas were determined by FEMA and are depicted on their Flood Insurance Rate Map (FIRM), Panel No. 32005C0235 F, dated November 8, 1999. Pursuant to Douglas County's Flood Hazard ordinance, residential development cannot be located with Special Flood Hazard areas. Accordingly, no such encroachments are proposed within the project plan.

The Owner proposes to develop approximately 117 acres into a planned commercial and residential development. Its proposal contemplates a hotel/casino, RV Park, considerable retail commercial areas, single family residential and a multi-family residential area. The conceptual development plan is attached as Figure 2.

2.0 HISTORICAL DRAINAGE SYSTEM

i. Identify Major Basins

Figure 3, Watershed Plan identifies the extent of the Martin Slough hydrologic basin and its individual subbasins. The hydrologic basin was divided into 9 distinct subbasins varying is size from 38 to 213 acres. In total, it is estimated that this subbasin of the East Fork of the Carson River drains approximately 785 acres.

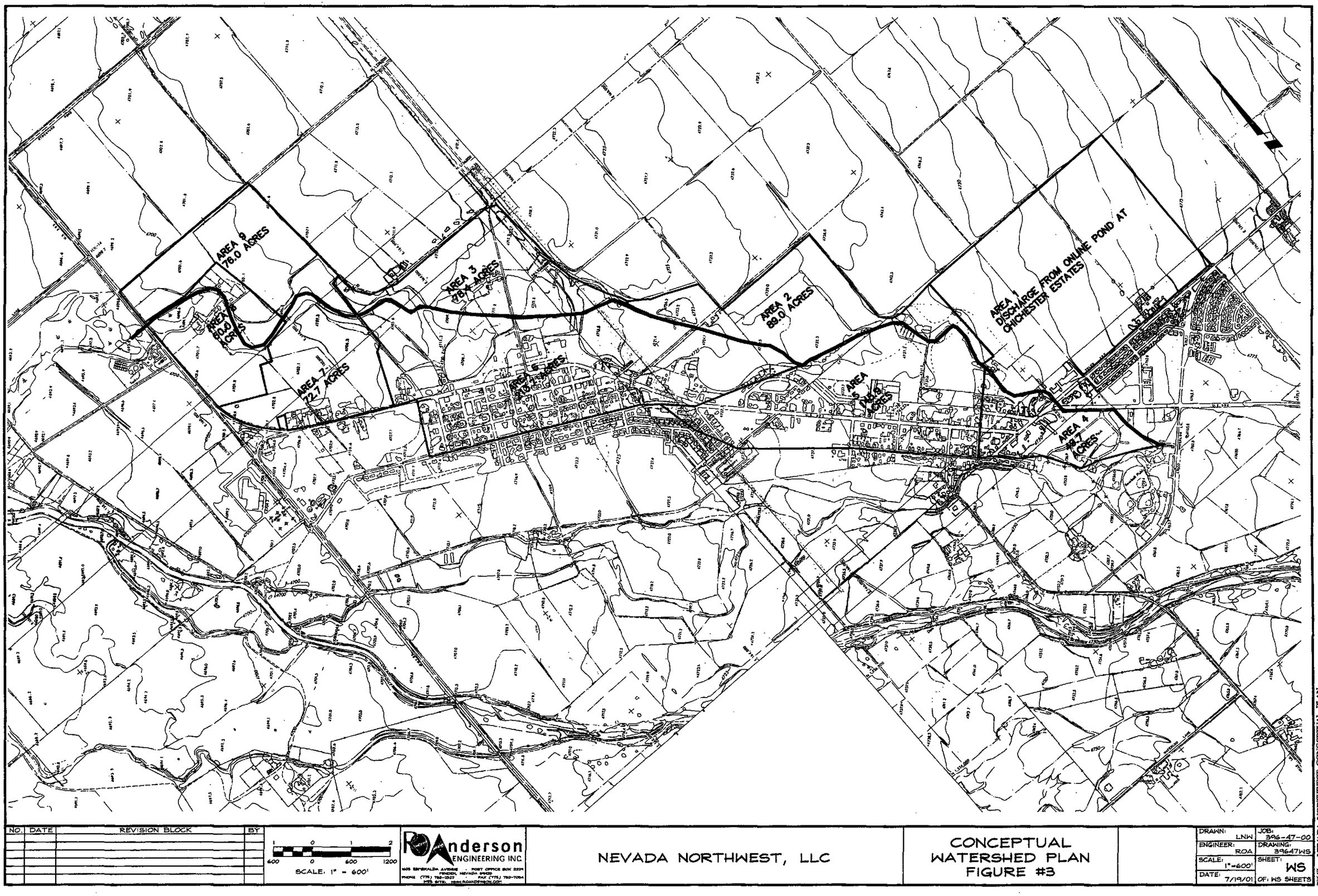
As identified previously, surrounding properties within this subbasin are existing agricultural fields that are flood irrigated with established cover including alfalfa and pasture grasses. In addition to the irrigated fields the Martin Slough serves to convey considerable storm water from both the Town of Gardnerville and Minden to its terminus at the Klauber Pond just upstream of East Fork of the Carson River.

Soil types in this area are generally characterized as clayey loam with some silts.

ii. Identify sub-basins and site drainage:

Existing drainage from the project site is generally undeveloped. In significant storm events runoff from the existing fields and the other undeveloped areas is conveyed by overland flow patterns ultimately to the Martin Slough.

Projected discharges from the subbasins were estimated using the TR-55 method as adopted by the United States Department of Agriculture, Soil Conservation Service (SCS). To determine and establish the existing hydrograph for the project, estimated discharges from each subbasin



NO.	DATE	REVISION BLOCK	BY

SCALE: 1" = 600'

Anderson ENGINEERING INC

605 SIERRA NEVADA AVENUE - POST OFFICE BOX 2229
MINDEN, NEVADA 89423
PHONE (775) 782-3621 FAX (775) 782-7084
WEB SITE: WWW.ROANDERSON.COM

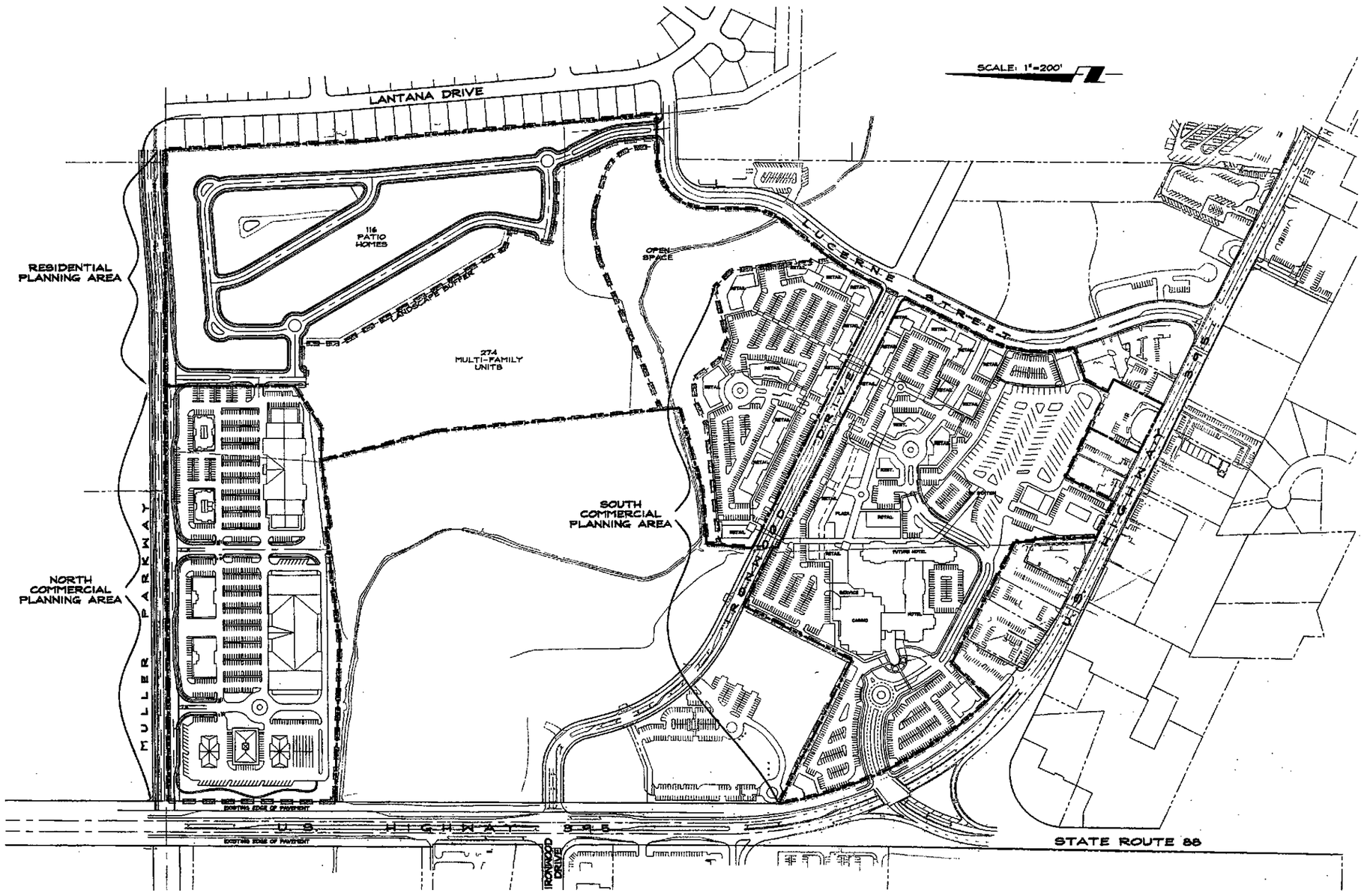
NEVADA NORTHWEST, LLC

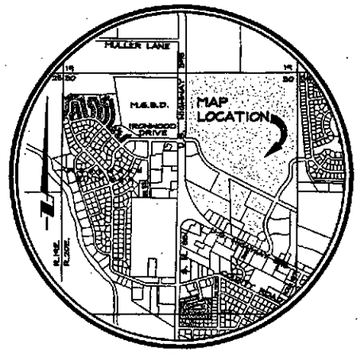
CONCEPTUAL WATERSHED PLAN FIGURE #3

DRAWN: LNW	JOB: 396-47-00
ENGINEER: ROA	DRAWING: 396471WS
SCALE: 1"=600'	SHEET: WS
DATE: 7/19/01	OF: WS SHEETS

Z:\PROJECTS\396471\dwg\CONCEPT\396471WS.dwg Fri Jul 20 06:03:15 2001

396471 - NEVADA NORTHWEST CONCEPTUAL PLAN





VICINITY MAP
NO SCALE

RESIDENTIAL PLANNING AREA:

OVERALL ACREAGE: 52.47
(Open Space: 9.79)

PATIO HOMES: 116
MULTIFAMILY UNITS: 274

NORTH COMMERCIAL PLANNING AREA:

OVERALL ACREAGE: 22.65

APPROXIMATE GROSS FLOOR AREA: 252,00 SF

SOUTH COMMERCIAL PLANNING AREA:

OVERALL ACREAGE: 42.18

APPROXIMATE GROSS FLOOR AREA: 323,460 SF

NO.	DATE	REVISION BLOCK	BY

SCALE: 1" = 200'

Anderson ENGINEERING INC
1408 ESMERALDA AVENUE - POST OFFICE BOX 2229
MINDEN, NEVADA 89423
PHONE (775) 782-2922 FAX (775) 782-7084
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NEVADA NORTHWEST, LLC

CONCEPTUAL SITE PLAN FIGURE #2

DRAWN: WH	JOB: 396-47-00
ENGINEER: ROA	DRAWING: 396471
SCALE: 1"=200'	SHEET:
DATE: 7/20/01	OF: SHEETS

396471 - NEVADA NORTHWEST CONCEPTUAL PLAN

were routed through the Slough system to the U.S. Highway 395 crossing using estimates of travel times. Travel times were also estimated using SCS methods.

Subbasin 1 is generally represented by the Chichester Estates residential development. Discharges from within the Chichester Estates are routed by a system of storm drain pipes through the development to an existing detention basin located within the Martin Slough stream. Discharges from the Chichester detention pond, and smaller water quality mitigation ponds constructed by the Town of Gardnerville, were added to discharges from the other subbasins to obtain the combined discharges of the system. Copies of previously developed discharge estimates from the Chichester Estates development are attached to this report.

Calculations of travel times and times of concentration are attached to this report and are summarized together with corresponding peak discharges as follows;

	T_c, (hrs)	AREA (Acres)	T_t, (hrs)	Q_2, (cfs)	Q_{25} (cfs)
Pre-development	2.7	785	15	69	160

3.0 WITH PROJECT DRAINAGE SYSTEM

i. Criteria & Methodology:

The TR-55 Method has also been used to approximate potential storm water discharges from the project site. These discharges were then added to the appropriate subbasin of the pre-development hydrograph to obtain the With-project hydrograph.

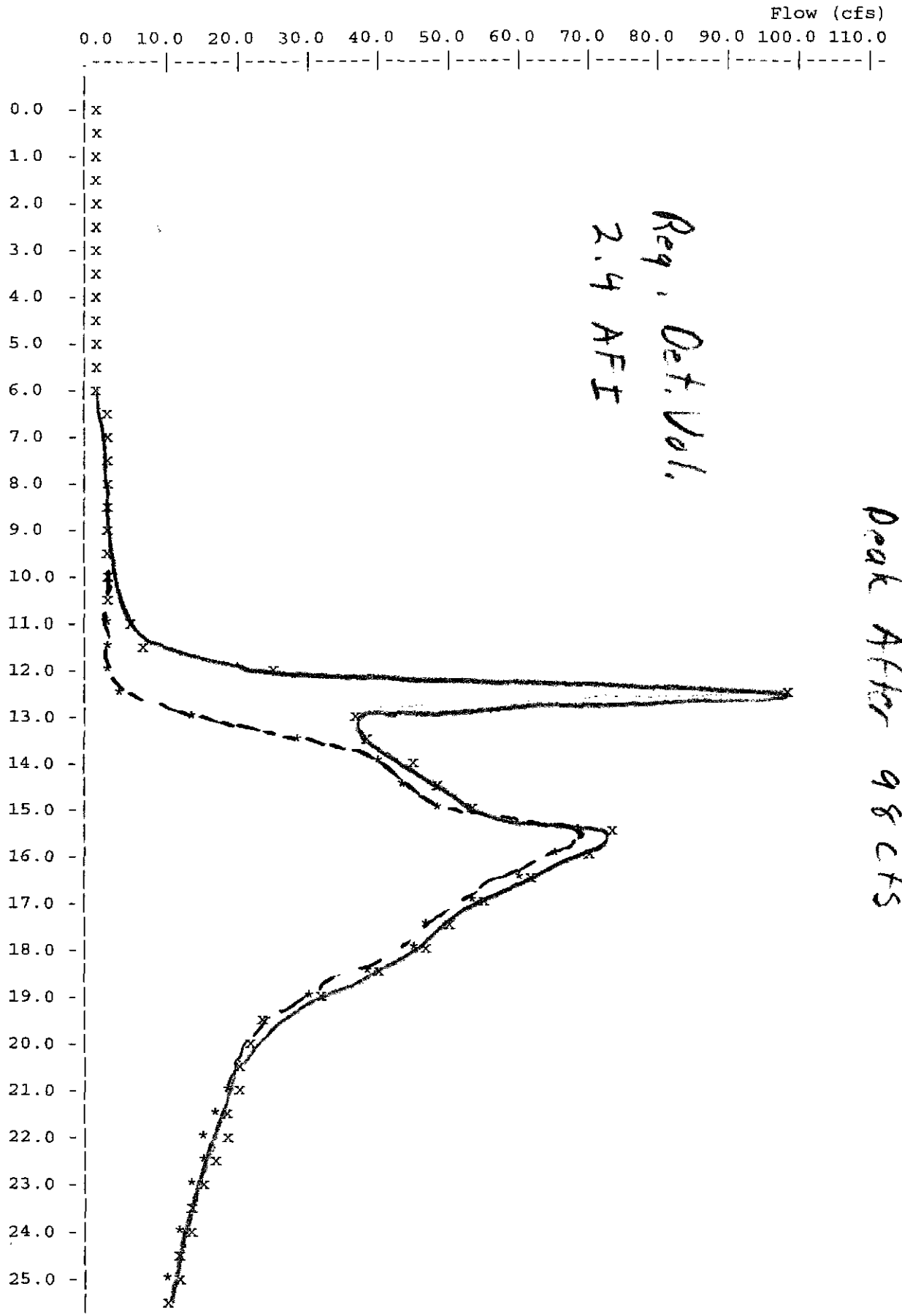
ii. Provide storm water runoff for 2-yr. & 25-yr. peak flows

Based upon the underlying assumptions and the attached calculations the estimated with-project peak discharges for the 2-yr & 25-yr storm events are 98 cfs and 204 cfs, respectively. The increase in these discharges is due to the proposed project. Due to the project site's close proximity to the Slough it has a very short time of concentration. These conditions result in an abnormal peak discharge spike in the with-project hydrograph at approximately T=12.5 hours. Copies of the hydrographs for both the 2-year and the 25-year storm events are attached.

iii. Identify size, capacity and location of conveyance facilities

The size and capacity of existing and proposed conveyance facilities have not been determined at this planning level analysis. However, to comply with Douglas County code the peak discharge from either of the design storm events can't be increased above that level estimated under pre-development conditions. The proposed project will comply with this requirement by developing relatively small detention basins at critical locations immediately upstream of discharge points to the Martin Slough. Alternatively, if acceptable to those agencies having jurisdiction, during final design efforts consideration will be given to constructing, a regional, in-stream detention basin similar to that constructed with the Chichester development. Such a facility would simplify maintenance

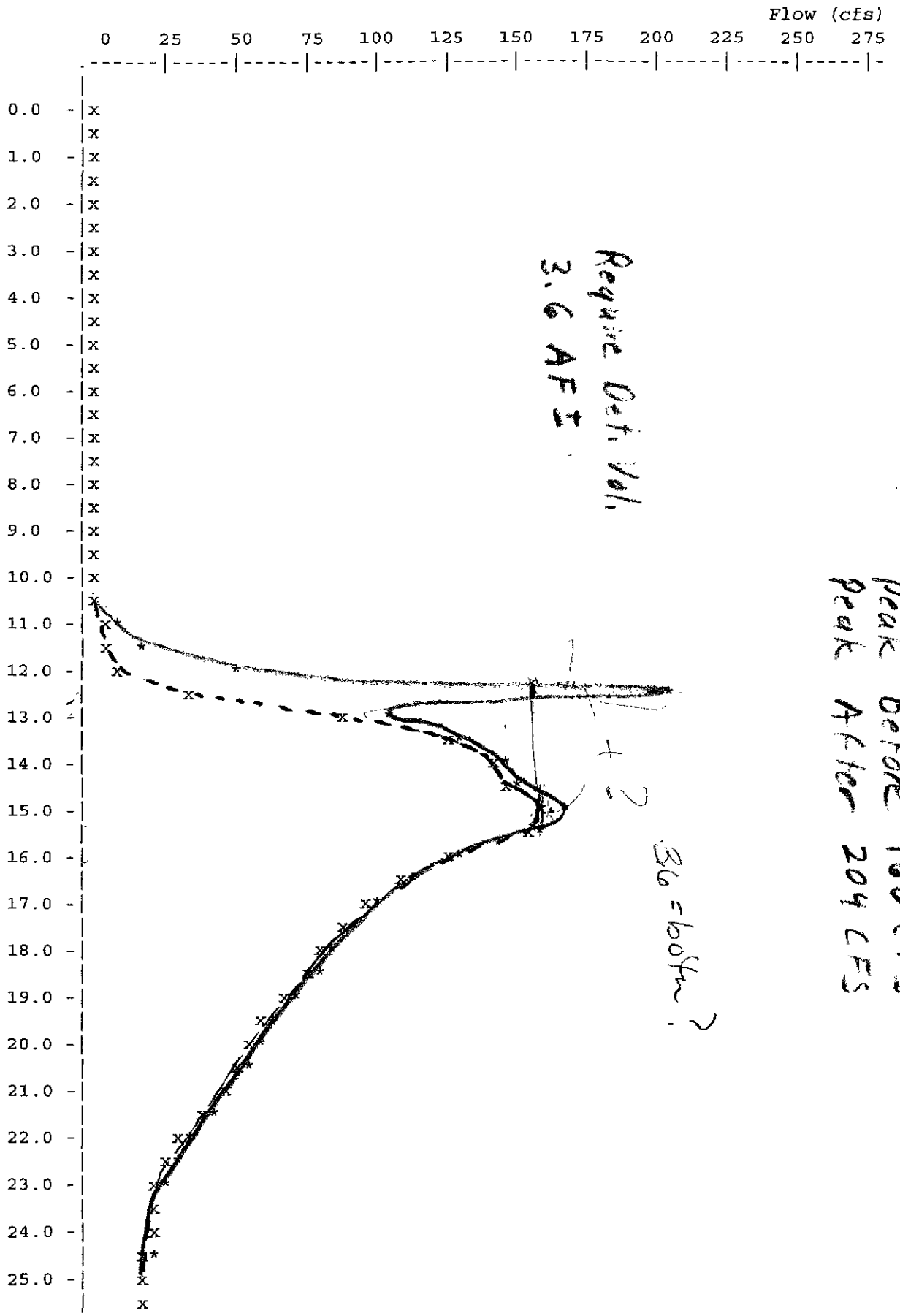
POND-2 Version: 5.21 S/N:
Plotted: 07-20-2001



Req'd Det. Vol.
2.4 AFI

2 - Year Storm
Peak Before 69 cfs
Peak After 96 cfs

POND-2 Version: 5.21 S/N:
Plotted: 07-20-2001



Require Detn Vol.
3.6 AFT

25- Year Storm
Peak Before 160 CFS
Peak After 204 CFS

+ 2 =

36 = both ?

requirements and may also serve to improve water quality in the slough system. Preliminary calculations indicate that a detention facility having a storage volume of 2.4 acre-feet would be required to mitigate with-project increases to the 2-year peak discharge. Similarly, to mitigate the with-project discharges to the 25-year event a detention basin having a capacity of 3.6 acre-feet would be required. Discharges from this proposed facility(ies) will be regulated by outlet structures located at the discharge points to the Martin Slough. Check downstream capacity?

Formal hydraulic calculations for proposed storm drains within the project areas have not been performed and are beyond the scope of this planning level document.

Maintenance responsibility for the proposed regional drainage improvements will be by either the Town of Minden or Douglas County. N/A

	T_c (hrs)	AREA (Acres)	T_t (hrs)	Q_2 (cfs)	Q_{25} (cfs)	
Pre-Development	2.7	785	2.7	69	160	
With-project	2.7	785	2.7	98	204	

4.0 CONCLUSIONS & RECOMMENDATIONS

i. Discuss identified impacts from proposed development:

Upon successfully completing the site development activities, including implementation of detention facilities having the rated capacities summarized within this report, no adverse impacts from this project have been identified or are anticipated.

During the design development and review process detailed analysis and design of specific storm drainage elements will be undertaken. The results of these evaluations will be incorporated into final improvement plans and a technical drainage study. These documents will be submitted for review and approval by those agencies having jurisdiction over such improvements. Ultimately, the successful implementation of requisite improvements will be monitored during the normal course of construction by site inspections conducted in accordance with building and site improvement permits as issued by Douglas County.

Table 2-2c.—Runoff curve numbers for other agricultural lands[1]

Cover description		Curve numbers for hydrologic soil group—			
Cover type	Hydrologic condition	A	B	C	D
Pasture, grassland, or range—continuous forage for grazing.[2]	Poor	68	79	86	89
	Fair	49	69	79	84
	Good	39	61	74	80
Meadow—continuous grass, protected from grazing and generally mowed for hay.	—	30	58	71	78
Brush—brush-weed-grass mixture with brush the major element.[3]	Poor	48	67	77	83
	Fair	35	56	70	77
	Good	*30	48	65	73
Woods—grass combination (orchard or tree farm).[5]	Poor	57	73	82	86
	Fair	43	65	76	82
	Good	32	58	72	79
Woods.[6]	Poor	45	66	77	83
	Fair	36	60	73	79
	Good	*30	55	70	77
Farmsteads—buildings, lanes, driveways, and surrounding lots.	—	59	74	82	86

[1]Average runoff condition, and $I_a = 0.2S$.

[2]*Poor:* <50% ground cover or heavily grazed with no mulch.
Fair: 50 to 75% ground cover and not heavily grazed.
Good: >75% ground cover and lightly or only occasionally grazed.

[3]*Poor:* <50% ground cover.
Fair: 50 to 75% ground cover.
Good: >75% ground cover.

[4]Actual curve number is less than 30; use CN = 30 for runoff computations.

[5]CN's shown were computed for areas with 50% woods and 50% grass (pasture) cover. Other combinations of conditions may be computed from the CN's for woods and pasture.

[6]*Poor:* Forest litter, small trees, and brush are destroyed by heavy grazing or regular burning.
Fair: Woods are grazed but not burned, and some forest litter covers the soil.
Good: Woods are protected from grazing, and litter and brush adequately cover the soil.

Table 2-2a.—Runoff curve numbers for urban areas[1]

Cover description		Curve numbers for hydrologic soil group—			
Cover type and hydrologic condition	Average percent impervious area[2]	A	B	C	D
Fully developed urban areas (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 areas only, no vegetation)[5]		77	86	91	94
Idle lands (CN's are determined using cover types similar to those in table 2-2c).					

[1]Average runoff condition, and $I_a = 0.2S$.

[2]The average percent impervious area shown was used to develop the composite CN's. 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. CN's for other combinations of conditions may be computed using figure 2-3 or 2-4.

[3]CN's shown are equivalent to those of pasture. Composite CN's may be computed for other combinations of open space cover type.

[4]Composite CN's for natural desert landscaping should be computed using figures 2-3 or 2-4 based on the impervious area percentage (CN = 98) and the pervious area CN. The pervious area CN's are assumed equivalent to desert shrub in poor hydrologic condition.

[5]Composite CN's to use for the design of temporary measures during grading and construction should be computed using figure 2-3 or 2-4, based on the degree of development (impervious area percentage) and the CN's for the newly graded pervious areas.

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NEVADA NORTHWEST
SUBAREA 1
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.0000	
Flow length, L (total < or = 300)	ft	0.0	
Two-yr 24-hr rainfall, P2	in	0.000	
Land slope, s	ft/ft	0.0000	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.00	= 0.00

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?			
Flow length, L	ft	0.0	
Watercourse slope, s	ft/ft	0.0000	
$Avg.V = Csf * (s)^{0.5}$	ft/s	0.0000	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		SLOUGH	
Cross Sectional Flow Area, a	sq.ft	10.00	
Wetted perimeter, Pw	ft	15.00	
Hydraulic radius, r = a/Pw	ft	0.667	
Channel slope, s	ft/ft	0.0035	
Manning's roughness coeff., n		0.0400	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818	
Flow length, L	ft	16200	
T = L / (3600*V)	hrs	2.68	= 2.68

TOTAL TIME (hrs) 2.68

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NEVADA NORTHWEST
SUBAREA 2

Tc COMPUTATIONS FOR: ALL AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	100.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0040	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.64	= 0.64

SHALLOW CONCENTRATED FLOW

Segment ID		FURROW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	2200.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.0204	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.60	= 0.60

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

::

TOTAL TIME (hrs) 1.24

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NEVADA NORTHWEST
SUBAREA 2
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.0000	
Flow length, L (total < or = 300)	ft	0.0	
Two-yr 24-hr rainfall, P2	in	0.000	
Land slope, s	ft/ft	0.0000	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.00	= 0.00

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?			
Flow length, L	ft	0.0	
Watercourse slope, s	ft/ft	0.0000	
$Avg.V = Csf * (s)^{0.5}$	ft/s	0.0000	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		SLOUGH
Cross Sectional Flow Area, a	sq.ft	10.00
Wetted perimeter, Pw	ft	15.00
Hydraulic radius, r = a/Pw	ft	0.667
Channel slope, s	ft/ft	0.0035
Manning's roughness coeff., n		0.0400
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818
Flow length, L	ft	9370
T = L / (3600*V)	hrs	1.55 = 1.55

TOTAL TIME (hrs) 1.55

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Executed: 21:37:23 07-19-2001

NEVADA NORTHWEST
AREA 2

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
100% AG	89.00	71	
COMPOSITE AREA --->	89.00	71.0	(71)

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NEVADA NORTHWEST
SUBAREA 3

Tc COMPUTATIONS FOR: 90% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	100.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0040	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.64	= 0.64

SHALLOW CONCENTRATED FLOW

Segment ID		FURROW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	2000.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.0204	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.54	= 0.54

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 1.18

Quick TR-55 Ver.5.46 S/N:
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NEVADA NORTHWEST
SUBAREA 3
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.0000	
Flow length, L (total < or = 300)	ft	0.0	
Two-yr 24-hr rainfall, P2	in	0.000	
Land slope, s	ft/ft	0.0000	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.00	= 0.00

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?			
Flow length, L	ft	0.0	
Watercourse slope, s	ft/ft	0.0000	
$Avg.V = Csf * (s)^{0.5}$	ft/s	0.0000	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		SLOUGH	
Cross Sectional Flow Area, a	sq.ft	10.00	
Wetted perimeter, Pw	ft	15.00	
Hydraulic radius, r = a/Pw	ft	0.667	
Channel slope, s	ft/ft	0.0035	
Manning's roughness coeff., n		0.0400	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818	
Flow length, L	ft	4430	
T = L / (3600*V)	hrs	0.73	= 0.73

TOTAL TIME (hrs) 0.73

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NEVADA NORTHWEST
AREA 3

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
90% AG	70.60	71	
10% EXISTING DEVELOPMENT	7.80	83	
COMPOSITE AREA --->	78.40	72.2	(72)

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NEVADA NORTHWEST
SUBAREA 4

future - 0.18

Tc COMPUTATIONS FOR: 0% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		LAWN	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	50.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0100	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.25	= 0.25

SHALLOW CONCENTRATED FLOW

Segment ID		GUTTER	
Surface (paved or unpaved)?		Paved	
Flow length, L	ft	2000.0	
Watercourse slope, s	ft/ft	0.0050	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.4374	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.39	= 0.39

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 0.64

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NEVADA NORTHWEST
SUBAREA 4
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.0000	
Flow length, L (total < or = 300)	ft	0.0	
Two-yr 24-hr rainfall, P2	in	0.000	
Land slope, s	ft/ft	0.0000	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.00	= 0.00

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?			
Flow length, L	ft	0.0	
Watercourse slope, s	ft/ft	0.0000	
$Avg.V = Csf * (s)^{0.5}$	ft/s	0.0000	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		SLOUGH
Cross Sectional Flow Area, a	sq.ft	10.00
Wetted perimeter, Pw	ft	15.00
Hydraulic radius, r = a/Pw	ft	0.667
Channel slope, s	ft/ft	0.0035
Manning's roughness coeff., n		0.0400
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818
Flow length, L	ft	15700
T = L / (3600*V)	hrs	2.59 = 2.59

TOTAL TIME (hrs) 2.59

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NEVADA NORTHWEST
AREA 4

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
0% AG	0.00	71	
100% EXISTING DEVELOPMENT	49.70	83	
COMPOSITE AREA --->	49.70	83.0	(83)

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NEVADA NORTHWEST
SUBAREA 5

Tc COMPUTATIONS FOR: 20% AG

SHEET FLOW (Applicable to Tc only)

Segment ID			OVERLAD		
Surface description			PASTURE		
Manning's roughness coeff., n			0.2400		
Flow length, L (total < or = 300)		ft	100.0		
Two-yr 24-hr rainfall, P2		in	1.600		
Land slope, s		ft/ft	0.0040		
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$		hrs	0.64	=	0.64

SHALLOW CONCENTRATED FLOW

Segment ID			FURROW		GUTTER		
Surface (paved or unpaved)?			Unpaved		Paved		
Flow length, L		ft	2000.0		2000.0		
Watercourse slope, s		ft/ft	0.0040		0.0050		
$Avg.V = Csf * (s)^{0.5}$		ft/s	1.0204		1.4374		
where:	Unpaved Csf = 16.1345						
	Paved Csf = 20.3282						
T = L / (3600*V)		hrs	0.54	+	0.39	=	0.93

CHANNEL FLOW

Segment ID					
Cross Sectional Flow Area, a		sq.ft	0.00		
Wetted perimeter, Pw		ft	0.00		
Hydraulic radius, r = a/Pw		ft	0.000		
Channel slope, s		ft/ft	0.0000		
Manning's roughness coeff., n			0.0000		
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$		ft/s	0.0000		
Flow length, L		ft	0		
T = L / (3600*V)		hrs	0.00	=	0.00

TOTAL TIME (hrs) 1.57

Quick TR-55 Ver.5.46 S/N:
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NEVADA NORTHWEST
SUBAREA 5
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.0000	
Flow length, L (total < or = 300)	ft	0.0	
Two-yr 24-hr rainfall, P2	in	0.000	
Land slope, s	ft/ft	0.0000	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.00	= 0.00

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?			
Flow length, L	ft	0.0	
Watercourse slope, s	ft/ft	0.0000	
$Avg.V = Csf * (s)^{0.5}$	ft/s	0.0000	

where: Unpaved Csf = 16.1345
Paved Csf = 20.3282

T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		SLOUGH
Cross Sectional Flow Area, a	sq.ft	10.00
Wetted perimeter, Pw	ft	15.00
Hydraulic radius, r = a/Pw	ft	0.667
Channel slope, s	ft/ft	0.0035
Manning's roughness coeff., n		0.0400
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818
Flow length, L	ft	11800
T = L / (3600*V)	hrs	1.95 = 1.95

TOTAL TIME (hrs) 1.95

Quick TR-55 Ver.5.46 S/N:
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NEVADA NORTHWEST
AREA 5

RUNOFF CURVE NUMBER DATA

Composite Area:

	SURFACE DESCRIPTION	AREA (acres)	CN	
20%	AG	29.20	71	
80%	EXISTING DEVELOPMENT	116.70	83	
	COMPOSITE AREA --->	145.90	80.6	(81)

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NEVADA NORTHWEST
SUBAREA 6

Tc COMPUTATIONS FOR: 20% AG

SHEET FLOW (Applicable to Tc only)

Segment ID			OVERLAD		
Surface description			PASTURE		
Manning's roughness coeff., n			0.2400		
Flow length, L (total < or = 300)		ft	100.0		
Two-yr 24-hr rainfall, P2		in	1.600		
Land slope, s		ft/ft	0.0040		
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$		hrs	0.64	=	0.64

SHALLOW CONCENTRATED FLOW

Segment ID			FURROW		GUTTER		
Surface (paved or unpaved)?			Unpaved		Paved		
Flow length, L		ft	1200.0		3000.0		
Watercourse slope, s		ft/ft	0.0040		0.0050		
$Avg.V = Csf * (s)^{0.5}$		ft/s	1.0204		1.4374		
where:	Unpaved Csf = 16.1345						
	Paved Csf = 20.3282						
T = L / (3600*V)		hrs	0.33	+	0.58	=	0.91

CHANNEL FLOW

Segment ID					
Cross Sectional Flow Area, a		sq.ft	0.00		
Wetted perimeter, Pw		ft	0.00		
Hydraulic radius, r = a/Pw		ft	0.000		
Channel slope, s		ft/ft	0.0000		
Manning's roughness coeff., n			0.0000		
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$		ft/s	0.0000		
Flow length, L		ft	0		
T = L / (3600*V)		hrs	0.00	=	0.00

TOTAL TIME (hrs) 1.55

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NEVADA NORTHWEST
SUBAREA 6
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID			
Surface description			
Manning's roughness coeff., n		0.0000	
Flow length, L (total < or = 300)	ft	0.0	
Two-yr 24-hr rainfall, P2	in	0.000	
Land slope, s	ft/ft	0.0000	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.00	= 0.00

SHALLOW CONCENTRATED FLOW

Segment ID			
Surface (paved or unpaved)?			
Flow length, L	ft	0.0	
Watercourse slope, s	ft/ft	0.0000	
$Avg.V = Csf * (s)^{0.5}$	ft/s	0.0000	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.00	= 0.00

CHANNEL FLOW

Segment ID		SLOUGH	
Cross Sectional Flow Area, a	sq.ft	10.00	
Wetted perimeter, Pw	ft	15.00	
Hydraulic radius, r = a/Pw	ft	0.667	
Channel slope, s	ft/ft	0.0035	
Manning's roughness coeff., n		0.0400	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818	
Flow length, L	ft	4800	
T = L / (3600*V)	hrs	0.79	= 0.79

TOTAL TIME (hrs) 0.79

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NEVADA NORTHWEST
AREA 6

RUNOFF CURVE NUMBER DATA

Composite Area:

	SURFACE DESCRIPTION	AREA (acres)	CN	
20%	AG	42.70	71	
80%	EXISTING DEVELOPMENT	171.00	83	
	COMPOSITE AREA --->	213.70	80.6	(81)

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NEVADA NORTHWEST
SUBAREA 7

Tc COMPUTATIONS FOR: 90% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	100.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0040	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.64	= 0.64

SHALLOW CONCENTRATED FLOW

Segment ID		FURROW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1600.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.0204	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.44	= 0.44

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 1.08

Quick TR-55 Ver.5.46 S/N:
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NEVADA NORTHWEST
SUBAREA 7
TRAVEL TIME

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID					
Surface description					
Manning's roughness coeff., n			0.0000		
Flow length, L (total < or = 300)		ft	0.0		
Two-yr 24-hr rainfall, P2		in	0.000		
Land slope, s		ft/ft	0.0000		
T = $\frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$		hrs	0.00	=	0.00

SHALLOW CONCENTRATED FLOW

Segment ID					
Surface (paved or unpaved)?					
Flow length, L		ft	0.0		
Watercourse slope, s		ft/ft	0.0000		
Avg.V = Csf * $(s)^{0.5}$		ft/s	0.0000		
where:	Unpaved Csf = 16.1345				
	Paved Csf = 20.3282				
T = L / (3600*V)		hrs	0.00	=	0.00

CHANNEL FLOW

Segment ID		DITCH	PIPE		
Cross Sectional Flow Area, a	sq.ft	8.00	3.20		
Wetted perimeter, Pw	ft	12.00	6.00		
Hydraulic radius, r = a/Pw	ft	0.667	0.533		
Channel slope, s	ft/ft	0.0035	0.0025		
Manning's roughness coeff., n		0.0400	0.0130		
V = $\frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	1.6818	3.7689		
Flow length, L	ft	1000	600		
T = L / (3600*V)	hrs	0.17	+ 0.04	=	0.21

TOTAL TIME (hrs) 0.21

Quick TR-55 Ver.5.46 S/N:
Executed: 21:51:47 07-19-2001

NEVADA NORTHWEST
AREA 7

RUNOFF CURVE NUMBER DATA

Composite Area:

	SURFACE DESCRIPTION	AREA (acres)	CN	
90%	AG	65.40	71	
10%	EXISTING DEVELOPMENT	7.30	83	
	COMPOSITE AREA --->	72.70	72.2	(72)

Quick TR-55 Ver.5.46 S/N:
Executed: 21:14:43 07-19-2001 3968.TCT

NEVADA NORTHWEST
SUBAREA 8

Tc COMPUTATIONS FOR: 80% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	100.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0040	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.64	= 0.64

SHALLOW CONCENTRATED FLOW

Segment ID		FURROW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1200.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.0204	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.33	= 0.33

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 0.97

Quick TR-55 Ver.5.46 S/N:
Executed: 21:59:14 07-19-2001

NEVADA NORTHWEST
AREA 8

RUNOFF CURVE NUMBER DATA

Composite Area:

	SURFACE DESCRIPTION	AREA (acres)	CN	
80%	AG	48.00	71	
20%	EXISTING DEVELOPMENT	12.00	83	
	COMPOSITE AREA --->	60.00	73.4	(73)

Quick TR-55 Ver.5.46 S/N:
Executed: 21:15:45 07-19-2001 3969.TCT

NEVADA NORTHWEST
SUBAREA 9

Tc COMPUTATIONS FOR: 100% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	100.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0040	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.64	= 0.64

SHALLOW CONCENTRATED FLOW

Segment ID		FURROW	
Surface (paved or unpaved)?		Unpaved	
Flow length, L	ft	1600.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.0204	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.44	= 0.44

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 1.08

Quick TR-55 Ver.5.46 S/N:
Executed: 21:57:09 07-19-2001

NEVADA NORTHWEST
AREA 9

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
100% AG	76.00	71	
00% EXISTING DEVELOPMENT	0.00	83	
COMPOSITE AREA --->	76.00	71.0	(71)

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:47:15
Watershed file: --> 3962 .WSD
Hydrograph file: --> 3962 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used	
AREA 2	89.00	71.0	1.25	1.50	1.68	0.15	.49	.50
AREA 3	78.40	72.0	1.25	0.75	1.68	0.17	.46	.50
AREA 4	49.70	83.0	0.75	2.50	1.68	0.49	.24	.30
AREA 5	145.90	81.0	1.50	2.00	1.68	0.41	.28	.30
AREA 6	213.70	81.0	1.50	0.75	1.68	0.41	.28	.30
AREA 7	72.70	72.0	1.00	0.30	1.68	0.17	.46	.50
AREA 8	60.00	73.0	1.00	0.00	1.68	0.19	.44	.50
AREA 9	76.00	71.0	1.00	0.00	1.68	0.15	.49	.50

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 785.40 acres or 1.2272 sq.mi
Peak discharge = 45 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
AREA 2	1.24	1.55	1.25	1.50	No	--
AREA 3	1.18	0.73	1.25	0.75	No	--
AREA 4	0.64	2.59	0.75	2.50	No	--
AREA 5	1.57	1.95	1.50	2.00	No	--
AREA 6	1.55	0.79	1.50	0.75	No	--
AREA 7	1.08	0.21	1.00	0.30	No	--
AREA 8	0.97	0.00	1.00	0.00	No	--
AREA 9	1.08	0.00	1.00	0.00	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:47:15
Watershed file: --> 3962 .WSD
Hydrograph file: --> 3962 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
AREA 2	3	15.0
AREA 3	3	13.8
AREA 4	8	15.5
AREA 5	17	15.5
AREA 6	27	14.0
AREA 7	3	13.2
AREA 8	3	13.0
AREA 9	3	13.0
Composite Watershed	45	15.0

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:47:15
Watershed file: --> 3962 .WSD
Hydrograph file: --> 3962 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
AREA 2	0	0	0	0	0	0	0	0	0
AREA 3	0	0	0	0	0	0	0	0	0
AREA 4	0	0	0	0	0	0	0	0	0
AREA 5	0	0	0	0	0	0	0	0	0
AREA 6	0	0	0	0	0	0	0	0	0
AREA 7	0	0	0	0	0	0	0	0	0
AREA 8	0	0	0	0	0	0	0	0	0
AREA 9	0	0	0	0	0	0	0	0	0
Total (cfs)	0	0	0	0	0	0	0	0	0

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
AREA 2	0	0	0	0	0	0	0	0	1
AREA 3	0	0	0	0	0	1	1	2	3
AREA 4	0	0	0	0	0	0	0	0	0
AREA 5	0	0	0	0	0	0	0	0	0
AREA 6	0	0	1	1	4	9	16	22	26
AREA 7	0	0	1	1	2	3	3	3	2
AREA 8	1	1	2	2	3	3	2	2	2
AREA 9	1	1	2	2	3	3	2	2	2
Total (cfs)	2	2	6	6	12	19	24	31	36

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:47:15
Watershed file: --> 3962 .WSD
Hydrograph file: --> 3962 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
AREA 2	1	2	2	3	2	2	2	1	1
AREA 3	3	3	2	2	2	1	1	1	1
AREA 4	0	1	4	7	8	5	3	2	2
AREA 5	1	4	9	15	17	13	9	7	5
AREA 6	27	25	20	15	11	8	7	6	5
AREA 7	2	2	2	1	1	1	1	1	1
AREA 8	2	2	1	1	1	1	1	1	1
AREA 9	2	2	1	1	1	1	1	1	1
Total (cfs)	38	41	41	45	43	32	25	20	17

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
AREA 2	1	1	1	1	0
AREA 3	1	1	1	1	0
AREA 4	2	1	1	1	1
AREA 5	5	4	3	2	2
AREA 6	5	4	4	3	1
AREA 7	1	1	1	1	0
AREA 8	1	1	1	0	0
AREA 9	1	1	1	0	0
Total (cfs)	17	14	13	9	4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:47:15
Watershed file: --> 3962 .WSD
Hydrograph file: --> 3962 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	0	14.8	43
11.1	0	14.9	44
11.2	0	15.0	45
11.3	0	15.1	45
11.4	0	15.2	44
11.5	0	15.3	44
11.6	0	15.4	43
11.7	0	15.5	43
11.8	0	15.6	41
11.9	0	15.7	39
12.0	0	15.8	36
12.1	0	15.9	34
12.2	0	16.0	32
12.3	0	16.1	31
12.4	0	16.2	29
12.5	2	16.3	28
12.6	2	16.4	26
12.7	6	16.5	25
12.8	6	16.6	24
12.9	9	16.7	23
13.0	12	16.8	22
13.1	16	16.9	21
13.2	19	17.0	20
13.3	22	17.1	19
13.4	24	17.2	19
13.5	27	17.3	18
13.6	31	17.4	18
13.7	34	17.5	17
13.8	36	17.6	17
13.9	37	17.7	17
14.0	38	17.8	17
14.1	39	17.9	17
14.2	40	18.0	17
14.3	41	18.1	17
14.4	41	18.2	16
14.5	41	18.3	16
14.6	41	18.4	16

14.7	42	18.5	16

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:47:15
Watershed file: --> 3962 .WSD
Hydrograph file: --> 3962 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	15	22.4	8
18.7	15	22.5	8
18.8	15	22.6	8
18.9	14	22.7	8
19.0	14	22.8	8
19.1	14	22.9	8
19.2	14	23.0	8
19.3	14	23.1	8
19.4	14	23.2	8
19.5	14	23.3	7
19.6	13	23.4	7
19.7	13	23.5	7
19.8	13	23.6	7
19.9	13	23.7	7
20.0	13	23.8	7
20.1	13	23.9	7
20.2	13	24.0	6
20.3	12	24.1	6
20.4	12	24.2	6
20.5	12	24.3	6
20.6	12	24.4	6
20.7	12	24.5	6
20.8	11	24.6	6
20.9	11	24.7	6
21.0	11	24.8	6
21.1	11	24.9	5
21.2	11	25.0	5
21.3	10	25.1	5
21.4	10	25.2	5
21.5	10	25.3	5
21.6	10	25.4	5
21.7	10	25.5	5
21.8	9	25.6	4
21.9	9	25.7	4
22.0	9	25.8	4
22.1	9	25.9	4
22.2	9		
22.3	9		

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:51:42
Watershed file: --> 39625 .WSD
Hydrograph file: --> 39625 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
AREA 2	89.00	71.0	1.25	1.50	2.60	0.54	.31	.30
AREA 3	78.40	72.0	1.25	0.75	2.60	0.58	.3	.30
AREA 4	49.70	83.0	0.75	2.50	2.60	1.13	.16	.10
AREA 5	145.90	81.0	1.50	2.00	2.60	1.01	.18	.10
AREA 6	213.70	81.0	1.50	0.75	2.60	1.01	.18	.10
AREA 7	72.70	72.0	1.00	0.30	2.60	0.58	.3	.30
AREA 8	60.00	73.0	1.00	0.00	2.60	0.62	.28	.30
AREA 9	76.00	71.0	1.00	0.00	2.60	0.54	.31	.30

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 785.40 acres or 1.2272 sq.mi
Peak discharge = 142 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
AREA 2	1.24	1.55	1.25	1.50	No	--
AREA 3	1.18	0.73	1.25	0.75	No	--
AREA 4	0.64	2.59	0.75	2.50	No	--
AREA 5	1.57	1.95	1.50	2.00	No	--
AREA 6	1.55	0.79	1.50	0.75	No	--
AREA 7	1.08	0.21	1.00	0.30	No	--
AREA 8	0.97	0.00	1.00	0.00	No	--
AREA 9	1.08	0.00	1.00	0.00	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:51:42
Watershed file: --> 39625 .WSD
Hydrograph file: --> 39625 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
AREA 2	15	14.6
AREA 3	15	13.6
AREA 4	23	15.0
AREA 5	50	15.0
AREA 6	81	13.8
AREA 7	17	13.2
AREA 8	17	13.0
AREA 9	19	13.0
Composite Watershed	142	14.6

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:51:42
Watershed file: --> 39625 .WSD
Hydrograph file: --> 39625 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
AREA 2	0	0	0	0	0	0	0	0	0
AREA 3	0	0	0	0	0	0	0	0	0
AREA 4	0	0	0	0	0	0	0	1	1
AREA 5	0	0	1	1	1	1	1	1	1
AREA 6	2	2	3	4	4	4	5	5	6
AREA 7	0	0	0	0	0	0	0	0	1
AREA 8	0	0	0	0	0	0	1	2	5
AREA 9	0	0	0	0	0	0	1	3	5
Total (cfs)	2	2	4	5	5	5	8	12	19

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
AREA 2	0	0	0	0	0	0	1	2	5
AREA 3	0	0	0	1	3	7	12	15	15
AREA 4	1	1	1	1	1	1	1	1	2
AREA 5	2	2	2	2	2	3	4	5	8
AREA 6	7	8	11	14	26	42	60	75	81
AREA 7	3	5	8	11	16	17	15	13	10
AREA 8	8	11	14	16	17	13	10	8	7
AREA 9	9	13	16	17	19	15	11	9	8
Total (cfs)	30	40	52	62	84	98	114	128	136

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:51:42
Watershed file: --> 39625 .WSD
Hydrograph file: --> 39625 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
AREA 2	9	14	15	13	9	6	5	4	3
AREA 3	15	12	9	7	5	4	3	3	3
AREA 4	3	8	15	23	19	11	6	4	3
AREA 5	13	25	40	50	43	29	19	13	10
AREA 6	79	65	50	34	23	16	13	11	9
AREA 7	8	6	5	4	3	3	3	2	2
AREA 8	6	5	4	3	3	2	2	2	2
AREA 9	6	5	4	4	3	3	2	2	2
Total (cfs)	139	140	142	138	108	74	53	41	34

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
AREA 2	3	2	2	2	1
AREA 3	2	2	2	1	0
AREA 4	3	2	2	1	1
AREA 5	8	6	5	4	3
AREA 6	8	7	6	4	2
AREA 7	2	2	2	1	0
AREA 8	2	2	1	1	0
AREA 9	2	2	1	1	0
Total (cfs)	30	25	21	15	7

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:51:42
Watershed file: --> 39625 .WSD
Hydrograph file: --> 39625 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	2	14.8	140
11.1	2	14.9	139
11.2	2	15.0	138
11.3	2	15.1	132
11.4	3	15.2	126
11.5	3	15.3	120
11.6	4	15.4	114
11.7	4	15.5	108
11.8	5	15.6	101
11.9	5	15.7	94
12.0	5	15.8	88
12.1	5	15.9	81
12.2	8	16.0	74
12.3	12	16.1	70
12.4	19	16.2	66
12.5	30	16.3	61
12.6	40	16.4	57
12.7	52	16.5	53
12.8	62	16.6	51
12.9	73	16.7	48
13.0	84	16.8	46
13.1	91	16.9	43
13.2	98	17.0	41
13.3	106	17.1	40
13.4	114	17.2	38
13.5	121	17.3	37
13.6	128	17.4	35
13.7	132	17.5	34
13.8	136	17.6	33
13.9	138	17.7	32
14.0	139	17.8	32
14.1	139	17.9	31
14.2	140	18.0	30
14.3	140	18.1	30
14.4	141	18.2	29
14.5	141	18.3	28
14.6	142	18.4	28

14.7	141	18.5	28

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:51:42
Watershed file: --> 39625 .WSD
Hydrograph file: --> 39625 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	27	22.4	14
18.7	26	22.5	14
18.8	26	22.6	14
18.9	26	22.7	14
19.0	25	22.8	13
19.1	25	22.9	13
19.2	24	23.0	13
19.3	24	23.1	13
19.4	23	23.2	13
19.5	23	23.3	12
19.6	23	23.4	12
19.7	22	23.5	12
19.8	22	23.6	12
19.9	21	23.7	12
20.0	21	23.8	11
20.1	21	23.9	11
20.2	20	24.0	11
20.3	20	24.1	11
20.4	20	24.2	11
20.5	20	24.3	10
20.6	19	24.4	10
20.7	19	24.5	10
20.8	19	24.6	10
20.9	18	24.7	10
21.0	18	24.8	9
21.1	18	24.9	9
21.2	17	25.0	9
21.3	17	25.1	9
21.4	17	25.2	9
21.5	16	25.3	8
21.6	16	25.4	8
21.7	16	25.5	8
21.8	16	25.6	8
21.9	15	25.7	8
22.0	15	25.8	7
22.1	15	25.9	7
22.2	15		
22.3	14		

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:53:20
Watershed file: --> 39650 .WSD
Hydrograph file: --> 39650 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 50- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
AREA 2	89.00	71.0	1.25	1.50	3.12	0.83	.26	.30
AREA 3	78.40	72.0	1.25	0.75	3.12	0.88	.25	.30
AREA 4	49.70	83.0	0.75	2.50	3.12	1.54	.13	.10
AREA 5	145.90	81.0	1.50	2.00	3.12	1.41	.15	.10
AREA 6	213.70	81.0	1.50	0.75	3.12	1.41	.15	.10
AREA 7	72.70	72.0	1.00	0.30	3.12	0.88	.25	.30
AREA 8	60.00	73.0	1.00	0.00	3.12	0.93	.24	.30
AREA 9	76.00	71.0	1.00	0.00	3.12	0.83	.26	.30

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 785.40 acres or 1.2272 sq.mi
Peak discharge = 203 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
AREA 2	1.24	1.55	1.25	1.50	No	--
AREA 3	1.18	0.73	1.25	0.75	No	--
AREA 4	0.64	2.59	0.75	2.50	No	--
AREA 5	1.57	1.95	1.50	2.00	No	--
AREA 6	1.55	0.79	1.50	0.75	No	--
AREA 7	1.08	0.21	1.00	0.30	No	--
AREA 8	0.97	0.00	1.00	0.00	No	--
AREA 9	1.08	0.00	1.00	0.00	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:53:20
Watershed file: --> 39650 .WSD
Hydrograph file: --> 39650 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 50- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
AREA 2	23	14.6
AREA 3	24	13.8
AREA 4	31	15.0
AREA 5	70	15.0
AREA 6	113	13.8
AREA 7	26	13.2
AREA 8	25	13.0
AREA 9	29	13.0
Composite Watershed	203	14.6

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:53:20
Watershed file: --> 39650 .WSD
Hydrograph file: --> 39650 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 50- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
AREA 2	0	0	0	0	0	0	0	0	0
AREA 3	0	0	0	0	0	0	0	0	0
AREA 4	0	0	0	0	0	1	1	1	1
AREA 5	0	1	1	1	1	2	2	2	2
AREA 6	2	3	4	5	6	6	7	8	8
AREA 7	0	0	0	0	0	0	0	1	2
AREA 8	0	0	0	0	0	0	1	4	7
AREA 9	0	0	0	0	0	0	2	4	8
Total (cfs)	2	4	5	6	7	9	13	20	28

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
AREA 2	0	0	0	0	0	0	1	4	8
AREA 3	0	0	1	2	5	11	18	22	24
AREA 4	1	1	1	1	1	1	2	2	3
AREA 5	2	2	3	3	3	4	5	7	11
AREA 6	10	12	15	20	36	59	84	105	113
AREA 7	4	7	12	17	25	26	23	19	15
AREA 8	12	17	21	24	25	20	16	12	10
AREA 9	14	19	24	27	29	22	18	14	12
Total (cfs)	43	58	77	94	124	143	167	185	196

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:53:20
Watershed file: --> 39650 .WSD
Hydrograph file: --> 39650 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 50- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
AREA 2	14	21	23	20	14	9	7	6	5
AREA 3	22	18	14	10	7	6	5	4	4
AREA 4	4	10	20	31	26	15	8	6	4
AREA 5	18	35	55	70	60	41	26	18	14
AREA 6	110	91	70	48	32	23	18	15	13
AREA 7	12	10	8	6	5	4	4	4	3
AREA 8	9	7	6	5	4	4	3	3	3
AREA 9	10	8	7	5	5	4	4	3	3
Total (cfs)	199	200	203	195	153	106	75	59	49

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
AREA 2	5	4	3	3	2
AREA 3	4	3	3	2	1
AREA 4	4	3	2	2	1
AREA 5	11	8	7	5	4
AREA 6	11	9	8	6	2
AREA 7	3	3	2	2	0
AREA 8	3	2	2	2	0
AREA 9	3	3	2	2	0
Total (cfs)	44	35	29	24	10

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:53:20
Watershed file: --> 39650 .WSD
Hydrograph file: --> 39650 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 50- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	2	14.8	199
11.1	3	14.9	197
11.2	3	15.0	195
11.3	4	15.1	187
11.4	4	15.2	178
11.5	5	15.3	170
11.6	5	15.4	161
11.7	5	15.5	153
11.8	6	15.6	144
11.9	6	15.7	134
12.0	7	15.8	125
12.1	9	15.9	115
12.2	13	16.0	106
12.3	20	16.1	100
12.4	28	16.2	94
12.5	43	16.3	87
12.6	58	16.4	81
12.7	77	16.5	75
12.8	94	16.6	72
12.9	109	16.7	69
13.0	124	16.8	65
13.1	134	16.9	62
13.2	143	17.0	59
13.3	155	17.1	57
13.4	167	17.2	55
13.5	176	17.3	53
13.6	185	17.4	51
13.7	190	17.5	49
13.8	196	17.6	48
13.9	198	17.7	47
14.0	199	17.8	46
14.1	199	17.9	45
14.2	200	18.0	44
14.3	200	18.1	43
14.4	201	18.2	42
14.5	202	18.3	41
14.6	203	18.4	40

14.7	201	18.5	40

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:53:20
Watershed file: --> 39650 .WSD
Hydrograph file: --> 39650 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 50- YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	39	22.4	23
18.7	38	22.5	22
18.8	37	22.6	22
18.9	36	22.7	22
19.0	35	22.8	21
19.1	34	22.9	21
19.2	34	23.0	20
19.3	33	23.1	20
19.4	33	23.2	20
19.5	32	23.3	19
19.6	31	23.4	19
19.7	31	23.5	19
19.8	30	23.6	18
19.9	30	23.7	18
20.0	29	23.8	18
20.1	29	23.9	17
20.2	28	24.0	17
20.3	28	24.1	17
20.4	28	24.2	16
20.5	28	24.3	16
20.6	28	24.4	16
20.7	27	24.5	15
20.8	27	24.6	15
20.9	27	24.7	15
21.0	26	24.8	14
21.1	26	24.9	14
21.2	26	25.0	14
21.3	26	25.1	13
21.4	26	25.2	13
21.5	25	25.3	12
21.6	25	25.4	12
21.7	25	25.5	12
21.8	24	25.6	11
21.9	24	25.7	11
22.0	24	25.8	11
22.1	24	25.9	10
22.2	23		
22.3	23		

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:54:56
Watershed file: --> 396100 .WSD
Hydrograph file: --> 396100 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 100 YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input	Ia/p used
AREA 2	89.00	71.0	1.25	1.50	3.60	1.13	.23	.30
AREA 3	78.40	72.0	1.25	0.75	3.60	1.19	.22	.30
AREA 4	49.70	83.0	0.75	2.50	3.60	1.94	.11	.10
AREA 5	145.90	81.0	1.50	2.00	3.60	1.79	.13	.10
AREA 6	213.70	81.0	1.50	0.75	3.60	1.79	.13	.10
AREA 7	72.70	72.0	1.00	0.30	3.60	1.19	.22	.30
AREA 8	60.00	73.0	1.00	0.00	3.60	1.25	.21	.30
AREA 9	76.00	71.0	1.00	0.00	3.60	1.13	.23	.30

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 785.40 acres or 1.2272 sq.mi
Peak discharge = 263 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
AREA 2	1.24	1.55	1.25	1.50	No	--
AREA 3	1.18	0.73	1.25	0.75	No	--
AREA 4	0.64	2.59	0.75	2.50	No	--
AREA 5	1.57	1.95	1.50	2.00	No	--
AREA 6	1.55	0.79	1.50	0.75	No	--
AREA 7	1.08	0.21	1.00	0.30	No	--
AREA 8	0.97	0.00	1.00	0.00	No	--
AREA 9	1.08	0.00	1.00	0.00	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:54:56
Watershed file: --> 396100 .WSD
Hydrograph file: --> 396100 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 100 YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
AREA 2	32	14.6
AREA 3	32	13.8
AREA 4	39	15.0
AREA 5	89	15.0
AREA 6	143	13.8
AREA 7	36	13.2
AREA 8	34	13.0
AREA 9	39	13.0
Composite Watershed	263	14.6

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:54:56
Watershed file: --> 396100 .WSD
Hydrograph file: --> 396100 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 100 YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
AREA 2	0	0	0	0	0	0	0	0	0
AREA 3	0	0	0	0	0	0	0	0	0
AREA 4	0	0	0	1	1	1	1	1	1
AREA 5	0	1	1	2	2	2	2	2	2
AREA 6	3	4	5	7	7	8	8	10	11
AREA 7	0	0	0	0	0	0	0	1	2
AREA 8	0	0	0	0	0	0	2	5	10
AREA 9	0	0	0	0	0	1	2	6	11
Total (cfs)	3	5	6	10	10	12	15	25	37

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
AREA 2	0	0	0	0	0	0	2	5	11
AREA 3	0	0	1	2	7	15	24	30	32
AREA 4	1	1	1	1	2	2	2	3	4
AREA 5	3	3	3	4	4	5	7	9	14
AREA 6	13	15	19	25	45	75	107	133	143
AREA 7	6	10	16	23	33	36	32	26	21
AREA 8	16	23	28	32	34	27	21	17	14
AREA 9	18	26	33	36	39	30	24	19	16
Total (cfs)	57	78	101	123	164	190	219	242	255

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:54:56
Watershed file: --> 396100 .WSD
Hydrograph file: --> 396100 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 100 YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
AREA 2	19	29	32	27	18	13	10	8	7
AREA 3	30	24	19	14	10	8	7	6	5
AREA 4	6	13	26	39	33	19	11	7	5
AREA 5	23	45	70	89	76	51	33	23	18
AREA 6	139	115	88	61	40	29	23	19	16
AREA 7	17	13	11	8	7	6	5	5	4
AREA 8	11	9	8	6	6	5	4	4	4
AREA 9	13	11	9	7	6	6	5	5	4
Total (cfs)	258	259	263	251	196	137	98	77	63

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
AREA 2	6	5	5	3	2
AREA 3	5	4	4	3	1
AREA 4	5	4	3	2	2
AREA 5	14	10	9	7	4
AREA 6	14	12	11	8	3
AREA 7	4	4	3	3	0
AREA 8	4	3	3	2	0
AREA 9	4	4	3	3	0
Total (cfs)	56	46	41	31	12

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:54:56
Watershed file: --> 396100 .WSD
Hydrograph file: --> 396100 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 100 YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	3	14.8	257

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 22:54:56
Watershed file: --> 396100 .WSD
Hydrograph file: --> 396100 .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 100 YEAR STORM
BEFORE PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	50	22.4	29
18.7	49	22.5	29
18.8	48	22.6	28
18.9	47	22.7	28
19.0	46	22.8	27
19.1	46	22.9	27
19.2	45	23.0	26
19.3	44	23.1	26
19.4	44	23.2	25
19.5	44	23.3	25
19.6	43	23.4	24
19.7	42	23.5	24
19.8	42	23.6	23
19.9	42	23.7	23
20.0	41	23.8	22
20.1	40	23.9	22
20.2	40	24.0	22
20.3	40	24.1	21
20.4	39	24.2	21
20.5	38	24.3	20
20.6	38	24.4	20
20.7	38	24.5	19
20.8	37	24.6	19
20.9	36	24.7	18
21.0	36	24.8	18
21.1	36	24.9	17
21.2	35	25.0	17
21.3	34	25.1	16
21.4	34	25.2	16
21.5	34	25.3	15
21.6	33	25.4	15
21.7	32	25.5	14
21.8	32	25.6	14
21.9	32	25.7	13
22.0	31	25.8	13
22.1	31	25.9	12
22.2	30		
22.3	30		

Executed 07-19-2001 23:34:09

Before Project

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	39612 (cfs)	3962 (cfs)	3962OFF (Total)
0.00	0.0	0.0	0.0
0.50	0.0	0.0	0.0
1.00	0.0	0.0	0.0
1.50	0.0	0.0	0.0
2.00	0.0	0.0	0.0
2.50	0.0	0.0	0.0
3.00	0.0	0.0	0.0
3.50	0.1	0.0	0.1
4.00	0.2	0.0	0.2
4.50	0.4	0.0	0.4
5.00	0.6	0.0	0.6
5.50	0.7	0.0	0.7
6.00	0.8	0.0	0.8
6.50	0.9	0.0	0.9
7.00	1.0	0.0	1.0
7.50	1.1	0.0	1.1
8.00	1.1	0.0	1.1
8.50	1.2	0.0	1.2
9.00	1.2	0.0	1.2
9.50	1.3	0.0	1.3
10.00	1.3	0.0	1.3
10.50	1.3	0.0	1.3
11.00	1.4	0.0	1.4
11.50	1.4	0.0	1.4
12.00	1.4	0.0	1.4
12.50	1.4	2.0	3.4
13.00	1.5	12.0	13.5
13.50	1.5	27.0	28.5
14.00	1.6	38.0	39.6
14.50	1.8	41.0	42.8
15.00	2.9	45.0	47.9
15.50	25.7	43.0	68.7
16.00	33.8	32.0	65.8
16.50	34.7	25.0	59.7
17.00	33.0	20.0	53.0
17.50	30.3	17.0	47.3
18.00	27.3	17.0	44.3
18.50	22.5	16.0	38.5
19.00	15.6	14.0	29.6
19.50	10.1	14.0	24.1

Travel Time from Pond

discharge all other areas

discharge from Chichester Pond

Executed 07-19-2001 23:34:09

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	39612 (cfs)	3962 (cfs)	3962OFF (Total)
20.00	8.4	13.0	21.4
20.50	7.8	12.0	19.8
21.00	7.3	11.0	18.3
21.50	7.0	10.0	17.0
22.00	6.6	9.0	15.6
22.50	6.3	8.0	14.3
23.00	6.0	8.0	14.0
23.50	5.6	7.0	12.6
24.00	5.4	6.0	11.4
24.50	5.2	6.0	11.2
25.00	5.2	5.0	10.1
25.50	5.1	5.0	10.1
26.00	5.0	Missing	5.0
26.50	4.9	Missing	4.9
27.00	4.9	Missing	4.9
27.50	4.4	Missing	4.4
28.00	3.0	Missing	3.0
28.50	3.0	Missing	3.0
29.00	3.0	Missing	3.0
29.50	2.9	Missing	2.9
30.00	2.9	Missing	2.9
30.50	2.9	Missing	2.9
31.00	2.7	Missing	2.7
31.50	2.5	Missing	2.5
32.00	2.4	Missing	2.4
32.50	2.2	Missing	2.2
33.00	2.1	Missing	2.1
33.50	1.9	Missing	1.9
34.00	1.6	Missing	1.6
34.50	1.4	Missing	1.4
35.00	1.2	Missing	1.2
35.50	1.0	Missing	1.0
36.00	0.9	Missing	0.9
36.50	0.7	Missing	0.7
37.00	0.6	Missing	0.6
37.50	0.6	Missing	0.6
38.00	0.5	Missing	0.5
38.50	0.4	Missing	0.4
39.00	0.3	Missing	0.3
39.50	0.3	Missing	0.3
40.00	0.3	Missing	0.3

Executed 07-19-2001 23:34:09

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	39612 (cfs)	3962 (cfs)	3962OFF (Total)
40.50	0.2	Missing	0.2
41.00	0.2	Missing	0.2
41.50	0.2	Missing	0.2
42.00	0.1	Missing	0.1
42.50	0.1	Missing	0.1
43.00	0.1	Missing	0.1
43.50	0.0	Missing	0.0
44.00	0.0	Missing	0.0
44.50	0.0	Missing	0.0
45.00	0.0	Missing	0.0
45.50	0.0	Missing	0.0
46.00	0.0	Missing	0.0
46.50	0.0	Missing	0.0
47.00	0.0	Missing	0.0
47.50	0.0	Missing	0.0
48.00	0.0	Missing	0.0

Quick TR-55 Ver.5.46 S/N:
Executed: 21:22:47 07-19-2001 3967A.TCT

NEVADA NORTHWEST
SUBAREA 7
AFTER PROJECT

Tc COMPUTATIONS FOR: 0% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		LAWN	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	50.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0100	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.25	= 0.25

SHALLOW CONCENTRATED FLOW

Segment ID		GUTTER	
Surface (paved or unpaved)?		Paved	
Flow length, L	ft	500.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.2857	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.11	= 0.11

CHANNEL FLOW

Segment ID		SD	
Cross Sectional Flow Area, a	sq.ft	3.20	
Wetted perimeter, Pw	ft	6.50	
Hydraulic radius, r = a/Pw	ft	0.492	
Channel slope, s	ft/ft	0.0025	
Manning's roughness coeff., n		0.0130	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	3.5730	
Flow length, L	ft	1100	
T = L / (3600*V)	hrs	0.09	= 0.09

TOTAL TIME (hrs) 0.45

Quick TR-55 Ver.5.46 S/N:
Executed: 21:35:16 07-19-2001 3967TTA.TCT

NEVADA NORTHWEST
SUBAREA 7
TRAVEL TIME
AFTER DEVELOPMENT

Tt COMPUTATIONS FOR: TRAVEL TIME

SHEET FLOW (Applicable to Tc only)

Segment ID					
Surface description					
Manning's roughness coeff., n			0.0000		
Flow length, L (total < or = 300)		ft	0.0		
Two-yr 24-hr rainfall, P2		in	0.000		
Land slope, s		ft/ft	0.0000		
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$		hrs	0.00	=	0.00

SHALLOW CONCENTRATED FLOW

Segment ID					
Surface (paved or unpaved)?					
Flow length, L		ft	0.0		
Watercourse slope, s		ft/ft	0.0000		
$Avg.V = Csf * (s)^{0.5}$		ft/s	0.0000		
where:	Unpaved Csf = 16.1345				
	Paved Csf = 20.3282				
T = L / (3600*V)		hrs	0.00	=	0.00

CHANNEL FLOW

Segment ID				PIPE	
Cross Sectional Flow Area, a		sq.ft	0.00	3.20	
Wetted perimeter, Pw		ft	0.00	6.00	
Hydraulic radius, r = a/Pw		ft	0.000	0.533	
Channel slope, s		ft/ft	0.0000	0.0025	
Manning's roughness coeff., n			0.0000	0.0130	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$		ft/s	0.0000	3.7689	
Flow length, L		ft	0	1600	
T = L / (3600*V)		hrs	0.00 +	0.12	= 0.12

::

TOTAL TIME (hrs) 0.12

Quick TR-55 Ver.5.46 S/N:
Executed: 21:53:08 07-19-2001

NEVADA NORTHWEST
AREA 7
AFTER DEVELOPMENT

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
00% AG	0.00	71	
00% EXISTING DEVELOPMENT	0.00	83	
100% FUTURE DEVELOPMENT	72.70	91	
COMPOSITE AREA --->	72.70	91.0	(91)

Quick TR-55 Ver.5.46 S/N:
Executed: 21:20:47 07-19-2001 3968A.TCT

NEVADA NORTHWEST
SUBAREA 8
AFTER PROJECT

Tc COMPUTATIONS FOR: 70% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		PASTURE	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	100.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0040	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.64	= 0.64

SHALLOW CONCENTRATED FLOW

Segment ID		FURROW	
Surface (paved or unpaved)?		Paved	
Flow length, L	ft	1200.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.2857	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.26	= 0.26

CHANNEL FLOW

Segment ID			
Cross Sectional Flow Area, a	sq.ft	0.00	
Wetted perimeter, Pw	ft	0.00	
Hydraulic radius, r = a/Pw	ft	0.000	
Channel slope, s	ft/ft	0.0000	
Manning's roughness coeff., n		0.0000	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	0.0000	
Flow length, L	ft	0	
T = L / (3600*V)	hrs	0.00	= 0.00

TOTAL TIME (hrs) 0.90

Quick TR-55 Ver.5.46 S/N:
Executed: 21:55:10 07-19-2001

NEVADA NORTHWEST
AREA 8
AFTER DEVELOPMENT

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
70% AG	42.00	71	
20% EXISTING DEVELOPMENT	12.00	83	
10 % FUTURE DEVELOPMENT	6.00	91	
COMPOSITE AREA --->	60.00	75.4	(75)

Quick TR-55 Ver.5.46 S/N:
Executed: 21:18:48 07-19-2001 3969A.TCT

NEVADA NORTHWEST
SUBAREA 9
AFTER PROJECT

Tc COMPUTATIONS FOR: 0% AG

SHEET FLOW (Applicable to Tc only)

Segment ID		OVERLAD	
Surface description		LAWN	
Manning's roughness coeff., n		0.2400	
Flow length, L (total < or = 300)	ft	50.0	
Two-yr 24-hr rainfall, P2	in	1.600	
Land slope, s	ft/ft	0.0100	
$T = \frac{.007 * (n*L)^{0.8}}{P2^{0.5} * s^{0.4}}$	hrs	0.25	= 0.25

SHALLOW CONCENTRATED FLOW

Segment ID		GUTTER	
Surface (paved or unpaved)?		Paved	
Flow length, L	ft	500.0	
Watercourse slope, s	ft/ft	0.0040	
$Avg.V = Csf * (s)^{0.5}$	ft/s	1.2857	
where: Unpaved Csf = 16.1345			
Paved Csf = 20.3282			
T = L / (3600*V)	hrs	0.11	= 0.11

CHANNEL FLOW

Segment ID		SD	
Cross Sectional Flow Area, a	sq.ft	3.20	
Wetted perimeter, Pw	ft	6.50	
Hydraulic radius, r = a/Pw	ft	0.492	
Channel slope, s	ft/ft	0.0025	
Manning's roughness coeff., n		0.0130	
$V = \frac{1.49 * r^{2/3} * s^{1/2}}{n}$	ft/s	3.5730	
Flow length, L	ft	1000	
T = L / (3600*V)	hrs	0.08	= 0.08

TOTAL TIME (hrs) 0.44

Quick TR-55 Ver.5.46 S/N:
Executed: 21:56:06 07-19-2001

NEVADA NORTHWEST
AREA 9
AFTER DEVELOPMENT

RUNOFF CURVE NUMBER DATA

Composite Area:

SURFACE DESCRIPTION	AREA (acres)	CN	
00% AG	0.00	71	
00% EXISTING DEVELOPMENT	0.00	83	
100% FUTURE DEVELOPMENT	76.00	91	
COMPOSITE AREA --->	76.00	91.0	(91)

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 23:26:39
Watershed file: --> 3962A .WSD
Hydrograph file: --> 3962A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used	
AREA 2	89.00	71.0	1.25	1.50	1.68	0.15	.49	.50
AREA 3	78.40	72.0	1.25	0.75	1.68	0.17	.46	.50
AREA 4	49.70	83.0	0.75	2.50	1.68	0.49	.24	.30
AREA 5	145.90	81.0	1.50	2.00	1.68	0.41	.28	.30
AREA 6	213.70	81.0	1.50	0.75	1.68	0.41	.28	.30
AREA 7	72.70	91.0	0.50	0.10	1.68	0.89	.12	.10
AREA 8	60.00	75.0	1.00	0.00	1.68	0.24	.4	.50
AREA 9	76.00	91.0	0.40	0.00	1.68	0.89	.12	.10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 785.40 acres or 1.2272 sq.mi
Peak discharge = 110 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
AREA 2	1.24	1.55	1.25	1.50	No	--
AREA 3	1.18	0.73	1.25	0.75	No	--
AREA 4	0.64	2.59	0.75	2.50	No	--
AREA 5	1.57	1.95	1.50	2.00	No	--
AREA 6	1.55	0.79	1.50	0.75	No	--
AREA 7	0.45	0.12	0.50	0.10	No	--
AREA 8	0.97	0.00	1.00	0.00	No	--
AREA 9	0.44	0.00	0.40	0.00	No	--

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 23:26:39
Watershed file: --> 3962A .WSD
Hydrograph file: --> 3962A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
AREA 2	3	15.0
AREA 3	3	13.8
AREA 4	8	15.5
AREA 5	17	15.5
AREA 6	27	14.0
AREA 7	50	12.5
AREA 8	4	13.0
AREA 9	63	12.3
Composite Watershed	110	12.4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 23:26:39
Watershed file: --> 3962A .WSD
Hydrograph file: --> 3962A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
AREA 2	0	0	0	0	0	0	0	0	0
AREA 3	0	0	0	0	0	0	0	0	0
AREA 4	0	0	0	0	0	0	0	0	0
AREA 5	0	0	0	0	0	0	0	0	0
AREA 6	0	0	0	0	0	0	0	0	0
AREA 7	2	2	3	5	8	14	25	40	49
AREA 8	0	0	0	0	0	0	0	0	0
AREA 9	2	3	4	8	15	29	49	63	61
Total (cfs)	4	5	7	13	23	43	74	103	110

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
AREA 2	0	0	0	0	0	0	0	0	1
AREA 3	0	0	0	0	0	1	1	2	3
AREA 4	0	0	0	0	0	0	0	0	0
AREA 5	0	0	0	0	0	0	0	0	0
AREA 6	0	0	1	1	4	9	16	22	26
AREA 7	50	44	35	27	16	11	8	7	6
AREA 8	1	2	2	3	4	3	3	3	2
AREA 9	46	31	23	17	11	8	7	6	5
Total (cfs)	97	77	61	48	35	32	35	40	43

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 23:26:39
Watershed file: --> 3962A .WSD
Hydrograph file: --> 3962A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
AREA 2	1	2	2	3	2	2	2	1	1
AREA 3	3	3	2	2	2	1	1	1	1
AREA 4	0	1	4	7	8	5	3	2	2
AREA 5	1	4	9	15	17	13	9	7	5
AREA 6	27	25	20	15	11	8	7	6	5
AREA 7	5	4	4	3	3	3	2	2	2
AREA 8	2	2	2	2	1	1	1	1	1
AREA 9	5	4	4	3	3	3	2	2	2
Total (cfs)	44	45	47	50	47	36	27	22	19

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
AREA 2	1	1	1	1	0
AREA 3	1	1	1	1	0
AREA 4	2	1	1	1	1
AREA 5	5	4	3	2	2
AREA 6	5	4	4	3	1
AREA 7	2	2	1	1	0
AREA 8	1	1	1	1	0
AREA 9	2	2	1	1	0
Total (cfs)	19	16	13	11	4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 23:26:39
Watershed file: --> 3962A .WSD
Hydrograph file: --> 3962A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	4	14.8	48
11.1	4	14.9	49
11.2	5	15.0	50
11.3	5	15.1	49
11.4	6	15.2	49
11.5	6	15.3	48
11.6	7	15.4	48
11.7	9	15.5	47
11.8	11	15.6	45
11.9	13	15.7	43
12.0	23	15.8	40
12.1	43	15.9	38
12.2	74	16.0	36
12.3	103	16.1	34
12.4	110	16.2	32
12.5	97	16.3	31
12.6	77	16.4	29
12.7	61	16.5	27
12.8	48	16.6	26
12.9	41	16.7	25
13.0	35	16.8	24
13.1	34	16.9	23
13.2	32	17.0	22
13.3	34	17.1	21
13.4	35	17.2	21
13.5	37	17.3	20
13.6	40	17.4	20
13.7	42	17.5	19
13.8	43	17.6	19
13.9	44	17.7	19
14.0	44	17.8	19
14.1	44	17.9	19
14.2	45	18.0	19
14.3	45	18.1	19
14.4	46	18.2	18
14.5	46	18.3	18
14.6	47	18.4	18

14.7	48	18.5	18

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-19-2001 23:26:39
Watershed file: --> 3962A .WSD
Hydrograph file: --> 3962A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 2 - YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	17	22.4	10
18.7	17	22.5	10
18.8	17	22.6	10
18.9	16	22.7	10
19.0	16	22.8	10
19.1	16	22.9	9
19.2	15	23.0	9
19.3	15	23.1	9
19.4	15	23.2	9
19.5	14	23.3	9
19.6	14	23.4	9
19.7	14	23.5	8
19.8	14	23.6	8
19.9	13	23.7	8
20.0	13	23.8	8
20.1	13	23.9	8
20.2	13	24.0	8
20.3	13	24.1	7
20.4	13	24.2	7
20.5	12	24.3	7
20.6	12	24.4	7
20.7	12	24.5	7
20.8	12	24.6	6
20.9	12	24.7	6
21.0	12	24.8	6
21.1	12	24.9	6
21.2	12	25.0	6
21.3	12	25.1	6
21.4	12	25.2	5
21.5	12	25.3	5
21.6	11	25.4	5
21.7	11	25.5	5
21.8	11	25.6	5
21.9	11	25.7	5
22.0	11	25.8	4
22.1	11	25.9	4
22.2	11		
22.3	10		

Executed 07-19-2001 23:37:18

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	39612 (cfs)	3962A (cfs)	3962AOF (Total)
0.00	0.0	Missing	0.0
0.50	0.0	Missing	0.0
1.00	0.0	Missing	0.0
1.50	0.0	Missing	0.0
2.00	0.0	Missing	0.0
2.50	0.0	Missing	0.0
3.00	0.0	Missing	0.0
3.50	0.1	Missing	0.1
4.00	0.2	Missing	0.2
4.50	0.4	Missing	0.4
5.00	0.6	Missing	0.6
5.50	0.7	Missing	0.7
6.00	0.8	Missing	0.8
6.50	0.9	Missing	0.9
7.00	1.0	Missing	1.0
7.50	1.1	Missing	1.1
8.00	1.1	Missing	1.1
8.50	1.2	Missing	1.2
9.00	1.2	Missing	1.2
9.50	1.3	Missing	1.3
10.00	1.3	Missing	1.3
10.50	1.3	Missing	1.3
11.00	1.4	4.0	5.4
11.50	1.4	6.0	7.4
12.00	1.4	23.0	24.4
12.50	1.4	97.0	98.4
13.00	1.5	35.0	36.5
13.50	1.5	37.0	38.5
14.00	1.6	44.0	45.6
14.50	1.8	46.0	47.8
15.00	2.9	50.0	52.9
15.50	25.7	47.0	72.7
16.00	33.8	36.0	69.8
16.50	34.7	27.0	61.7
17.00	33.0	22.0	55.0
17.50	30.3	19.0	49.3
18.00	27.3	19.0	46.3
18.50	22.5	18.0	40.5
19.00	15.6	16.0	31.6
19.50	10.1	14.0	24.1

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
3962A .HYD

Executed 07-19-2001 23:37:18

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	39612 (cfs)	3962A (cfs)	3962AOF (Total)
20.00	8.4	13.0	21.4
20.50	7.8	12.0	19.8
21.00	7.3	12.0	19.3
21.50	7.0	12.0	19.0
22.00	6.6	11.0	17.6
22.50	6.3	10.0	16.3
23.00	6.0	9.0	15.0
23.50	5.6	8.0	13.6
24.00	5.4	8.0	13.4
24.50	5.2	7.0	12.2
25.00	5.2	6.0	11.1
25.50	5.1	5.0	10.1
26.00	5.0	Missing	5.0
26.50	4.9	Missing	4.9
27.00	4.9	Missing	4.9
27.50	4.4	Missing	4.4
28.00	3.0	Missing	3.0
28.50	3.0	Missing	3.0
29.00	3.0	Missing	3.0
29.50	2.9	Missing	2.9
30.00	2.9	Missing	2.9
30.50	2.9	Missing	2.9
31.00	2.7	Missing	2.7
31.50	2.5	Missing	2.5
32.00	2.4	Missing	2.4
32.50	2.2	Missing	2.2
33.00	2.1	Missing	2.1
33.50	1.9	Missing	1.9
34.00	1.6	Missing	1.6
34.50	1.4	Missing	1.4
35.00	1.2	Missing	1.2
35.50	1.0	Missing	1.0
36.00	0.9	Missing	0.9
36.50	0.7	Missing	0.7
37.00	0.6	Missing	0.6
37.50	0.6	Missing	0.6
38.00	0.5	Missing	0.5
38.50	0.4	Missing	0.4
39.00	0.3	Missing	0.3
39.50	0.3	Missing	0.3
40.00	0.3	Missing	0.3

>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<
ks were missed during interpolation for the following files:
2A .HYD

Executed 07-19-2001 23:37:18

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	39612 (cfs)	3962A (cfs)	3962AOF (Total)
40.50	0.2	Missing	0.2
41.00	0.2	Missing	0.2
41.50	0.2	Missing	0.2
42.00	0.1	Missing	0.1
42.50	0.1	Missing	0.1
43.00	0.1	Missing	0.1
43.50	0.0	Missing	0.0
44.00	0.0	Missing	0.0
44.50	0.0	Missing	0.0
45.00	0.0	Missing	0.0
45.50	0.0	Missing	0.0
46.00	0.0	Missing	0.0
46.50	0.0	Missing	0.0
47.00	0.0	Missing	0.0
47.50	0.0	Missing	0.0
48.00	0.0	Missing	0.0

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
ks were missed during interpolation for the following files:
3962A .HYD

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-20-2001 00:01:21
Watershed file: --> 39625A .WSD
Hydrograph file: --> 39625A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

>>>> Input Parameters Used to Compute Hydrograph <<<<

Subarea Description	AREA (acres)	CN	Tc (hrs)	* Tt (hrs)	Precip. (in)	Runoff (in)	Ia/p input/used
AREA 2	89.00	71.0	1.25	1.50	2.60	0.54	.31 .30
AREA 3	78.40	72.0	1.25	0.75	2.60	0.58	.3 .30
AREA 4	49.70	83.0	0.75	2.50	2.60	1.13	.16 .10
AREA 5	145.90	81.0	1.50	2.00	2.60	1.01	.18 .10
AREA 6	213.70	81.0	1.50	0.75	2.60	1.01	.18 .10
AREA 7	72.70	91.0	0.50	0.10	2.60	1.70	.08 .10
AREA 8	60.00	75.0	1.00	0.00	2.60	0.71	.26 .30
EA 9	76.00	91.0	0.40	0.00	2.60	1.70	.08 .10

* Travel time from subarea outfall to composite watershed outfall point.
Total area = 785.40 acres or 1.2272 sq.mi
Peak discharge = 223 cfs

>>>> Computer Modifications of Input Parameters <<<<<

Subarea Description	Input Values Tc (hr)	Input Values * Tt (hr)	Rounded Values Tc (hr)	Rounded Values * Tt (hr)	Ia/p Interpolated (Yes/No)	Ia/p Messages
AREA 2	1.24	1.55	1.25	1.50	No	--
AREA 3	1.18	0.73	1.25	0.75	No	--
AREA 4	0.64	2.59	0.75	2.50	No	--
AREA 5	1.57	1.95	1.50	2.00	No	--
AREA 6	1.55	0.79	1.50	0.75	No	--
AREA 7	0.45	0.12	0.50	0.10	No	Computed Ia/p < .1
AREA 8	0.90	0.00	1.00	0.00	No	--
AREA 9	0.44	0.00	0.40	0.00	No	Computed Ia/p < .1

* Travel time from subarea outfall to composite watershed outfall point.

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-20-2001 00:01:21
Watershed file: --> 39625A .WSD
Hydrograph file: --> 39625A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

>>>> Summary of Subarea Times to Peak <<<<

Subarea	Peak Discharge at Composite Outfall (cfs)	Time to Peak at Composite Outfall (hrs)
AREA 2	15	14.6
AREA 3	15	13.6
AREA 4	23	15.0
AREA 5	50	15.0
AREA 6	81	13.8
AREA 7	96	12.5
AREA 8	19	13.0
AREA 9	120	12.3
Composite Watershed	223	12.4

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-20-2001 00:01:21
Watershed file: --> 39625A .WSD
Hydrograph file: --> 39625A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	11.0 hr	11.3 hr	11.6 hr	11.9 hr	12.0 hr	12.1 hr	12.2 hr	12.3 hr	12.4 hr
AREA 2	0	0	0	0	0	0	0	0	0
AREA 3	0	0	0	0	0	0	0	0	0
AREA 4	0	0	0	0	0	0	0	1	1
AREA 5	0	0	1	1	1	1	1	1	1
AREA 6	2	2	3	4	4	4	5	5	6
AREA 7	3	4	6	10	15	27	49	76	93
AREA 8	0	0	0	0	0	0	1	3	6
AREA 9	4	5	7	16	28	55	94	120	116
Total (cfs)	9	11	17	31	48	87	150	206	223

Subarea Description	12.5 hr	12.6 hr	12.7 hr	12.8 hr	13.0 hr	13.2 hr	13.4 hr	13.6 hr	13.8 hr
AREA 2	0	0	0	0	0	0	1	2	5
AREA 3	0	0	0	1	3	7	12	15	15
AREA 4	1	1	1	1	1	1	1	1	2
AREA 5	2	2	2	2	2	3	4	5	8
AREA 6	7	8	11	14	26	42	60	75	81
AREA 7	96	84	66	51	31	21	15	13	11
AREA 8	9	13	16	18	19	15	12	10	8
AREA 9	87	60	44	33	21	16	13	11	10
Total (cfs)	202	168	140	120	103	105	118	132	140

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-20-2001 00:01:21
Watershed file: --> 39625A .WSD
Hydrograph file: --> 39625A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Composite Hydrograph Summary (cfs)

Subarea Description	14.0 hr	14.3 hr	14.6 hr	15.0 hr	15.5 hr	16.0 hr	16.5 hr	17.0 hr	17.5 hr
AREA 2	9	14	15	13	9	6	5	4	3
AREA 3	15	12	9	7	5	4	3	3	3
AREA 4	3	8	15	23	19	11	6	4	3
AREA 5	13	25	40	50	43	29	19	13	10
AREA 6	79	65	50	34	23	16	13	11	9
AREA 7	9	8	7	6	6	5	4	4	4
AREA 8	7	5	4	4	3	3	3	2	2
AREA 9	9	8	7	6	6	5	4	4	4
Total (cfs)	144	145	147	143	114	79	57	45	38

Subarea Description	18.0 hr	19.0 hr	20.0 hr	22.0 hr	26.0 hr
AREA 2	3	2	2	2	1
AREA 3	2	2	2	1	0
AREA 4	3	2	2	1	1
AREA 5	8	6	5	4	3
AREA 6	8	7	6	4	2
AREA 7	4	3	3	2	0
AREA 8	2	2	2	1	0
AREA 9	4	3	3	2	0
Total (cfs)	34	27	25	17	7

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-20-2001 00:01:21
Watershed file: --> 39625A .WSD
Hydrograph file: --> 39625A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
11.0	9	14.8	145
11.1	10	14.9	144
11.2	10	15.0	143
11.3	11	15.1	137
11.4	13	15.2	131
11.5	15	15.3	126
11.6	17	15.4	120
11.7	22	15.5	114
11.8	26	15.6	107
11.9	31	15.7	100
12.0	48	15.8	93
12.1	87	15.9	86
12.2	150	16.0	79
12.3	206	16.1	75
12.4	223	16.2	70
12.5	202	16.3	66
12.6	168	16.4	61
12.7	140	16.5	57
12.8	120	16.6	55
12.9	112	16.7	52
13.0	103	16.8	50
13.1	104	16.9	47
13.2	105	17.0	45
13.3	112	17.1	44
13.4	118	17.2	42
13.5	125	17.3	41
13.6	132	17.4	39
13.7	136	17.5	38
13.8	140	17.6	37
13.9	142	17.7	36
14.0	144	17.8	36
14.1	144	17.9	35
14.2	145	18.0	34
14.3	145	18.1	33
14.4	146	18.2	33
14.5	146	18.3	32
14.6	147	18.4	31

14.7	146	18.5	30

TR-55 TABULAR HYDROGRAPH METHOD
Type II Distribution
(24 hr. Duration Storm)

Executed: 07-20-2001 00:01:21
Watershed file: --> 39625A .WSD
Hydrograph file: --> 39625A .HYD

NEVADA NORTHWEST
FLOW AT HWY 395 25- YEAR STORM
AFTER PROJECT
AREAS 2 THROUGH 9

Time (hrs)	Flow (cfs)	Time (hrs)	Flow (cfs)
18.6	30	22.4	16
18.7	29	22.5	16
18.8	28	22.6	16
18.9	28	22.7	15
19.0	27	22.8	15
19.1	27	22.9	15
19.2	27	23.0	14
19.3	26	23.1	14
19.4	26	23.2	14
19.5	26	23.3	14
19.6	26	23.4	14
19.7	26	23.5	13
19.8	25	23.6	13
19.9	25	23.7	13
20.0	25	23.8	12
20.1	25	23.9	12
20.2	24	24.0	12
20.3	24	24.1	12
20.4	23	24.2	12
20.5	23	24.3	11
20.6	23	24.4	11
20.7	22	24.5	11
20.8	22	24.6	10
20.9	21	24.7	10
21.0	21	24.8	10
21.1	21	24.9	10
21.2	20	25.0	10
21.3	20	25.1	9
21.4	19	25.2	9
21.5	19	25.3	9
21.6	19	25.4	8
21.7	18	25.5	8
21.8	18	25.6	8
21.9	17	25.7	8
22.0	17	25.8	8
22.1	17	25.9	7
22.2	16		
22.3	16		

Executed 07-20-2001 00:04:33

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	396125 (cfs)	39625 (cfs)	39625OF (Total)
0.00	0.0	Missing	0.0
0.50	0.0	Missing	0.0
1.00	0.0	Missing	0.0
1.50	0.0	Missing	0.0
2.00	0.0	Missing	0.0
2.50	0.0	Missing	0.0
3.00	0.0	Missing	0.0
3.50	0.1	Missing	0.1
4.00	0.2	Missing	0.2
4.50	0.4	Missing	0.4
5.00	0.6	Missing	0.6
5.50	0.7	Missing	0.7
6.00	0.8	Missing	0.8
6.50	0.9	Missing	0.9
7.00	1.0	Missing	1.0
7.50	1.1	Missing	1.1
8.00	1.1	Missing	1.1
8.50	1.2	Missing	1.2
9.00	1.2	Missing	1.2
9.50	1.3	Missing	1.3
10.00	1.3	Missing	1.3
10.50	1.4	Missing	1.4
11.00	1.4	2.0	3.4
11.50	1.4	3.0	4.4
12.00	1.5	5.0	6.5
12.50	1.6	30.0	31.6
13.00	1.8	84.0	85.8
13.50	2.2	121.0	123.2
14.00	2.8	139.0	141.8
14.50	3.0	141.0	144.0
15.00	21.6	138.0	159.6
15.50	45.1	108.0	153.1
16.00	50.7	74.0	124.7
16.50	54.0	53.0	106.9
17.00	54.6	41.0	95.6
17.50	53.2	34.0	87.2
18.00	50.6	30.0	80.6
18.50	47.4	28.0	75.4
19.00	42.4	25.0	67.4
19.50	37.4	23.0	60.4

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
396125 .HYD

Executed 07-20-2001 00:04:33

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	396125 (cfs)	39625 (cfs)	39625OF (Total)
20.00	33.4	21.0	54.4
20.50	30.0	20.0	50.0
21.00	26.5	18.0	44.5
21.50	21.9	16.0	37.9
22.00	15.4	15.0	30.4
22.50	11.2	14.0	25.2
23.00	9.9	13.0	22.9
23.50	9.1	12.0	21.1
24.00	8.7	11.0	19.7
24.50	8.4	10.0	18.4
25.00	8.2	9.0	17.2
25.50	8.1	8.0	16.0
26.00	7.9	Missing	7.9
26.50	7.8	Missing	7.8
27.00	7.7	Missing	7.7
27.50	6.8	Missing	6.8
28.00	4.2	Missing	4.2
28.50	3.0	Missing	3.0
29.00	3.0	Missing	3.0
29.50	3.0	Missing	3.0
30.00	2.9	Missing	2.9
30.50	2.9	Missing	2.9
31.00	2.8	Missing	2.8
31.50	2.6	Missing	2.6
32.00	2.5	Missing	2.5
32.50	2.3	Missing	2.3
33.00	2.2	Missing	2.2
33.50	2.1	Missing	2.1
34.00	2.0	Missing	2.0
34.50	1.9	Missing	1.9
35.00	1.9	Missing	1.9
35.50	1.8	Missing	1.8
36.00	1.8	Missing	1.8
36.50	1.7	Missing	1.7
37.00	1.7	Missing	1.7
37.50	1.7	Missing	1.7
38.00	1.6	Missing	1.6
38.50	1.6	Missing	1.6
39.00	1.6	Missing	1.6
39.50	1.6	Missing	1.6
40.00	1.6	Missing	1.6

>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
396125 .HYD

Executed 07-20-2001 00:04:33

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	396125 (cfs)	39625 (cfs)	39625OF (Total)
40.50	1.6	Missing	1.6
41.00	1.5	Missing	1.5
41.50	1.5	Missing	1.5
42.00	1.5	Missing	1.5
42.50	1.5	Missing	1.5
43.00	1.5	Missing	1.5
43.50	1.4	Missing	1.4
44.00	1.2	Missing	1.2
44.50	1.0	Missing	1.0
45.00	0.9	Missing	0.9
45.50	0.7	Missing	0.7
46.00	0.6	Missing	0.6
46.50	0.6	Missing	0.6
47.00	0.5	Missing	0.5
47.50	0.4	Missing	0.4
48.00	0.3	Missing	0.3

>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<

ks were missed during interpolation for the following files:

39625 .HYD

Executed 07-20-2001 00:05:39

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	396125 (cfs)	39625A (cfs)	396A250 (Total)
0.00	0.0	Missing	0.0
0.50	0.0	Missing	0.0
1.00	0.0	Missing	0.0
1.50	0.0	Missing	0.0
2.00	0.0	Missing	0.0
2.50	0.0	Missing	0.0
3.00	0.0	Missing	0.0
3.50	0.1	Missing	0.1
4.00	0.2	Missing	0.2
4.50	0.4	Missing	0.4
5.00	0.6	Missing	0.6
5.50	0.7	Missing	0.7
6.00	0.8	Missing	0.8
6.50	0.9	Missing	0.9
7.00	1.0	Missing	1.0
7.50	1.1	Missing	1.1
8.00	1.1	Missing	1.1
8.50	1.2	Missing	1.2
9.00	1.2	Missing	1.2
9.50	1.3	Missing	1.3
10.00	1.3	Missing	1.3
10.50	1.4	Missing	1.4
11.00	1.4	9.0	10.4
11.50	1.4	15.0	16.4
12.00	1.5	48.0	49.5
12.50	1.6	202.0	203.6
13.00	1.8	103.0	104.8
13.50	2.2	125.0	127.2
14.00	2.8	144.0	146.8
14.50	3.0	146.0	149.0
15.00	21.6	143.0	164.6
15.50	45.1	114.0	159.1
16.00	50.7	79.0	129.7
16.50	54.0	57.0	110.9
17.00	54.6	45.0	99.6
17.50	53.2	38.0	91.2
18.00	50.6	34.0	84.6
18.50	47.4	30.0	77.4
19.00	42.4	27.0	69.4
19.50	37.4	26.0	63.4

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
25A .HYD

Executed 07-20-2001 00:05:39

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	396125 (cfs)	39625A (cfs)	396A250 (Total)
20.00	33.4	25.0	58.4
20.50	30.0	23.0	53.0
21.00	26.5	21.0	47.5
21.50	21.9	19.0	40.9
22.00	15.4	17.0	32.4
22.50	11.2	16.0	27.2
23.00	9.9	14.0	23.9
23.50	9.1	13.0	22.1
24.00	8.7	12.0	20.7
24.50	8.4	11.0	19.4
25.00	8.2	10.0	18.2
25.50	8.1	8.0	16.0
26.00	7.9	Missing	7.9
26.50	7.8	Missing	7.8
27.00	7.7	Missing	7.7
27.50	6.8	Missing	6.8
28.00	4.2	Missing	4.2
28.50	3.0	Missing	3.0
29.00	3.0	Missing	3.0
29.50	3.0	Missing	3.0
30.00	2.9	Missing	2.9
30.50	2.9	Missing	2.9
31.00	2.8	Missing	2.8
31.50	2.6	Missing	2.6
32.00	2.5	Missing	2.5
32.50	2.3	Missing	2.3
33.00	2.2	Missing	2.2
33.50	2.1	Missing	2.1
34.00	2.0	Missing	2.0
34.50	1.9	Missing	1.9
35.00	1.9	Missing	1.9
35.50	1.8	Missing	1.8
36.00	1.8	Missing	1.8
36.50	1.7	Missing	1.7
37.00	1.7	Missing	1.7
37.50	1.7	Missing	1.7
38.00	1.6	Missing	1.6
38.50	1.6	Missing	1.6
39.00	1.6	Missing	1.6
39.50	1.6	Missing	1.6
40.00	1.6	Missing	1.6

>>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<<
Peaks were missed during interpolation for the following files:
396125A .HYD

Executed 07-20-2001 00:05:39

Data directory: *.HYD

File Summary for Composite Hydrograph

Time (hrs)	396125 (cfs)	39625A (cfs)	396A25O (Total)
40.50	1.6	Missing	1.6
41.00	1.5	Missing	1.5
41.50	1.5	Missing	1.5
42.00	1.5	Missing	1.5
42.50	1.5	Missing	1.5
43.00	1.5	Missing	1.5
43.50	1.4	Missing	1.4
44.00	1.2	Missing	1.2
44.50	1.0	Missing	1.0
45.00	0.9	Missing	0.9
45.50	0.7	Missing	0.7
46.00	0.6	Missing	0.6
46.50	0.6	Missing	0.6
47.00	0.5	Missing	0.5
47.50	0.4	Missing	0.4
48.00	0.3	Missing	0.3

>>>>>>>>>>>>>>>> SUMMATION WARNING <<<<<<<<<<<<<<<<
ks were missed during interpolation for the following files:
39625A .HYD

Type.... Node: Addition Summary
N... OUTFALL
F... .\sample\27716.PPK
Storm... TypeII 24hr Tag: 2 yr

Event: 2 yr

TOTAL NODE INFLOW...
HYG file =
HYG ID = OUTFALL
HYG Tag = 2 yr

Peak Discharge = 34.77 cfs
Time to Peak = 13.4000 hrs
HYG Volume = 16.501 ac-ft

WARNING: Hydrograph truncated on right side.

Discharge from Existing Chichester Estates + Town Ponds From Chichester Estates Drainage Report

note travel time for this flow to reach Htwy 395 is 2.9 Hours

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.00	.02	.03	.05	.06
.5000	.08	.09	.12	.16	.20
1.0000	.24	.27	.31	.35	.38
1.5000	.41	.45	.48	.51	.54
2.0000	.57	.60	.62	.65	.67
2.5000	.70	.72	.75	.77	.79
3.0000	.81	.83	.85	.87	.89
3.5000	.91	.93	.94	.96	.98
4.0000	.99	1.01	1.02	1.04	1.05
4.5000	1.06	1.08	1.09	1.10	1.11
5.0000	1.12	1.14	1.15	1.16	1.17
5.5000	1.18	1.19	1.20	1.21	1.21
6.0000	1.22	1.23	1.24	1.25	1.25
6.5000	1.26	1.27	1.28	1.28	1.29
7.0000	1.30	1.30	1.31	1.32	1.32
7.5000	1.33	1.34	1.34	1.35	1.36
8.0000	1.36	1.37	1.37	1.38	1.38
8.5000	1.39	1.39	1.40	1.40	1.41
9.0000	1.41	1.42	1.43	1.43	1.44
9.5000	1.44	1.45	1.45	1.46	1.46
10.0000	1.47	1.47	1.48	1.48	1.49
10.5000	1.50	1.50	1.52	1.53	1.54
11.0000	1.56	1.59	1.62	1.65	1.70
11.5000	1.75	1.82	1.91	2.07	2.37
12.0000	2.90	2.98	9.55	16.81	22.03
12.5000	25.72	28.43	30.44	31.94	33.02
13.0000	33.80	34.31	34.62	34.76	34.77
13.5000	34.66	34.45	34.17	33.81	33.41
14.0000	32.96	32.48	31.97	31.44	30.89
14.5000	30.33	29.77	29.21	28.66	28.05

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .1000 hrs

Time on left represents time for first value in each row.

Time hrs					
15.0000	27.30	26.41	25.45	24.47	23.49
15.5000	22.55	21.64	20.77	19.49	17.60
16.0000	15.62	13.93	12.60	11.55	10.73
16.5000	10.09	9.60	9.21	8.90	8.65
17.0000	8.44	8.27	8.12	7.99	7.87
17.5000	7.77	7.67	7.58	7.50	7.42
18.0000	7.34	7.27	7.19	7.12	7.05
18.5000	6.98	6.91	6.84	6.77	6.70
19.0000	6.63	6.56	6.50	6.43	6.36
19.5000	6.30	6.23	6.16	6.10	6.03
20.0000	5.96	5.89	5.83	5.76	5.69
20.5000	5.63	5.57	5.52	5.47	5.43
21.0000	5.39	5.35	5.32	5.29	5.27
21.5000	5.24	5.22	5.20	5.19	5.17
22.0000	5.15	5.13	5.12	5.10	5.09
22.5000	5.07	5.06	5.04	5.03	5.02
23.0000	5.00	4.99	4.98	4.97	4.95
23.5000	4.94	4.93	4.92	4.91	4.90
24.0000	4.88	4.86	4.82	4.73	4.59
24.5000	4.38	4.13	3.84	3.54	3.25
25.0000	2.98	3.00	2.99	2.99	2.99
25.5000	2.98	2.98	2.98	2.97	2.97
26.0000	2.96	2.96	2.95	2.95	2.95
26.5000	2.94	2.94	2.93	2.93	2.92
27.0000	2.92	2.92	2.91	2.91	2.90
27.5000	2.88	2.84	2.80	2.76	2.72
28.0000	2.68	2.65	2.61	2.58	2.54
28.5000	2.51	2.48	2.45	2.42	2.39
29.0000	2.36	2.33	2.31	2.28	2.26
29.5000	2.23	2.21	2.19	2.17	2.14
30.0000	2.12	2.09	2.04	1.99	1.93
30.5000	1.87	1.81	1.75	1.70	1.64
31.0000	1.59	1.54	1.49	1.45	1.40
31.5000	1.36	1.32	1.28	1.24	1.20
32.0000	1.17	1.13	1.10	1.07	1.03
32.5000	1.00	.97	.94	.92	.89
33.0000	.86	.84	.81	.79	.76
33.5000	.74	.72	.70	.68	.66
34.0000	.64	.62	.60	.58	.56
34.5000	.55	.53	.51	.50	.48
35.0000	.47	.46	.44	.43	.42
35.5000	.40	.39	.38	.37	.36
36.0000	.35	.34	.33	.32	.31
36.5000	.30	.29	.28	.27	.26

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .1000 hrs

Time on left represents time for first value in each row.

Time hrs					
37.0000	.26	.25	.24	.23	.23
37.5000	.22	.21	.21	.20	.19
38.0000	.19	.18	.18	.17	.17
38.5000	.16	.16	.15	.15	.14
39.0000	.14	.14	.13	.13	.12
39.5000	.12	.12	.11	.11	.11
40.0000	.10	.10	.10	.10	.10
40.5000	.10	.09	.09	.09	.09
41.0000	.09	.09	.09	.09	.09
41.5000	.09	.09	.08	.08	.08
42.0000	.08	.08	.08	.08	.08
42.5000	.08	.08	.08	.08	.07
43.0000	.07	.07	.07	.07	.07
43.5000	.07	.07	.07	.07	.07
44.0000	.07	.07	.07	.06	.06
44.5000	.06	.06	.06	.06	.06
45.0000	.06	.06	.06	.06	.06
45.5000	.06	.06	.06	.06	.05
46.0000	.05	.05	.05	.05	.05
46.5000	.05	.05	.05	.05	.05
47.0000	.05	.05	.05	.05	.05
47.5000	.05	.05	.05	.05	.04
48.0000	.04				

TOTAL NODE INFLOW...
HYG file =
HYG ID = OUTFALL
HYG Tag = 25 yr

Peak Discharge =	54.63 cfs
Time to Peak =	13.9000 hrs
HYG Volume =	32.346 ac-ft

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.00	.02	.03	.05	.06
.5000	.08	.09	.12	.16	.20
1.0000	.24	.27	.31	.35	.38
1.5000	.41	.45	.48	.51	.54
2.0000	.57	.60	.62	.65	.67
2.5000	.70	.72	.75	.77	.79
3.0000	.81	.83	.85	.87	.89
3.5000	.91	.93	.94	.96	.98
4.0000	.99	1.01	1.02	1.04	1.05
4.5000	1.06	1.08	1.09	1.10	1.11
5.0000	1.13	1.14	1.15	1.16	1.17
5.5000	1.18	1.19	1.20	1.21	1.22
6.0000	1.23	1.24	1.25	1.26	1.27
6.5000	1.28	1.29	1.30	1.31	1.31
7.0000	1.32	1.33	1.34	1.35	1.36
7.5000	1.36	1.37	1.38	1.39	1.39
8.0000	1.40	1.41	1.42	1.42	1.43
8.5000	1.44	1.45	1.46	1.48	1.49
9.0000	1.51	1.53	1.55	1.58	1.60
9.5000	1.64	1.67	1.71	1.75	1.79
10.0000	1.84	1.90	1.95	2.02	2.09
10.5000	2.18	2.27	2.37	2.48	2.61
11.0000	2.75	2.90	2.92	2.94	2.97
11.5000	3.00	6.33	9.53	12.92	16.72
12.0000	21.65	27.66	33.54	38.46	42.28
12.5000	45.14	46.33	47.52	48.66	49.73
13.0000	50.70	51.58	52.34	52.98	53.52
13.5000	53.95	54.26	54.48	54.60	54.63
14.0000	54.57	54.44	54.23	53.96	53.63
14.5000	53.24	52.80	52.32	51.79	51.23

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .1000 hrs

Time hrs | Time on left represents time for first value in each row.

Time hrs					
15.0000	50.64	50.02	49.39	48.73	48.06
15.5000	47.37	46.66	45.93	45.19	43.82
16.0000	42.42	41.21	40.14	39.17	38.26
16.5000	37.39	36.55	35.74	34.95	34.18
17.0000	33.44	32.71	32.01	31.33	30.67
17.5000	30.03	29.40	28.80	28.17	27.39
18.0000	26.50	25.55	24.58	23.64	22.73
18.5000	21.87	21.05	20.19	18.84	17.05
19.0000	15.41	14.08	13.06	12.26	11.65
19.5000	11.18	10.81	10.51	10.27	10.06
20.0000	9.88	9.71	9.56	9.42	9.28
20.5000	9.15	9.04	8.93	8.83	8.75
21.0000	8.67	8.60	8.53	8.48	8.43
21.5000	8.38	8.34	8.30	8.27	8.23
22.0000	8.20	8.17	8.14	8.11	8.08
22.5000	8.05	8.03	8.00	7.97	7.94
23.0000	7.92	7.89	7.87	7.85	7.82
23.5000	7.80	7.77	7.74	7.72	7.69
24.0000	7.67	7.63	7.56	7.41	7.16
24.5000	6.78	6.30	5.77	5.21	4.68
25.0000	4.20	3.77	3.40	3.09	3.00
25.5000	3.00	2.99	2.99	2.98	2.98
26.0000	2.98	2.97	2.97	2.96	2.96
26.5000	2.96	2.95	2.95	2.94	2.94
27.0000	2.93	2.93	2.93	2.92	2.92
27.5000	2.91	2.91	2.90	2.90	2.86
28.0000	2.82	2.77	2.74	2.70	2.66
28.5000	2.62	2.59	2.55	2.52	2.49
29.0000	2.46	2.43	2.40	2.37	2.34
29.5000	2.32	2.29	2.26	2.24	2.22
30.0000	2.19	2.17	2.15	2.13	2.11
30.5000	2.09	2.07	2.06	2.04	2.02
31.0000	2.00	1.99	1.97	1.96	1.94
31.5000	1.93	1.92	1.90	1.89	1.88
32.0000	1.87	1.86	1.84	1.83	1.82
32.5000	1.81	1.80	1.79	1.78	1.78
33.0000	1.77	1.76	1.75	1.74	1.74
33.5000	1.73	1.72	1.71	1.71	1.70
34.0000	1.69	1.69	1.68	1.68	1.67
34.5000	1.67	1.66	1.66	1.65	1.65
35.0000	1.64	1.64	1.63	1.63	1.63
35.5000	1.62	1.62	1.61	1.61	1.61
36.0000	1.60	1.60	1.60	1.59	1.59
36.5000	1.59	1.59	1.58	1.58	1.58

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .1000 hrs

Time on left represents time for first value in each row.

Time hrs					
37.0000	1.58	1.57	1.57	1.57	1.57
37.5000	1.56	1.56	1.56	1.56	1.56
38.0000	1.55	1.55	1.55	1.55	1.55
38.5000	1.55	1.55	1.54	1.54	1.54
39.0000	1.54	1.54	1.54	1.54	1.53
39.5000	1.53	1.53	1.53	1.53	1.53
40.0000	1.53	1.52	1.48	1.44	1.40
40.5000	1.36	1.32	1.28	1.24	1.20
41.0000	1.17	1.13	1.10	1.07	1.03
41.5000	1.00	.97	.94	.92	.89
42.0000	.86	.84	.81	.79	.76
42.5000	.74	.72	.70	.68	.66
43.0000	.64	.62	.60	.58	.56
43.5000	.55	.53	.51	.50	.48
44.0000	.47	.46	.44	.43	.42
44.5000	.40	.39	.38	.37	.36
45.0000	.35	.34	.33	.32	.31
45.5000	.30	.29	.28	.27	.26
46.0000	.26	.25	.24	.23	.23
46.5000	.22	.21	.21	.20	.19
47.0000	.19	.18	.18	.17	.17
47.5000	.16	.16	.15	.15	.14
48.0000	.14				

TOTAL NODE INFLOW...
HYG file = .
HYG ID = OUTFALL
HYG Tag = 50 YR

Peak Discharge =	71.39 cfs
Time to Peak =	13.5000 hrs
HYG Volume =	41.833 ac-ft

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)
Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
.0000	.00	.02	.03	.05	.06
.5000	.08	.09	.12	.16	.20
1.0000	.24	.27	.31	.35	.38
1.5000	.41	.45	.48	.51	.54
2.0000	.57	.60	.62	.65	.67
2.5000	.70	.72	.75	.77	.79
3.0000	.81	.83	.85	.87	.89
3.5000	.91	.93	.94	.96	.98
4.0000	.99	1.01	1.02	1.04	1.05
4.5000	1.07	1.08	1.09	1.11	1.12
5.0000	1.13	1.14	1.16	1.17	1.18
5.5000	1.19	1.20	1.21	1.22	1.24
6.0000	1.25	1.26	1.27	1.28	1.29
6.5000	1.30	1.31	1.32	1.33	1.34
7.0000	1.34	1.35	1.36	1.37	1.38
7.5000	1.39	1.40	1.42	1.43	1.45
8.0000	1.46	1.48	1.50	1.52	1.55
8.5000	1.57	1.60	1.64	1.67	1.71
9.0000	1.75	1.80	1.86	1.91	1.98
9.5000	2.05	2.13	2.21	2.30	2.39
10.0000	2.49	2.60	2.71	2.84	2.91
10.5000	2.92	2.94	2.96	2.98	3.94
11.0000	6.27	8.18	9.83	11.38	12.92
11.5000	14.57	16.18	17.70	19.60	22.75
12.0000	27.76	34.28	41.04	45.83	48.03
12.5000	50.08	52.01	53.81	55.46	56.97
13.0000	59.23	62.59	65.98	68.73	70.54
13.5000	71.39	71.34	70.59	69.60	68.70
14.0000	67.88	67.11	66.38	65.67	64.99
14.5000	64.32	63.66	63.00	62.35	61.69

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)

Time hrs | Output Time increment = .1000 hrs
Time on left represents time for first value in each row.

Time hrs					
15.0000	61.03	60.37	59.68	58.99	58.29
15.5000	57.57	56.85	56.11	55.37	54.61
16.0000	53.84	53.06	52.28	51.49	50.69
16.5000	49.89	49.10	48.30	47.49	46.68
17.0000	45.86	45.05	43.38	41.94	40.71
17.5000	39.63	38.66	37.75	36.89	36.07
18.0000	35.28	34.52	33.78	33.07	32.38
18.5000	31.72	31.07	30.44	29.83	29.24
19.0000	28.67	28.05	27.29	26.42	25.51
19.5000	24.58	23.68	22.80	21.96	21.17
20.0000	20.43	19.29	17.64	15.99	14.60
20.5000	13.52	12.69	12.05	11.57	11.20
21.0000	10.92	10.71	10.55	10.42	10.31
21.5000	10.23	10.16	10.09	10.04	9.99
22.0000	9.94	9.90	9.86	9.82	9.78
22.5000	9.75	9.71	9.68	9.64	9.61
23.0000	9.58	9.55	9.51	9.48	9.45
23.5000	9.41	9.38	9.35	9.32	9.29
24.0000	9.25	9.21	9.12	8.94	8.64
24.5000	8.21	7.63	6.96	6.24	5.56
25.0000	4.93	4.38	3.91	3.51	3.17
25.5000	3.00	3.00	2.99	2.99	2.99
26.0000	2.98	2.98	2.97	2.97	2.97
26.5000	2.96	2.96	2.95	2.95	2.94
27.0000	2.94	2.93	2.93	2.93	2.92
27.5000	2.92	2.91	2.91	2.91	2.90
28.0000	2.87	2.83	2.79	2.75	2.71
28.5000	2.67	2.63	2.60	2.56	2.53
29.0000	2.50	2.47	2.44	2.41	2.38
29.5000	2.35	2.32	2.30	2.27	2.25
30.0000	2.22	2.20	2.18	2.16	2.14
30.5000	2.12	2.10	2.08	2.06	2.04
31.0000	2.03	2.01	1.99	1.98	1.96
31.5000	1.95	1.93	1.92	1.91	1.89
32.0000	1.88	1.87	1.86	1.85	1.84
32.5000	1.83	1.82	1.81	1.80	1.79
33.0000	1.78	1.77	1.76	1.75	1.75
33.5000	1.74	1.73	1.72	1.72	1.71
34.0000	1.70	1.70	1.69	1.68	1.68
34.5000	1.67	1.67	1.66	1.66	1.65
35.0000	1.65	1.64	1.64	1.63	1.63
35.5000	1.63	1.62	1.62	1.61	1.61
36.0000	1.61	1.60	1.60	1.60	1.60
36.5000	1.59	1.59	1.59	1.58	1.58

WARNING: Hydrograph truncated on right side.

HYDROGRAPH ORDINATES (cfs)

Output Time increment = .1000 hrs

Time hrs | Time on left represents time for first value in each row.

Time hrs					
37.0000	1.58	1.58	1.57	1.57	1.57
37.5000	1.57	1.56	1.56	1.56	1.56
38.0000	1.56	1.56	1.55	1.55	1.55
38.5000	1.55	1.55	1.55	1.54	1.54
39.0000	1.54	1.54	1.54	1.54	1.54
39.5000	1.54	1.53	1.53	1.53	1.53
40.0000	1.53	1.52	1.50	1.49	1.47
40.5000	1.46	1.44	1.43	1.42	1.40
41.0000	1.39	1.38	1.37	1.35	1.34
41.5000	1.33	1.32	1.31	1.30	1.29
42.0000	1.28	1.28	1.27	1.26	1.25
42.5000	1.24	1.24	1.23	1.22	1.22
43.0000	1.21	1.20	1.20	1.19	1.19
43.5000	1.18	1.17	1.17	1.16	1.16
44.0000	1.15	1.15	1.15	1.14	1.14
44.5000	1.13	1.13	1.13	1.12	1.12
45.0000	1.11	1.11	1.11	1.10	1.10
45.5000	1.10	1.10	1.09	1.09	1.09
46.0000	1.08	1.08	1.08	1.08	1.07
46.5000	1.07	1.07	1.07	1.07	1.06
47.0000	1.06	1.06	1.06	1.06	1.06
47.5000	1.05	1.05	1.05	1.05	1.05
48.0000	1.05				