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Chapter One

INTRODUCTION

This is the Second Amendment to the North Douglas County Specific Plan (NDCSP) adopted September 7, 2000. This amendment seeks to modify the future land uses for a portion of the NDCSP area owned by Big George Ventures (BGV) and to provide additional analysis of regional infrastructure and mitigation requirements. It is the intent of this amendment to address key issues of the proposed change to the BGV land uses and to provide implementation measures and strategies to mitigate impacts that may result from the proposed change. It is not the intent of this amendment to introduce new land uses or changes to other properties within the Specific Plan area. Therefore, any changes adopted through this amendment will only affect the BGV site as legally described in Appendix G. Furthermore, unless specifically modified within this amendment, all other policies of the original NDCSP remain in effect for the BGV site.

1.0 SPECIFIC PLAN / BGV PROJECT LOCATION

Flanked by the Sierra Nevada mountain range to the west and the Carson River drainage to the east, the North Douglas County Specific Planning area is generally situated at the northern end of the county and Carson Valley, immediately south of the Douglas County/Carson City line (see Vicinity and Location map, Figure 1-1, 1-1A). U.S. Highway 395 bisects the 624-acre planning area, 444-acres of which is under the jurisdiction of the Bureau of Land Management, into east and west sections.

The eastern portion of the planning area contains the majority of land in the planning area and is located north of the Sunridge subdivision, west of Center Drive, east of U.S. Highway 395, and south of the Douglas County/Carson City line. The western portion is generally located just north of Jack's Valley Road, is bounded on the west by Washoe Tribal lands, and extends to the Douglas County/Carson City boundary. Situated at approximately 4,800 feet in elevation, the project area is generally composed of gently rolling hills moderately vegetated by sagebrush plant community species.

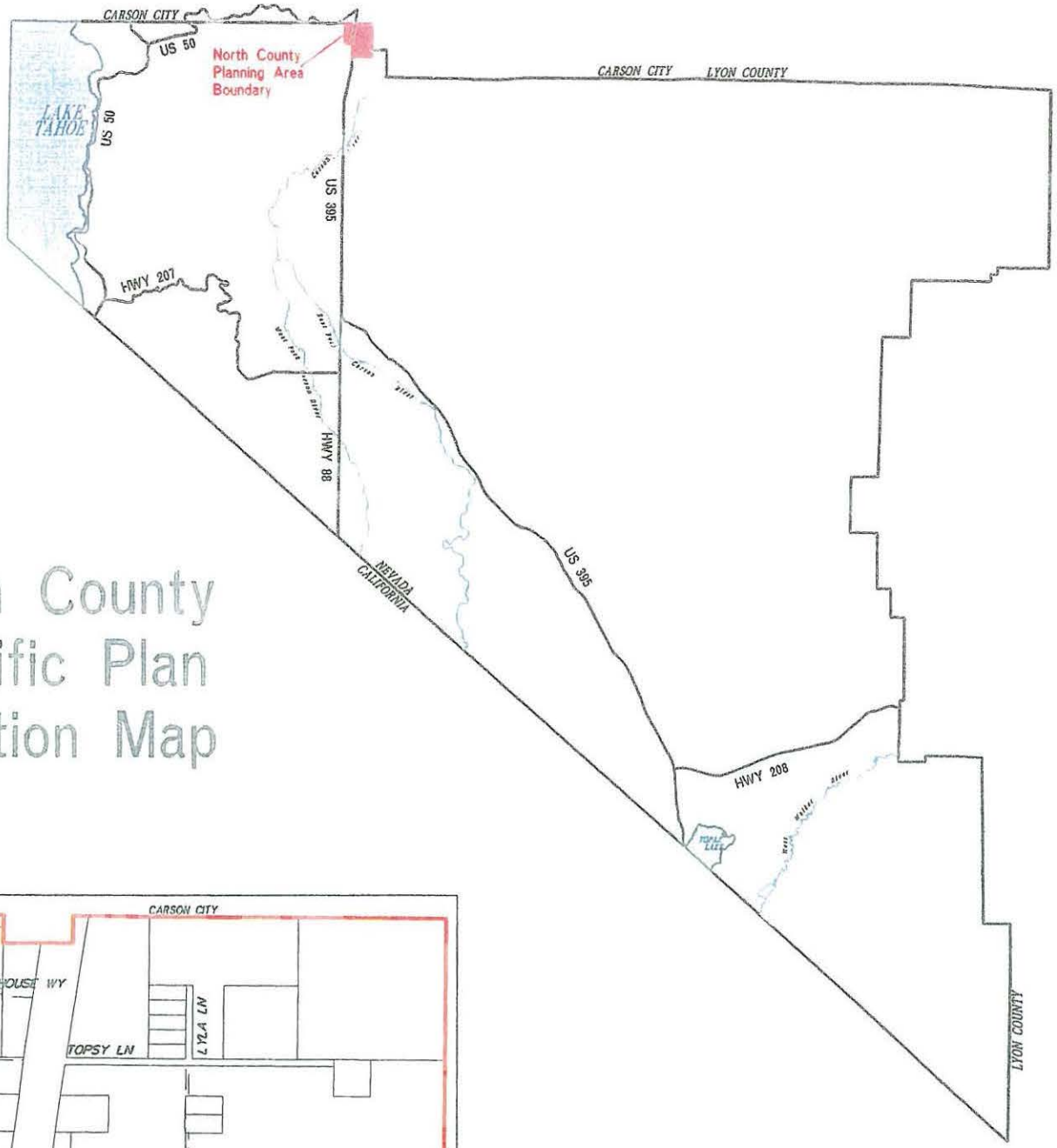
The Big George Ventures (BGV) site is comprised of 101.1 acres and is located approximately 1,160 feet south of Topsy Lane and 1,400 feet east of US Highway 395 in the Indian Hills Community Planning Area.

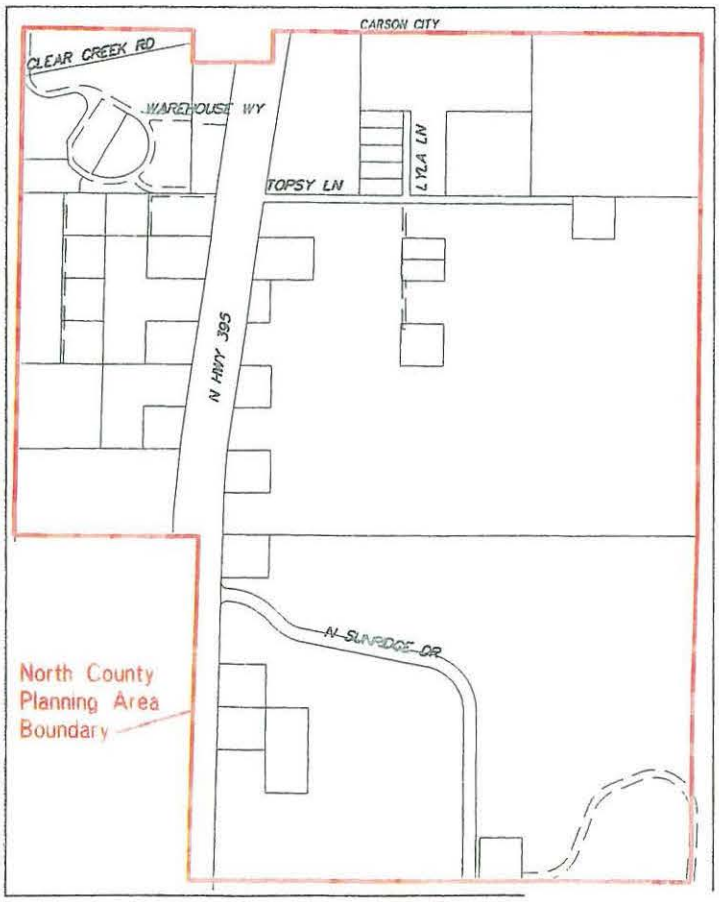
1.1 SPECIFIC PLAN DEFINITION, BACKGROUND, and PURPOSE

Definition

A Specific Plan is essentially a plan within a plan that builds upon the general elements of an existing Land Use or Master Plan, but which considers unique or special circumstances present in a particular area. These unique or special circumstances can

North County Specific Plan Location Map





SCALE: 1" = 6 miles
DATE: 07/31/00

(FIGURE 1-1)

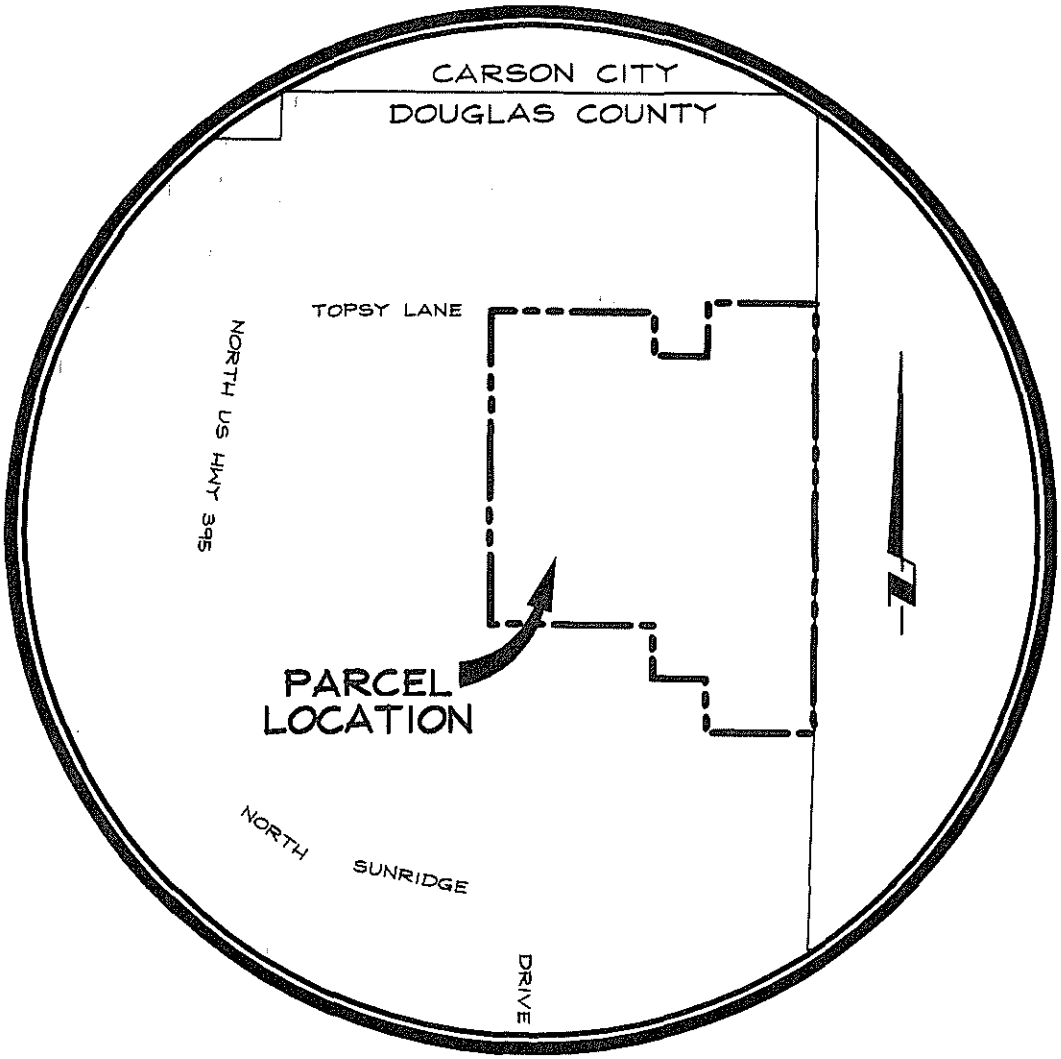


FIGURE 1-1 'A'

BIG GEORGE VENTURES
PROJECT BOUNDARY

1293-005

06/30/08

include, but are not limited to, such elements as sensitive environmental resources, joint or overlapping governmental jurisdictions, development transition zones, or economic considerations. Usually developed through extensive community input, the Specific Plan reflects a specific community vision for an area. Although a Specific Plan is often used to compliment, enhance, or embellish existing regulations or plans, it can also be used as a regulatory alternative to conventional zoning and master plan procedures by enabling non-traditional planning mechanisms to be utilized.

NDCSP and BGV Project Background

The Federal Land Policy and Management Act (FLPMA) passed in 1976 required the Bureau of Land Management (BLM) to "develop land use plans for public lands and to study the suitability of certain lands for wilderness designation." In response to this requirement, the BLM initiated the development of Resource Management Plans for lands under their jurisdiction. The Resource Management Plans, which were developed on a district by district basis, typically addressed three key resource issues:

1) Rangeland Management, which concerned the use of rangeland resources by livestock, wild horses and burros, and wildlife;
2) Wilderness, which considered the amount of acreage to be recommended as suitable or unsuitable for wilderness designation; and
3) Land Tenure / Rights-of-Way Corridors, which considered the amount of land to be identified as potentially suitable for disposal from federal ownership and what areas, if any, are suitable for rights-of-way corridors.

In 1985 the BLM completed a Resource Management Plan for the Walker Resource Area of the Carson City District entitled the "Walker Resource Management Plan." This plan identified lands currently within the North Douglas County Specific Plan area as eligible for patent or lease under the Recreation and Public Purposes Act (R&PP), and also identified the lands as meeting criteria for disposal or exchange out of federal ownership. The North Douglas County Specific Plan area has subsequently experienced significant development pressure from R&PP leases and patents and has generated extensive development interest from the private sector.

In 1998, the BLM indicated a desire to dispose of 440 acres of BLM land in north Douglas County. In order to develop a more specific land use plan for this area based on private ownership, the County proceeded to prepare a specific plan for the area that included not only the BLM lands, but also adjacent lands owned by both the U.S. Forest Service and private parties. The County also sought to increase the valuation of this property since a portion of the revenues from the land sale were to accrue to Douglas County for the purpose of purchasing of open space easements within the County.

In April of 2000, the County hired a consulting firm to assist in preparing the North County Specific Plan and to assist the BLM in the preparation of a BLM plan amendment and environmental assessment.

On September 7, 2000 the Board of Commissioners adopted the North Douglas County Specific Plan ("NDCSP"), including Master Plan land use map amendments and zoning map amendments establishing consistency zoning for the North County Specific Plan area. A map of the approved zoning per the Specific Plan is attached. The Specific Plan was used to support a master plan amendment which redesignated the vast majority of this area from FR-40 (Forest and Range 40 acre minimum) to Commercial, Public Facilities and Single Family. Also included was a consistency rezoning request. This reclassified the zoning on the site to be consistent and compatible with land use designations granted during the master plan amendment process and with the goals, policies and vision statements included within the NDCSP.

On October 11, 2007 the Douglas County Board of Commissioners approved the First Amendment to the North Douglas County Specific Plan for Max Baer and Riverwood Partners, LLC. This amendment reflects revised zoning map changes for the Beverly Hillbillies Casino Project. This includes changing the zoning on their site from General Commercial to Tourist Commercial with a Gaming District Overlay.

Big George Ventures Project Background

On October 27, 2005 the BLM held the land auction for the area now owned by Big George Ventures. The escrow was funded and title of the land transferred to BGV on April 18, 2006. BGV submitted a Planned Development application to Douglas County on August 29, 2006 for a 364 unit project with a mix of residential land uses, including 254 patio homes (ownership lines defined by building footprint, land between units owned and maintained as common area) with five variations in building envelope sizes, 27 duplex buildings (54 units) situated on corner parcels and 14 four unit buildings (56 townhouse units). 18 common area parcels are also proposed, two of which contain the County's existing well and storm water detention facilities. These two parcels will be dedicated to Douglas County in fee. The remainder of the open space parcels and improved park area will be owned and maintained by a homeowner's association.

On July 5, 2007 the Douglas County Board of Commissioners approved the BGV Planned Development & Tentative Map application (PD 06-005 - see Figure 1-2). On July 10th, 2007 the Douglas County Planning Commission approved a Special Use Permit and Variance for the proposed Beverly Hillbillies Casino/Hotel project which is located directly adjacent to and west of the BGV Planned Development. This approval allows unlimited gaming in addition to the construction of two twelve-story hotel towers with a total height of 143 feet. This decision was appealed by BGV to the Board of County Commissioners. On August 2, 2007 the Board of County Commissioners upheld the Planning Commission's decision regarding the Special Use Permit and Variance. The Board also reviewed and approved the first reading of the zoning map change and the First Amendment to the North Douglas County Specific Plan for Mr. Baer and Riverwood Partners LLC. At the request of the Board of Commissioners, the second reading of the ordinance was delayed until October 11, 2007 in order that both project proponents (Baer and BGV) could work together to develop a plan "with a mix of

FIGURE 1-2

APPROVED

PLANNED DEVELOPMENT

SITE PLAN FOR BIG GEORGE VENTURES

1293-005

06/30/08

compatible uses"[1]. At the same August 2nd meeting, an amendment to the NDCSP Plan for Big George Ventures was also continued to the October 11th Board meeting so that both project proponents could work together.

On October 11, 2007 the Board of Commissioners reviewed and approved the second reading of the zone change ordinance for the proposed Casino project. Staff received direction from the Board regarding the NDCSP amendment that it should follow the normal process. Since the NDCSP amendment as proposed would also require a concurrent amendment to the Master Plan, the earliest the revised amendment could be completed is during the Master Plan cycle of June 1, 2008. On May 30, 2008 an amendment to the Master Plan was filed with Douglas County reflecting the changes necessary to support a compatible project with a mix of uses which will complement Big George Ventures, the proposed Casino development, and other adjacent land uses.

Purpose

The purpose of the North Douglas County Specific Plan (hereinafter referred to as the NDCSP) is to provide for the orderly planning of future development as lands in the planning area transition out of federal ownership. Ultimately, the plan is intended to act as a guide for the BLM, Douglas County Commissioners, Planning Commissioners, and the community in general on matters of growth and development within the NDCSP area.

The plan intends to guide growth by outlining existing patterns of development, by establishing new land use and zoning designations, by providing a plan for the provision of public facilities, by identifying conservation areas, and by establishing site design and transportation patterns. Additionally, the development of the NDCSP will result in appropriate property values for lands being disposed out of federal ownership, thereby enabling the BLM and/or Douglas County to utilize revenues to acquire or conserve sensitive farmland and floodplain properties in the Carson Valley.

1.2 RELATIONSHIP TO OTHER PLANS, CODES, POLICIES, AND PROGRAMS

The Douglas County Master Plan indicates that the NDCSP area is located within the Indian Hills / Jacks Valley Regional and Community Master Plan Element. Certain goals, objectives, and policies contained within this element were developed under the assumption that lands within the NDCSP area would remain under BLM ownership, thus remaining rural in nature. Because of the development pressures and land management issues discussed above, certain goals, objectives, and policies are now inconsistent with conditions in the area. To rectify this inconsistency, an amendment to the master plan was required along with the development of the NDCSP. The Master Plan amendment process was conducted concurrently with the development of the NDCSP.

[1] Zuckerman Letter dated August 14, 2007

Findings for the amendment are discussed in the conclusion section (chapter six) of this plan.

The Douglas County Master Plan also contains Growth Management and Land Use Elements that establish policies regarding the adequate provision of infrastructure to proposed development. As part of these policies, urban and rural service boundaries were created throughout the county that established specific service standards for the provision of public facilities. The NDCSP area, because of its large amount of BLM land, is currently designated as being within a rural service boundary. The NDCSP master plan amendment will amend this designation to include the area within an urban service boundary. This amendment will help to ensure that adequate public facilities are supplied to potential development in the area.

While the NDCSP is intended to replace the previous pattern of zoning in the planning area, existing Douglas County codes, policies, and programs will not be modified by the specific plan. All existing Douglas County codes, requirements, design guidelines, policies, and programs apply and are in effect regarding the planning area.

1.3 SPECIFIC PLAN PROCESS

The process for the NDCSP began in April 2000 with data collection and scoping sessions to identify key issues and develop a framework for the plan process. The plan was a joint effort between Douglas County and the BLM to facilitate the orderly disposal of public lands out of federal ownership. The plan was developed through public involvement, discussions with surrounding jurisdictions, and consultation with professional services. A series of public workshops and meetings were conducted to gather public input and involve the community in the specific planning process.

The public workshops were held on May 10, May 17, and June 21 of 2000. The purpose of the May 10th workshop was to introduce the project to the public and solicit input regarding potential development of the area, the community's needs and vision, and the identification of key issues, goals, and objectives for the planning area. The intent of the May 17 workshop was to explain the environmental public scoping aspect of the project, introduce the Walker Resource Management Plan amendment and Environmental Analysis processes and timeline, provide an opportunity for review and comment of potential environmental issues, and solicit input regarding the human environment. The June 21st workshop was held to introduce four conceptual land use and zoning map alternatives for the specific planning area and solicit input regarding the proposed alternatives.

The public workshops were followed by a series of county hearings held on July 11, August 8, and September 7 of 2000. The July 11th meeting was a no-action Planning Commission meeting to present and discuss proposed land use and zoning maps with the Planning Commission. The Planning Commission solicited public comments and made recommendations regarding the proposed zoning and land uses. The August 8th Planning Commission meeting was held to adopt the Draft North Douglas County

Specific Plan document and zoning map. The September 7th board of Commissioners meeting was held to finalize adoption of the Specific Plan and to pass an associated master plan amendment required as a result of the specific planning process. Public comments were solicited at all of the above referenced workshops and meetings (agendas and minutes of these workshops and meetings are attached in the appendix of this plan). Goals and objectives for the planning area were developed through this public input, and a vision for the future development of the area was established.

1.4 KEY ISSUES

Key issues are an inherent part of any planning process and generally form the basis for subsequent goal and objective development. Key issues are identified in a variety of ways including public input, evaluation of existing conditions, environmental analysis, and the land use planning process. The key issues identified in the NDCSP area are particularly engaging and complex given the location, ownership, development trends, and existing conditions of the lands and surrounding uses. The following is a summary of these key issues.

Key issues identified in the NDCSP area by an evaluation of existing conditions, environmental analysis, and the land use planning process included:

- Existing and potential development of the area was occurring without adequate planning for infrastructure, land use compatibility, or the needs of the county as a whole.
- The unique opportunity, either through land exchanges or disposal, for Douglas County and the BLM to acquire conservation easements or sensitive lands in the Carson Valley that are threatened by development pressures.
- Surrounding urban and suburban development pressures and land use trends.
- Site topography, drainage, and existing character of the area.
- Existing land uses and compatibility of potential uses.
- Land management issues stemming from overlapping governmental jurisdictions and associated regulations, variety of stakeholders, sensitive cultural resources, and history of the area.
- The BLM land exchange/disposal process and development process for the area in general, including the Environmental Assessment and Walker Resource Management Plan Amendments processes.
- The location of the area as a potential regional commercial activity center.
- The need for multi-family housing in the NDCSP area to replace multi-family zoning eliminated by previous development.

Key issues identified during the public involvement process included:

- The desire for commercial zoning along the east side of Highway 395 if development of the area were to occur.

- Site topography and drainage as possible development constraints, but also as opportunities for open space and recreation, particularly along the eastern portion of the planning area.
- Retention of open space to the greatest extent possible.
- Development of usable open space, such as connected trail systems and parks.
- Existing land uses and compatibility with proposed uses.
- The location and extent of proposed land uses.
- BLM disposal process and land development process.
- Environmental issues, such as wildlife, cultural resources, drainage, and vegetation.
- Buffer treatments for existing residential areas, particularly the Sunridge subdivision, to ensure compatibility with proposed land uses.
- Interest in a potential school site with sports or recreation fields to accommodate future needs and take advantage of affordable land.
- Utilization of certain land uses as buffer treatments, such as churches or a school site north of the Sunridge subdivision.
- Concern regarding traffic circulation, congestion, and access points to/or along Highway 395.
- The need for a potential "back road" out of Douglas County to Carson City.
- Adequate fire protection.

1.5 SPECIFIC PLAN GOALS

Based on the above key issues, a series of goals for the NDCSP area were developed. The goals are not intended as specific solutions but as desired ends for the future condition of the area.

Goal 1.5.1: Ensure the orderly planning of future development as lands in the NDCSP area transition out of federal ownership.

Goal 1.5.2: Ensure the provision of adequate public facilities in the planning area.

Goal 1.5.3: Provide for growth in a manner that is compatible with the existing and surrounding built and natural environment.

Goal 1.5.4 To create a community oriented to both the automobile and the pedestrian through adequate infrastructure planning and the provision of connected trail systems.

Goal 1.5.5 Provide needed regional commercial services and employment opportunities while preserving prime farmland and sensitive lands in the Carson Valley.

Goal 1.5.6 Offer increased housing choices while retaining the character of the area.

Goal 1.5.7 Preserve and provide both passive and usable open space.

Goal 1.5.8 Provide adequate opportunities for public services such as schools, churches, and community needs.

Goal.1.5.9 Improve the jobs/housing balance in Douglas County.

Goal.1.5.10 Provide adequate transportation circulation.

Goal.1.5.11 Ensure adequate fire and police protection.

Goal.1.5.12 Protect and enhance cultural resources present in the planning area.
Goal 1.5.13 Support and encourage Planned Unit Developments to enhance the ability for providing unique design features in the planning area.

1.6 VISION STATEMENT

Based on existing conditions, identified key issues and goals, and public comments, the following vision statement for the NDCSP area was developed:

"To create a unique mixed use community in the north Douglas County area that will provide needed regional commercial services, housing choices, increased employment opportunities, and recreational elements while maintaining a distinct sense of place. The NDCSP area shall represent a community designed for both pedestrian and automobile circulation with abundant open space amenities and connected trail systems. The NDCSP area will ensure the provision of adequate public facilities and retain space for the development of public services such as churches, schools, and open space recreational areas. "

Chapter Two

ENVIRONMENTAL RESOURCES

2.0 INTRODUCTION

The environmental resources section of a specific plan typically discusses the identification of resources present in a particular area and the potential constraints, sensitivities, or opportunities they represent. Environmental resources normally inventoried in a specific plan include flood hazards, wetlands, soils and geology, topography, archeological and historic resources, land ownership, vegetation, and wildlife.

The NDCSP involves the potential use and development of federal lands. Actions involving the use of federal lands automatically require compliance with the National Environmental Policy Act (NEPA), which sets federal standards nationwide for environmental review and regulatory documentation requirements. For this reason, a more in depth study of environmental resources was required for the NDCSP area.

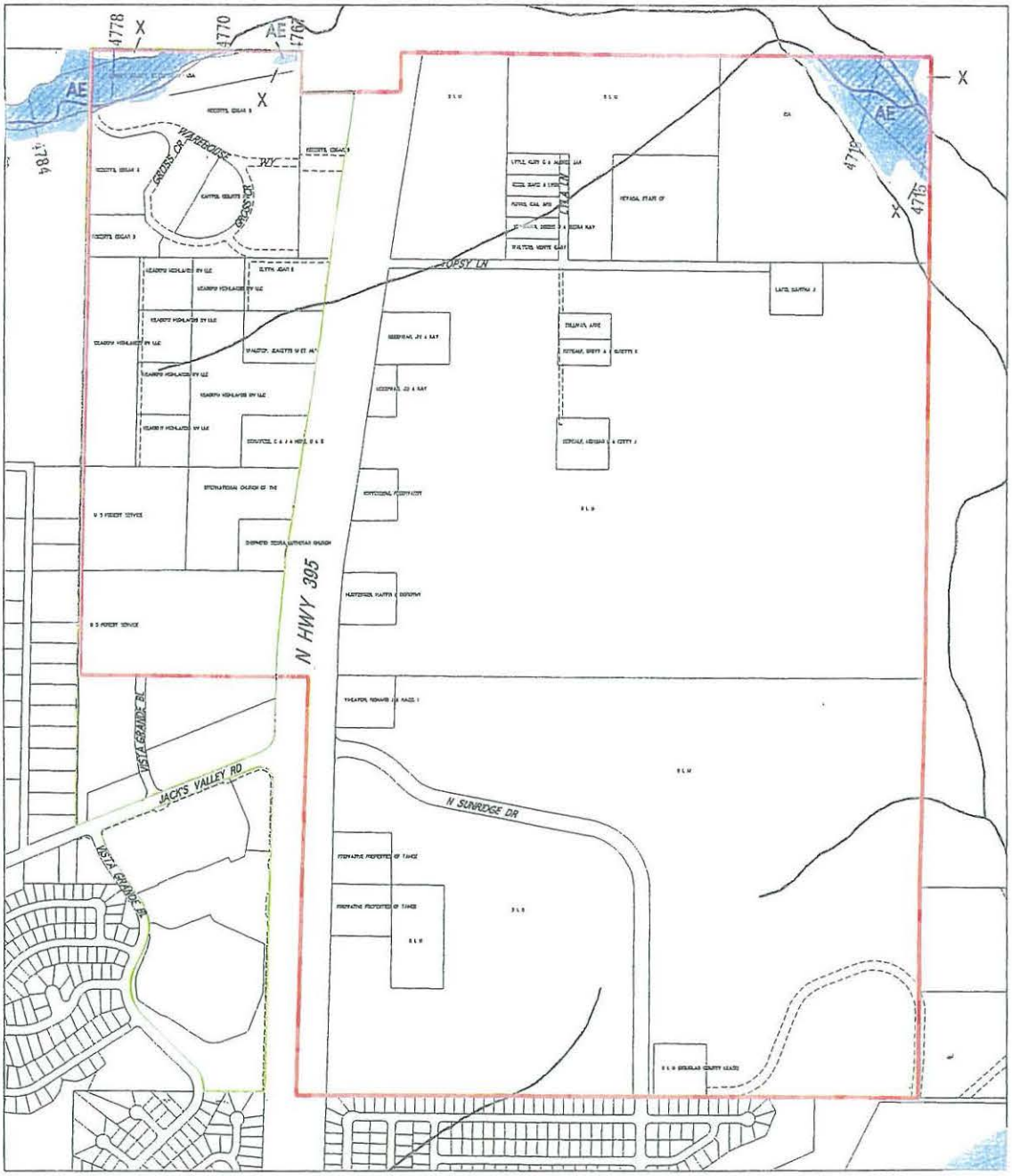
To meet these requirements, it was determined that an Environmental Assessment (EA) would need to be conducted in the NDCSP area. Additionally, the Bureau of Land Management (BLM) is required to develop Resource Management Plans for lands under their jurisdiction. Approximately 440 acres of land within the planning area are currently managed by the BLM and are addressed by the Walker Resource Management Plan. In order for lands within the NDCSP area to transition into private ownership, certain management policies within the Walker Resource Management Plan must be amended.

The Environmental Assessment and Walker Resource Management Plan amendment were conducted concurrently with the development of the NDCSP to ensure consistency and coordination of issues. Because these documents are highly detailed and complex, they have been summarized in this section of the specific plan and used as a basis for discussion of environmental resource elements. The Environmental Assessment Walker Resource Management Plan Amendment will be included by reference as a supplement to this plan.

2.1 PLANNING PROCESS OVERVIEW

The Bureau of Land Management (ELM), Carson City Field Office, and Douglas County jointly directed the preparation of the Walker Resource Management Plan Amendment, Environmental Assessment, and North Douglas County Specific Plan. Douglas County and the BLM met numerous times over the course of the project to coordinate these efforts. Additionally, public input was gathered at several public workshops held during the spring and summer of 2000.

North County Specific Plan Area
Floodplain and Hydrology



LEGEND

100-YEAR

- Zone A, Base flood elevation not determined
- Zone AE, Base flood elevation determined
- Floodway, Zone AE
- Zone AH, Flood depths of 1 to 3 feet
- Zone AO, Flood depths of 1 to 3 feet

500-YEAR

- Zone X

Flood Zones: From FEMA Flood Insurance Rate Maps - 32005C0030 F 11-8-99

Redevelopment Area Boundary — North County Specific Plan Area

Hydrology, Ground Water Flow: USGS Open File Report 89-382

SCALE 1" = 700'
DATE: 04/03/00

(FIGURE 2-1)

The study area geology, which is crossed by several small faults, has been mapped as consisting of gravel, sands, and Cretaceous granitic rocks of the Quaternary and Tertiary periods (Stewart, 1999 and Moore, 1969). The town of Stewart marks an abrupt change from a simple fault scarp to a more complex range front in which down warping and distributive faulting has played an important part. A rock outcropping occurs near the eastern portion of the property and is a part of the cultural site to be potentially transferred to the Washoe Tribe. Existing or potential mineral deposits within the project area were not discovered during the project investigation (Moore, 1969).

2.2.3 Topography

The NDCSP area is distinguished by a series of rolling hills separated by small drainage ways and washes of intermittent flow. The area could be characterized as "bench land" situated just above the prime farmlands and flat floodplains of the Carson Valley and the Carson River system.

The eastern portion of the planning area experiences more pronounced variations in topography than the western portion (see Elevation and Soils map, Figure 2-2, 2-2A). Several areas along the eastern boundary contain significant slopes in excess of 15 percent and are not suitable for development. The western portion of the planning area does not contain slopes in excess of 15 percent.

Drainage ways in the eastern portion of the planning area are also more extensive. Several sizable drainage ways, which generally drain into the Clear Creek drainage, divide the eastern portion into distinct topographical areas. These drainage ways and steep slopes have been designated as open space to retain their natural character.

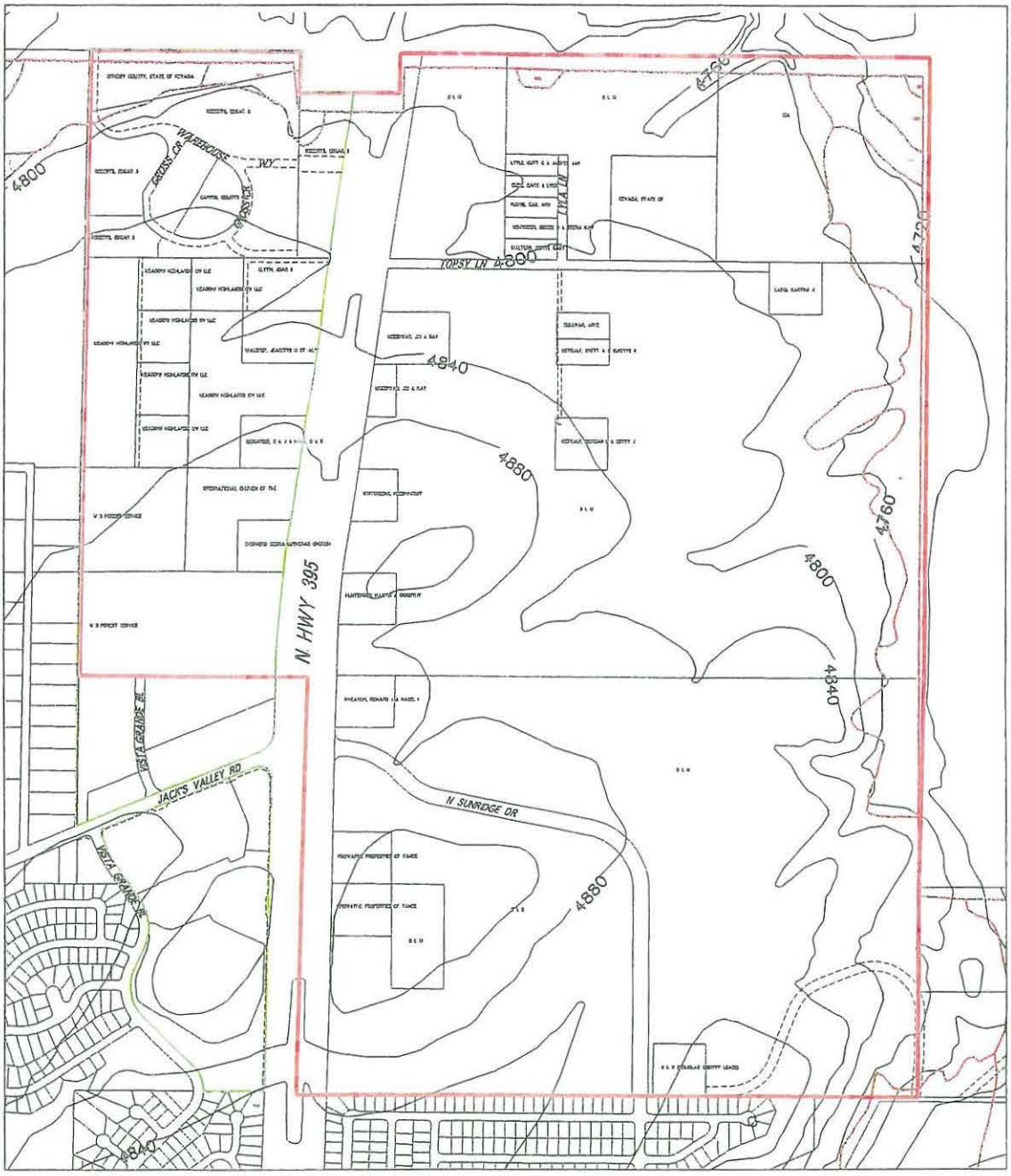
2.2.4 Archaeological and Historic Resources

A Class III cultural resource survey was conducted between April 26th to May 1st, 2000 by Western Cultural Resource Management, Inc. and submitted to the BLM, Carson City office for review and approval. The scope of work for this survey and report included: 1) conducting an intensive (Class III) field reconnaissance designed to identify historic properties that may be located within the project area; 2) recordation of cultural resources and evaluation of eligibility for nomination to the National Register of Historic Places (NRHP); and, 3) assessment of potential project impacts to historic properties (recommended eligible sites) and making management recommendations concerning avoidance, monitoring, and if necessary, mitigation.

This inventory resulted in the identification of seven sites consisting of three historic refuse scatters, one historic ditch segment, one historic site with structural materials and associated refuse, one prehistoric lithic scatter, and one prehistoric lithic scatter with a small ground stone component. In addition, one previously identified site consisting of bedrock milling slicks and mortars with an associated rock feature was recorded (see Identified Cultural Resources map, Figure 2-3). Two of the sites are recommended eligible to the National Register of Historic Places (NRHP): the milling feature site,

North County Specific Plan Area

Elevation and Soils



Contour Lines

Soils*, US Department of Agriculture, Soil Survey of Douglas County Area Nevada, 1984. Digital data from USGS, Carson City, NV.

Redevelopment Area Boundary

North County Specific Plan Area

*Consult Soil Survey of Douglas County Area NV for explanation of soil units.

SCALE: 1" = 700'
DATE: 04/11/02

(FIGURE 2-2)

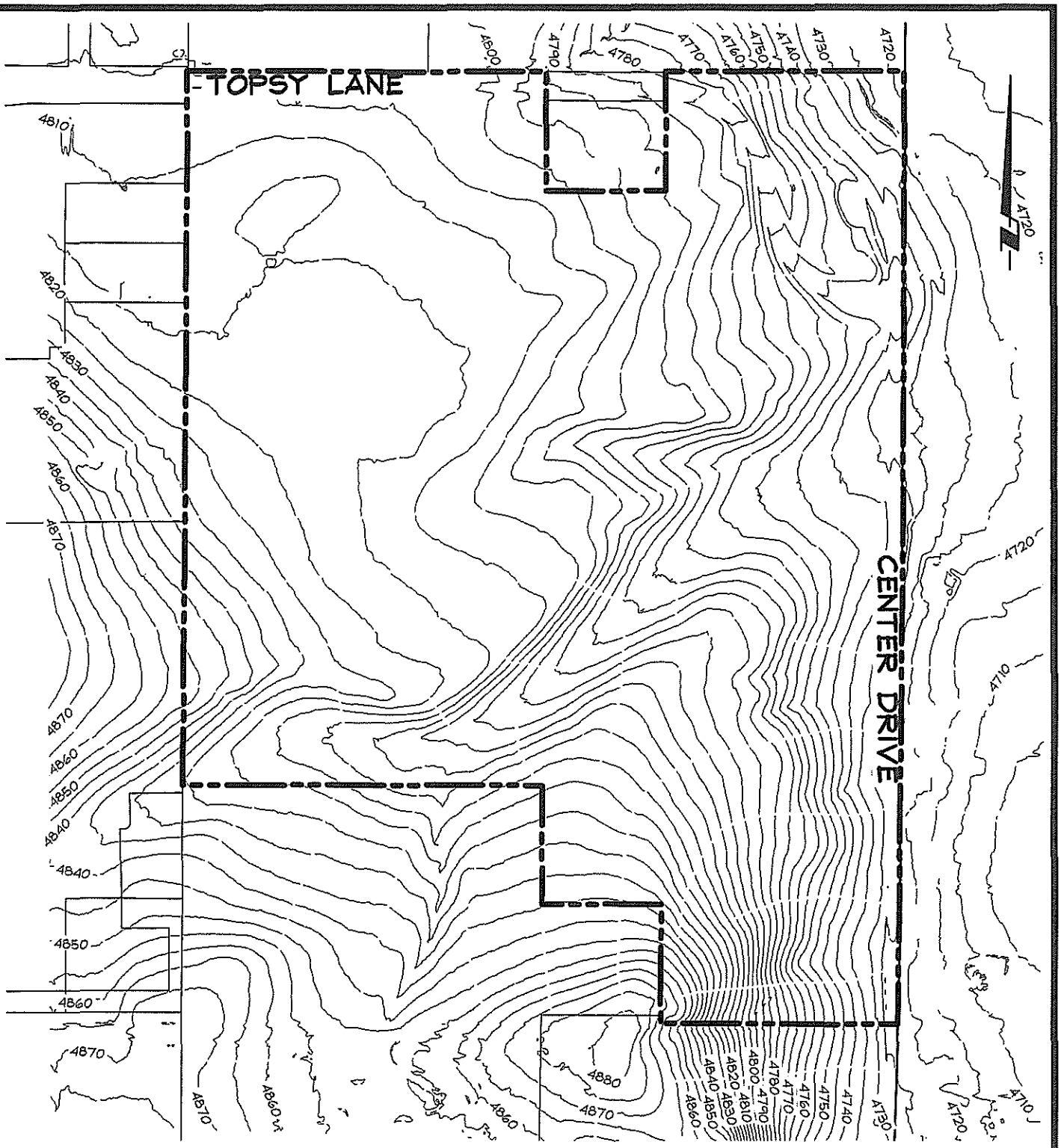


FIGURE 2-2 'A'

DOUGLAS COUNTY
SPECIFIC PLAN
TOPOGRAPHIC STUDY

1293-005 06/30/08

26Do265, and a site containing historic refuse scatters, 26Do710. Due to the significance of these sites, these portions of the planning area have been set aside as open space and/or transferred to Washoe Tribal ownership for applicable feature areas.

2.2.5 Land Ownership

For planning purposes, land ownership is typically discussed in terms of private and pubic (government) ownership. The majority of land within the NDCSP area is currently under government ownership. An exception to this generality is the smaller, western portion of the planning area (i.e. west of Highway 395) where the majority of parcels are privately owned. Two large United States Forest Service (USFS) parcels, however, are located in this area. Most parcels under the jurisdiction of the BLM are located in the eastern portion of the NDCSP area and are interspersed by a few privately owned parcels.

BLM Lands within the NDCSP area total approximately 440 acres. Classification of these lands is provided within the Walker Resource Management Plan and the Reno Planning Area covered by the Management Framework Plan. Approximately 315 acres of the land is classified as Recreation and Public Purposes (R&PP) act lands. However, planning decisions for the area identify 160 acres for R&PP and 320 acres for urban and suburban purposes consistent with local comprehensive plans or the views of local governmental authorities. At this time, approximately 144 acres are under R&PP patent, lease, or application, but only 44 of these acres are currently classified for disposal through R&PP. There are 15 Acres of R&PP lands Patented to Carson Valley Community Church and Museum, 2.5 acres under R&PP lease for a fire/police station, and 40 acres are potentially needed for a future Douglas County High School.

2.2.6 Vegetation

Vegetation in the area is characterized by shrubs such as: Antelope bitterbrush (Purshia tridentata) , Douglas rabbitbrush (Chyrothamnus viscidiflorusy, Mountain big sagebrush (Artemisia tridentata vaseyana) , Spineless horsebrush (Tetradymia canescens), Wyoming big sage (Artemisia tridentata wyomiingensisy; and by grasses such as: Basin wildrye (Elymus cinereus), Bottlebrush squirreltail (Sitanion hystrix), Desert needlegrass (Stipa speciosa), Indian ricegrass (Oryzopsis hymenoides), Needle-and-thread (Stipa comata), and Thurber needlegrass (Stipa thurberiana). Field research indicates that there are no sensitive plants in the project area.

2.2.7 Wildlife

Wildlife in the area is composed of small mammals, reptiles, songbirds, and occasional raptors. The Nevada Natural Heritage Program search revealed that habitat may be available for the Carson Valley sandhill skipper, Polites sabuleti genoa, a taxon determined to be sensitive by the NNHP and the Townsend's bigeared bat, Corynorhinus townsendii, a BLM Sensitive Species. A BLM Nevada Special Status Species, the Carson Valley Wood nymph (Cercyonis pegala carsonensis) may also

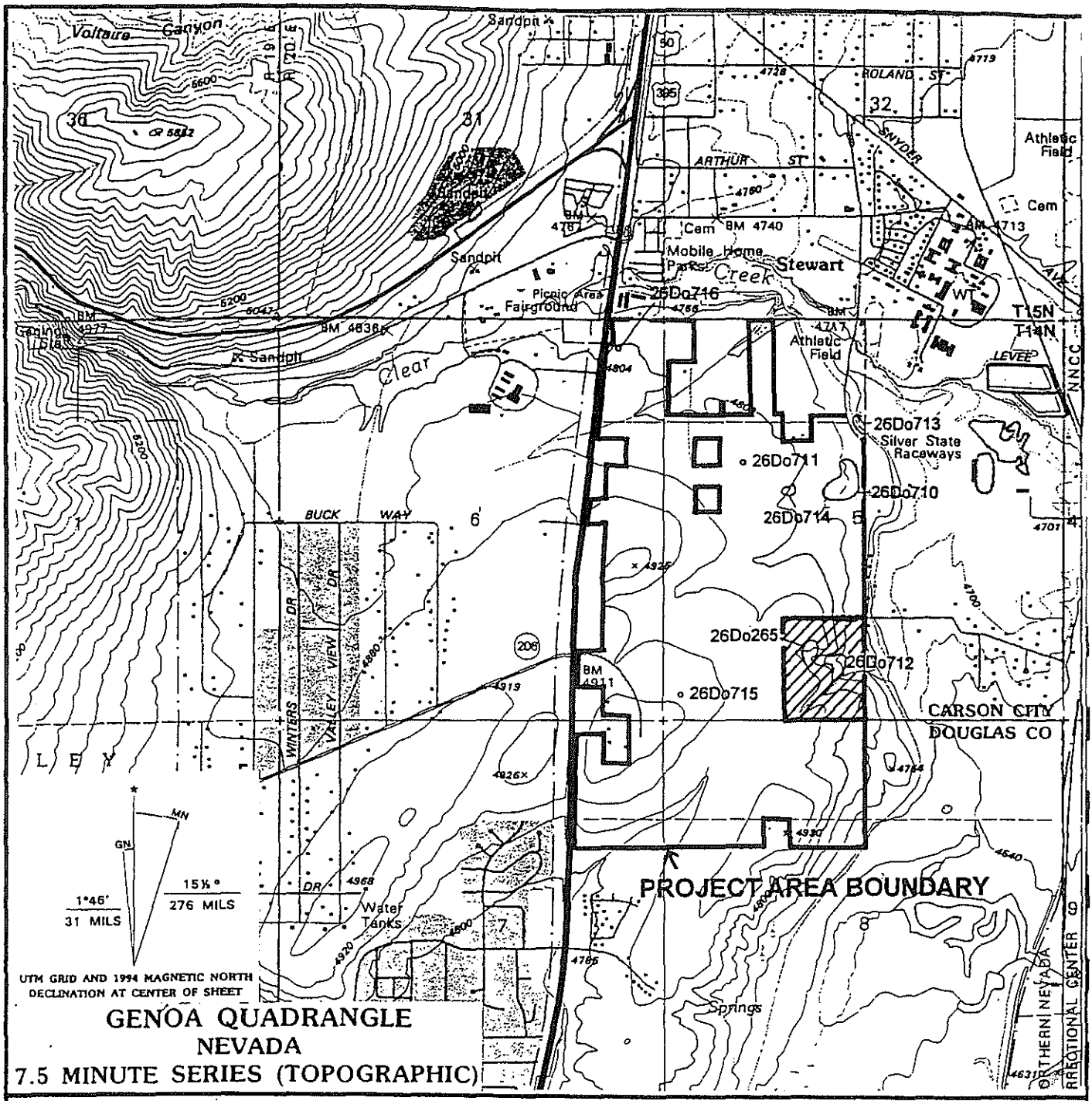
occur in the project area. Habitat for these species, however, is not ideal or unique within the specific plan Area. Roads, as well as residential and public facility developments, disturb the sagebrush type community present in the planning area.

2.3 CRITICAL ELEMENTS OF THE HUMAN ENVIRONMENT NOT PRESENT

The following critical elements of the human environment are either not present in the planning area or are not affected by the proposed action or alternatives in the Environmental Assessment:

Air Quality
*Areas of Critical Environmental Concern
Environmental Justice
*Prime or Unique Farm Lands
Flood Plains
Native American Religious Concerns
Noxious Weeds
*Paleontology
*Threatened or Endangered Animals
*Threatened or Endangered Plants
Wastes (hazardous or solid)
*Water Quality
*Wetlands/Riparian
*Wild and Scenic Rivers
*Wild Horse and Burro
*Wilderness

Items marked with an asterisk (*) do not occur within the Specific Plan Area. The US Fish and Wildlife Service and the Nevada Natural Heritage Program were contacted regarding the potential occurrence or habitat for threatened, endangered, and/or candidate species. See the Environmental Assessment/Walker Resource Management Plan amendment for correspondence.



NORTH DOUGLAS COUNTY SPECIFIC PLAN
IDENTIFIED CULTURAL RESOURCES

○ ∘ SITE LOCATION ▨ 30 ACRE PARCEL TO BE TRANSFERRED TO THE BUREAU OF INDIAN AFFAIRS

SCALE 1:24 000

1 .5 0 KILOMETERS 1 2

1000 0 METERS 1000 2000

1 .5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

CONTOUR INTERVAL 40 FEET

NEVADA

QUADRANGLE LOCATION

BLM REPORT #: CRR-3-1988

FIGURE 3

Chapter Three

LAND USE AND DESIGN

3.0 INTRODUCTION

The character of a community is greatly influenced by the location, density, and mix of land uses present. A community must be carefully arranged to accommodate a variety of land uses. Resource areas must be preserved, sufficient space allocated for future development and growth, and adequate public facilities provided in order to achieve a balance between different forms of land use.

The land use and design element of a land use plan identifies existing land use patterns in an area and provides a vision for the future location and distribution of residential, commercial, recreational, public (facilities and services), and agricultural land uses. The purpose of this second amendment to the NDCSP is to provide a plan for compatible land uses and densities appropriate for the Big George Ventures (BGV) project site, which is in response to changes to approved land uses within the specific planning area since adoption of the initial plan in 2000.

The land use and design element provided in this amendment is designed to promote adequate planning and land use balance in the area by establishing a new pattern of land use designations.

3.1 EXISTING CONDITIONS

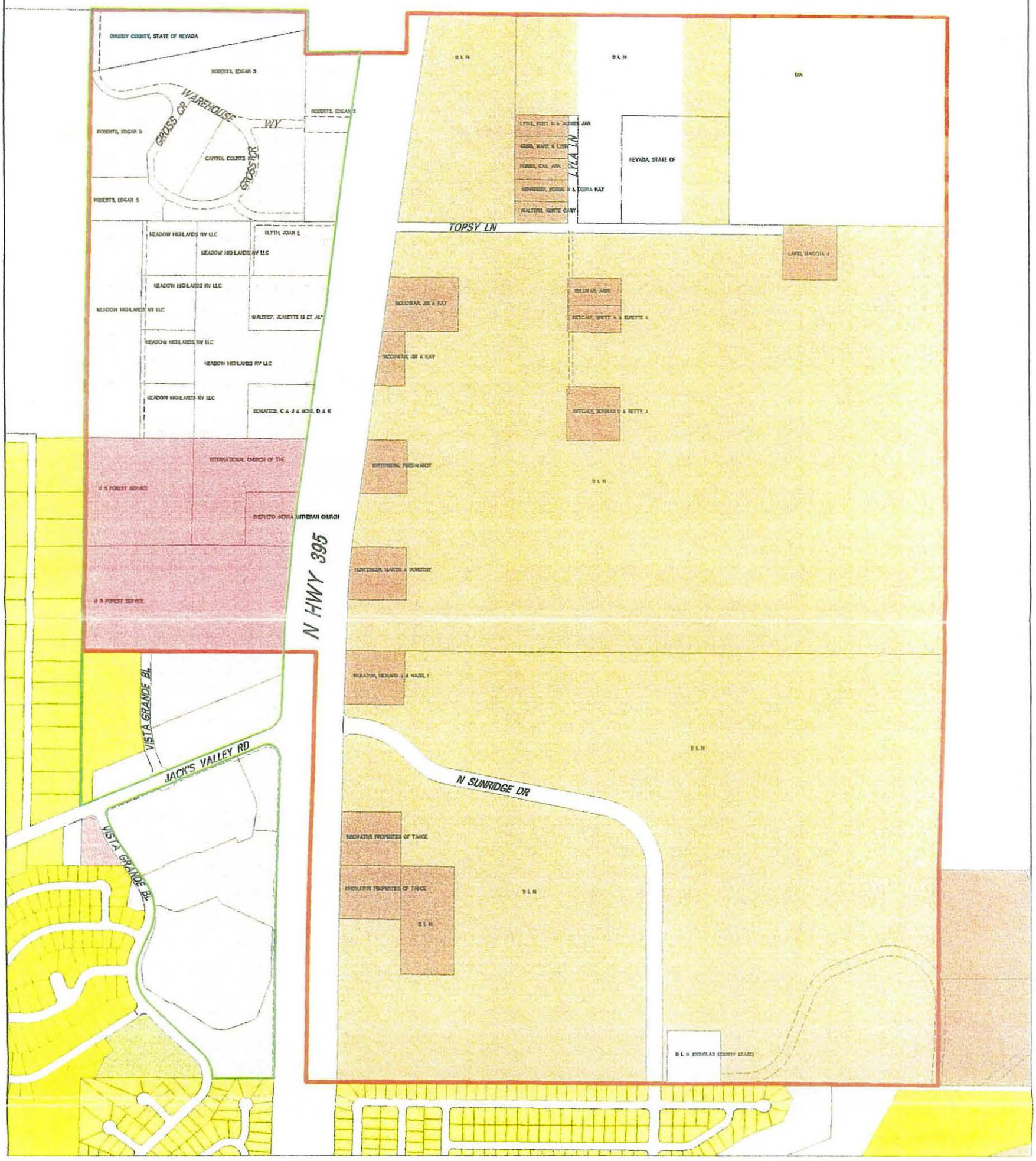
3.1.1 Previous and Existing Zoning

In 1996 Douglas County adopted a Master Plan that established new land use designations within the Indian Hills/Jacks Valley area (see Previous Zoning Map Figure 3-1 and Existing Master Plan map, Figure 3-2). The new designations consisted of Forest and Range 19-acre (FR-19), Forest and Range 40-acre (FR-40), Commercial (C), and Community Facilities (CF). Commercial designations were established for the area west of Highway 395 with FR-19, FR-40, and CF designations assigned to parcels east of the highway. BLM parcels, which comprised the majority of lands east of the highway, were primarily designated FR-40 while privately owned parcels in the area were designated as FR-19. Community Facilities designations were established on a state owned parcel north of Topsy Lane and for a parcel just north of the Sunridge subdivision leased by Douglas County from the BLM.

Prior to the adoption of the Master Plan in 1996 all parcels within the planning area had been zoned Agricultural 1-acre (A-1), which allowed one residential dwelling per parcel along with agricultural uses. A segment of land in the

North County Specific Plan Area

EXISTING ZONING MAP



ZONING LEGEND

A-10 Agriculture, 10 Acres	SFR-1 Single-Family Res., 1 Acre	NC Neighborhood Commercial	LI Light Industrial
FR-40 Forest Range, 40 Acres	SFR-1/2 Single-Family Res., 1/2 Acre	OC Office Commercial	GI General Industrial
FR-10 Forest Range, 10 Acres	SFR-12,000 Single-Family Res., 12,000 SF	GC General Commercial	SI Service Industrial
RR-10 Rural Res., 10 Acres	SFR-8000 Single-Family Res., 8000 SF	MUC Mixed Use Commercial	PF Public Facility
RA-5 Rural Res., 10 Acres	MFR Multi-Family Res. 6.01-12 Dwelling Units/Ac.	TC Tourist Commercial	AP Airport
SFR-2 Single-Family Res., 2 Acres		PR Private Recreation	Washoe Tribe Land

Redevelopment Area Boundary

North County Specific Plan Area

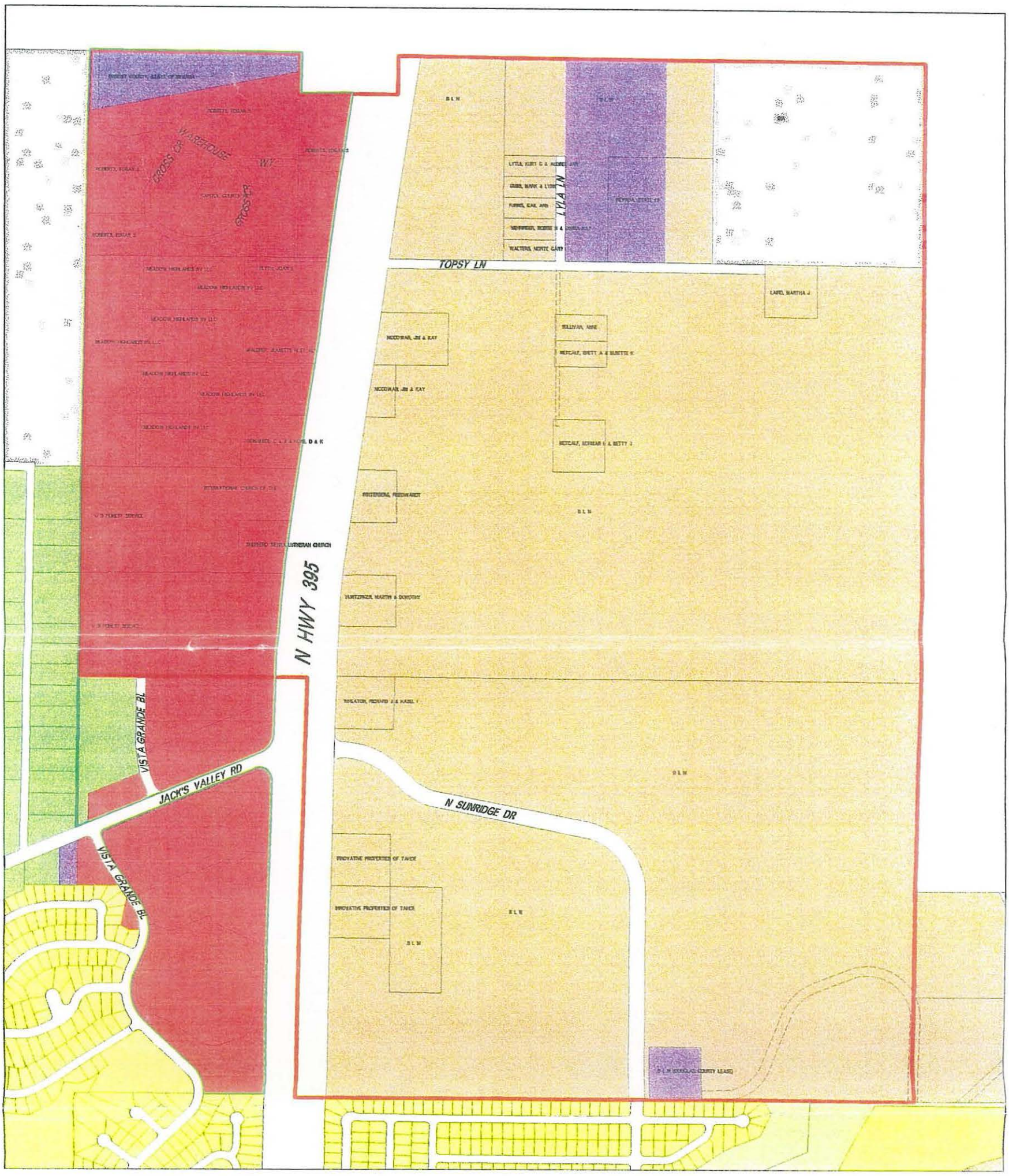
N

SCALE: 1" = 700'
DATE: 04/14/00

(FIGURE 3-1)

North County Specific Plan Area

EXISTING MASTER PLAN MAP



(FIGURE 3-2)

northeastern comer of the planning area owned by the Washoe Tribe is zoned industrial within the Washoe Tribe Master Plan.

In September of 2000, Douglas County adopted the North Douglas County Specific Plan and also approved a consistency rezoning effort with a concurrent Master Plan Amendment and Zoning Map Amendment.

In July of 2007, Douglas County approved a Planned Development application for the Big George Ventures site. This approval was for 254 patio homes, 27 duplex buildings (54 units) and 14 four unit buildings (56 townhouse units).

Between July and October of 2007, Douglas County approved through a series of hearings a zoning map amendment, reclassifying a 23 acre portion of the property directly adjacent and to the west of the Big George Ventures site from General Commercial (GC) to Tourist Commercial (TC) and also approved a Gaming District (GD) Overlay, including the development plan for the proposed project, on a 15.83-acre portion of the 23-acre site to allow unrestricted gaming use also allowing a building height variance to increase the required maximum building height from 45 feet to 143 feet to support a casino and a pair of twelve-story hotel towers.

The existing (2007) land use and zoning maps reflecting the most recent changes to the zoning in the area as described above are per Figures 3-6 and 3-7.

3.1.2 Existing Land Uses

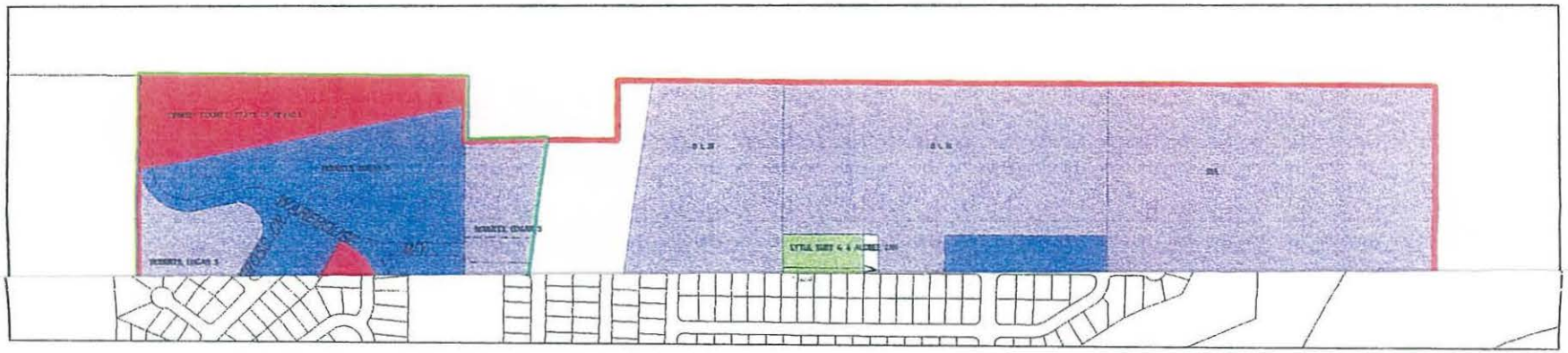
Current land uses in the planning area were determined through field visits, county assessor records, data collection, and public input. Much of the land within the planning area is currently either vacant or undeveloped (see Existing Land Use map, Figure 3-3). Of the parcels that are developed, most contain residential or community facility uses. The project area is also used for a variety of recreational purposes such as horseback riding, walking, hiking, bicycling, off-highway-vehicles, motorcycles, and wildlife viewing.

Residential properties in the planning area include five parcels clustered north of Topsy Lane, one parcel at the end of Topsy lane, three parcels clustered south of Topsy Lane near the middle of the planning area, and one parcel located at the intersection of N. Sunridge Drive and Highway 395.

The Community Facility uses present in the planning area include numerous church sites, a state run museum, and a Douglas County police/fire station. The church sites are located along the west side of Highway 395 and in the "loop" area south of N. Sunridge Drive and north of the Sunridge subdivision. The state museum is located north of Topsy Lane and the Douglas County police/fire station is located where N. Sunridge Drive enters the Sunridge subdivision.

North County Specific Plan Area

Existing Land Use



- Commercial
- Residential
- Vacant
- Industrial

Existing land use as appraised by the Douglas County Assessor.

Redevelopment Area Boundary

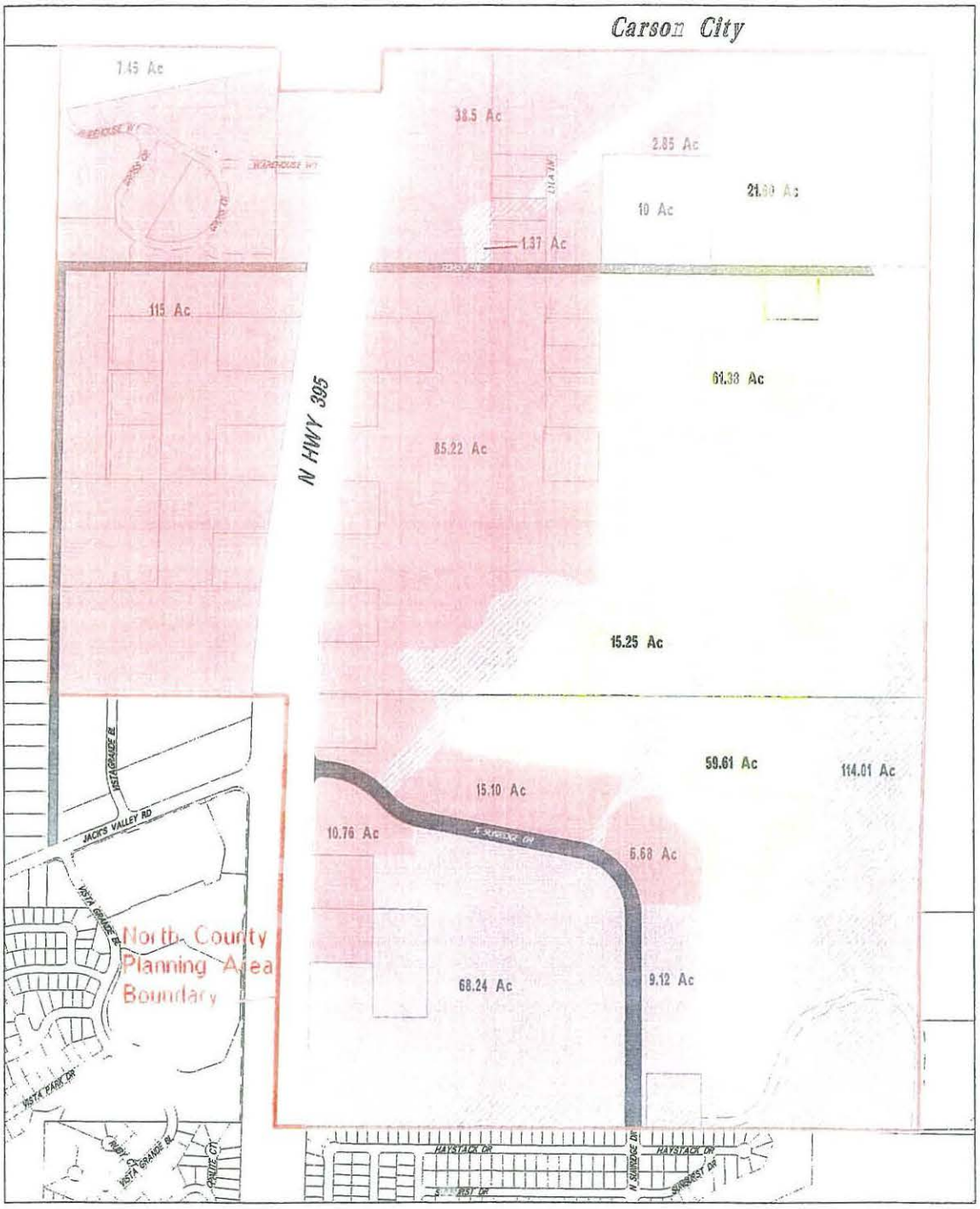
North County Specific Plan Area

N

SCALE: 1" = 700'
DATE: 04/17/00

(FIGURE 3-3)

North Douglas County Specific Plan
Land Use Map



LEGEND

- Public Facilities, 31.57%
- Single Family Res., 25.05%
- Commercial, 40.68%
- Open Space Overlay, 19.00%
- Primary Roads, 2.70%

LUMOS

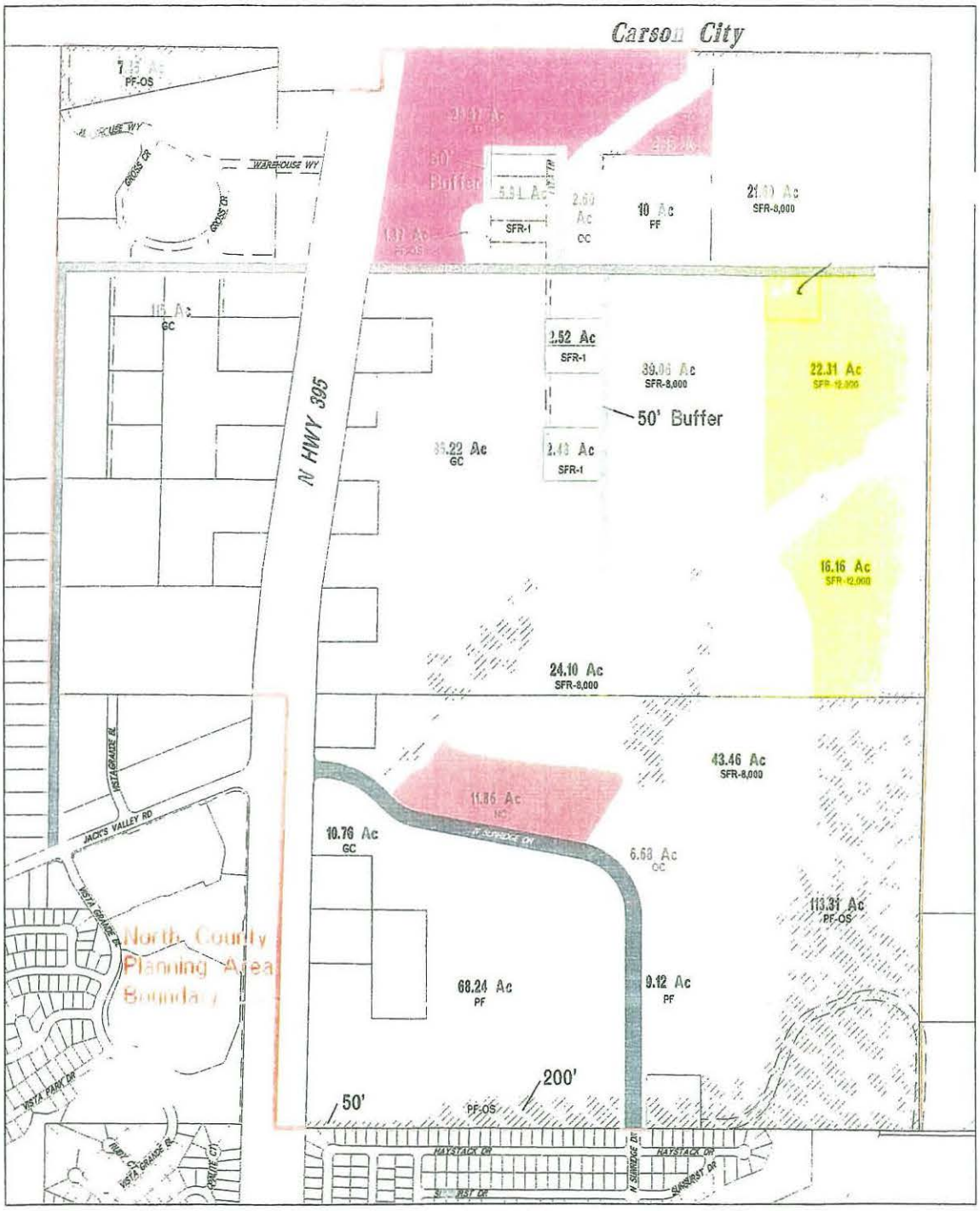
N

DOUGLAS COUNTY
Multi-Agency Geographic Information Center

1" = 1000'
12/06/00

(FIGURE 3-4)

North Douglas County Specific Plan
Zoning Map



LEGEND

- PF-Public Facilities, 31.50%
- SFR-Single Family Res., 8000 sq ft, 19.26%
- SFR-Single Family Res., 12,000 sq ft, 5.78%
- SFR-1-Single Family Res., 1 Ac., 1.65%
- NC-Neighborhood Commercial, 1.78%
- GC-General Commercial, 30.93%
- OC-Office Commercial, 1.47%
- TC-Tourist Commercial, 4.93%
- OS-Open Space Overlay, 19.00%
- Primary Roads, 2.70%

N

DOUGLAS COUNTY
Multi-Agency Geographic Information Center

1" = 1000'
12/06/00

LUMOS

(FIGURE 3-5)

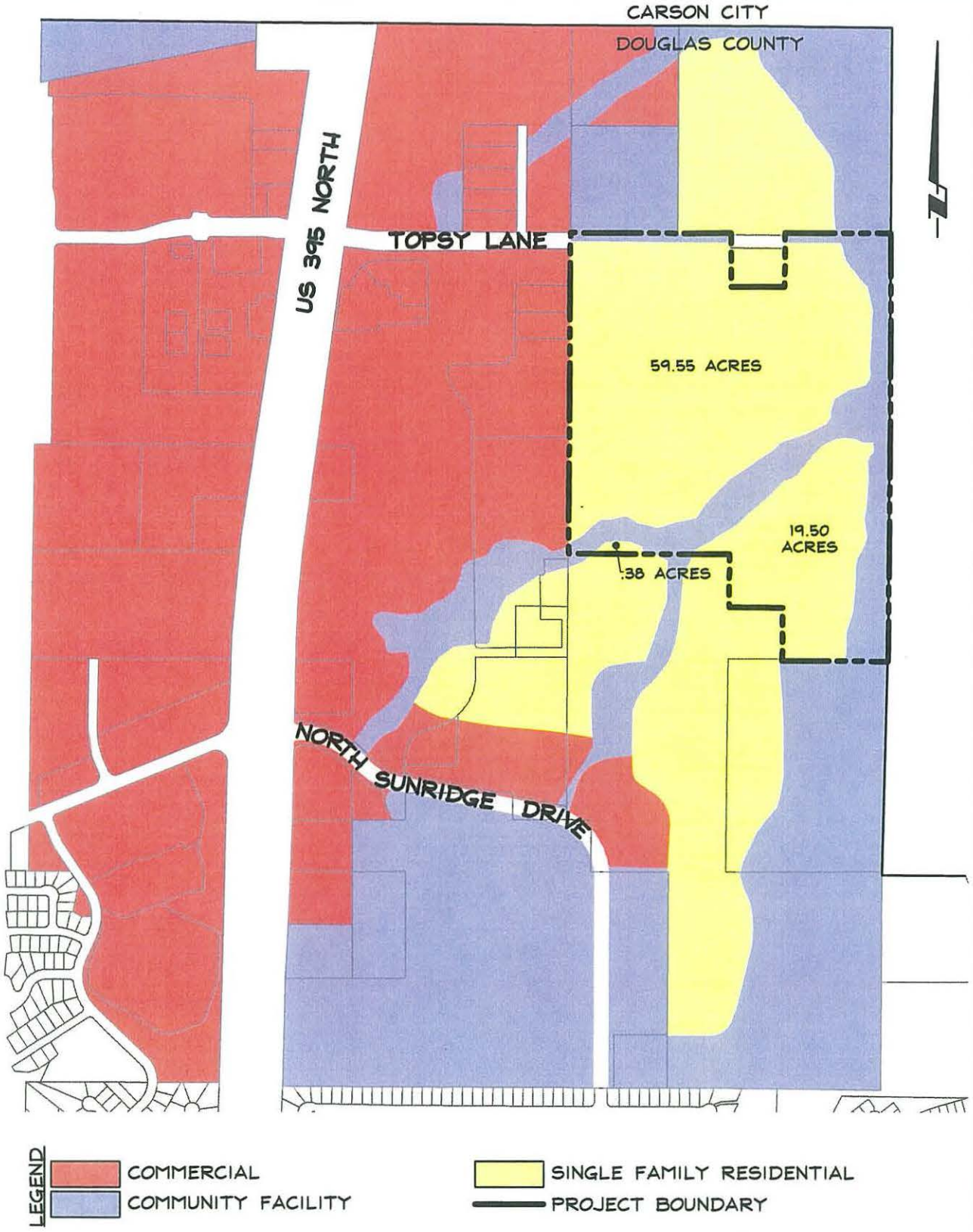


FIGURE 3-6

NORTH DOUGLAS COUNTY
SPECIFIC PLAN
2007 LAND USE MAP

1293-005 06/30/08

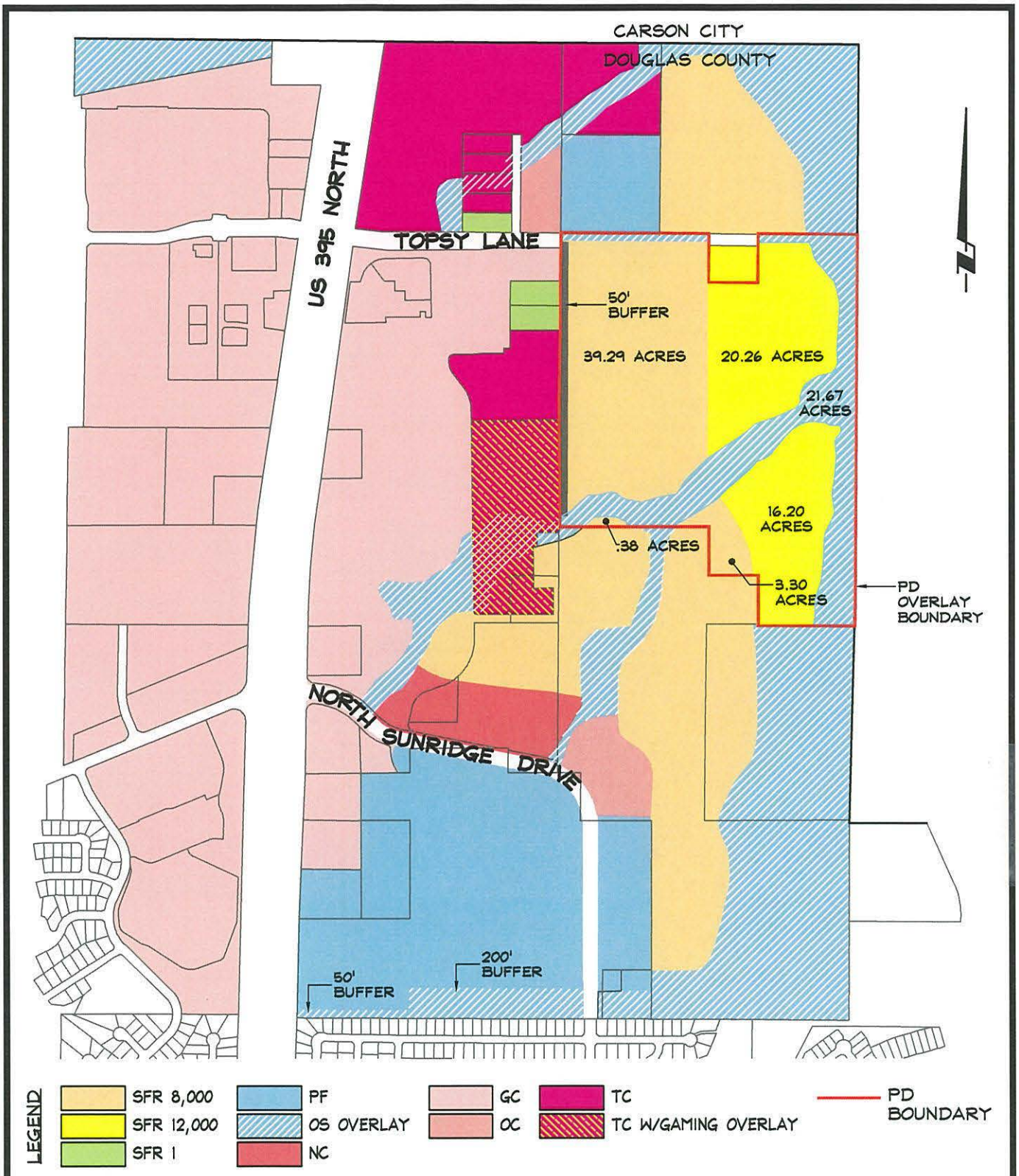


FIGURE 3-7

NORTH DOUGLAS COUNTY
SPECIFIC PLAN
2007 ZONING MAP

1293-005 06/30/08

Y:\Client Files\1293\1293-005\CAD\dwg\Planning\Specific Plan Exh\X-ZONING SP FIG 3-7 07-23-08.dwg 8/8/2008 1:10:24 PM Marie A. Hulse

The only other existing land use in the planning area, besides recreational and open space uses on undeveloped BLM lands, is located in the northwest corner of the planning area. This area contains quasi-light industrial use with public storage units and a fitness/athletic facility. A few privately owned parcels located along the east side of Highway 395 have been graded in anticipation of future development but are currently vacant. The segment of land in the northeastern corner of the planning area zoned industrial within the Washoe Tribe Master Plan is also currently vacant.

3.1.3 Surrounding Development

Surrounding development in the north county area consists of a variety of uses ranging from commercial to residential, the majority of which are residential. Existing residential uses in the surrounding area include the extensive Sunridge subdivision development immediately south of the planning area, ranches to the east, the Stewart Indian Colony to the northeast, and residential mixed with commercial uses west and south of the planning area. The residential lots to the south and southwest are moderately dense ranging between 6,000 and 9,000 square feet in size while the residential lots to the east and west are larger, some exceeding 1-acre in Size.

Commercial uses have increased in recent years with the addition of a Home Depot and Target southwest of the planning area. Several other parcels in this vicinity have been graded and are planned for large retail commercial sites. Development located immediately north of the planning area in Carson City includes industrial and commercial uses and a Washoe Tribal cemetery.

3.1.4 Land Uses Changes since NDCSP Adoption

Since adoption of the specific plan, several developments within the planning area have occurred, not including the Big George Venture's Planned Development approval and the Project One/Riverwood zoning change, special use permit and variance for the proposed casino. Other changes include:

- Construction of the Carson Valley Plaza development; includes Wal-Mart, Best Buy, Borders, World Market, and numerous other retailers and restaurants.
- Construction of the Lutheran High School;
- Construction of the a new Catholic Church and School;
- Construction of a new Fire Station;

- Approval of a design review application for phase one of the Riverwood commercial development.
- Approval of a development agreement for Riverwood;
- Design of water and sewer improvements for the NDCSP area;
- Approval of redevelopment funding for phase one of Riverwood.

3.2 PROPOSED ZONING and LAND USE

Proposed zoning and land uses in the NDCSP area are intended to represent and support an overall vision for the area based on public input, land use trends, environmental resources, and existing characteristics. The following factors were considered in the development of proposed zoning and land uses for the NDCSP area:

- Site topography, particularly the significant slopes and drainages located along the eastern portion of the planning area;
- Property evaluation;
- A desire and need for regional commercial development in the area;
- The presence of sensitive cultural resources;
- Land ownership;
- Input from property owners, surrounding residents, and the general public;
- A need for multi-family zoning in the area;
- Compatibility issues associated with surrounding land uses;
- Retention of usable open space;
- Pedestrian circulation, trails, pathways, connectivity, and passive recreation elements;
- Potential school sites, church sites, or other public facility uses;
- Traffic circulation and roadways;
- The provision of infrastructure and adequate public facilities; and
- The overall development feasibility/potential of the land for proposed uses.

The zoning and land uses proposed attempt to blend these factors into a unified concept for the area that includes open space connected by trail systems, a core commercial area, single family and multi-family residential uses, public facilities, and limited tourist, neighborhood, office, and mixed commercial uses. This vision is represented on the proposed Land Use and Zoning Maps included with this amendment. In order to provide additional density that is consistent with smart growth principles of being in close proximity to employment centers and transportation corridors while at the same time preserving open space, the increase in density sought with this amendment can only occur through the use of transfer of development rights and affordable housing. No new hard zoning is sought with this amendment. At least 100 acres of agricultural open space will be provided as a result of this amendment, without further development encroachments in agricultural or forest and range areas.

In addition to representing an overall vision for the planning area, a new pattern of zoning designations and land uses, designed to present a blueprint for development, is created by the amended NDCSP. Existing zoning designations, as defined in Title 20 of the Douglas County Consolidated Development Code, were utilized to create this new pattern of land use. The NDCSP does not, however, create new land use designations for the planning area, or redefine existing Douglas County zoning designations. Listed below are the new zoning designations proposed for the Big George Ventures site within the NDCSP, followed by a brief definition of the designation, and an approximate location of the proposed uses (see Figures 3-8 and 3-9 for the proposed land use and zoning classifications for the site).

3.2.1 Residential Uses:

Single Family Residential 12,000 Square Feet (SFR-12,000):

This designation is intended for the development of single-family detached units in a suburban setting with a minimum lot size of 12,000 square feet, and a maximum density of 3.63 units per gross acre. One home per parcel, unless otherwise specified and approved by the County, is permitted in this land use district.

Approximately 38-acres of SFR-12,000 is proposed along the eastern boundary of the planning area to take advantage of view opportunities and distance from Highway 395. Additionally, the location and placement of this use is intended to act as a buffer and transition zone to the adjacent larger lot residential uses to the east (across Center Drive). Two pockets of SFR-12,000, one consisting of 22acres and the other 16-acres, separated by an open space corridor are proposed in this location.

The open space corridor separating the two pockets will be utilized for natural drainage and pedestrian pathways / recreation components. It is anticipated, and desired, that the two pockets will develop to incorporate and take advantage of this open space feature, as well as integrate potential connection between the two pockets (see Figures 4-6 and 4-8 in chapter 4). The use of Planned Unit Development is supported and encouraged to enhance the ability for providing such unique design features and for achieving plan goals in this district.

Single Family Residential 8,000 Square Feet (SFR-8,000):

This designation is similar to the SFR-12,000 district but proposes smaller lot sizes with a maximum of 8,000 square feet. The district is intended for the development of single family detached units in a suburban setting with a maximum density of 5.45 units per gross acre. No more than one home per parcel is permitted, unless otherwise allowed for by the County.

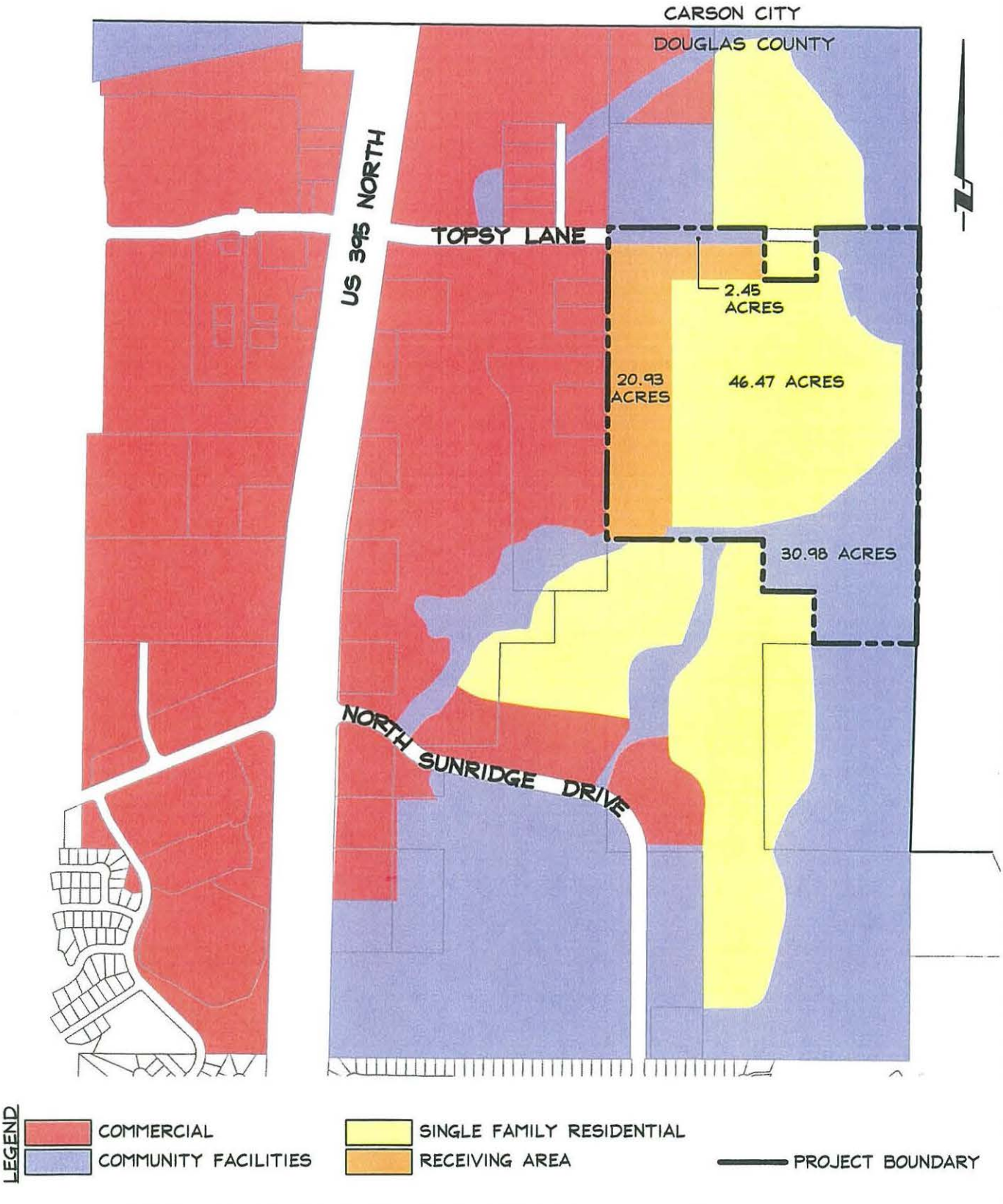


FIGURE 3-8

NORTH DOUGLAS COUNTY
SPECIFIC PLAN
PROPOSED LAND USE MAP

1293-005 06/30/08

Y:\Client Files\1293\1293-005\CAD\dwg\Planning\Specific Plan Exh\P-LAND USE SP FIG 3-5 06-30-08.dwg 7/16/2008 11:58:55 AM Marie A. Huls

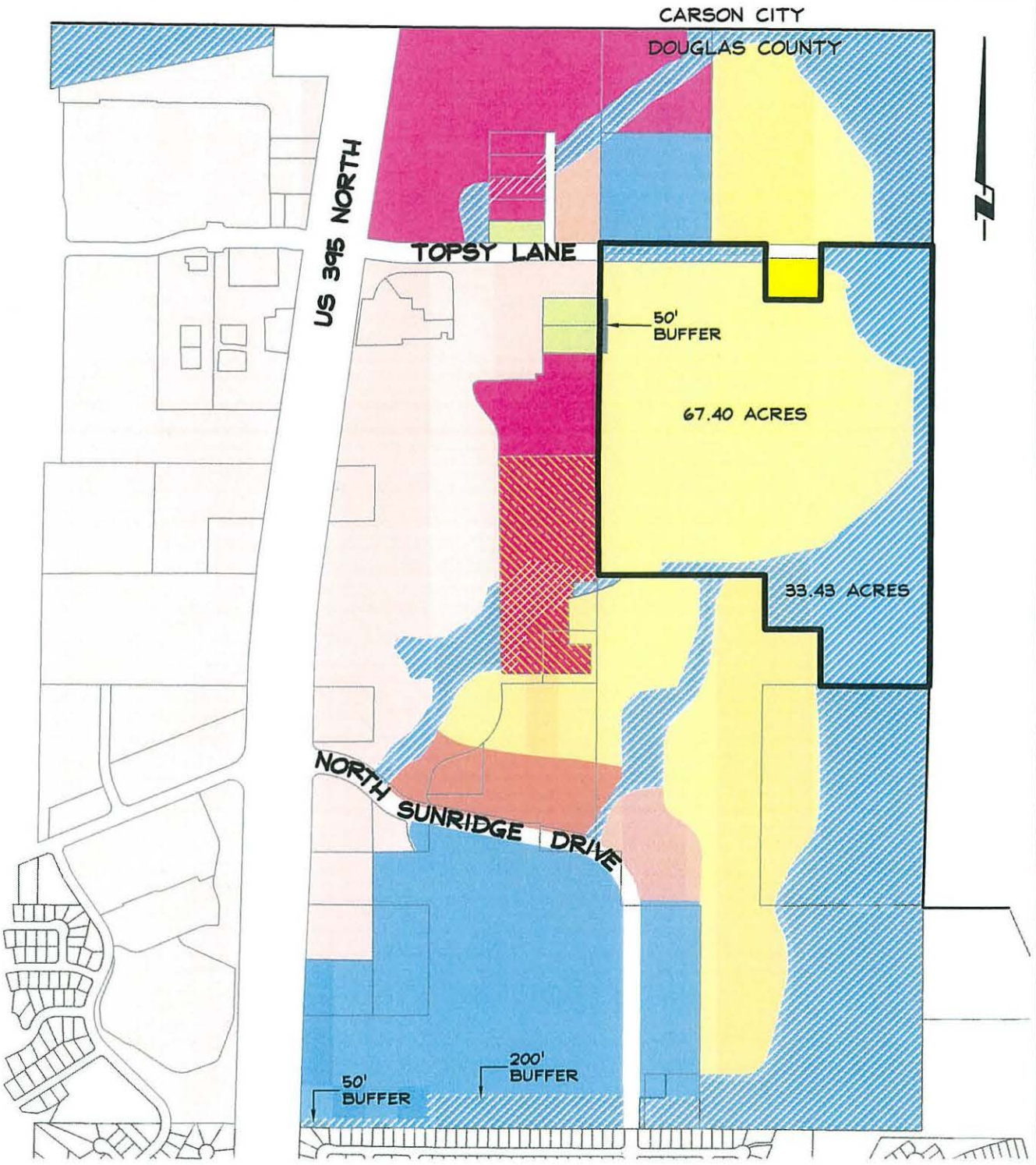


FIGURE 3-9

NORTH DOUGLAS COUNTY
SPECIFIC PLAN
PROPOSED ZONING MAP

1293-005 06/30/08

This designation totals 67.4 acres, and is located in the proposed development area east of the proposed casino project, west of Center Drive, south of Topsy Lane and north of an arroyo area which runs east/west through the site.

This zoning is intended to retain the existing density as originally approved by the NDCSP of 366 units for the BGV site. Previous SFR-12000 zoning has been eliminated from the BGV site, particularly along the steeper slopes located south of the east/west arroyo. The use of Planned Unit Development is supported and encouraged to enhance the ability for providing unique design features and achieving plan goals in this district.

The master plan land use underlying the 67.4 acre area in the BGV site includes 46.47 acres of Single Family Residential (SFR) and 20.93 acres of Receiving Area (RA). Based on the master plan amendment area calculations for these land use designations, the only way to achieve the proposed 504 unit project density would be through the transfer of 138 TDR's. This development, as may all development proposals in the County, can also apply for affordable housing bonus. If the maximum affordable housing bonus consistent with county code were to be obtained, the maximum residential density for the site would be 630 units.

Single Family Residential- 1-acre (SFR-1):

This district is intended for the development of single-family detached units in suburban and rural settings with a minimum lot size of one net acre, and a maximum density of one unit per gross acre. Unless otherwise specified in this development code, no more than one home per parcel is permitted in this land use district.

Eight existing privately owned parcels totaling approximately 11-acres are proposed for this land use designation. The parcels are located along Lyla Lane and Topsy Lane in the northeastern portion of the planning area. In the NDCSP area, the SFR-I designation is mainly intended to accommodate the existing uses and conditions of these parcels. SFR-I is not proposed for any other portions of the planning area.

Parcels designated SFR-I will be surrounded by a 50' open space buffer to ensure compatibility with surrounding uses. The privately owned parcels north of Topsy Lane designated SFR-I are surrounded by tourist commercial and office commercial zoning designations. The parcels located along Lyla Lane are surrounded by general commercial and SFR-8,000 zoning designations. The 50' buffer separating these parcels from the SFR-8,000 designation will be utilized for pedestrian pathways and internal circulation.

3.2.2 Commercial Uses

General Commercial (GC):

The purpose of this district is to provide areas of development for a broad range of commercial, business, wholesale. retail and service uses of a local and regional nature. This designation represents the largest district proposed for the planning area, including large sections along both the east and west sides of Highway 395. A total of approximately 210-acres of GC is proposed including 115-acres west of Highway 395, an 85-acre area directly east of Highway 395, and a 10-acre pocket on the southeast comer of the North Sunridge Drive and Highway 395 intersection.

This zone is anticipated to form a regional commercial core area for North Douglas County and surrounding areas. It is envisioned that this regional commercial component will provide valuable services and employment opportunities currently lacking in Douglas County. The goal of this district is to offer residents the opportunity to conduct their business within the county instead of having to go outside the county for services and employment. Additionally, this component of the NDCSP will help reduce existing economic leakage, thus enabling Douglas County the ability to offer increased public services such as parks, schools, and community centers.

Office Commercial (OC):

The purpose of this district is to provide areas limited to professional office uses that have a minimal exterior impact on surrounding properties. The district may also serve as a transition or buffer area between medium density residential and more intense commercial zoning districts.

Two 6-acre sections of OC are proposed, one located in the northern portion of the planning area at the intersection of Topsy Lane and Lyla Lane, and the other along the outside curve of N. Sunridge Drive in the southern portion of the planning area. The northern section of OC, which is located between Tourist Commercial (TC) and Public Facilities (PF) districts, is intended as a transition zone. The southern section is located between Neighborhood Commercial (NC), SFR-8,OOO, and PF districts with open space to the north. In addition to acting as transition zones, the sections of OC are intended to balance services in the area and offer increased opportunity for jobs-housing balance.

Neighborhood Commercial (NC):

The purpose of this district is to provide areas for the development of restricted retail and business uses that have minimal impact on surrounding properties. The uses are oriented to provide services to the immediate neighborhood and in doing so reduce the amount of vehicle trips by providing local retail services. A

10-acre pocket of NC is proposed for the planning area. The district is located along North Sunridge Drive immediately south of the proposed MFR district and north of a large PF district. Open space surrounds the district on the east and west sides. It is envisioned that this district will provide convenience services to the adjoining MFR district and surrounding residential uses, thereby reducing the need or distance of vehicular trips.

Tourist Commercial (TC):

The purpose of this district is to provide suitable areas for tourist related commercial and retail services, including hotels and casinos. Approximately 35-acres of TC is proposed north of Topsy Lane along the east side of Highway 395. The district is situated directly north and east of the proposed core commercial area and enjoys good access to and from Highway 395 and the future bypass. It is envisioned that certain natural features present in this area could be utilized by tourist related services.

Mixed Use Commercial (MUC):

The purpose of this district is to provide areas which integrate compatible commercial uses with medium density multi-family residential uses through proper design. Situated within the receiving area land use designation in the master plan, the goal of the district is to provide for a better jobs-housing balance, conserve land resources, reduce commuter trips, and provide opportunities for more affordable housing.

Up to 35,000 square feet of neighborhood serving commercial floor area has been included within the proposed analysis and conceptual plan. This MUC area is set adjacent to Topsy Lane and the main access entry to the planned BGV community. Because of the significant grading and 30 to 40 foot high retaining walls planned on the adjacent Casino site, a direct road connection between the BGV site and the commercial-casino land uses to the west is not possible. A pedestrian trail system connecting the BGV site to the commercial area is planned near the southwest corner of the community (see Figure 4-6A).

3.2.3 Public Facilities

The purpose of this district is to provide areas needed for present and future public facilities. The public facilities zoning district is consistent with all master plan land use designations. The PF designation contained in the NDCSP, however, does not represent the typical county definition because of the federal land status of the parcels designated. Therefore, some uses normally allowed under the PF designation will not be allowed in the NDCSP area.

The PF district will be utilized as a base for the development of an open space "overlay". Open space "overlay" zones are intended for passive recreational use, connected trail systems, and sensitive environmental resources
R&PP uses in the PF zone are intended for uses such as church sites, schools, museums, or other public services. For example, an existing parcel leased by the Carson Valley Community Church from the BLM, as well as an existing parcel leased by Douglas County for use as a police and fire station, is currently included in this designation.

Approximately 223-acres of PF, including open space "overlay" zones, is proposed for the planning area. Much of this acreage is located in the southern and eastern portion of the planning area. The remaining acreage consists of a small 7-acre portion located in the northwestern tip of the planning area. The 21.67 acres of PF that was originally zoned within the BGV site is being increased within this amendment to 33.7 acres, an increase of 55%. Although there is more density proposed on the BGV site, it occurs on a smaller development envelope, the net result of which increases the amount of open space buffer areas, areas containing steep slopes are preserved, and grading impacts and drainage concerns are concomitantly reduced.

3.2.4 Planned Development Overlay District

The use of a Planned Development overlay is supported and encouraged to enhance the ability for providing unique design features and achieving plan goals within the BGV site. It is the implementation tool necessary to increase zoning density beyond the existing zoning density of 366 units and requires the use of TDR's to increase the receiving areas from the existing zoning density of 5.45 units per acre to a maximum of 12 units per acre gross density for the area underlying the receiving area designation. It permits the zoning and development of the Mixed Use Commercial, open space areas within the development envelope, and the ability to concentrate medium to high density residential areas in locations that are compatible with the adjacent planned commercial areas located west of the BGV site.

The following requirements are applicable to the subject site through approval of a future planned development overlay district:

Gross Floor Area: Maximum Gross Floor Area (GFA) ratios for the Mixed-Use Commercial area is subject to the current MUC zoning district standards. Similarly, areas planned for residential or multifamily residential uses are subject to the GFA standards within the MFR zoning district.

Coverage: Coverage for the Mixed-Use Commercial area is subject to the current MUC zoning district standards. Similarly, areas planned for residential or

multifamily residential uses are subject to the coverage standards within the MFR zoning district.

Height: Building heights for the Mixed-Use Commercial area is subject to the current MUC zoning district standards. Similarly, areas planned for residential or multifamily residential uses are subject to the maximum building heights within the MFR zoning district. With application of a planned development, building heights higher than 35 feet may be considered for proposed structures located adjacent to the retaining wall planned as part of the Casino/Hotel project adjacent to and west of the BGV site. Any such proposal would need to be evaluated as part of a future planned development application.

Parking: Parking ratios for the Mixed-Use Commercial area is subject to the current MUC zoning district standards. Similarly, areas planned for residential or multifamily residential uses are subject to the parking ratios within the SFR-8000 for single family detached housing or the MFR zoning district for attached housing areas.

Density: The planned development may not exceed a total of 504 dwelling units. The project is eligible for affordable housing densities beyond the 504 dwelling units subject to approval of an affordable housing agreement and the bonus density requirements found in Title 20.

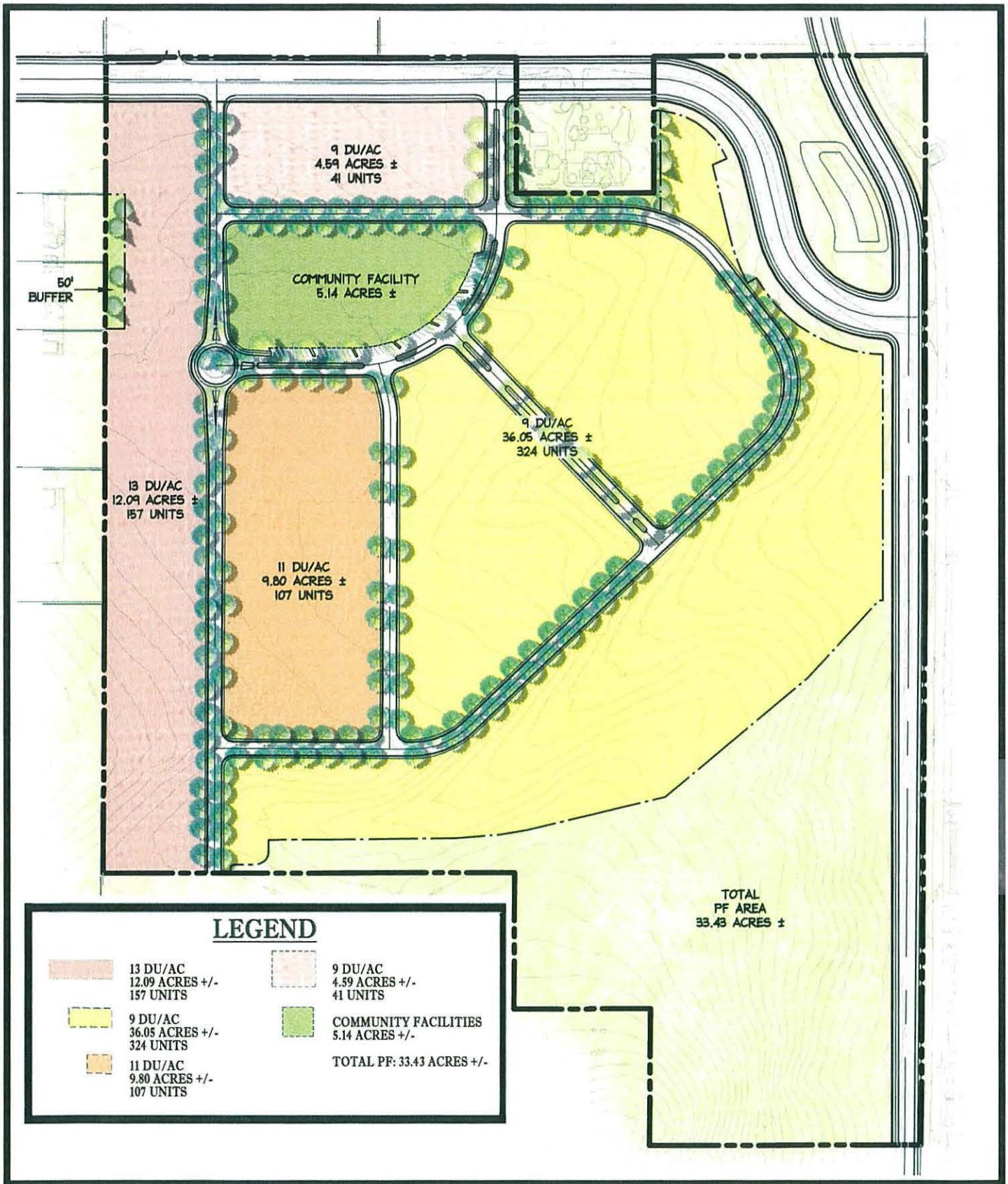
Figure 3-10 provides the conceptual plan for the proposed BGV development. Figure 3-11 shows the proposed development in context with conceptual plans obtained from adjacent owners.

3.2.5 Sequence and Timing

Subsequent to adoption of the proposed amendment #2 to the North Douglas County Specific Plan, the Owner is required to file an application for a planned development which will provide the phasing and development schedule for the proposed community. It is anticipated that this planned development application will be filed with Douglas County within one year following adoption of this plan amendment. The new BGV community is preliminarily anticipated to be developed over a ten to fifteen year period, depending upon market conditions and facility availability. The final timing of phased development within BGV site is subject to the availability adequate water and sewer facilities which must be demonstrated prior to the recordation of each phase.

3.3 TABLE OF ALLOWABLE USES

The following tables list all allowable uses, as defined in Title 20 of the Douglas County Consolidated Development Code, for the use districts discussed and proposed above. Table 3.1 is an inventory of uses allowed in residential districts while Table 3.2 is an index of uses allowed in non-residential districts. For the purposes of this plan, only



NORTH DOUGLAS COUNTY
CONCEPTUAL DEVELOPMENT PLAN

FIGURE 3-10

1293-005

08/07/08

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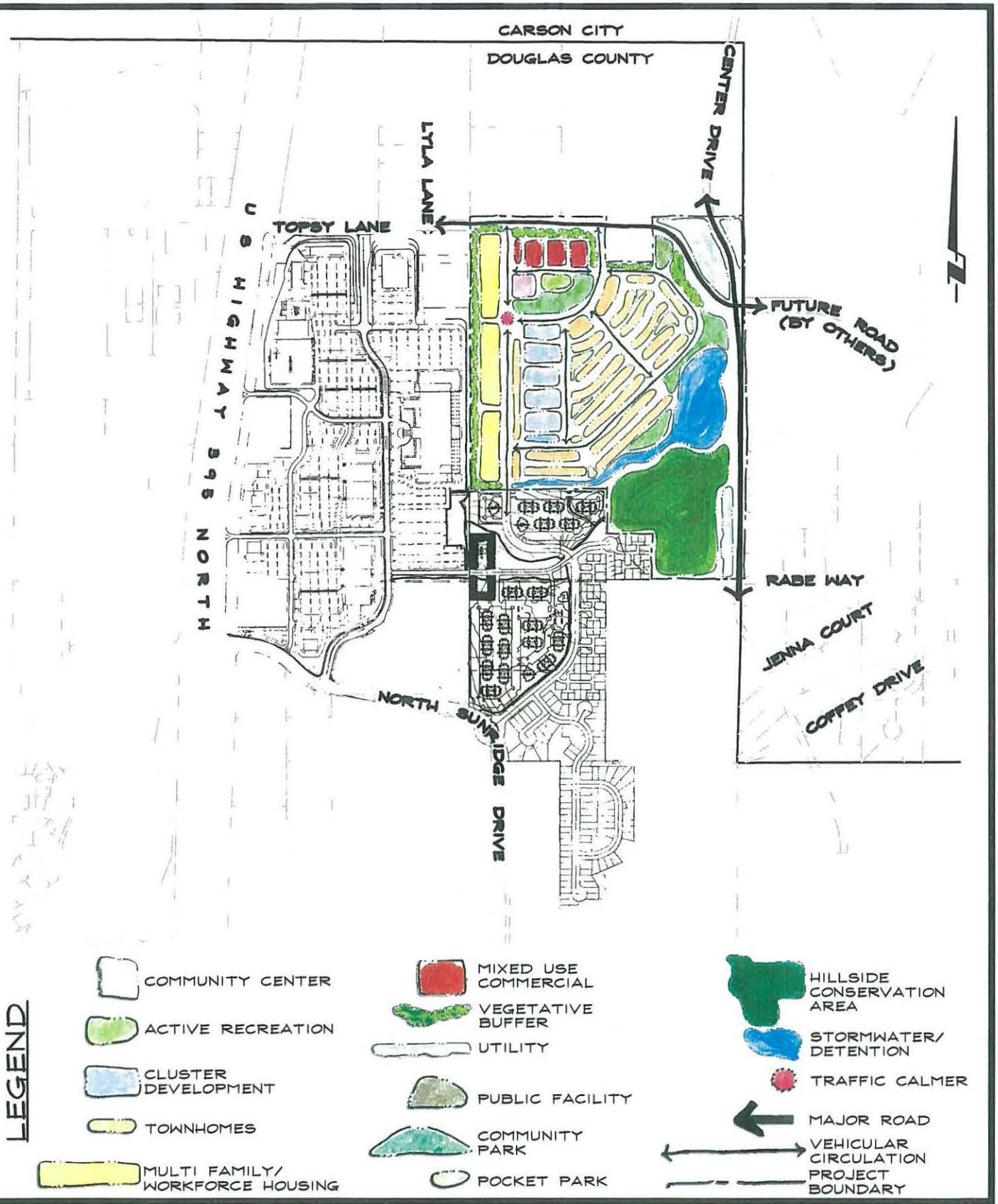


FIGURE 3-11

NORTH DOUGLAS COUNTY
SPECIFIC PLAN
CONCEPTUAL DEVELOPMENT PLAN

1293-005 06/30/08

those uses proposed for the NDCSP area are listed. A "P" denotes uses permitted by right, a "D" denotes uses subject to design review, "S" represents uses that require a special use permit, "T" requires approval of a temporary use permit, and an "X" signifies uses that are prohibited (not allowed) in the respective use district.

(Table 3.1) TABLE of ALLOWABLE USES	*RESIDENTIAL*			
20.656.020 USES	**MFR**	**SFR 8,000**	**SFR 12,000**	**SFR 1-Acre**
Agricultural and Related Limited Commercial				
(A) Agricultural products processing and storage	x	X	X	X
(D) Animal Keeping	X	X	X	P
(I) Limited agricultural uses	X	P	P	P
(K) Open agricultural uses	X	X	X	X
Commercial and business service uses				
(G) Kennel	X	X	X	X
Forestry uses				
(None permitted)		X	X	X
Industrial uses				
(None permitted)		X	X	X
Institutional and uses of community significance				
(A) Cemetery	S	S	S	S
(B) Church	S	S	S	S
(D) Day care center (Large)	X	X	S	S
(E) Day care center (Small)	P	P	P	P
(F) Emergency care facility	X	X	X	X
(H) Small group care or group home	D	D	D	D
(I) Large group or group home	X	X	X	X
(L) Nursing, convalescent, residential care facility	X	X	X	X
(N) Uses of community significance	S	S	S	S
Lodging uses				
(A) Bed and Breakfast	S	X	X	S
Mining uses				
(None permitted)	X	X	X	X
Offices uses				
Permitted in Residential Office district only	X	X	X	X
Recreational uses				
(A) Equestrian facility	X	X	X	X
(B) Golf Course	X	P	P	P
(C) Health clubs	X	X	X	X

20.656.020 USES	MFR	SFR 8,000	SFR 12,000	SFR 1-Acre
(D) Indoor recreation	X	X	X	X
(E) Membership club	X	X	X	S
(F) Motorized racing	X	X	X	X
(G) Non-motorized racing	X	X	X	D
(H) Outdoor recreation, day use	X	X	X	X
(I) Outdoor recreation, night use	X	X	X	X
(J) Park or playfield, day use	S	S	S	S
(K) Park or playfield, night use	S	S	S	S
(L) Public recreation center	S	S	S	S
(M) Outdoor recreation, night use	X	X	X	X
Residential uses				
(A) Boarding houses	X	X	X	X
(C) Manufactured home	P	P	P	P
(D) Manufactured home park	X	X	X	X
(E) Multi-family dwelling	D	X	X	X
(F) Single-family dwelling	P	P	P	P
Retail and personal services				
(None permitted)	X	X	X	X
Transportation uses				
(A) Private airports	X	X	X	X
(B) Public airports	X	X	X	X
(C) Airport related uses	X	X	X	X
(D) Heliport	X	X	X	X
(E) Helistop	X	X	X	X
(F) Park and ride facility	S	S	S	S
Utility and public service				
(A) Central office of telecommunication company	X	X	X	X
(B) Fire Station	S	S	S	S
(C) Major facility of a public or private utility	X	X	X	X
(D) Public or quasi-public facility other than listed	S	S	S	S
(E) Public safety telecommunications site	X	S	S	D
(F) Sewer or water transmission lines	P	P	P	P
(G) Sewage treatment facility	X	X	X	X
(H) Telecommunications site (Ord. 99-871)	D	D	D	D
(I) Telecommunications facility (Ord. 99-871)	X	X	X	X
(J) Utility service facility	P	P	P	P
(K) Water reservoir	S	S	S	S
(L) Water tank, water treatment facility/sewer	D	D	D	D

20.656.020 USES	MFR	SFR 8,000	SFR 12,000	SFR 1-Acre
(M) Wind powered electric generator farm	X	X	X	X
Warehouse uses				
(None permitted)	X	X	X	X
Accessory uses				
(A) Accessory agricultural retail sales	X	X	X	P
(B) Accessory dwelling	X	X	X	D
(C) Accessory outside storage	P	P	P	P
(D) Accessory structure	P	P	P	P
(E) Grading or more than 500 cubic yards	S	S	S	S
(F) Home occupation 1	P	P	P	P
(G) Household pets	P	P	P	P
(H) Non-commercial telecommunications site…	P	P	P	P
(I) Non-commercial telecommunications site	S	S	S	S
(J) Solar energy system	P	P	P	P
(K) Stationary tank storage (above ground)	P	P	P	P
Temporary uses				
(A) Emergency non-commercial telecommunication Facility	T	T	T	T
(B) Temporary batch plant	X	X	X	X
(C) Temporary construction or sales office	T	T	T	T
(D) Temporary dwelling unit	T	T	T	T
(E) Seasonal sales lot	T	T	T	T

(Table 3.2) TABLE of ALLOWABLE USES	*COMMERCIAL*					
20.656.020 USES	**MUC**	**NC**	**OC**	**GC**	**TC**	**PF**
Agricultural and Related Limited Commercial						
(A) Agricultural products processing and storage	X	X	X	X	X	X
(B) Agricultural products retail outlet	X	D	X	D	X	X
(D) Animal keeping	X	P	P	P	P	P
(E) Commercial stock yard	X	X	X	X	X	X
(F) Commercial meat and poultry processing facility	X	X	X	X	X	X
(G) Commercial nursery	X	S	X	D	X	X
(H) Keeping of non-domestic animals	X	X	X	X	X	X
(I) Limited agricultural uses	X	P	P	P	P	P
(J) Limited commercial uses	X	X	X	X	X	X
(K) Open agricultural	X	P	P	P	P	P
Commercial and business service uses						
(A) Building contracting shop	X	X	X	D	X	X
(B) Carpentry, woodworking, or furniture making	X	X	X	X	X	X
(C) Car wash	X	S	X	D	X	X
(D) Commercial bakery	X	X	X	X	X	X
(E) Commercial laundry and dry cleaning	X	X	X	X	X	X
(F) Gaming	X	X	X	X	X	X
(G) Kennel	X	X	X	X	X	X
(H) Pawn shop	X	X	X	D	X	X
(I) Printing and publishing establishments	D	D	D	D	X	X
(J) Thrift or secondhand stores, used appliance shops	X	X	X	X	X	X
(K) Sexually oriented businesses	X	X	X	X	X	X
Forestry uses						
(None permitted)	X	X	X	X	X	X
Industrial uses						
(A) Equipment rental	X	X	X	X	X	X
(B) General industrial	X	X	X	X	X	X
(C) Light industrial	X	X	X	X	X	X
(D) Machine shop	X	X	X	X	X	X
(E) Outside storage	X	X	X	X	X	D
(F) Saw mill	X	X	X	X	X	X
(G) Solid waste disposal site and facility	X	X	X	X	X	S
(H) Solid waste transfer facility	X	X	X	X	X	S
Institutional and uses of community significance						
(A) Cemetery	X	S	S	S	X	S
(B) Church	D	D	D	D	D	D
(C) Community center and related facilities	D	D	D	D	D	D

20.656.020 USES	MUC	NC	OC	GC	TC	PF
(D) Day care center (Large)	D	D	D	D	D	D
(E) Day care center (small)	D	D	D	D	D	P
(F) Emergency care facility	D	D	D	D	D	D
(G) Educational facility	D	D	D	D	X	D
(H) Small group care or group home	D	X	D	X	X	D
(I) Large group or group home	S	X	S_2	X	X	S_2
(J)Hospital	X	X	X	D	X	S
(K) Judicial center	X	X	X	X	X	S
(L) Nursing, convalescent, residential care facility	D	S	S	X	X	S
(M) Post office	D	D	D	D	D	D
(N) Uses of community significance	S	S	S	S	S	S
Lodging uses						
(A) Bed and breakfast	D	S	S	D	D	X
(B) Campground	X	X	X	X	S	X
(C) Overnight Lodging	D	D	X	D	D	X
(D) Resort lodge, conference center or quest ranch	D	X	X	D	D	D
Mining uses						
Open and subsurface mining	X	X	X	X	X	S
Office uses						
(Professional office)	D	D	D	D	D	D
Recreational uses						
(A) Equestrian facility	X	X	X	X	S	S
(B) Golf course	S	S	S	S	S	S
(C) Health club	D	D	D	D	D	D
(D) Indoor recreation	D	D	X	D	D	D
(E) Membership club	D	D	D	D	D	D
(F) Motorized racing	X	X	X	X	X	S
(G) Non-motorized racing	X	X	X	X	X	D
(H) Outdoor recreation, day use	S	S	X	S	S	S
(I) Outdoor recreation, night use	X	S	X	S	S	S
(J)Park or playfield, day use	D	D	D	D	D	D
(K) Park or playfield, night use	S	S	S	S	S	S
(L) Public recreation center	D	D	D	D	D	D
(M) Ski area	X	S	X	X	S	S
Residential uses						
(A) Boarding horses	D	D	D	D	D	X
(D) Manufactured home park	X	X	X	X	X	X
(E) Multi-family dwelling	D	X	X	X	X	X
(F) Single-family dwelling	X	X	X	X	X	X

		X	X	X	X	X
20.656.020 USES	**MUC**	**NC**	**OC**	**GC**	**TC**	**PF**
Retail and personal services						
(A) Bank	D	D	D	D	D	X
(B) Bar	S	X	X	D	S	X
(C) Building material or garden store	X	X	X	D	X	X
(D) Convenience store (with gasoline sales)	D	D	X	D	D	X
(E) Indoor theater	D	D	D	D	X	X
(F) Mortuary	D	D	D	D	X	X
(G) Outdoor theater	X	X	X	S	X	X
(H) Restaurant	D	D	X	D	D	X
(I) Retail or personal service facility	D	D	X	D	D	X
(J) Vehicle rental	X	X	X	D	X	X
(K) Vehicle service center, minor	S	S	X	D	X	D
(L) Vehicle service center, major	X	X	X	D	X	D
(M) Veterinary clinic with outdoor holding facilities	X	X	X	X	X	X
(N) Veterinary clinic without outdoor holding facilities	X	D	D	D	X	X
Transportation uses						
(A) Private airport	X	X	X	X	X	X
(B) Public airports	X	X	X	X	X	X
(C) Airport related uses	X	X	X	X	X	X
(D) Heliport	X	X	X	X	X	X
(E) Helistop	X	X	X	X	S	S
(F) Park and ride facility	S	S	S	S	S	S
(G) Parking structure or parking lot (primary use)	S	S	S	S	S	S
(H) Terminal and passenger service facility	X	X	X	D	X	D
Utility and public service						
(A) Central office of telecommunication company	D	D	D	D	X	X
(B) Fire station	X	X	X	X	X	D
(C) Major facility of a public or private utility	X	X	X	X	X	S
(D) Public or quasi-public facility other than listed	X	X	X	X	X	S
(E) Public safety telecommunications site	D	D	D	D	D	D
(F) Sewer or water transmission lines	P	P	P	P	P	P
(G) Sewage treatment facility	X	X	X	X	X	S
(H) Telecommunications site (Ord. 99-871)	D	D	D	D	D	D
(I) Telecommunications facility (Ord. 99-871)	S	S	S	S	S	S
(J) Utility service facility	P	P	P	P	P	P
(K) Water reservoir	X	X	X	X	X	D
(L) Water tank, water treatment facility/sewer	D	D	D	D	D	D
(M) Wind powered electric generator farm	X	X	X	X	X	S
Warehouse uses						
(A) Personal storage facility	X	X	X	X	X	X

20.656.020 USES	MUC	NC	OC	GC	TC	PF
(B) Warehouse and distribution center	X	X	X	X	X	D
Accessory uses						
(A) Accessory agricultural retail sales	D	D	D	D	D	X
(B) Accessory dwelling	D	D	D	D	D	D
(C) Accessory outside storage	D	X	X	D	D	D
(D) Accessory structure	D	S	S	S	S	S
(E) Grading or more than 500 cubic yards	P	P	P	P	P	X
(F) Home occupational	P	P	P	P	P	P
(G) Household pets	P	P	P	P	P	P
(H) Non-commercial telecommunications site…	P	P	P	P	P	P
(I) Non-commercial telecommunications site	P	P	P	P	P	P
(J) Solar energy system	P	P	P	P	P	P
(K) Stationary tank storage (above ground)	P	P	P	P	P	P
Temporary uses						
(A) Emergency non-commercial telecommunication facility	T	T	T	T	T	T
(B) Temporary batch plant	T	T	T	T	T	T
(C) Temporary construction or sales office	T	T	T	T	T	T
(D) Temporary dwelling unit	T	T	T	T	T	T
(E) Seasonal sales lot	T	T	T	T	T	T

Upon approval of a Planned Development for the BGV site, additional allowable land uses will be based on MUC and MFR zoning districts where those densities and uses occur on the site as approved by Douglas County with a future planned development application. All of requirements of this section shall remain the same.

3.4 IMPROVEMENT STANDARDS / DESIGN GUIDELINES

Improvement standards and design guidelines are a way of defining parameters for site and/or building design and development. They should be used to guide public and private property improvement decisions toward a desired community goal or standard. Design guidelines typically include recommendations or standards on such items as parking and sidewalks, lighting, landscaping, architecture, and signage.

The development of a specific plan, because of its inherent flexibility or non-traditional approach, is often used as an opportunity to either create design guidelines where none currently exist, or to refine existing guidelines to meet the unique circumstances or vision of a particular area.

Douglas County adopted a comprehensive manual of design criteria and improvement standards for the entire county in September of 1998 that addressed both planning and engineering development issues. According to the manual, the design criteria are intended "as a reference to assist the designer in understanding the County's goals for commercial, industrial, and institutional developments. "Improvement standards contained in the manual are "complementary to the development regulations contained within the Douglas County Consolidated Development Code and are not intended to modify specific ordinance provisions."

It is the intent of the NDCSP to utilize the existing Douglas County design criteria and improvement standards regarding development and planning issues in the NDCSP area. During the NDCSP planning process, however, it became evident that additional design criteria and development standards would be needed to address unique circumstances present in the planning area. These circumstances resulted in the formation of the following additional design criteria and improvement standards. They are not intended to replace existing design criteria and improvement standards, rather; they are intended to compliment and build upon existing guidelines. ' The additional design criteria and improvement standards listed below **are only applicable within the NDCSP area**. No other planning areas, jurisdictions, codes, or policies are affected by these guidelines.

3.4.1 Buffer Zones / Screening

A key issue in the development of the NDCSP centered on the compatibility of existing uses versus proposed uses, particularly since the majority of the land in the NDCSP planning area is currently undeveloped. Residents in the Sunridge subdivision, for example, were very concerned about what type of adjacent development would occur and if access to open space would be lost: Additionally, eight privately owned parcels, seven of which contain existing single-family dwellings, are located within areas proposed for commercial uses. Commercial zoning is also proposed adjacent to the proposed 38-acre SFR-8,000 designation. Although compatibility between commercial and residential

uses is perceived to increase with higher residential densities, commercial uses are generally considered incompatible with single-family housing.

One way of mitigating these types of compatibility issues is to utilize buffer treatments between the incompatible uses, typically in the form of increased setback requirements, additional landscaping requirements, fencing, and other screening methods. The extent or intensity of the buffer treatment is often proportional to the degree of incompatibility present or perceived.

As mentioned above, the compatibility issues identified in the NDCSP area generally concerned open space access and commercial uses adjacent to single-family housing. Existing Douglas County codes and design guidelines contain the following provisions for buffering commercial land uses adjacent to single-family uses:

- Minimum 15-foot landscaped side and rear yard setbacks.
- Minimum 20-foot landscaped front yard setback.
- Architecturally compatible screening of any equipment.
- Maximum light fixture height of IS-feet within 100-feet of residential uses.
- Parking lots directly adjacent to residential uses require a 6-foot wall and 10foot landscape buffer.

These existing guidelines will be utilized, along with careful site design and design review procedures, to help mitigate compatibility issues. The level of concern expressed by surrounding residents, however, dictated that additional standards were necessary and appropriate in the NDCSP area. The following additional standards were therefore developed:

- A 200-foot open space corridor buffer will be established immediately north of parcels in the Sunridge subdivision along Haystack Drive. The buffer will extend east to west from North Sunridge Drive to Highway 395 (see zoning and land use maps).
- Commercial development in the area adjacent to the proposed 38-acre SFR8,000 zone will be required to construct and maintain a 50-foot open space buffer with landscaping. This buffer area will also be used to establish a pedestrian/bike path corridor.
- Commercial development proposed adjacent to existing residential uses shall provide and maintain a contiguous 50-foot open space buffer, retained in its natural state, along all abutting property lines.
- Commercial access from Lyla Lane, south of Topsy Lane, shall be prohibited, unless the existing residential uses are discontinued.

3.4.2 Transitional Zoning Boundaries

Traditional zoning practices generally establish zoning districts and boundaries based on property/parcel lines, streets, or other officially known and surveyed

monuments. Although some of these elements are present in the NDCSP area, primarily in the portion west of Highway 395, the majority of acreage in the planning area consists of large tracts of land that have not been parceled or developed. This situation presents problems for "hard zoning" the area because there are no parcel lines, streets, or surveyed divisions to base zoning boundary lines on.

To overcome this problem, areas containing parcel lines or other sufficient demarcation features will be "hard zoned" and areas without such elements will be conceptually zoned. Under this development standard, conceptually zoned areas will have "transitional zoning boundaries" to allow for some flexibility in the parceling and zoning process.

The transitional zones would allow zoning boundaries to vary, if necessary to accommodate proposed uses, during the parceling process without having to apply for land use map or zoning map amendments. The maximum amount of variance allowed to the conceptual boundaries depicted on the proposed zoning map will be 20% of the total area proposed for improvements.

3.4.3 Non-conforming Uses

Two existing residential parcels, one located at the comer of N. Sunridge Dr. and U.S. 395 N. and the other at the eastern end of Topsy Lane, will become nonconforming uses because of new zoning designations proposed in the NDCSP. Among other regulations, existing Douglas County code stipulates that nonconforming uses are not allowed to expand. Because of the residential nature of the parcels in question, this represents an undue hardship for these existing property owners, whom under their previous zoning for example, were allowed an accessory dwelling. To mitigate this undue hardship, these parcels will be allowed to continue their current land use. Additionally, these parcels will be allowed to expand their existing uses under the provisions of the previous zoning until such time that the use of the parcels change to the zoning stipulated in the NDCSP. The building setback requirements, however, shall comply with the proposed zoning.

3.5 TERMINATION OF PROJECT

Phasing plans for the future planned development application must include within the early phases of the proposed development critical public facilities needed to support the project should abandonment occur. These critical public facilities include adequate fire flows to support the then existing development, as well as looped road connections and connections to the exterior boundaries of the planned development consistent with the circulation plan in this plan document. Where road connections are not necessary at the time of development, right-of-ways grants for the road connections to the exterior boundaries per the circulation plan should be granted with the first phase. Proposed

private recreational facilities should be completed within the first two phases of the proposed development.

Chapter Four

TRAFFIC and CIRCULATION

4.0 INTRODUCTION

The circulation network of the NDCSP area was analyzed to determine key intersection configurations, street widths, right-of-way widths, and pedestrian and bike routes based on conceptual land uses proposed for the planning area. Calculations and supplemental material are provided in Appendix B.

4.1 EXISTING CONDITIONS

The existing roadway system consists of the following roadways:

1) .S. 395 provides the primary access-to the NDCSP area from Carson City and the Minden/Gardnerville areas. U.S. 395 is classified as a Principle Arterial in the current Douglas County Master Plan. Currently U.S. 395 is a four-lane roadway with two lanes in each direction. Construction is underway to widen southbound U.S. 395 to three lanes to Clear Creak Road to Jacks Valley Road.

2) Jacks Valley Road is classified as a Major Collector in the Master Plan. The construction of the North Valley Plaza (Home Depot and Target) recently widened Jacks Valley Road to a four-lane roadway with continuous left turn lanes at intersections from U.S. 395 to Vista Grande Boulevard. Jacks Valley Road transitions into a two-lane facility west of Vista Grande Boulevard.

3) North Sunridge Drive is classified as a Minor Collector in the Master Plan. This roadway consists of two through lanes, one in each direction.

4) Topsy Lane is classified as a local street in the Master Plan and consists of a graded gravel and dirt road east of U.S. 395.

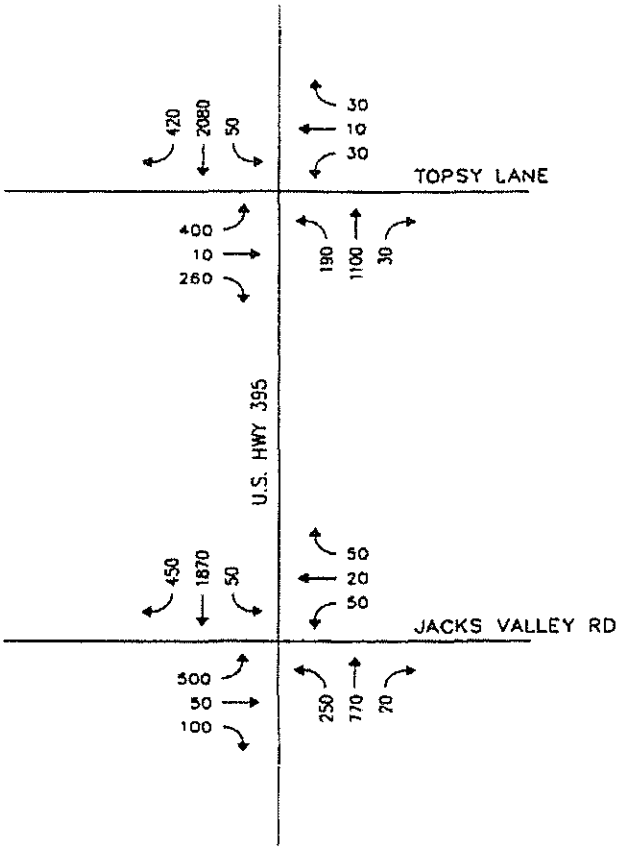
The above four roadways form the following two intersections within the project area:

1) U.S. 395/Jacks Valley Road - North Sunridge Drive is currently controlled with a traffic signal. The east approach consists of a single combined left turn/through lane, and one right turn lane. The west approach consists of 2 left turn lanes, one through lane, and one right turn lane. The south approach consists of 2 left turn lanes, 2 through lanes, and one right turn lane. The north approach consists of a one left turn lane, 2 through lanes, and one right turn lane.

2) U.S. 395/Topsy is an unsignalized 'T' intersection with a stop sign on the eastern approach. The east approach contains a single combined left and right turn lane. The south approach contains one through lane and a combined through/right turn lane. The north approach contains one left turn lane and two through lanes.

Existing Traffic Volumes

Existing PM peak hour traffic volumes were taken from previous traffic studies conducted for developments west of U.S. 395. These studies include the U.S. 395/Topsy Shopping Center Traffic Analysis, February 2000 and the North Valley Plaza Traffic Analysis dated July 1998 with amendments dated July 29 and November 9,1998. Traffic generated from buildout of the North Valley Plaza and U.S. 395/Topsy Shopping Center was included within the existing traffic volumes. Figure 4-1 indicates the existing traffic volumes.



(Figure 4-1)
Year 2010 PM Peak Hour Traffic Volumes
(Includes North County Plaza and Topsy Shopping Center Traffic)

4.2 FUTURE STREETS AND HIGHWAYS ANALYSIS

Trip Generation

Buildout of the NDCSP area is anticipated to occur by 2010 for the purposes of this analysis. Trips generated for the proposed development were determined from two sources. The first source is the u.s. 395/Topsy Shopping Center Traffic Analysis for the west side of U.S. 395 and the second source is the Institute of Transportation Engineers (ITE) Trip Generation Report, Sixth Edition. Tables 4.1 and 4.2 indicates the ITE Land Use, Average Daily Traffic (ADT), AM Peak Hour Traffic, and PM Peak Hour Traffic for eastern approaches to Topsy Lane and North Sunridge Drive respectively.

(Table 4.1) Trip Generation
Topsy Lane

ITE Land Use	Land Use	ADT	AM Peak Hour	PM Peak Hour
560	Public Facilities (Church)	0	0	
521	Public Facilities (School)	0	0	
820	Commercial (Shopping Center)	25,886	550	2,470
210	Single-Family (8,000 SF)	2,417	189	255
210	Single-Family (12,000 SF)	641	50	68
	Subtotal	28,943	790	2,793
	Total with 10% Capture Rate	24,891	679	2,402

(Table 4.2) Trip Generation
North Sunridge Drive

ITE Land Use	Land Use	ADT	AM Peak Hour	PM Peak Hour
560	Public Facilities (Church)	957	76	69
521	Public Facilities (School)	1,620	460	100
820	Commercial (Shopping Center)	22,936	492	2,182
210	Single-Family (8,000 SF)	2,170	170	229
210	Single-Family (12,000 SF)	646	36	49
	Subtotal	28,147	1,234	2,629
	Total with 10% Capture Rate	25,332	1,111	2,366

The following estimates were utilized to determine the applicable number of building gross square feet, number of students, and number of residential units:

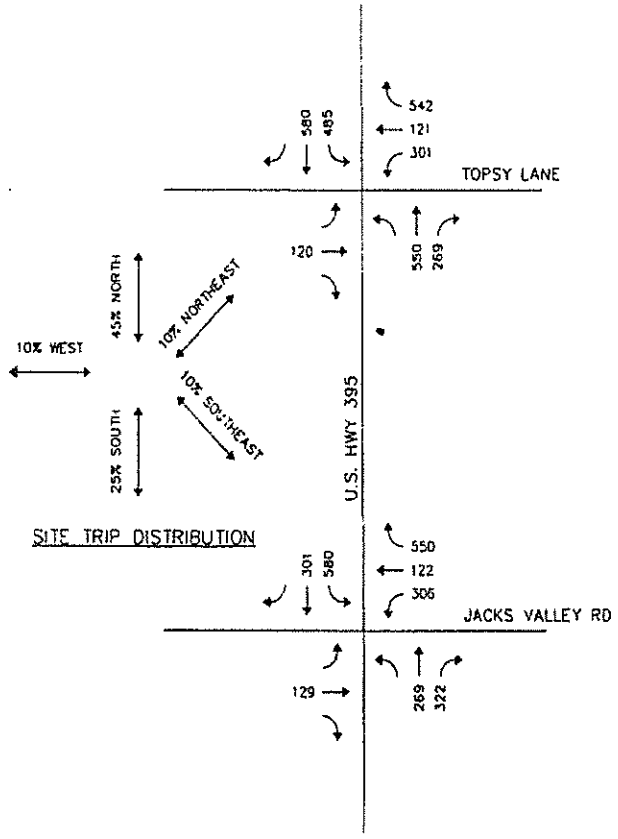
1) Land Use 560 - Church - Estimate three new churches totaling 35,000 square feet of building per facility.

2) Land Use 521 - Schools - Estimate 500 students attending a private school, grades K through 12.

3) Land Use 820 - Shopping Center - Estimate 22% of total land area to be gross building area pursuant to similar uses (Home Depot/Target and Costco developments).

4) Land Use 210 - Residential - Estimate four units per acre and three units per acre for 8,000 and 12,000 square foot lots respectively.

The ITE Trip Generation Report values were decreased to account for internal vehicle trips. Internal vehicle trips are defined as trips between various uses within the development that are not made on the surrounding street system. The percentage of internal vehicle trips to total vehicle trips is the internal capture rate. The ITE Trip Generation Handbook, An ITE Proposed Recommended Practice, October 1998 was utilized to estimate the internal capture rate of 10%. Pass-by-trips, or vehicle trips to the development that were currently utilizing the adjacent street network were not removed from the adjacent street system to be conservative.

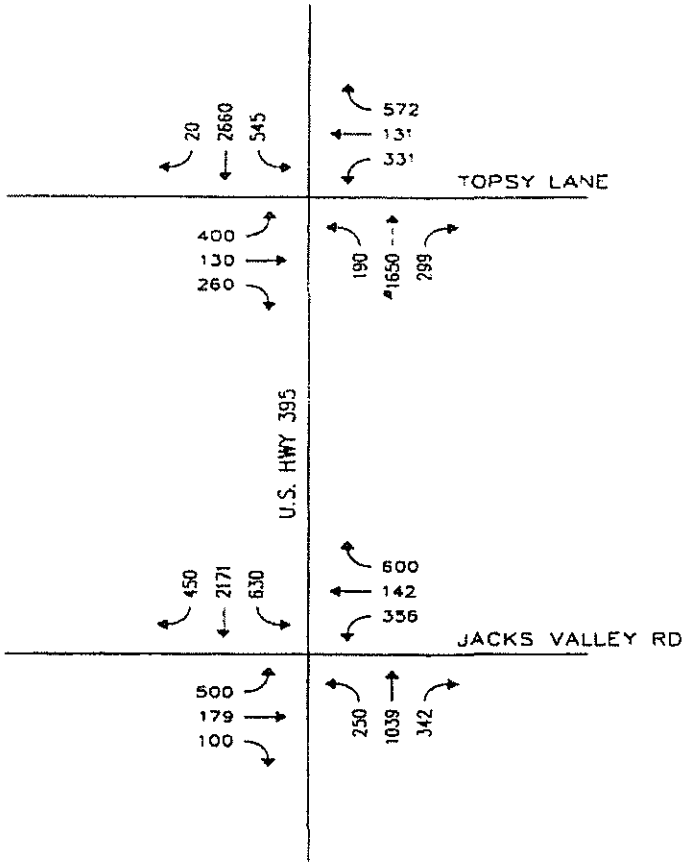


(Figure 4-2)
Year 2010 PM Peak Site Generated Traffic

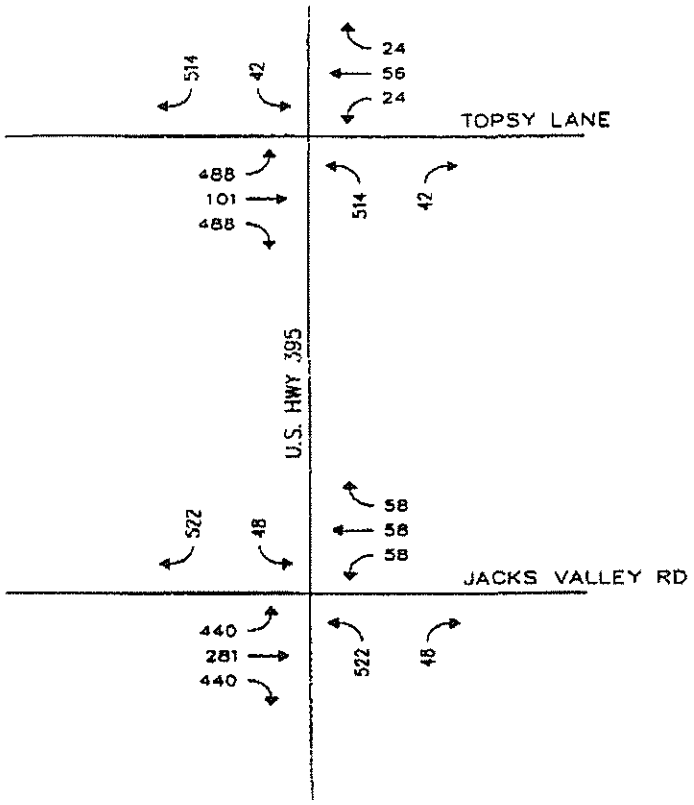
Figure 4-2 indicates the project trip generation for the U.S. 395/Topsy and U.S. 395/Jacks Valley intersections. Figure 4-4 indicates the project trip generation for the

proposed internal commercial street and Topsy Lane and North Sunridge Drive intersections. Figures 4-3 and 4-4 indicate the total PM Peak hour traffic for each of the studies intersections. Appendix B provides additional information pursuant to trip generation.

The Figures and LOS Analysis was conducted from a previous use configuration. The current use indicates less than a one percent decrease in site-generated traffic therefore the Figures and LOS Analysis was not updated.



(Figure 4-3)
Year 2010 PM Peak Hour Traffic Volumes with Project Traffic



(Figure 4-4)
PM Peak Hour Traffic (Internal Intersections)

Traffic Analysis and Results

The four subject intersections, U.S. 3951T0psy, U.S. 395/Jacks Valley, Topsy/Commercial, and North Sunridge/Commercial were analyzed utilizing Level of Service (LOS) methodology contained in the 1997 update to the 1994 Highway Capacity Manual (HCM). The Highway Capacity Software (HCS) was utilized to provide the computations. LOS is defined as a qualitative measure describing operational conditions within a traffic stream, and their perception by motorists and passengers.

The 1997 update to the HCM defines LOS in terms of delay. Delay is a measure of driver discomfort, frustration, fuel consumption, and lost travel time. LOS criteria for signalized intersections are shown in table 4.3. The Douglas County Master Plan specifies LOS C for all streets with the exception of Major Arterials where the LOS may be reduced to D.

(Table 4.3)
Level of Service Criteria
Signalized Intersections

Level of Service	Delay (sec/veh)	Expected Delay
A	≤10	Little or no delay
B	>10 and ≤20	Short traffic delays
C	>20 and ≤35	Average traffic delays
D	>35 and ≤55	Long traffic delays
E	>55 and ≤20	Very long traffic delays
F	>80	Extreme delays

A Summary of year 2010 PM peak hour LOS for the three subject intersections is provided in Table 4.4.

(Table 4.4)
Level of Service (LOS) Results
Signalized Intersections

Intersection	PM Peak Hour	
	LOS	Delay (sec/veh)
U.S. 395/Jacks Valley Road	D	51.2
U.S. 395/Topsy Lane	D	47.1
Topsy Lane/Commercial Street	C	29.4
N. Sunridge/Commercial Street	C	29.4

Based on conceptual estimates, the following intersection improvements are required to achieve the LOS's presented in Table 4.4:

U.S. 395/Jacks Valley Road

Construct two left turn lanes, one through lane, and one right turn lane on the east approach. Construct two left turn lanes, three through lanes, and one right turn lane on the north approach. The west approach does not require upgrades. Construct two left turn lanes, three through lanes, and a right turn lane on the south approach. In addition a right turn deceleration and acceleration lanes should be constructed on U.S. 395 east approach.

U.S. 395/Topsy Lane

Construct two left turn lanes, one through lane, and one right turn lane on the east approach. Construct two left turn lanes, three through lanes, and one right turn lane on the north approach. Construct two left turn lanes, three through lanes, and a right turn lane on the south approach. In addition a right turn deceleration and acceleration lanes should be constructed on U.S. 395 east approach.

Topsy Lane/Commercial Street

The internal intersection of Topsy Lane/Commercial Street was utilized to also represent the improvements and LOS of the North Sunridge Drive/Commercial Street intersection. The Topsy Lane/Commercial intersection was first analyzed as an unsignalized two-way and four-way stop controlled intersection and the LOS was well below F. Traffic Signal Warrant 11, peak hour traffic volumes, in the Manual of Uniform Traffic Control Devises (MUTCD) was evaluated and satisfied. Therefore, the intersections were analyzed as a signalized intersection.

The north and east approaches should be one left turn lane, one through lane, and one right turn lane. The south and west approaches should be two left turn lanes, one through lane, and one right turn lane.

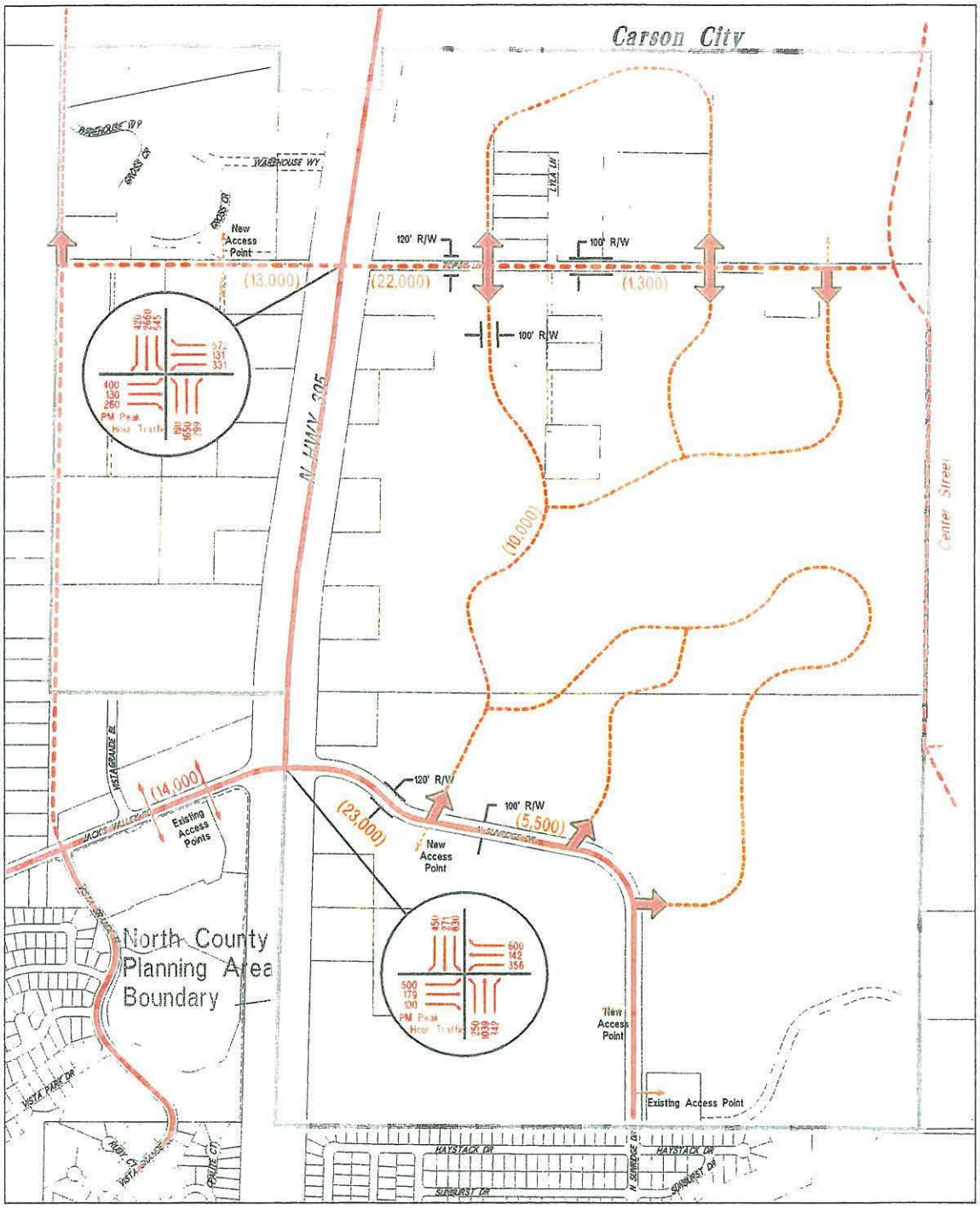
North Sunridge Drive/Commercial Street

The north and east approaches should be one left turn lane, one through lane, and one right turn lane. The north and east approaches should be two left turn lanes, one through lane, and one right turn lane.

Left turn lane storage lengths were also evaluated utilizing methodology outlined in the National Cooperative Highway Research Program (NCHRP) Report 348. Left turn storage lengths are indicated in Table 4.5.

North County Specific Plan

Transportation Plan Map



LEGEND

- Existing Primary Roads
- Proposed Primary Roads
- Possible Road Connections
- (XX XXX) Average Daily Traffic **
- New Road Connections
- Area Proposed for Development *
- Area Proposed for Open Space *

* North County Specific Plan Zoning

** 2010 Project Buildout Traffic Volumes

N

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1" = 1000'
12/06/00

LUMOS

(Figure 4-5)

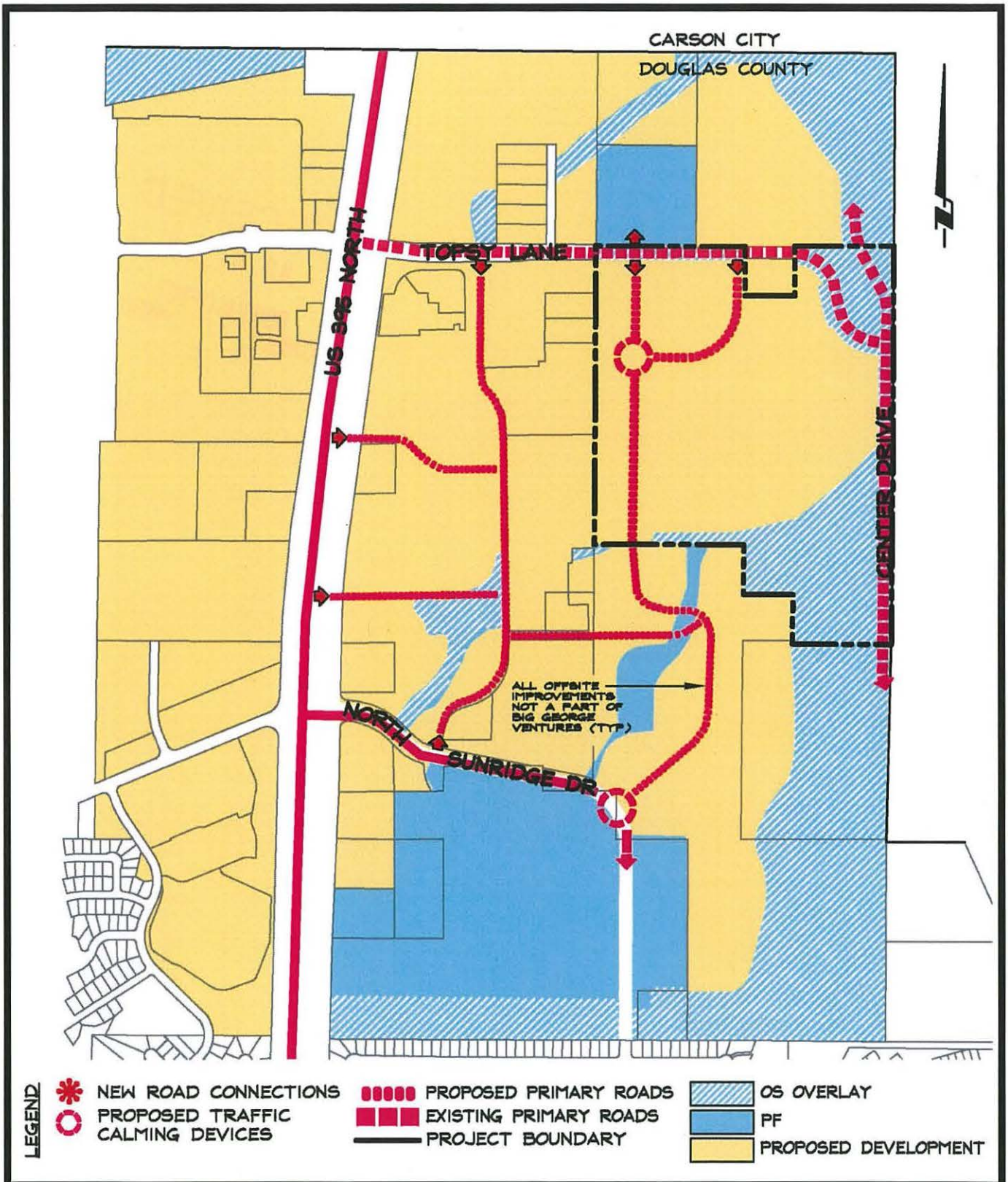


FIGURE 4-5 'A'

SPECIFIC PLAN ALTERNATE #2 PROPOSED TRANSPORTATION PLAN INCLUDING CURRENT PLANS FOR OFFSITE CONNECTIONS

1293-005 06/30/08

(Table 4.5)
Left Turn Storage Length Requirements

Intersection	West Approach	East Approach	South Approach	North Approach
U.S. 395/Jacks Valley	(2) 450	(2) 325	(2) 175	(2) 450
U.S. 395/Topsy	(2) 175	(2) 300	(2) 150	(2) 375
Topsy/Commercial	(2) 250	(1)100	(2) 275	(1) 100
N. Sunridge/Comm.	(2) 250	(1) 100	(2) 275	(1) 100

Left turn lane lengths that need upgrading and/or construction.

Figure 4-5, Proposed Transportation Plan, summarizes in a graphic format the preceding analysis.

4.25 SUMMARY OF TRAFFIC STUDY RESULTS FOR BIG GEORGE VENTURES

A Traffic Impact Analysis report was prepared for the proposed amendment for Big George Ventures, which included increasing the density from 366 units to a maximum of 630 units, including up to 35,000 square feet of commercial floor area for the mixed-use commercial component of the proposed development. The project is a master plan amendment, specific plan amendment and if approved, will be implemented with a new a planned development application within the North Douglas County Specific Plan. Figures 4-5A indicates the proposed circulation roads serving the BGV site. This report, which is included as part of the submittal for the master plan and specific plan amendment, analyzes the existing and future traffic impacts generated by the development as well as with and without several other North Douglas County Specific Plan projects or adjacent project scenarios.

The scope of the traffic study was defined by Douglas County staff at a meeting with R.O. Anderson Engineering. Per the scoping session held with county staff, the following intersections were identified for analysis:

1. US 395 / Topsy Lane
2. Topsy Lane / Project Site Access (collector roadway)
3. Topsy Lane / Center Drive
4. Snyder Avenue / Bigelow Drive **
5. Snyder Avenue / S. Edmonds Drive **
6. US 395 / Jacks Valley Road (SR 206) / North Sunridge Drive
7. North Sunridge Drive / Project Site Access (collector roadway)
8. US 395 / Clear Creek Avenue**

The asterisks on intersections four, five and eight denote the Carson City study intersections. All of the intersections above were analyzed in the trip generation,

distribution, assignment, and level or service analyses of this report. Initially, this study presents existing traffic conditions and level of service analyses in the area under both existing AM and PM peak-hour conditions without the project. Next, the proposed development is assessed to determine the traffic that will be generated in peak-hour vehicle trips and daily vehicle trips. These additional vehicle-trips are then assigned to the nearby roadway system to determine the necessary future level of analysis, and to identify the impact on future intersection LOS, as well as to determine the level of significance of the impacts for the AM and PM peak hour conditions.

Traffic related issues addressed in this report are consistent with Douglas County requirements. The issues are:

Existing AM and PM peak hour traffic conditions;

Site generated traffic volumes, their distribution, and assignment to identified study area intersections;

Capacity analysis of the required intersections during the existing AM and PM peak hour conditions (with and without the project);

Capacity analysis of the required intersections during the existing AM and PM peak hour conditions (with the project plus "other" NDCSP projects);

Capacity analysis for year 2025 during the PM peak hour growth rate conditions for the Douglas County intersections;

Safety analysis of the proposed conditions;

Recommendations for mitigation of traffic impacts and conclusions.

The results of this traffic study are used to develop recommendations to mitigate project traffic impacts. This analysis considers the following traffic scenarios:

- Existing No Project – AM
- Existing No Project – PM
- Existing Plus Project – AM
- Existing Plus Project - PM
- Existing Plus Project Plus Schulz – AM
- Existing Plus Project Plus Schulz - PM
- Existing Plus Project Plus Schulz Plus Retail– AM
- Existing Plus Project Plus Schulz Plus Retail - PM
- 2025 Future Growth Rate Conditions – PM
- Recommended Mitigations – PM

CONCLUSIONS & RECOMMENDATIONS

The findings of the traffic study report are listed below:

1. All of the study area intersections operate at an acceptable level of service in existing conditions with and without the project. No mitigation is required for this project at any study area intersection based on existing plus project capacity needs.

   Five of the eight study intersections fail under existing conditions and future 2025 conditions plus this project plus the Schulz Ranch Project plus the full buildout of the North Douglas County Specific Plan: US 395 / Topsy Lane, Topsy Lane / Center Drive, US 395 / N. Sunridge Drive, N. Sunridge Drive / Site Access, and US 395 / Clear Creek Road. Please refer to Chapters 4 and 5 of the traffic study for further details on potential future mitigation of these intersections.

2. No additional turn lanes are warranted under existing plus project conditions.

3. Intersection sight distance should be adequate at the access points. However, the actual location of the site access was difficult to determine in the field at the time of the study. Sight distance should be verified in the field when a more developed site plan is available to the County.

4. Signal warrants are not met at any intersection under existing plus project conditions. However, signal warrants have been found to be met at Topsy Lane / Center Drive and North Sunridge Drive / Site Access under existing plus the project, plus the Schulz Ranch Project, plus the full buildout of the North County Specific Plan as well as under future 2025 conditions, which considers the full buildout of the North County Specific Plan and the Schulz Ranch Project.

5. The site access location and internal traffic circulation were not analyzed due to the conceptual nature of the proposed site plan. However, the site plan does provide a secondary emergency accesses to the site.

6. The project is expected to generate an estimated total of 426 AM peak-hour trips (123 entering and 303 exiting), 729 PM peak-hour trips (419 entering and 311 exiting) and 7,807 average daily trips (new trips). Traffic generated by this development will not have a significant impact on the adjacent roadways with respect to capacity thresholds.

7. Mitigation measures are not recommended for this project under existing plus project conditions. However, this project may be responsible for a prorated share of future mitigation measures since this project's trip generation or traffic adds to the deficiency of five intersection failures in the future conditions.

4.3 PEDESTRIAN PATHWAYS and CIRCULATION

Pathways

The NDCSP contemplates 3.5 miles of multi-use paths. Bike and Pedestrian pathways for the BGV site are included within Figure 4-6A. Multi-use pathways are intended to follow the open space areas in the North County planning area and make connections between various types of uses or designations. Connections between residential and commercial zones are very important, as are connections between residential and public facilities. Each neighborhood will connect to the pathway system by way of a spur or trailhead. Special care should be given to street crossings where the most danger exists for the user. Median refuge islands are helpful in aiding path users safely across busy streets.

The level of improvements of the facility will determine the skill level and type of the user. Pathways are intended to be improved with hard surfaces, whereas trails are intended to use softer surfacing such as decomposed granite (see Typical Walkway and Pathway Design Examples, Figures 4-7 through 4-11 in the 2000 specific plan). The design of the pathways will use a Douglas County minimum standard width of 12 feet and surfacing of asphalt concrete. The improvements will follow Douglas County and AASHTO guidelines for path facilities.

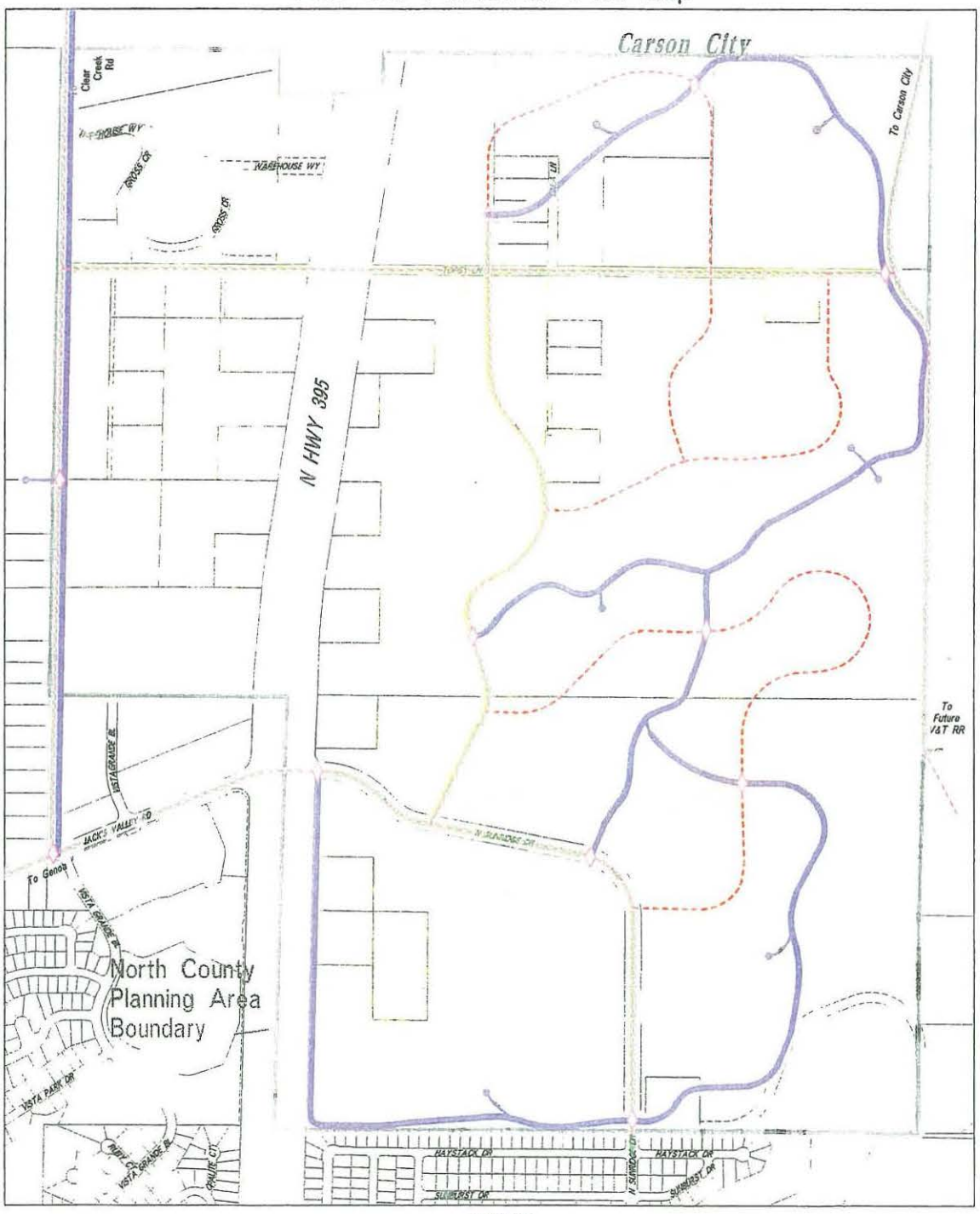
Sidewalks

In general, pedestrian circulation and access will be accommodated by the roadside sidewalk network, which will be constructed as a part of all streets. Sidewalks may be on both sides of the street. The standard location of the sidewalks will be off-set from the street by a six foot buffer and landscape area. In residential areas, minimum sidewalk width is 5 feet. In accordance with the Douglas County Design Standards in commercial areas the minimum width is 6 feet. Again, special care should be given to street crossings, especially U.S. 395. Traffic signals should allow adequate time to cross and make use of possible refuge islands

.

North County Specific Plan

Bike and Pedestrian Plan Map



LEGEND

- Bike Lane
- Multi-Use Path (Pedestrian and Equestrian)
- Pedestrian System
- Road Crossings
- Path Spur, Entry and Exit
- Area Proposed for Development *
- Area Proposed for Open Space *

* North County Specific Plan, Zoning

N

DOUGLAS COUNTY Multi-Agency Geographic Information Center

LUMOS

1" = 1000'
12/06/00

(Figure 4-6)

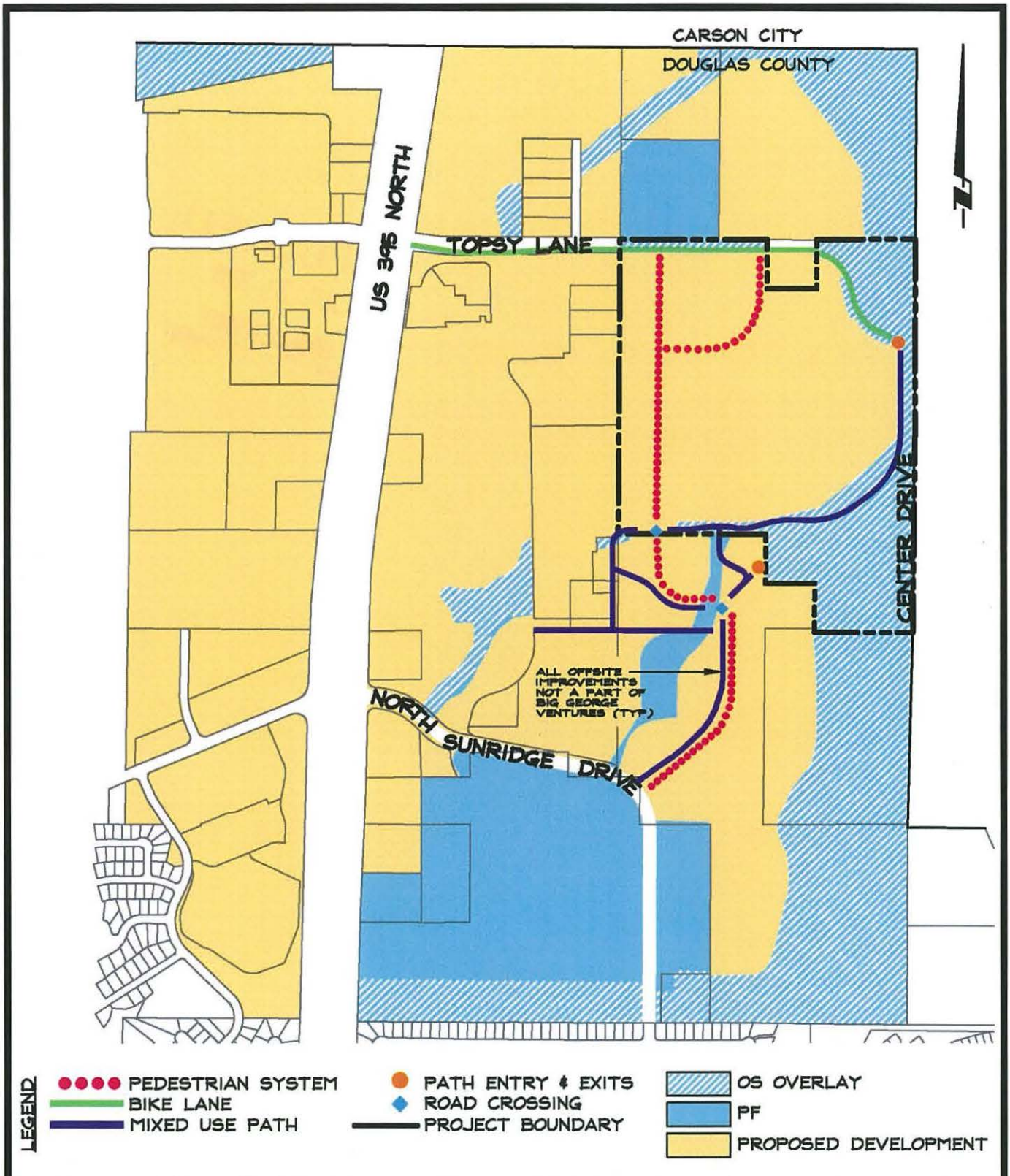
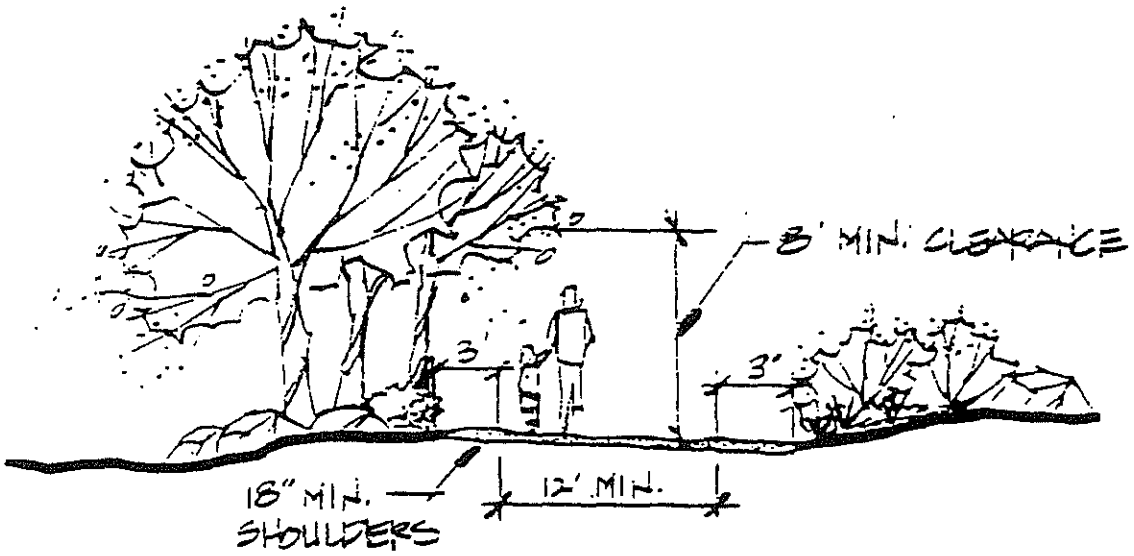


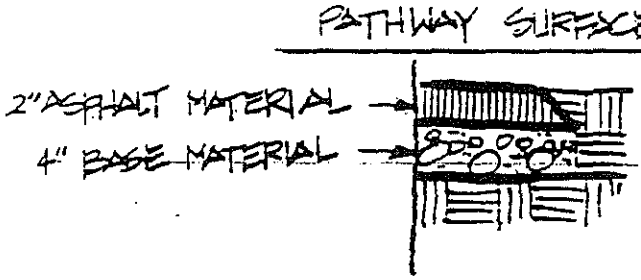
FIGURE 4-6 'A'

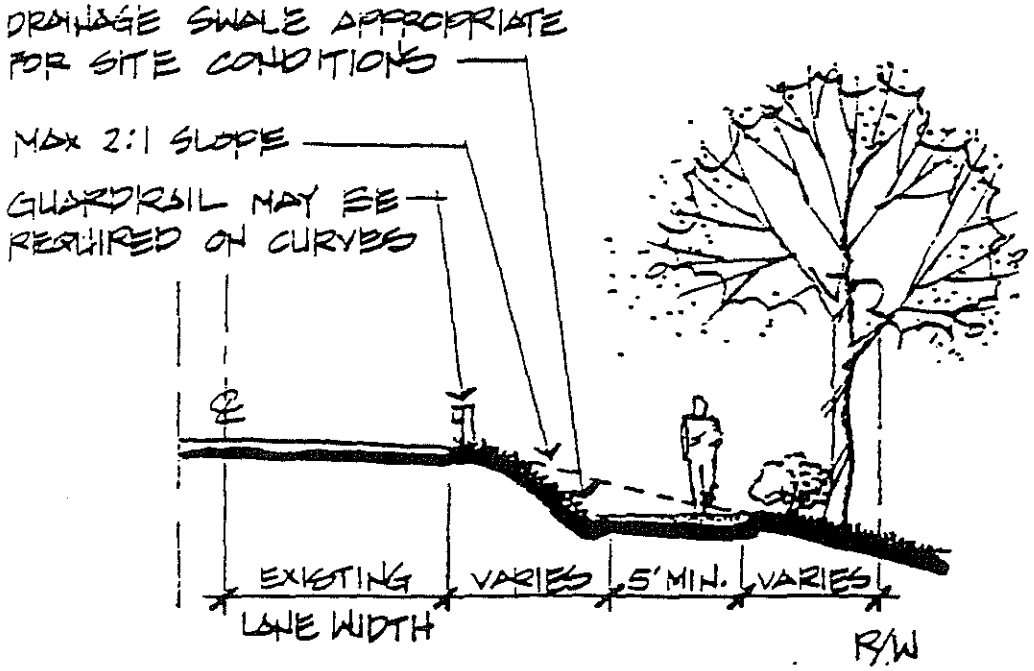
SPECIFIC PLAN ALTERNATE #2 PROPOSED PEDESTRIAN & BIKE CIRCULATION PLAN INCLUDING CURRENT PLANS FOR OFFSITE CONNECTIONS

1293-005 06/30/08

TYPICAL WALKWAY/PATH DESIGN EXAMPLES

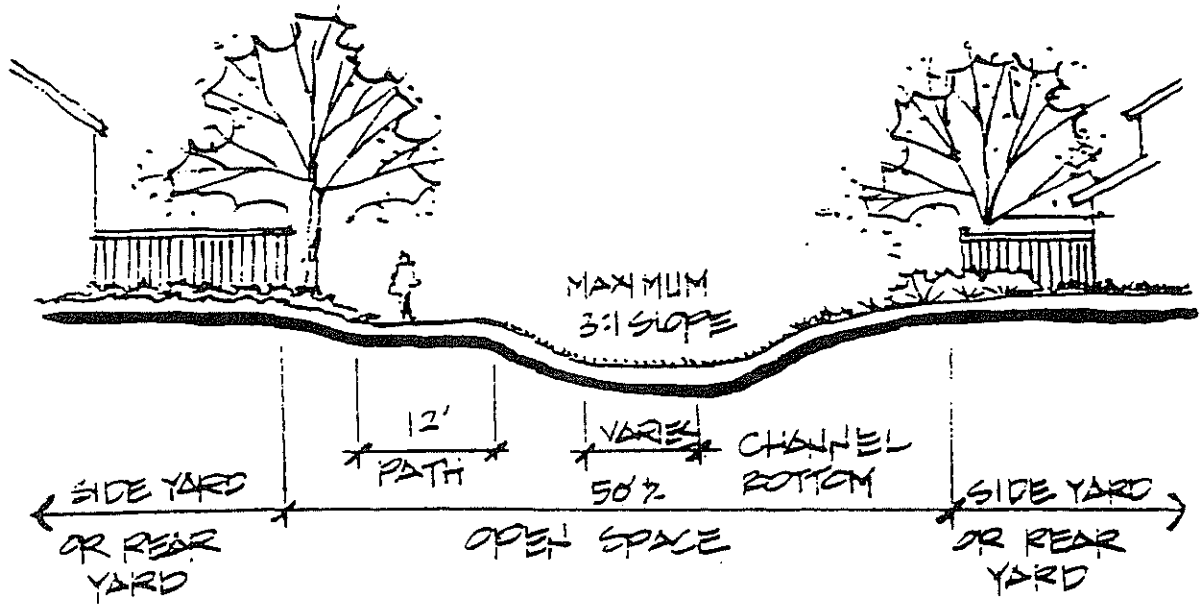


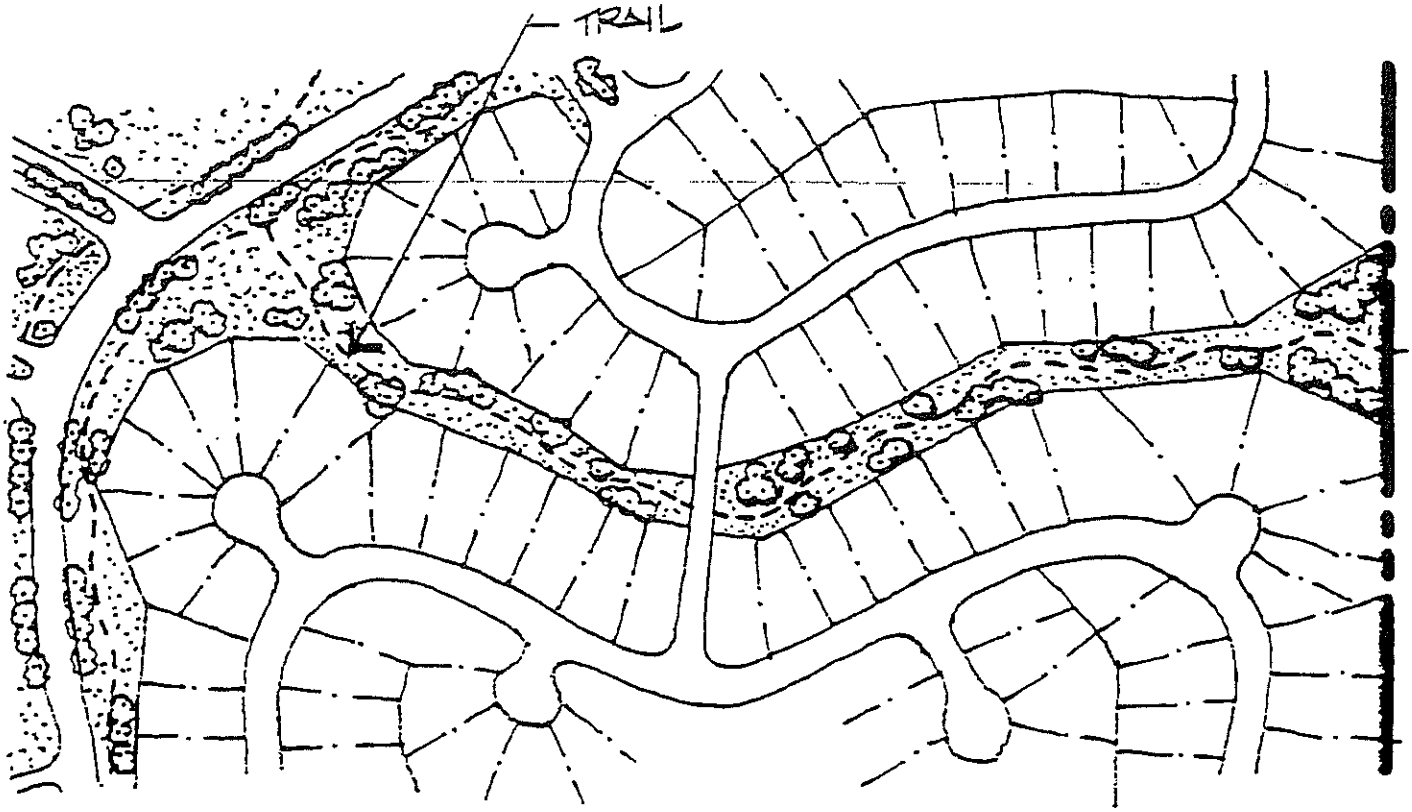




SEPARATED PATHWAY BELOW ROAD GRADE

(FIGURE 4-7)



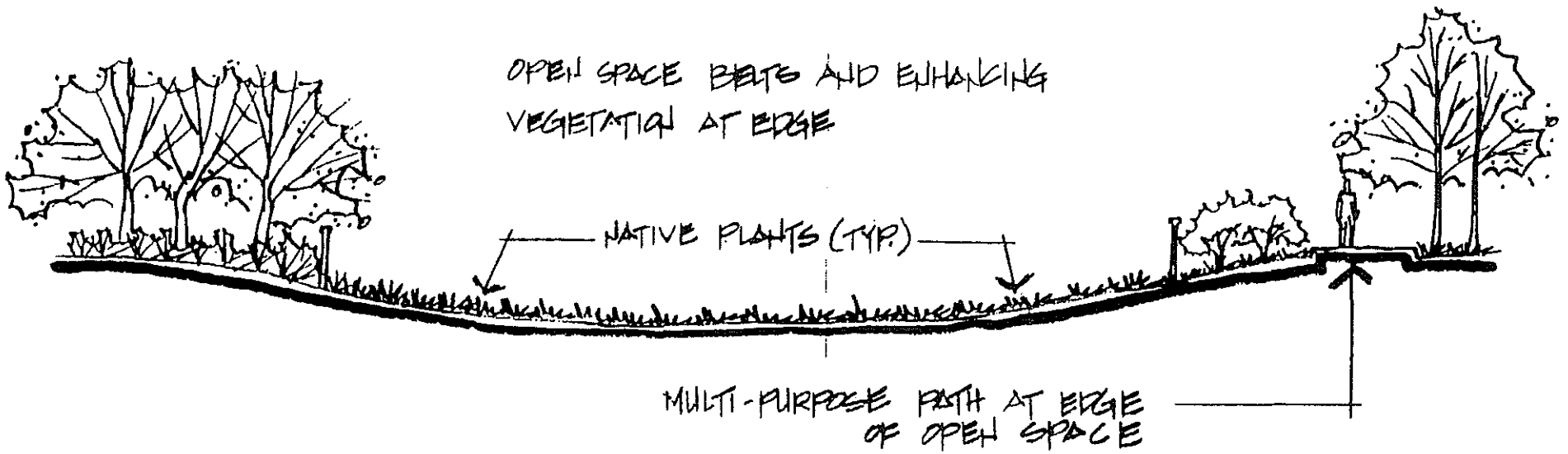


OPEN SPACE BETWEEN NEIGHBORHOODS
ACCOMMODATES DETENTION STORM DRAINAGE, TRAILS,
AND LANDSCAPE BUFFERING

TYPICAL WALKWAY/ PATH DESIGN EXAMPLES

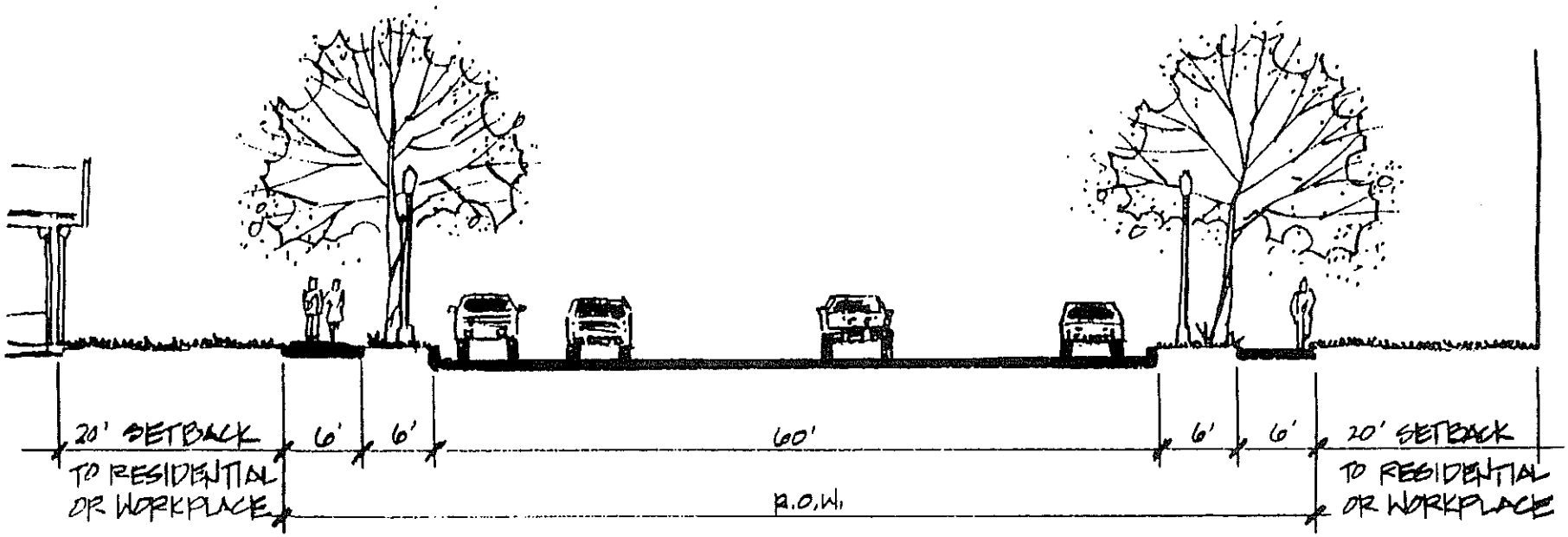
(FIGURE 4–8)

TYPICAL WALKWAY/PATH DESIGN EXAMPLES



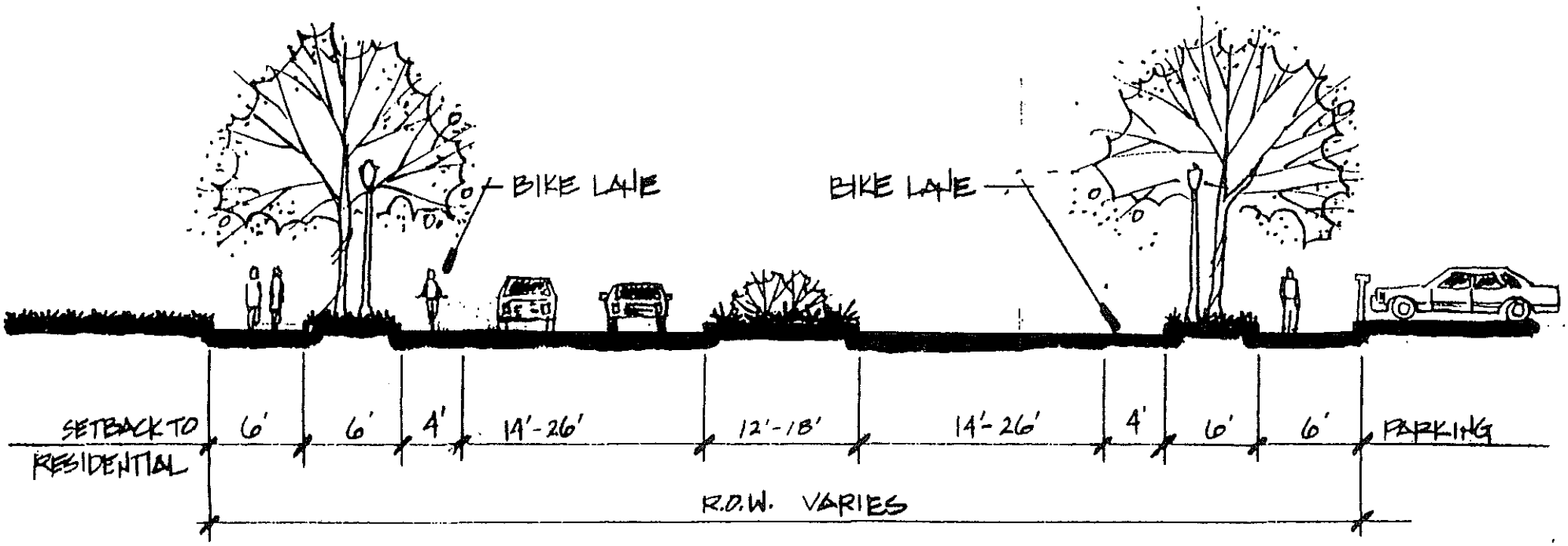
(FIGURE 4-2)

TYPICAL WALKWAY DESIGN EXAMPLES



(FIGURE 4-10)

TYPICAL WALKWAY/PATH DESIGN EXAMPLES



(FIGURE 4–11)

Chapter Five

PUBLIC SERVICES and FACILITIES

5.0 INTRODUCTION

The North Douglas County Specific Plan study area consists of 624 acres of sparsely developed land. The north and east boundary of the study area is contiguous to Carson City. The subject property is bisected by U.S. 395 and adjacent to the Clear Creek drainage corridor. The topographic relief across the proposed developable portion of the property creates an elevation difference of approximately 180 feet.

5.1 EXISTING CONDITIONS

5.1.1 Water System

The existing study area IS "not served by a public water system. An on-site water system has been developed to serve the Clear Creek Industrial Park at the extreme northwest portion of the study area. Other developed parcels within the study area rely primarily upon individual, private domestic wells.

The Indian Hills General Improvement District (IHGID) provides water service to properties to the south and west of the study area. The IHGID Master Plan indicates that the western portion of the study area (west of U.S. 395) is located within potential water service boundaries. IHGID does not have excess capacity, however, to serve the planning area. Improvements to the IHGID water system would therefore be required to provide additional service.

Carson City currently provides water service to the properties located immediately north of the study area. The Carson City water system has the ability to provide storage and supply service to the site but will need sufficient water rights to provide potential service.

5.1.2 Waste Water System

The existing study area is not currently served by a public wastewater collection system. Generally, on-site development relies upon individual treatment and disposal systems. Carson City's wastewater system serves properties to the north of the study area. The Indian Hills General Improvement District (IHGID) provides wastewater service to properties immediately to the south of the study area. The IHGID Master Plan indicates that the western portion of the study area (west of U.S. 395) is located within potential sewer service district boundaries. However, IHGID has limited treatment capacity.

The Foothill Sewer Project - Updated Sewer Master Plan prepared by R.O. Anderson Engineering, January 2000, recommends that this area be served by the North Valley Wastewater Treatment Facility. There is significant topographic relief across the property, which is favorable for serving the area with a gravity sewer system. However, the property contains several natural drainage features that will segregate the sewer system into independent service areas.

5.1.3 Drainage and Storm Drain Systems

The NDCSP planning area consists of approximately 624 acres, 611 of which is divided into several hydrological sub-basins. The area west of US 395 has three distinct sub-basins; one lies along the westerly and northerly edge of the planning area and flows northwesterly to Clear Creek, two other sub-basins (numbers 2 & 3) utilize existing culverts under the Highway and drain to the northeast. On the East side of U.S. 395, the planning area is divided into five sub-basins. Of the five, two are a continuation of flows from the west side of US 395. (See Table 5.1, and the Proposed Drainage Plan map, Figure 5-1 for reference on the sub-basins and their approximate acreage.)

September, 2000 Public Services and Facilities

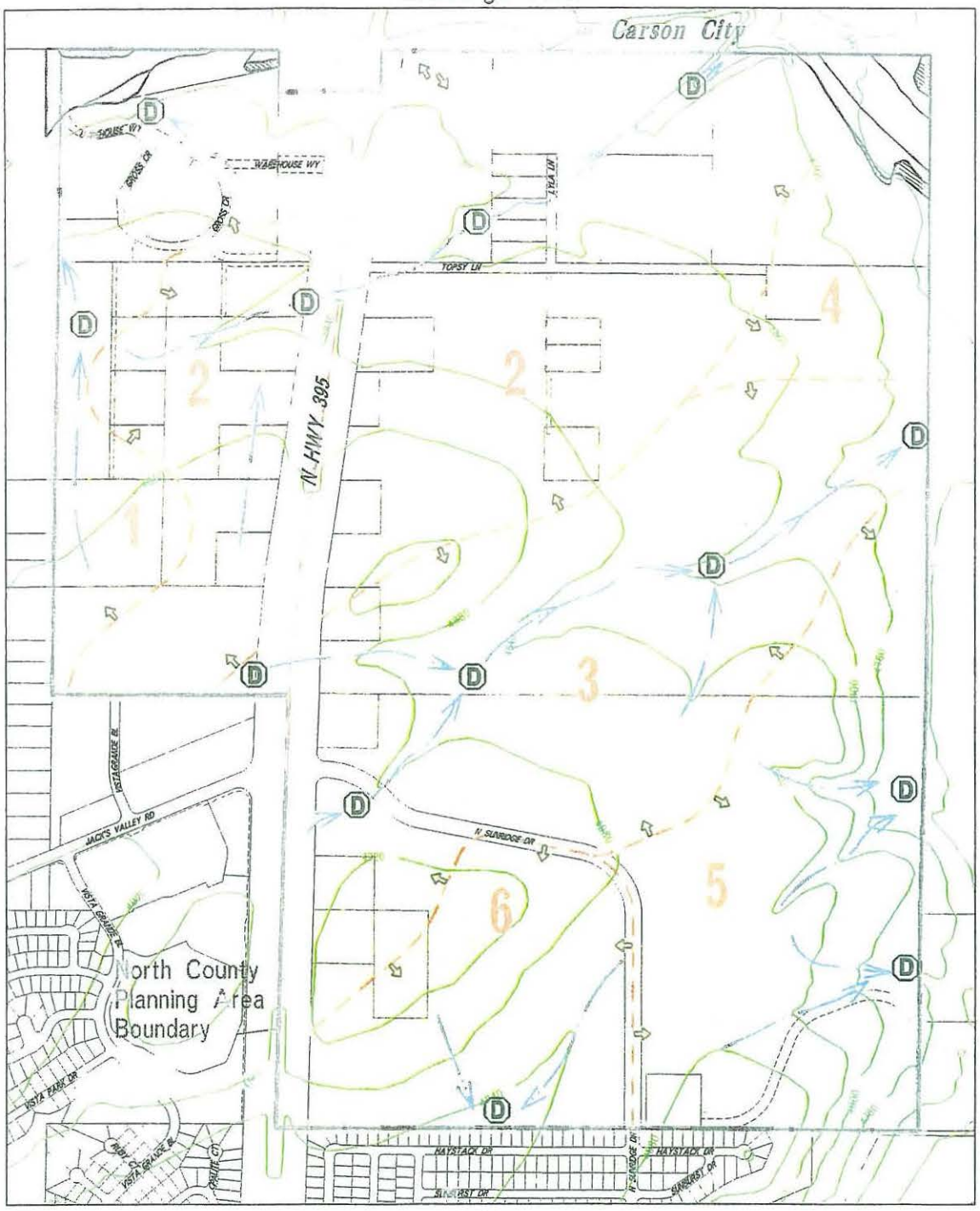
(Table 5.1) **Sub Basin Acreage**

Sub-basin	Acreage
1	82
2	190
3	22
4	165
5	105
6	47
Other	13
Total	624

Vegetation in the area is predominately medium density sagebrush with some riparian areas next to Clear Creek. Soil types for the planning area include two kinds of sand, Mottsville loamy coarse sand (601) and Prey gravelly loamy sand (712). Another minor soil type, Haybourne sand, lies along the easterly edge of the planning area. The land generally slopes to the northeast with the exception of the area next to the Sunridge subdivision and south of North Sunridge Drive. The land falls from 0 to 4 percent with steeper sections in the open space areas. All drainage from the sub-basins eventually flows to Clear Creek with the exception of the area next to Sunridge. *Figure 5-1, Proposed Drainage Plan,* shows the overall existing drainage patterns.

North County Specific Plan

Drainage Plan



LEGEND

- Approx. Limits of Subbasins and Direction of Slope
- Direction of Flow
- Contours (Source: USGS, 40' intervals)
- (D) Possible Detention Areas
- Subbasins
- Area Proposed for Development *
- Area Proposed for Open Space *
- 100 Year Flood Zone - AE
- 100 Year Flood Zone - Floodway
- 500 Year Flood Zone - X

* North County Specific Plan Zoning

N

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DOUGLAS COUNTY
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1" = 1000'
12/06/00

LUMOS

(Figure 5-1)

5.2 ANALYSIS

5.2.1 Water System

Four alternatives have been identified to serve as a source of supply for the study area. The tentative alternatives include:

1) Water service from the Indian Hills General Improvement District (IHGID) water system.

2) Water service from the existing Carson City water system.

3) Connection to a proposed regional water system that will provide service to Carson Valley and Carson City.

4) Development of an on-site water system utilizing new wells and existing wells at the Clear Creek Industrial Park.

Each alternative creates a different approach for identifying the source of supply, system storage and potential points of connection to the study area. Douglas County is currently working on jurisdictional matters for acquiring water service from potential sources. The detailed analysis for the water system will be conducted once the County has completed its negotiations with potential water providers (see Proposed Water and Wastewater Plan, Figure 5-2. for the preliminary analysis).

At this stage of the infrastructure planning process, site characteristics and design criteria have been examined to identify opportunities and limitations for developing a water system.

Water Demands

Based on proposed uses and the conceptual land use plan, water system demands have been developed in accordance with Douglas County's Design Criteria & Improvement Standards and from estimates for similar land use demands within the Carson Valley and Carson City area. The analysis for the water system assumes a fire flow demand of 4,500 gallons per minute (gpm) for a 4-hour duration to meet fire demand requirements.

Douglas County's residential water demand requirements appear to be conservatively high at 1 gpm per equivalent dwelling unit (EDU) for the type of residential development that is proposed. Residential demands are highly dependent upon landscaping and subsequent irrigation practices. Irrigation practices will be influenced by water rates and water conservation measures. It is assumed that residential customers will be metered.

It is estimated that the net area available for residential development is approximately 80% of the gross area identified for residential land uses in the specific plan. This adjustment in the yield of residential units is reflected in the calculations depicted in table 5.2.

An average day to maximum day peaking factor of 2.5 is recommended for sizing the water system. The study area contains a high proportion of commercial property relative to the proposed residential property. Although a smaller peaking factor could be used, based upon a population equivalent for the water system, a higher factor is recommended. An average day to peak hour peaking factor of 3.75 is suggested for the peak hour demand. The water demands for residential uses are depicted in table 5.2. (Note: In all of the following tables the symbol "Q" represents the water flow rate, EDU represents each dwelling unit, and gpm/gpd stands for gallon per minute and gallons per day.)

(Table 5.2) **RESIDENTIAL WATER DEMANDS**

	Land Use		
Flow Rate	**SFR – 8,000**	**SFR – 12,000**	**Total**
$Q_{MAX\ DAY}$/EDU (gpm)	1.0	1.0	
EDU/AC	4.5	3.0	
$Q_{MAX\ DAY}$/EDU (gpm)	4.5	3.0	
Acres	117.35	38.47	
$Q_{MAX\ DAY}$/EDU (gpm)	528.1	115.4	643.5
$Q_{PEAK\ HOUR}$ (gpm)	792.1	173.1	965.2
$Q_{AVG\ DAY}$ (gpd)	304.171	66,476	370.647
$Q_{MAX\ DAY}$/EDU (gpd)	760,428	166,190	926,618

Several commercial use districts are proposed for the property. Wide variations in water demand can occur for specific developments that are allowed within a given commercial land use district (i.e. TC, GC, NC, etc.). Water demand estimates have been developed for each commercial zoning district. As indicated in Section 3.2.3 of this plan, the public facilities land use district does not reflect the typical county definition for public facilities. A significant portion of the public facilities designation is assumed to be reserved for open space. Open space areas are assumed to retain their native vegetation; therefore, no irrigation demands have been assigned to these areas. The commercial and public facilities demands are depicted in table 5.3.

(Table 5.3) **COMMERCIAL AND PUBLIC WATER DEMANDS**

	Land Use				
Flow Rate	**GC**	**OC/NC**	**TC**	**PF**	**Total**
$Q_{AVG\ DAY}$ / AC (gpd)	2000	1000	4000	700	
Acres	210.98	22.76	35.85	224.52	
$Q_{MAX\ DAY}$ (gpm/AC)	3.5	1.5	7	1.2	

$Q_{MAX\ DAY}$ (gpm)	738.4	34.1	251.0	269.4	1292.9
$Q_{PEAK\ HOUR}$ (gpm)	1107.6	51.2	376.4	404.1	1939.4
$Q_{AVG\ DAY}$ (gpd)	425,336	19,665	144,547	155,188	744,736
$Q_{MAX\ DAY}$ (gpd)	1,063,339	49,162	361,368	387,971	1,861,839

The total water demand for residential, commercial and public facilities land uses is depicted in table 5.4. The maximum day demand plus fire flow will govern the design of the system in accordance with Nevada Administrative Code requirements. Therefore, the water system should be capable of delivering the maximum day flow of 1,936 gpm plus the fire flow rate of 4,500 gpm through the network of transmission and distribution piping. The design flow rate for the water system network is 6,436 gpm.

(Table 5.4) **TOTAL WATER DEMAND**

$Q_{MAX\ DAY}$ (gpm)	1,936
$Q_{PEAK\ HOUR}$ (gpm)	2,905
$Q_{FIRE\ FLOW}$ (gpm)	4,500
$Q_{AVG\ DAY}$ (gpd)	1,115,370
$Q_{MAX\ DAY}$ (gpd)	2,788,400
Q_{DESIGN} (gpm)	6,436

Storage Capacity

The combination of a reliable source of supply and operating storage capacity must be adequate to accommodate maximum-day -demand characteristics. As indicated above, the source(s) of supply is not know at this stage of the planning process. There should be sufficient water production capacity to replenish the water storage volume during maximum demand conditions.

A preliminary estimate of the operating water storage requirements will consist of 700 gallons per residential unit, consistent with Nevada Administrative Code requirements. The operating storage for commercial and public facilities is assumed to be the average daily demand for those uses. Emergency storage will be 75% of the operating storage. The fire storage consists of sustaining a fire flow of 4,500 gpm for a duration of4 hours. The system storage estimates are depicted in table 5.5.

The final design for the water system must recognize the balance between water production capabilities and water storage capacity. The operating and emergency storage requirements should consider the quantity and reliability of the source of supply for the selected water supply alternative to determine the size of storage structures.

(Table 5.5) **Water Storage**

	Gallons
Operating Storage	1,195,000

Emergency Storage	897,000
Fire Demand	1,080,000
Total	3,172,000

Water System Characteristics

Based upon Douglas County and Bureau of Health Protection Services water system design criteria, the maximum day, with fire flow demand, will govern the capacity of the water system. Preliminary pipe sizing calculations indicate that there will not be significant savings in pipe costs associated with sizing the water pipes in accordance with high or maximum permitted velocities. It is recommended that conservative pipe sizing, particularly for transmission and primary distribution piping, be utilized to accommodate the water system's performance under maximum day plus fire flow conditions. Generally, there is a relatively small difference between maximum day and maximum month conditions within this region. Maximum month conditions are indicative of the duration of warm, dry weather. Heavy irrigation and high water use can be experienced for an extended period of time. Also during this time, dry conditions increase the exposure to fires, particularly in open space areas. It is recommended to maintain reliable fire flow capabilities under maximum day conditions.

To meet design conditions, it is estimated that an equivalent 2l-inch supply line can serve the study area. It would be preferred that multiple supply lines service the site to enhance the reliability of the water supply. Multiple supply lines (two or more) are estimated to require l6-inch and/or 14-inch pipe sizes to efficiently deliver water to the site.

There is a smaller fire flow requirement for single-family residential areas. A fire flow requirement of 1,500 gpm is assumed for these areas. Design water demands in single-family districts can be accommodated with 8- to 10-inch primary mains.

The existing topography of the site indicates an elevation difference of approximately 180 feet between the highest to lowest elevation of the proposed areas for development. The site generally slopes to the north and east. Douglas County design criteria requires that the static pressure within a water system is maintained between 40 and 80 psi. A 180-foot elevation difference is equivalent to a static pressure differential of approximately 80 psi. Although, site grading of developed areas could be expected to decrease some of the grade differences, it is estimated that at least three pressure zones should be planned for the site. Multiple pressure zones (i.e. minimizing the pressure differential within a pressure zone) will be beneficial to the type of land uses proposed for the study area. The ability to meet high fire flow demands will be enhanced by minimizing the pressure fluctuations within a water pressure zone. Further, the installation of backflow prevention devices, which is anticipated for a significant portion of the

commercial projects, can be expected to reduce the available water pressure at the service connection by approximately 10 psi.

The water supply system, either gravity or pressure, will require regulating the pressure zones within the study area. Pressure reduction and pressure sustaining devices will need to be installed to control shifts in water demand and differences in water pressure.

5.2.2. BGV Water System Analysis

The Big George master plan amendment proposes 504 residential units (with the potential of up to 630 with affordable housing density bonus units), approximately 2.75 acres of commercial development and some open space irrigation. Using the common assumption of 1500 gallons per acre per day for commercial and 700 gallons per day per equivalent dwelling unit (EDU) this results in a total of 636 EDU's. For single family homes the 700 gallons per day per EDU includes the landscape irrigation around the single family home. For multi family homes the 700 gallons per day per EDU includes the units share of the landscape irrigation around the multi family dwelling as well as its share of the open space irrigation.

The required average daily flow for 636 EDU's at 0.49 gallons per minute per EDU is 309 gallons per minute. Based upon the Douglas County Design Criteria and Improvement Standards the required water production is 1.0 gallons per minute per EDU or 636 gallons per minute. This is also the expected maximum day flow. It is expected that the peak hour domestic flow is 5 times the average daily flow or 1545 gallons per minute. The minimum required fire flow is 1500 gallons per minute. The required storage for emergency reserve is 700 gallons per EDU or 445,000 gallons and the required storage for fire flow is 2 hours at 1500 gallons per minute or 180,000 gallons.

With 636 EDU's at a required 1.12 acre feet per EDU 712 acre feet of underground water rights are required. A portion of these are already owned by the applicant with the remaining water rights to be purchased.

The specific plan for North Douglas County estimated that the Big George property would have 261 EDU's based upon average densities of 4.5 EDU's per acre for SFR-8000 land use, and 3.0 EDU's per acre for SFR-12000 land use. However, because clustering is allowed per the current land use designations, the Big George property is allowed 5.44 EDU's per acre for SFR-8,000 land use, and 3.63 EDU's per acre for SFR-12,000 land use for a total of 366 EDU's on the BGV property. The specific plan therefore underestimated the EDU's for the Big George property by 105 EDU's.

The master plan amendment contemplates 270 more EDU's than allowed by current zoning (an increase of 375 EDU's from the specific plan estimate).

Water is proposed to be provided in accordance with the Capital Facility Plan for the North County/West Valley Water System (CFP) dated August 2007 prepared by Forsgren Associates Inc. The CFP identifies improvements to the water system required to serve the North Douglas County Specific Plan (NDCSP) area. In accordance with this plan additional groundwater wells will be developed in the James Canyon area and the water conveyed to Lower James Canyon Tank. The James Canyon Booster Pump Station would be enlarged as well as the transmission line from the booster pump to the Upper James Canyon Tank. A new transmission line would be constructed from the booster pump to the Jacks Valley Tank. Also, according to the Capital Facility Plan additional water storage would be provided in the Jacks Valley/North County area. There are existing transmission lines in the North Valley water system that connect to the Jacks Valley Tank and pass along the north edge of the Big George property. Within the Big George property looped water mains would be constructed.

The CFP assumed that the BGV property would only realize the 261 EDU's estimated in the specific plan however, as noted previously, the existing zoning in the specific plan allows for 375 EDU's. The CFP also did not take into account additional EDU's that will be generated by a proposed casino within the North Douglas County Specific Plan area. Based on a verbal communication with Manhard Consulting Ltd. (the engineering firm representing the proposed casino) the preliminary estimate of water supply needs for the casino are 90 gpm during average day and 225 gpm maximum day.

The CFP modeled the proposed North County water system using WaterCad and provided the model on a CD attached to the report. The WaterCad model provided with the report is a static water system model with the pumps off during maximum day demand (Model 1 on the CD provided in the appendix of this report). All modeling discussed herein refer to a static maximum day fire flow condition with pumps off. A dynamic water model that includes transient analysis and active controls of the pumps and valves is not available and was not analyzed as part of this master plan amendment submittal.

The CFP water model does not include fire flow at the Wal-Mart site which is anticipated to control the water system design. East Fork Fire and Paramedic District (EFFPD) has identified a required fire flow at the Wal-Mart site of between 3,500 and 4,000 gpm (per verbal communication with Steve Eisele on June 25, 2008) however, the CFP identifies a fire flow of 4,500 gpm for 4 hours (Appendix D, page D-1). Douglas County engineering staff has determined that a 4,000 gpm demand is to be used for the purposes of this analysis (per verbal communication with Ron Roman on June 26, 2008). The CFP text states that the proposed improvements contained in the CFP adequately meet the fire flow requirements for velocity, pressure and demand, however these results could not be duplicated using the model provided with the CFP.

The water system proposed by the CFP was duplicated and a fire flow of 4,000 gpm was added at the Wal-Mart site, additional flows at the BGV property and for the proposed casino was not included in this model (Model 2 on the CD provided in appendix). The model shows that the existing 14" water main from Jacks Valley Road to Topsy Lane (P286 in the models) has a velocity of 10.8 feet per second which exceeds the maximum velocity of 10 feet per second allowed by Douglas County Design Criteria. Pressures were above 20 psi at all junctions in the model.

In order to meet Douglas County criteria for fire flow approximately 2,600 feet of 8-inch water line is needed parallel to the existing 14-inch water line (Model 3 on the CD provided in the appendix) in addition to the improvements already identified in the CFP. Additionally a Pressure Reducing Valve (PRV) will also be required on the 8-inch line prior to its connection to the Wal-Mart Pressure Zone. The 8-inch parallel water line is necessary to serve the existing land use approvals at the NDCSP area even if the casino and BGV amendment are not accounted for. With the 2,600 feet of 8-inch main in place there are no improvements to the distribution system required to serve the additional 105 EDU's and the proposed casino that are currently allowed (but not accounted for in the current CFP) and for the 270 additional EDU's proposed with the Master Plan Amendment (Model 4 on the CD provided in the appendix). A summary of the water models provided on the CD in the appendix is provided below.

Table 5.6 Summary of Water Models

Model Label	Change from CFP model	Additional Improvements to CFP
1	None	
2	+4,000 gpm fire flow	*refer to Model 3*
3	+4,000 gpm fire flow	2,600 LF 8-inch Water
4	Model 3 +Casino +105 EDU+270 EDU	2,600 LF 8-inch Water

The CFP, as previously discussed, identifies future storage and water supply needs for the North County Area. The CFP currently estimates that 1,117,900 gallons of storage and 1,304 gpm of water supply are needed to serve future build out of the NDCSP area in addition to the existing water supply and storage. There is no increase in the fire flow storage requirement as the fire flow for the Wal-Mart site controls the fire storage requirement for the NDCSP area.

The proposed Specific Plan and Master Plan amendments, if fully realized, will increase the supply and storage needs identified in the CFP for future build out of the NDCSP area. The estimated increases in water supply and storage needs attributable to the proposed Specific Plan and Master Plan amendments are:

Supply: 270 gpm

Operating Storage: 270 EDU x 700 gallons = 189,000 gallons.

Emergency Storage: 189,000 gallons x 0.75 = 141,750 gallons

Total Storage: 330,750 gallons.

The total storage and water supply needs to meet future build out of the NDCSP area, including the assumed casino requirements and upon approval of the Specific Plan and Master Plan amendments are provided in Table 3-3A in the appendix. A summary of Table 3-3A is provided below.

Supply:

Total Future Supply Neded: 270 gpm (BGV amendments)
105 gpm (Zoned but not accounted for in CFP)
225 gpm (Assumed for Casino)
1,754 gpm (Identified in CFP)
Total: 2,354 gpm

Existing Supply: 450 gpm

Additional Future Supply Needed: 1,904 gpm

The additional water supply generated by the proposed Specific Plan and Master Plan amendments (270 gpm) is approximately 14% of the total additional water supply that will be required for full build out of the NDCSP area (1,905 gpm).

Storage:

Operating Storage: 189,000 gallons (BGV amendments)
73,500 gallons (Zoned but not accounted for in CFP)
157,500 gallons (Assumed for Casino)
1,095,900 gallons (Identified in CFP)
Total: 1,515,900 gallons (Increase from existing available storage)

Emergency Storage: 1,137,000 gallons (75% of Operating)

Fire Storage: 1,200,000

Total Future Storage Needed: 3,852,900 gallons.

Total Existing Storage: 2,000,000 gallons (Jacks Valley Tank).

Total Additional Future Storage Needed: 1,852,900 gallons.

The additional water storage generated by the proposed Specific Plan and Master Plan amendments (330,750 gallons) is approximately 18% of the total additional storage that will be required for full build out of the NDCSP area (1,905 gpm).

Summary

The estimated impact of the proposed Master Plan and Specific Plan amendments to the water system Capital Facility Plan is as follows: 460,250 gallons of additional storage needed

This report provides a conceptual water system analysis and plan for the proposed North Douglas County Specific Plan and Master Plan Amendments proposed by Big George Ventures and in general shows the feasibility of the project. The proposed improvements conceptually comply with Douglas County Code, design criteria and improvement standards. This report should be considered a planning level document. A detailed water system analysis and plans are needed prior to construction.

A CD with the water models and supporting information is provided in the Appendices.

5.2.3 Waste Water System

Three alternatives have been identified to provide sewage treatment for the study area. The alternatives are:

1) Discharge to the Indian Hills General Improvement District.

2) Discharge to Carson City.

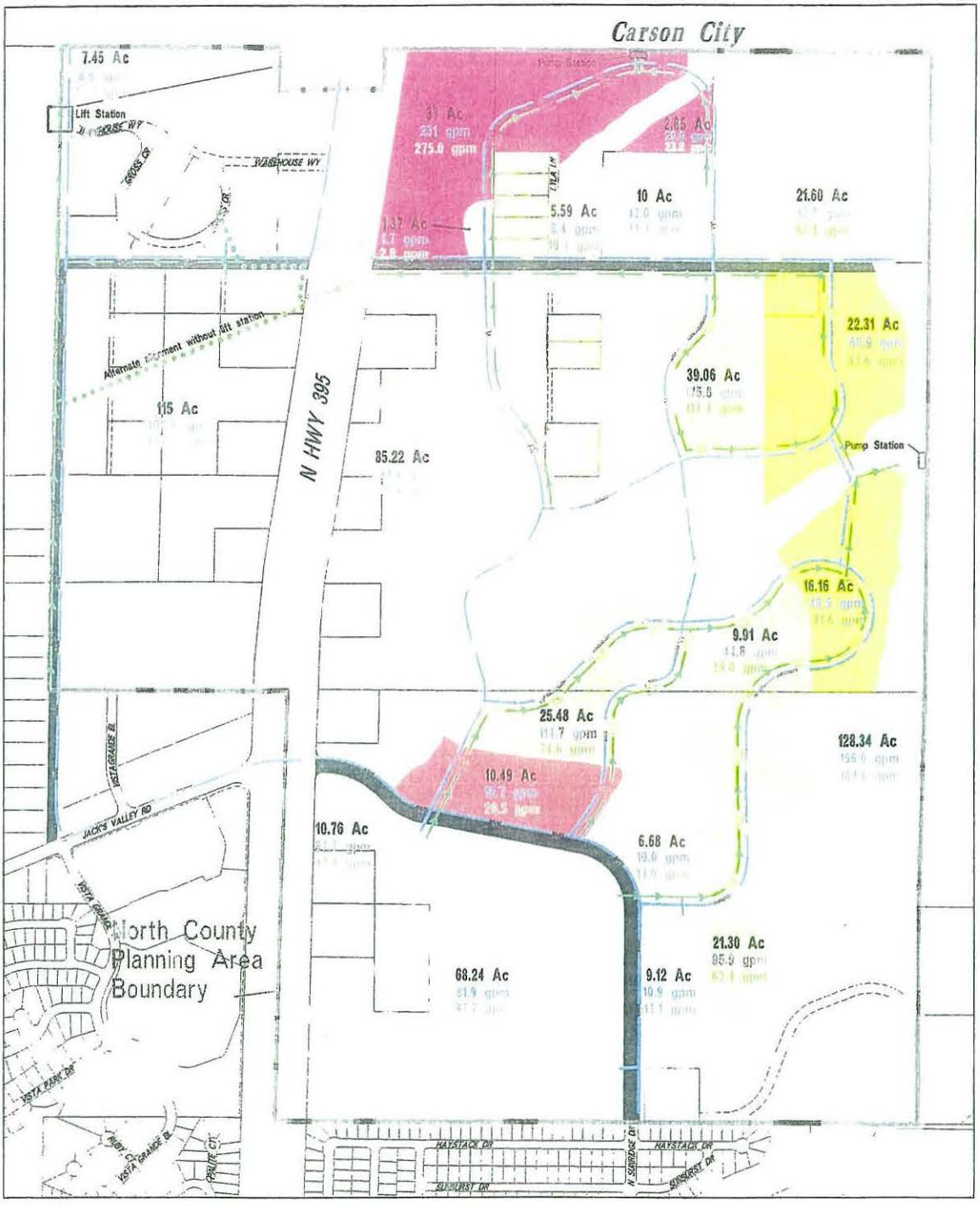
3) Discharge to the North Valley Wastewater Treatment Facility.

The discharge of wastewater from the study area will require pumping for all of the alternatives. Douglas County is currently working on jurisdictional matters for acquiring water and wastewater services from potential sources.

At this stage of the infrastructure planning process, site characteristics and design criteria have been examined to provide a wastewater collection system for the site (see Proposed Water and Wastewater Plan, Figure 5-2.).

Wastewater Demands

North County Specific Plan
Water and Wastewater Plan Map



LEGEND

ZONING

- Public Facilities, 31.50%
- Single Family Res., 8000 sq ft, 19.26%
- Single Family Res., 12,000 sq ft, 5.78%
- SFR-1-Single Family Res., 1 Ac., 1.65%
- Neighborhood Commercial, 1.78%
- General Commercial, 30.93%
- Office Commercial, 1.47%
- Tourist Commercial, 4.93%
- Open Space Overlay, 19.00%
- Water System
- Wastewater System
- Water Demand Max. Day Flow
- Wastewater Demand Peak Hour Flow

N

DOUGLAS COUNTY
Multi-Agency Geographic Information Center

1" = 1000'
12/06/00

LUMOS

(Figure 5-2)

Based on proposed uses and the conceptual land use plan, wastewater flow rates have been developed in accordance with Douglas County's Design Criteria Improvement Standards and estimates from similar land use demands within the Carson Valley and Carson City area.

Douglas County's design standards require that 250 gallons per day (gpd) is used for each equivalent dwelling unit (EDU). The residential wastewater flow rates are depicted in Table 5.6.

(Table 5.7) **RESIDENTIAL WASTEWATER FLOWS**

	Land Use		
Flow Rate	**SFR – 8,000**	**SFR – 12,000**	**Total**
$Q_{AVG\ DAY}$ / EDU (gpd)	250	250	
EDU/AC	4.5	3.0	
Acres	117.35	38.47	
$Q_{PEAK\ HOUR}$ (gpm)	344	75	419
$Q_{AVG\ DAY}$ (gpd)	132,019	28,853	160,871

The commercial wastewater flow rates are generally assumed to be approximately 80 percent of the water demand for a specific zoning district. For uses where significant landscape irrigation is anticipated, the proportion is reduced. Wastewater flow rate estimates for commercial and public facilities are depicted in table 5.7.

(Table 5.8) **COMMERCIAL AND PUBLIC WASTEWATER FLOWS**

Flow Rate	**GC**	**OC/NC**	**TC**	**PF**	**Total**
$Q_{AVG\ DAY}$ /AC	1500	750	3200	550	
Acres	210.98	22.76	35.85	224.52	
$Q_{PEAK\ FLOW}$ (gpm)	824	44	299	322	1489
$Q_{AVG\ DAY}$ (gpd)	316,470	17,070	114,720	123,486	571,746

An average day to peak hour peaking factor of 3.75 is recommended due to the high proportion of commercial development for the study area. The peak hour conditions are used to size sanitary sewer mains and pumping stations. An average day to maximum day peaking factor of 2.5 is also recommended. The average day, maximum day and peak hour characteristics serve as parameters for determining capacity requirements for various components of wastewater treatment facilities.

The study area consists of a high proportion of commercial and public facility properties. Peak wastewater discharge characteristics will be strongly influenced by the commercial and public facility activities. Peak wastewater discharge

characteristics may vary considerably from those that are typically experienced from residential developments. The wastewater discharges from commercial facilities will primarily occur in close proximity to business hours. Residential, office commercial and public facilities land uses should have an impact upon weekday wastewater peak flows. Tourist commercial and general commercial uses should have an impact upon weekend wastewater peak flows. The estimates for the wastewater flow characteristics are depicted in Table 5.8.

(Table 5.9) **TOTAL WASTEWATER FLOWS**

$Q_{PEAK\ HOUR}$ (gpm)	1,910
$Q_{AVG\ DAY}$ (gpd)	732,600
$Q_{MAX\ DAY}$ (gpd)	1,831,500
Q_{DESIGN} (gpm)	1,910

Wastewater System Characteristics

The study area generally slopes to the north and to the east. Natural drainage features divide portions of the site, thus the continuity for gravity sewers is interrupted in various areas. The on-site topography necessitates the use of wastewater lift stations. Further, disposal of wastewater to existing wastewater treatment facilities will require pumping. The majority of the areas proposed to be developed have natural land slopes of 0 to 4 percent. Steeper slopes are evident near natural drainage features. A majority of the wastewater collection system can be installed with slopes at approximately 1 percent or greater. Final site grading activities should benefit the grade lines for the gravity sanitary sewers.

A collection system on the site can serve a limited amount of the adjacent properties to the south and to the west by the extension of gravity sewers. Design criteria for sizing sanitary sewers requires pipe diameters of 15 inches or less are to be designed to flow at half depth for the design flow rate. The majority of the gravity sewer system can be served with 8- to 12-inch sewer lines. It is not anticipated that gravity sewer lines will exceed 15 inches in diameter. It is anticipated that portions of the gravity sewer system will deviate from the proposed road alignment due to grade conflicts with natural drainage features.

Lift stations are proposed at two locations. The natural drainage from the site is to the north and east toward the Clear Creek drainage corridor. The Clear Creek corridor is at a lower elevation than bordering lands. Therefore, transporting wastewater from the site will require pumping to either a gravity sewer connection or a wastewater treatment facility. The pump stations can be designed to pump in series or to a common wastewater force main.

5.2.4 Big George Ventures Waste Water System Analysis

The Big George master plan amendment proposes 504 residential units (with the potential of up to 630 with affordable housing density bonus units), and approximately 2.75 acres of commercial development. It is estimated that this will require approximately 650 sewer equivalent dwelling units (EDU's). Based upon the 200 gallons per day per EDU used by Manhard Consulting Ltd. in their work for Douglas County on the North Valley Specific Plan the Big George site would produce 130,000 gallons per day.

The estimated sewage flow from the Big George property in the report titled: *Sewer Analysis for North Valley Specific Plan Area, Topsy Lane Infrastructure, by Manhard Consulting Ltd. dated April 2008* is 364 EDU's and 72,800 gallons per day. Therefore, this master plan amendment proposes an increase of 314 EDU's and 62,800 gallons per day. Using the same peak factor used by Manhard of 3.0 the peak flow will increase by 130 gallons per minute (gpm) or 0.188 million gallons per day (MGD) with the proposed master plan amendment.

Sewer service is proposed to be provided in accordance with the above report by Manhard Consulting Ltd. Sewage flows from the site will be collected in gravity mains constructed by Big George and conveyed to the proposed gravity mains within Topsy Lane and Center Drive. This will flow to the proposed Topsy Lift Station. From there sewage will flow first in a proposed force main then an existing gravity line to the existing Sunridge Lift Station. From the Sunridge lift station it will be conveyed by the existing force main to the North Valley Wastewater Treatment Plant.

Conveyance Capacity

- Topsy Lane and Center Drive Gravity Line Capacity – Appendix 2 of the Manhard sewer analysis referenced above provides a table showing the half full capacity of the proposed gravity sewer main along Topsy Lane and Center Drive adjacent to the Big George Ventures property. The table incorrectly references the half full capacity of the pipes in MGD however the accompanying calculations show that the table actually references the half full capacity in cubic feet per second (cfs). Table 5.10: Gravity Sewer Capacity provided with this report converts the sewer design flows from MGD to cfs in order to verify that sufficient capacity is available using the calculations provided in the Manhard report. Table 5.10 shows that the capacity of the gravity sewer mains proposed in the Manhard report are sufficient to convey the design flows used in the Manhard report along with the flow estimated to be generated by the additional EDU's proposed by the Big George Ventures specific plan and master plan amendment.

- Proposed Topsy Lane Lift Station and Force Main - The report states that the Topsy Lift Station will initially have pumps for 550 gpm and those will be replaced as development occur with pumps of 1100 gpm at full build out (Manhard report – Appendix 3). The proposed Topsy Lift Station and force

main is designed for a total future capacity of 1330 gpm. With the proposed master plan amendment as flows increase the pumps will need to be replaced or modified to be capable of handling the new expected flow at full build out of 1,230 gpm (1,100 +130).

- Gravity Line from the Topsy Force Main to the Sunridge Lift Station – This existing gravity line was designed assuming a sewer flow of 270 gpm from the Clear Creek development area would go through the line. The sewer flows from the Clear Creek development area are now going to be directed to the Indian Hills treatment plant therefore 270 gpm of capacity is available in this line. The flow from the additional EDU's generated by the proposed specific plan and master plan amendments is 130 gpm therefore this line has adequate capacity for the increase in flow.

- Sunridge Lift Station and Force Main – The Sunridge Lift Station has three pumps and was designed so that one pump could handle all the flow to the lift station. The current capacity of the lift station is 1,250 gpm and it was designed so that the capacity could be increased to 1510 gpm in order to receive sewer flows from the future Clear Creek development area. The sewer flows from the Clear Creek development area are now going to be directed to the Indian Hills treatment plant and the Sunridge Lift Station no longer needs to account for these flows. At full build out including the additional flows from this specific plan amendment the Sunridge Lift Station will have a peak inflow of 1,230 gpm from the Topsy Lift Station and 150 gpm from the gravity main in Sunridge. The total inflow will therefore be 1,380 gpm which exceeds the current pump capacity. The Sunridge Lift Station is designed so that there are two options to increase its capacity. The first option is to allow two pumps to come on (currently only one of the three pumps is used). The feasibility of this option requires a detailed review of the existing pumps that is beyond the scope of this report. The second option is to replace all three existing pumps.

In summary the existing and proposed conveyance facilities can handle the expected increase in peak flows of 130 gpm (0.188 MGD). The only modifications necessary are:

- when the pumps in the Topsy Lift Station are replaced they need to be replaced with pumps capable of 1230 gpm instead of the proposed 1100 gpm pumps, and
- when the Topsy Lift Station is modified the existing Sunridge Lift Station needs to also be modified to allow two of the existing pumps to come on or replace the Sunridge pumps with new pumps capable of producing 1380 gallons per minute.

Table 5.10: Gravity Sewer Capacity

Analysis of Capacity available in proposed sewer conveyance system provided in the "Sewer Analysis for North Valley Specific Plan Area Topsy Lane Infrastructure" dated April 29, 2008.

*Manhole #	**Manhole #	Manhard Design Flow (MGD)	Add'l BGV Design Flow (MGD)	Total Design Flow (MGD)	Total Design Flow (cfs)	Size (in.)	Slope (ft./ft.)	1/2 Full Velocity (fps)	1/2 Full Capacity (cfs)	Capacity Available for Additional BGV EDU's
1	T1	0.701	0	0.701	1.1	12	0.016	5.8	2.3	Y
	T2	0.701	0	0.701	1.1	12	0.016	5.8	2.3	Y
2	T3	0.867	0	0.867	1.3	12	0.012	4.9	1.9	Y
	T4	0.867	0	0.867	1.3	12	0.012	4.9	1.9	Y
3	T5	0.867	0.188	1.055	1.6	12	0.012	4.9	1.9	Y
	T6	0.867	0.188	1.055	1.6	12	0.012	4.9	1.9	Y
4	T7	1.110	0.188	1.298	2.0	12	0.015	5.6	2.2	Y
	T8	1.110	0.188	1.298	2.0	12	0.020	6.4	2.5	Y
	T9	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T10	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T11	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T12	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T13	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T14	1.110	0.188	1.298	2.0	12	0.015	5.6	2.2	Y
5	C1	1.110	0.188	1.298	2.0	15	0.015	6.5	4.0	Y
	C2	1.110	0.188	1.298	2.0	15	0.008	4.6	2.8	Y
6	C3	1.274	0.188	1.462	2.3	15	0.014	6.3	3.9	Y
	C4	1.274	0.188	1.462	2.3	15	0.008	4.6	2.8	Y
	C5	1.274	0.188	1.462	2.3	15	0.008	4.6	2.8	Y

* per Manhard Appendix 1 Estimated Sewage Flow Rates - Full B/O

** per Manhard Appendix 2, Gravity Main - Manhole Display

Treatment and Disposal Capacity

The Big George Property is within the North Valley Wastewater Treatment Plant (NVWWTP) Service area. The treatment works is operated by the Douglas County Utility Division and currently has an average day capacity of 0.45 MGD. Per discussions with Ron Roman of the Douglas County Utility Division, the NVWWTP plant is currently at capacity given their will serve commitments. One of these will serve commitments is to Big George Ventures for this site, (APN

1420-05-201-006) that contemplates 364 EDU's. Therefore, in accordance with the requested County format for master plan amendments:

0.45 MGD existing Capacity + 0.0628 MGD required additional capacity = .5128 MGD required capacity

The facility plan for the NVWWTP proposes expansion to 1.6 MGD average daily flow. It is understood that if the plant were to expand to 1.6 MGD there would be capacity available for the expected flows from the Big George Master Plan amendment.

Summary

This report provides a conceptual sewer system analysis and plan for the North Douglas County Specific Plan and Master Plan Amendments proposed by Big George Ventures and in general shows the feasibility of the project. The proposed improvements conceptually comply with Douglas County Code, design criteria and improvement standards. This report should be considered a planning level document. A detailed sewer system analysis and plans are needed prior to construction.

5.2.5 Proposed Drainage and Storm Drain Systems

The proposed drainage system for the NDCSP area intends to follow existing flow patterns. The system will mitigate the increased run-off by use of detention facilities. The facilities should utilize open space as much as possible to limit the amount of underground improvements as well as aesthetic impacts. To the extent possible, the drainage system should be public and utilize small regional detention ponds. These ponds should be spread out within the open space and use areas upstream of potential road and path crossings as preferred sites. Again, Figure 5-1 shows potential sites for detention ponds. The ponds will control their outflow using staged discharge, which will regulate outflows by the size of the storm. Water quality mitigation should occur within the ponds using natural processes such as vegetation filtration. All system improvements will follow the Douglas County criteria for minimum pipe sizes, materials, slopes, etc. The minimum design storm will be a 25 year 24 hour peak event.

Maintenance of the facilities would be consistent with current standard maintenance routines that remove sediment and debris on a "as needed" basis. Maintenance of the system should be performed by a combination of agencies, both private and public, depending upon where the system is located.

5.3 FIRE PROTECTION

Located within the Indian Hills/Jacks Valley area the NDCSP spans two fire districts. The western portion of the NDCSPA is in the Sierra Forest Fire District (SFFD) and the eastern portion is in the East Fork Fire and Paramedic District (EFFPD). EFFPD has been providing all-risk services for the SFFD service area in the Indian Hills/Jacks Valley area under a contract with the State of Nevada – Division of Forestry. With the exception of extended wildland fire attack, EFFPD provides structural firefighting, hazardous materials response, emergency medical services, and initial attack wildland and urban interface firefighting year around. The Division of Forestry has a seasonal program that supplies additional staffing to the area during the fire season.

Fire protection for the NDCSP is provided by EFFPD from at least 3 fire stations within a 5-mile radius. Station 12 is located along North Sunridge Drive and is staffed full time with paid firefighters. Station 15 located on Jacks Valley Road and Station 6 located on Stephanie Lane are volunteer fire stations that are also staffed part-time or seasonally with paid firefighters.

Adopted levels of service (LOS) for fire protection in Douglas County stipulate a fire station within a five-mile radius of developed properties, and a response time of 7 minutes in urban service boundaries, and 12 minutes in rural service areas. The planning area being amended for the BGV site is within the required response time for either the rural or the urban service standard, as all of the fire stations are well within a 5 mile radius of the planning area.

5.4 POLICE PROTECTION

The sheriff's substation was constructed on a 5-acre site leased from the BLM by Douglas County. Located on the northeast comer of where North Sunridge Drive enters the north boundary of the Sunridge subdivision the site was originally chosen to accommodate the new fire station as well. According to Sergeant Halsey with the Sheriff's department, the 1,200 square foot substation will be adequate to serve existing and future police protection needs in the area including the additional development planned by Big George Ventures.

5.5 PARKS and RECREATION

Three parks, the James Lee Memorial park and two neighborhood "pocket" parks, currently exist in the Indian Hill/Jacks Valley area. The neighborhood parks are located in the Sunridge subdivision and are referred to as the Sunridge South Park and the Sunridge North Park. These "pocket" parks are approximately 2.5-acres each and contain limited recreational facilities such as play equipment and open lawn areas. The James Lee Memorial Park is a 64-acre park of regional size with facilities such as ball fields, play equipment, and picnic areas. Parts of this site are currently undeveloped but

planned improvements are on going. In addition to these park sites, area residents also use the Jacks Valley Elementary School facilities for recreational purposes. There is 662 acres of park land under County, Town or GID's jurisdiction. The national standard is 10 acres of parks for every 1,000 in population. Based on national standards and the LOS in the Douglas County Master Plan, the current park system is sufficient to support a population of 66,200 people. Therefore, there is current capacity for the proposed increase of 264 units (660 people) within the existing park system. Furthermore, private recreational facilities that will be maintained by a homeowner's association will be programmed as part of the BGV development, including a clubhouse facility and a hard court sports recreation area.

Local residents currently utilize the undeveloped portions of the NDCSP area for walking, jogging, horseback riding, mountain biking, viewing wildlife, nature study, and motorcycle uses. The majority of this use is short term, day use. The amendment to the BGV site will increase areas open for this type of passive use as all development has been eliminated south of the arroyo area bifurcating the site.

Although motorized recreation in the area is not likely to continue, proposed recreational uses for the NDCSP are intended to maintain current activities to the greatest extent possible. Significant areas of passive open space will be retained and will be enhanced with the proposed amendment by including more passive recreation areas in PF zoning for the development of connected trail systems offering hiking, biking, equestrian, and interpretive opportunities for the public.

Additional improved park sites, however, are not proposed for the NDCSP area with the exception of potential "pocket" parks that may be proposed as a result of planned developments in the SFR and MFR districts.

5.6 SCHOOLS and LIBRARIES

The Jacks Valley Elementary School is the only school currently serving the Indian Hills/Jacks Valley area in which the NDCSP area is located. According to the Holly Luna, Facilities Manager for the Douglas County School District, Jack's Valley Elementary is currently operating at capacity. However, other schools in the district are operating at much less than full capacity, and as a result the school service area boundaries are rebalanced to shift school populations to facilities where there is excess capacity. District-wide, the school enrollment for the District has been falling 1.2% annually on average over the last ten years.

Middle school aged students in the Indian Hills/Jacks Valley area attend Carson Valley Middle School, and high school aged students currently attend Douglas High School. A future middle school site is planned adjacent to the existing Jacks Valley Elementary School.

Since adoption of the original NDCSP, construction of the Sierra Lutheran High School facility on North Sunridge Drive has commenced and is nearing completion. This will provide additional private education facilities serving residents of the area.

Existing library facilities in Douglas County consist of the 11,500 square foot main library in Minden, and the 10,000 square foot branch at Lake Tahoe. According to adopted level of service standards, existing demand is exceeding the capacity of these locations. As part of the planned Mixed-Use Commercial area within the planned BGV site, Big George Ventures has been in discussions with the Douglas County Library and has agreed to donate the commercial space and facilities for a new state-of-the-art library facility.

5.7 PUBLIC IMPROVEMENTS FINANCING

There are several alternatives available for public improvement financing. Developers may enter into private agreements amongst themselves to construct public facilities needed to serve the project. They may construct public improvements themselves, and then request a reimbursement agreement from Douglas County who would require reimbursement from subsequent development. They may initiate an assessment district for financing public improvements. Redevelopment agency development agreements have also included some of the regional improvements for the North Valley area. However, historically in Douglas County the financing alternative typically utilized involves the phasing of an individual project timed with the phasing of public improvements, with private financing of public improvements that increase the capacity of public facilities beyond a project's demand subject to a reimbursement agreement. Therefore, the County and Big George Ventures shall enter into a reimbursement agreement for any public facility improvement constructed by Big George Ventures which will provide capacity beyond that required by subsequent development of the Big George Ventures site. Detailed capacity analysis and actual availability of public utility facilities will be determined at the time Planned Development approval. In-lieu fees may be utilized by the developer to off-set development impacts which uses available physical capacity of existing regional improvements.

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Chapter Six

CONCLUSION

6.0 CLOSING COMMENTS

The North Douglas County Specific Plan will act as a guide for the BLM, Douglas County Planning Commission, Douglas County Board of County Commissioners, and the general community on matters of growth and development within the planning area. The plan guides growth by recognizing community needs and visions, environmental resources, existing conditions, land use trends, and providing a plan for the provision of traffic circulation and public facilities.

If carefully implemented, the plan will provide for a well-balanced and planned community as lands within the planning area transition out of federal ownership. This area contains tremendous potential for the citizens of Douglas County, not only in the unique community proposed, but also for the possible acquisition of prime farmland and sensitive areas in beautiful Carson Valley. Finally, the plan represents an important planning process and cooperative effort between federal, state, and local governments.

6.1 CONSISTENCY WITH THE MASTER PLAN

6.1.1 Introduction

Because the NDCSP would alter or replace existing land use designations and elements contained within the adopted Douglas County Master Plan, an amendment to the master plan was required as part of the planning process for the NDCSP. Amendments to the master plan must be passed by both the Planning Commission and the Board of County Commissioners, and are only considered on a fixed periodic schedule. Additionally, the proposed amendment must be found consistent with the intent of the master plan based on the findings discussed below.

6.1.2 Findings

The Douglas County Master Plan adopted in 1996 states that "amendments should be considered on the basis of whether they promote the overall goals and objectives of the Master Plan or whether there has been a demonstrated change in circumstances since the adoption of the Plan that makes it appropriate to reconsider one or more of the goals and objectives or land use designations." Any request for a master plan amendment is reviewed based on the following standards:

1) The proposed change reflects a logical change to the boundaries of the area in that it allows infrastructure to be extended in efficient increments and

patterns, it creates a perceivable community edge as strong as the one it replaces, and it maintains relatively compact development patterns.

2) The proposed change is based on a demonstrated need for additional land to be used for the proposed use, and that such demand cannot be reasonably accommodated within the current boundaries of the area.

3) The proposed change would not materially affect the availability, adequacy, or level of service of any public improvement serving people outside the applicant's property, and is consistent with the Capital Facilities Element of the Plan and implementing ordinances.

Using these guidelines as a basis for review, amendments are approved or denied based on the following findings.

1) That the proposed amendment is consistent with the policies embodies in the adopted master plan;

2) That the proposed amendment will not be inconsistent with the adequate public facilities policies contained in chapter 20.100 of the Douglas County Consolidated Development Code;

3) That the proposed amendment is compatible with the actual and master planned use of the adjacent properties.

The NDCSP amendment is consistent with the policies and findings listed above. Surrounding urban and suburban pressures, and changes in land uses which will create additional demand for affordable housing at urban levels of service near employment centers, illustrates a demonstrated change in circumstances that makes it appropriate to reconsider land use designations in the area. The development of the proposed amendment to the NDCSP will ensure that adequate public facilities are provided to potential development in the area. Proposed land uses for the BGV site contain similar land uses and densities to the actual and master planned uses of adjacent properties. The plan, and existing Douglas County codes, will ensure that potential development occurs in a manner that is compatible with the surrounding and existing built and natural environment.

6.2 IMPLEMENTATION

Implementation of the NDCSP will reflect the proposed alternatives selected by the BLM during the Environmental Analysis and Walker Resource Management Plan amendment process. The preferred alternative identified as a result of this process will be used, in, conjunction with this specific plan, by the BLM, Douglas County Planning Commission, Douglas County Board of County Commissioners, and the general community on matters of growth and development within the planning area.

Appendix A
PUBLIC MEETING MATERIALS

The following materials represent the meeting agendas, meeting summaries, and public comments from the public workshops conducted as part of this plan.

North Douglas County Specific Plan
Carson Valley Community Church
May 10, 2000 @ 6:30 p.m.
PUBLIC MEETING AGENDA

I. Introduction

- Introduction of Consultant Team Members.
- Introduction of Douglas County Representative

II. Purpose of Meeting

- Define purpose and goals of the workshops.
- Review project scope and timeline.
- Present materials gathered during data collection efforts.
- Discuss existing land uses in the project area.
- Solicit input regarding community needs and environmental concerns.

III. Review Purpose and Goal of the North County Specific Plan

- Develop conceptual land use designations.
- Guide future land use and growth of area.

IV. ReviewProject Scope

- Scoping Sessions
- Data Collection
- Public Workshops
- E.A.
- BLM Plan Amendment
- Develop Conceptual Land Use Plan
- Utility and Transportation System
- Draft Planning Report
- County Approval
- Presentation of Final Pla

V. Present Data Collection Materials and Information

- Planning Criteria
  - Existing Land Use, Zoning, and Master Plan Elements
  - Demographics / Population / Housing
  - Economic Trends
  - Public Facilities and Services

- Site Characteristics
  - Topography
  - Drainage

- Soils
- Environmental Characteristics
  - Wetlands and Floodplains
  - Cultural Resources
  - Natural Resources
- Infrastructure / Public Facilities
  - Utilities
  - Transportation and Access
  - Water and Sewer

VI. Identify / Discuss Community Needs, Vision, Issues, and Concerns

- Land Use / Public Lands
- Constraints
- Growth
- Environmental Issues

VII. Closing Comments/Future Scheduling

8:30 p.m. – Adjourn

COMMUNITY DEVELOPMENT
1594 Esmeralda Avenue, Minden, Nevada 89423

Bob Nunes
DIRECTOR

775-782-9005
775-782-9010
FAX: 775-782-9007

Planning Division
Engineering Division
Building Division
Regional Transportation
Water/Sewer Utility
Road Maintenance
Code Enforcement

INVITATION TO PARTICIPATE

Douglas County invites you to participate in public workshops to assist the County in the preparation of the North County Specific Plan. The first two workshops will be held on **May 10 and May 17, 2000 at 6:30 p.m. at the Carson Valley Community Church, located at 3616 North Sunridge Drive.** Additional workshop(s) will be scheduled in June and you will receive a similar notice.

Background

As you may be aware, the area generally north of Jacks Valley Road and the Sunridge Subdivision has generated a lot of development interest. The Bureau of Land Management (BLM) has also identified their land north of the Sunridge Subdivision and east of Highway 395 (please see the map on the other side) for disposal. This means that the BLM can exchange this land with private property owners for other land or conservation easements. Hence, allowing private development north of Sunridge.

Purpose of the North County Specific Plan

In order to have orderly development in the north area of Douglas County, the County will prepare a specific plan to:

1. Establish land use and zoning to designate what kind of development can occur;
2. Provide a layout and capacities for water and sewer lines;
3. Identify drainage areas;
4. Establish a road plan and connection(s) with Highway 395;
5. Prepare an environmental assessment for the BLM; and
6. Prepare a BLM plan amendment to allow future private development on the BLM land.

The total area to be studied by the specific plan is approximately 624 acres.

Public Participation

Your participation in this process is very important. Douglas County and its residence have been given an opportunity to work with the BLM to determine the future potential uses of this area. The purpose of the May 10, 2000 meeting is to obtain your input on what you would like and not like to see built in this area. The purpose of the May 17, 2000 meeting is to start the BLM environmental assessment process and obtain your input regarding any environmental issues. We plan to have at least one additional workshop in June. You will also have an opportunity to present your comments on the specific plan during the Planning Commission meetings on July 11, 2000 and August 8, 2000, and at the Board of Commissioners meeting on September 7. 2000.

Thank you in advance for your participation. Should you have any questions please contact:

Douglas County
Community Development Department
Pete Wysocki, AICP
Senior Planner

1594 Esmeralda Ave.
P.O. Box 218
Minden, NV 89423
Phone: 775-782-6213
Fax: 775-782-9007

pete/ncsp/invite

North Douglas County Specific Planning Area
PROJECT DESCRIPTION

Dear Member of the Community:

Douglas County recently selected the Lumos and Associates project team to formulate a Specific Plan for the North County area. As we begin this exciting project, the Lumos team intends to hold public meetings and workshops to identify key issues, goals and objectives, and a vision for the project area. This is the first of these planned meetings.

The objective of the meeting, based on public input, is to provide the project team with an understanding of the community's needs and visions concerning potential development of the area. Input regarding community needs, environmental concerns relating to public lands, and the planning process will therefore be solicited. Additionally, the Lumos team will review the project scope, define the purpose and goals of the Specific Plan, and present materials gathered during data collection efforts, including existing land uses in the project area.

The North County Specific Planning Area is generally located north and east of Jacks Valley Road and north of the Sunridge subdivision. The subject area consists of approximately 624 acres, nearly 440 acres of which is under the ownership of the Bureau of Land Management (BLM). The BLM has identified this 440 acres as land suitable for disposal or exchange, meaning that the BLM can exchange this land with private property owners for other land or conservation easements and allow private development north of Sunridge.

A Specific Plan is essentially a plan within a plan that builds upon the general elements of an existing Land Use Plan, but which considers unique or special circumstances present in a particular planning area. These unique or special circumstances can include, but are not limited to, such elements as sensitive environmental resources, joint or overlapping governmental jurisdictions, development transition zones, or economic considerations. The Specific Plan is usually developed through extensive community input and typically reflects a specific community vision for an area.

The development of the North County Specific Plan is a response to the unique opportunity to address an area that has become an island between two growth areas, is available for acquisition from government management and ownership, and which is a transition zone between Douglas County and Carson City. Development of the plan will involve numerous tasks including data collection, public meetings, development of a conceptual land use plan, public facilities development, assessment of transportation infrastructure and future plans, environmental assessment, and amendments to existing zoning and master plan elements.

With the help of the community, we believe a common vision for the North County Specific Planning Area can be created that will take advantage of the project site's unique characteristics. Our next planning meeting to further identify and discuss environmental project issues is scheduled for May 17. We look forward to having another opportunity to meet with the community.

If you have any questions about this process, or at any time during the project, please feel free to contact Carol Dotson of Lumos and Associates at (775) 827-6111, or Pete Wysocki of the Douglas County Community Development Department at (775) 782-6213.

TECHNICAL MEMORANDUM
NORTH DOUGLAS COUNTY SPECIFIC PLAN
MAY 10, 2000 MEETING SUMMARY

On Wednesday, May 10, 2000 the first in a series of public meetings was held at the Carson Valley Community Church to begin the public involvement process for the North Douglas County Specific Plan project. Pubic turnout was good, despite unseasonable and inclement weather conditions, with approximately 110 members of the community attending the meeting.

The purpose of the meeting was to introduce the project and the project team to the community and solicit public input regarding community needs and environmental concerns for the project. To achieve these meeting goals, an agenda was developed that included defining the purpose of the public workshops, reviewing the project scope and timeline, presentation of data collection materials and information, a discussion of existing land uses in and around the planning area, and public comment. A brief project description and background along with reduced copies of various visual aids were distributed with the agenda as a handout. Following is a brief summary of meeting events:

- The meeting began with Mimi Moss of the Douglas County Community Development Department providing a brief project background and introduction of project team members, after which she turned the meeting over to Carol Dotson of Lumos and Associates. A member of the audience indicated at this time that, although they resided within the planning area, the county had not notified them of the meeting. Mimi responded that she was aware of the problem and was checking into it.

- Carol then proceeded to review the meeting agenda with the audience explaining how the meeting would be structured and what would be covered. After discussing the meeting agenda, Carol referred to the various visual aids that would be used during the presentation and pointed out which ones were in reduced form in their handouts. Carol then went through the agenda item by item repeatedly stressing the importance of public input. After describing what a specific plan is, Carol went on to further explain the purpose of the North County Specific Plan and present the project scope. A few comments from the audience were made at this time resulting in a request to hold comments until the public comment portion of the meeting.

- After presenting a brief overview of data collection efforts to date and a review of existing land use maps, Carol asked Glen Martel of Lumos and Associates to go over a few additional maps of the project area and discuss potential engineering issues and site constraints/opportunities. Glen assured the audience that specific plans for the area had not been developed yet, but that if development were to occur, various issues and conditions would need to be addressed. At this point, an individual pointed out that NDOT had already approached them regarding the use of their property and construction plans for Highway 395. Glen responded by stating what he knew of NDOT's plans for the Highway and circulation plans in general for the area. A concern was also expressed at this point regarding traffic congestion and the number of planned access points to Highway 395. Glen stressed that only the existing access points (i.e. Topsy Lane and N. Sunridge Dr.) to Highway 395 would be utilized for the planning area.

- The meeting then moved toward public comment and Carol briefly introduced a few elements from the Douglas County Master Plan that applied to the planning area and key issues/policies. Initial comments expressed concern about what types of development would or could occur in the area. Questions were also raised at this point about the land disposal process and how the decision was made to move forward with the specific planning process. Many members of the audience wanted to take a consensus vote about leaving the land as open space.

- At this point Dan Holler, Douglas County Manager, addressed the audience and explained existing circumstances, processes, and issues surrounding the area and facing the county. He also explained the county's position and rationale concerning the specific plan.

- Mike McQueen of the BLM then addressed the audience regarding the land disposal process, background, and the BLM's intent regarding the area. Someone asked about NEPA regulations and Mike responded that they would be addressed during the land exchange/disposal process. Cultural resources and their location were also discussed at this time and Mike fielded questions concerning current and future non-profit applications to the BLM.

- The public comment portion of the meeting then resumed and key issues were solicited. **Attached is a complete listing of key issues raised during public comment at the meeting and a summary of the written comments submitted to date.**

Next Step

The next pubic meeting is scheduled for May 17th to discuss the environmental aspect of the project and gain additional public input. Based upon information from these meetings, preparation of a preliminary conceptual plan will begin.

North Douglas County Specific Plan
Carson Valley Community Church
May 10, 2000 @ 6:30 p.m.
PUBLIC MEETING COMMENTS

Key Issues Raised During the Public Comment Portion of the Meeting:

1) During discussions of the Master Plan elements for the area, it was pointed out that commercial uses were primarily intended for the west side of Highway 395 and not the east side. The area along the east side of the highway and north of the Sunridge development was seen as an open space area at this time.

2) It was suggested, if development of the area were to occur, that a strip of commercial zoning be considered along the east side of Highway 395.

3) An issue was raised regarding code enforcement and the recently constructed Home Depot near the Jacks Valley Road/Highway 395 intersection, which allegedly violates code and certain design guideline elements on a regular basis. A desire was subsequently expressed for increased code enforcement and compliance with design guidelines, particularly if the specific plan area is developed in a similar manner.

4) A need for a school site in the planning area was expressed.

5) There were repeated comments to maintain open space in the planning area and to leave the area as is.

6) It was suggested to buffer existing residential areas, particularly the Sundridge subdivision, should development occur.

7) A concern was expressed regarding traffic circulation, congestion, and access points to/or along Highway 395.

8) How will Carson City and Douglas County plans interface? Concurrent planning with Carson City regarding transportation layout and infrastructure was encouraged.

9) Supply adequate sewer, water, and other public facilities infrastructure for development of the area.

10) Several comments expressed a desire to exclude multi-family residential from the planning area.

11) What is possibility of a casino/hotel being developed in planning area?

12) Questions were raised regarding land values and the land exchange process.

13) Cultural resource sites and their locations were discussed.

14) It was suggested that the consultant team conduct a needs assessment to determine what uses, if any, would be most viable for the area. What businesses are needed and can be supported by the community? The recent failure of a new gas station/mini mart in the area was cited.

15) What is the possibility of developing/including cultural uses in the planning area, such as a performing arts center?

16) The issue of fire protection and a better location for a fire station was discussed. Possibility of combining jurisdictions or increasing coordination? Also, the cost or rate of assessment for fire protection services was discussed.

17) Possible school site just north of the Sunridge subdivision within the "loop" area of North Sunridge Drive? Could also serve as a buffer for residential properties.

18) Site topography and drainage were discussed as possible constraints, but also as opportunities for open space, specifically along the eastern portion of the planning area.

19) It was suggested to provide large lot residential zoning as a buffer to surrounding uses in the area. The compatibility of potential land uses and existing land uses was repeatedly raised as an issue.

20) A comment was made to not allow commercial uses in the "loop" area north of the Sunridge subdivision or in good view sites.

21) Comments and concerns were raised regarding deer migration routes and other potential sensitive environmental resources in the planning area.

22) What is the possibility of developing a commercial strip along Highway 395 but then leaving the remaining land in the planning area as open space?

23) What if future changes to the specific plan are made? Process?

24) It was suggested to develop usable open space with such elements as connected trail systems and parks.

25) What will be the status of church sites and non-profit applications for BLM leases?

Summary of Key Issues Submitted as Written Comments:

1) "I want at least a 2 acre buffer zone(s) behind Haystack Drive. I own a few homes in Sunridge!"

2) "We want a buffer zone and trails in loop area north of Sunridge subdivision with 2 acre estate home sites behind Haystack Drive."

3) "Advanced planning is an excellent idea. We can plan a pleasing, viable community. A community center would be a great idea. We Lutherans plan to build a Christian High School located in this area. Our studies indicate that there is definitely a need and desire for such a facility."

4) "Corpus Christi Catholic Church and the Roman Catholic Diocese of Reno needs a locale in North Douglas County. Since our parishes are territorial, we cannot go further south in Douglas County and there is no land available in South Carson City of sufficient size and quality for church use. Our Meitler Associates study for the Diocese shows an increasing need for a Catholic Church."

5) "I live on the north edge of Sunridge looking up to the BLM land. I purchased my house knowing the taxes were higher in Douglas County than Carson City where I was living. I value the open spaces more than saving the difference I pay in taxes. I value the birds and animals. More people need more open space – not less. Target and Home Depot is a disgrace to Douglas County and this beautiful Carson Valley – sitting as they do on the top of the ridge – they destroy the aesthetics of the land. As usual, the bottom line is money in our county. Douglas County should buy the land to be left as open space and the all terrain vehicles should be excluded as they denude the vegetation. I'll be moving back to Carson City as I might as well live in a more convenient area if I have to give up the reasons that I moved to Douglas County."

6) "Most of the ideas presented are good. I like some open space and possible trails. No more swimming pools. Somehow keep housing development at a minimum."

7) "Need buffer zone between Sunridge homes and northern development. No commercial (e.g. Target / Home Depot) development in area – east side of 395 south of north Sunridge."

8) "Sirs' I object to your planning this project without consulting the people involved. I object to not being notified of the public meetings – I object to not fully informing me of the plan. I object to starting a plan before asking voters if they wanted a plan. Six months after the planning started you have a couple of short meetings for public comment. What kind of democratic government is this?"

9) "We moved into our home in September 1999 and paid a premium for our view lot and do not believe that any change should be made to the lands. If we had been made

aware of this project we would not have made the purchase – why were we NOT INFORMED!"

10) "I just moved here from the bay area. My wife and I are having a house built in Sunridge on Haystack. I was led to believe the additional funds I paid for a view lot was a good investment? There needs to be a buffer area behind the existing Sunridge homes to preserve some of the views and open areas I paid to look out on."

11) "Unimproved recreational space in the loop of land bordered by N. Sunridge, Highway 395, and the Sunridge development. The remainder of land east of 395 divided into 1-2 acre parcels for large homes similar to "East Valley" area. No large "box" stores east of Highway 395, especially on ridge lines. These should be limited to west of Highway 395. If commercial to be included east of Highway 395 limit it to single story professional office space."

12) "Our property borders 395 to the east. It is our hope that we will have access to the land. We further wish for it to be general commercial."

13) "My husband and I are owners of parcels 13-032-11 & 13-032-12. We appreciate that BLM & Douglas County are planning ahead intelligently and thoughtfully for the development of the North County. Commercial zoning seems to be the logical choice for at least the corridor directly to the east of Highway 395. We are, however, sensitive to the desire of our Topsy lane neighbors for an open space buffer. We believe churches, schools, ball fields, etc., to be an excellent source of open space, as well as an attractive beneficial use of land in that area."

14) Before development begins, I believe a needs assessment should be conducted and a clearly defined Implementation Plan should be enacted so that commercial space does not result in closed, empty buildings in the county. Recognizing that development in some fashion will take place on the 600+ acres, the North Douglas County Specific Plan should consider what other stores are planned for the remaining commercial spots adjacent to Target and Home Depot, what is planned for the area immediately south of Sunridge, and plans for other areas in the north part of Douglas County. The community has been looking for ways to build a community center that would include a sports complex, senior center, and performing arts theatre. This land exchange would be an excellent opportunity to provide what all county residents have long been wanting. Many county residents desire open space to remain in the county. Please consider using some of the land as a park, including walking and conservation trails to enjoy the vast wildlife that surrounds this area. No auto mall. Perhaps a computer store, sporting goods and restaurant would benefit the area. I am concerned that future development in the north county area is being considered solely to increase the county's tax base. Increased money to the county should not be the driving force in this decision making process.

North Douglas County Specific Plan

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to us @ Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

I want at least a 2 acre buffer zones behind Marysteeks Dr.

I own a few homes in Sunridge!

Suzi Warren
287-1015.

North Douglas County Specific Plan

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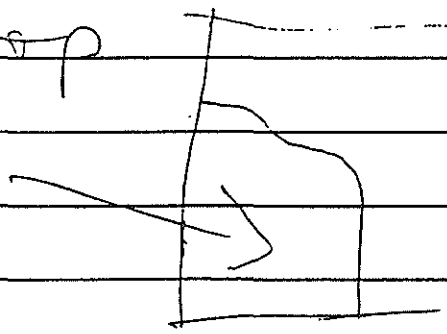
We Want Buffer Zone & Trails in Loop



with 2 Acre estate homesites. behind Haystack

C + C. Varin
1012 Haystack Dr.

COMMENT SHEET

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Advanced planning is an excellent idea. We can plan a pleasing, viable community. A Community Center would be a great idea. We Lutherans plan to build a Christian High School located in this area. Our studies indicate that there is definitely a need and desire for such a facility.

COMMENT SHEET

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CORPUS CHRISTI CATHOLIC CHURCH AND THE ROMAN CATHOLIC DIOCESE OF RENO NEEDS A LOCALE IN NO. DOUGLAS COUNTY. SINCE OUR PARISHES ARE TERRITORIAL WE CANNOT GO FURTHER SOUTH IN DOUGLAS COUNTY AND THERE IS NO LAND AVAILABLE IN SO. CARSON CITY OF SUFFICIENT SIZE AND QUALITY FOR CHURCH USE. OUR MEITLER ASSOCS. STUDY FOR THE DIOCESE SHOWS AN INCREASING NEED FOR A CATHOLIC CHURCH. CORPUS CHRISTI CURRENTLY HAS 5 SERVICES ON A WEEKEND AND NEEDS 2 MORE. OUR CURRENT CHURCH SEATS 155 PEOPLE AND IS OWNED BY THE WASHOE TRIBE.

North Douglas County Specific Plan

COMMENT SHEET

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I live on the north edge of Gunnison, backing up to the BLM land. I purchased my home knowing the taxes were higher in Douglas County than Carson City where I was living. I value the open spaces more than saving the difference I pay in taxes. I value the birds & animals. More people need more open space - not less. Target & Home Depot is a disgrace to Douglas County & the beautiful Carson Valley - sitting as they do on the top of the ridge - they destroy the esthetics of the land. As usual, the bottom line is money in our county. Douglas County should buy the land to be left as open space & the all terrain vehicles should be excluded as they denude the vegetation. I'll be moving back to Carson City as I might as live in a more convenient area if I have to give up the views that I moved to Douglas for.

Eileen Cohen

North Douglas County Specific Plan

COMMENT SHEET

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Most of the ideas presented are good.

I like some open space + possible trails

More swimming pools

Somehow keep housing development at

a minimum.

See ya next meeting

Paul Lumley

North Douglas County Specific Plan

COMMENT SHEET

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(1) Need buffer zone between Sunridge homes and northern development

(2) No commercial (Target / Home Depot) development in area - east side of 395 / south of North Sunridge

(3)

Bruce Monteith

267-3509

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to us @ Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

JAMES P. GRIFFIN
760 JACK'S VALLEY RD
CARSON CITY NEV 89705

SIRS' I object To your planning This project WiTHouT CONSULTING The people IN volved. I objecT To NOT BeING NoTifed of The puBLic MeeTINGS - I objecT To NOT Fully INFORMING ME of The plAN. I objecT To STARTING A plAN BeFORE ASKING VOTERS IF THey WANTED A plAN. SIX MoNTHS AFTER The planning STARTED YOU HAVE A Couple of sHorT MeeTINGS FOR puBLIC COMMENT; WHAT Kind of democRATIC GOVERMENT IS THIS?

Jim Griffin

5-10-2001

North Douglas County Specific Plan

COMMENT SHEET

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We moved into our home in Sept 1999 and paid a premium for our view lot. I do not believe that any changes should be made to the lands.

If we had been made aware of this project we would not have made the purchase - We were NOT INFORMED!!

Barbara Pitter
1030 Haystack Dr
CC NV 89705
267-0138

North Douglas County Specific Plan

MAY 2 2 2003

COMMENT SHEET

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Our property borders 395 to the east. It is our hope that we will have access to the land. We further wish for it to be zoned commercial.

MARTIN HUNTZINGER Martin Huntzinger

DOROTHY HUNTZINGER Dorothy Huntzinger

MAY 1 7 2000

May 12, 2000

Dear Lumos and Associates,

Thank-you for your presentation on the North Douglas County Specific Plan. My name is Kurt Lytle and I own the property at 3759 Lyla Lane. This is the last house to the north on Lyla Lane. I am currently leasing the house to another party and would appreciate any information, maps or notices sent to P.O. Box 2202 Overton NV 89040. My telephone numbers are: (H) (702) 397-2835 and (W) (702) 385-6552.

When I purchased the property I expected that the land use in the neighborhood would eventually change. I agree with the concept of establishing a plan so that the neighborhood will develop in an orderly way. I have been in to many towns in Nevada where there does not seem to have been any planning and the result is discouraging.

I believe that Douglas County has a great opportunity to establish a commercial core area that will provide the services needed by County residents and also attract tax dollars from neighboring communities. The Target and Home Depot are nicely done and set a good pattern for what else can be done.

With the anticipated signal light at Topsy Lane, it seems natural to have commercial zoning along the highway corridor. With the State of Nevada building to the east of Lyla Lane, I believe that the commercial corridor should extend from the Highway to at least the State land along Lyla Lane. To leave the four residences along the west side of Lyla Lane in a residential zone would be awkward as commercial development occurs to the west and east of the these houses. Eventually, the demand for commercial land will absorb the residences. Here are some additional thoughts for your consideration:

1. I would like to see Topsy Lane improved to the east so that traffic can flow efficiently.
2. A school or park could be placed as a buffer between the Sunridge development and the property to the North.
3. Smaller single family lots could be established on the eastern side of the subject area.
4. Single family homes abutting the Highway are not preferred due to the traffic noise.
5. Center Street could be improved to allow for greater North/South traffic flow.
6. Some type of buffer between residential and commercial uses.

I know that whatever plan is approved will not please everyone, but I hope that lessons from other communities can be learned and that the approved plan will allow for an attractive entry into Douglas County and locations for future necessary services.

Respectfully,

Kurt G Lytle

Kurt G Lytle

North Douglas County Specific Plan

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to us @ Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

I just moved here from the bay area. My wife and I are having a house built in sunridge on Haystack, I was led to believe the additional funds I paid for a view lot was a good investment? There needs to be a buffer area behind the existing Sunridge homes to preserve some of the views + open areas I paid to look out on. If you have questions call me (775) 841-5284 Jeff Malloy

P.S. I would also like to know if the developer or builder is legally obligated to disclose that the BLM land was designated for disposal in 1982?

North Douglas County Specific Plan

RECE
MAY 23
5/22/00

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to us @ Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

Jim & Kaci McCowan
P.O. Box 1914
Carson City, NV 89702-1914

775/ 882-4177

My husband an I are owners of parcels 13-032-11 & 13-032-12. We appreciate that BLM & Douglas Co. are planning ahead intelligently & thoughtfully for the development of the North County.

Commercial zoning seems to be the logical choice for at least the corridor directly to the east of Hwy 395. We are, however, sensitive to the desire of our Topsy Lane neighbors for an open space buffer.

We believe churches, schools, ballfields, etc., to be an excellent source of open space, as well as an attractive & beneficial use of land in that area.

Sincerely,

Jim & Kay McCowan

To: Lumos & Associates
From: Joi Davis
Date: May 17, 2000
Re: North Douglas County Specific Plan

I attended the neighborhood meeting regarding the 600+ acres that the BLM has determined to be "disposal" property in Douglas County. Since I am unable to attend the follow-up meeting on May 17, 2000, I have placed my comments in writing for your consideration.

Before development begins, I believe a needs assessment should be conducted (do not rely entirely on UNR leakage study) and a clearly defined Implementation Plan should be enacted so that commercial space does not result in closed, empty buildings in the county. The following are some examples:

- Gormans in the Ranchos, and other vacant commercial spaces surrounding that shopping center.
- Winans Furniture, vacant.
- Chevron Gas & Mini-Mart, vacant.
- Downtown Gardnerville, many vacant buildings.
- Does the population base and projected growth in Douglas County warrant these projects? The past couple years have shown declining population in school district. Saratoga Springs has had slow development. Silvercrest, four years later, is not built-out. Perhaps more commercial development is not what the county needs.

Recognizing that development in some fashion will take place on the 600+ acres, the North Douglas County Specific Plan should consider:

1) What stores are planned for the remaining commercial spots adjacent to Target and Home Depot?

2) What is planned for immediately south of Sunridge? (Washoe Tribe has indicated two more "box" type stores, convenient store, car wash, restaurants, etc.)

3) What else is the county considering for the north county area? A mini "master plan" of the north county should be established so that planning and development is accomplished in accordance with the needs and desires of the community, in addition to the future plans already in progress.

My suggestions:

1) **Community Center** - The community has been looking for ways to build a community center that would include a sports complex, senior center, and performing arts theatre. This land exchange would be an excellent opportunity to provide what all county residents have long been wanting.

2) **Open Space** - Many county residents desire open space to remain in the county. Please consider using some of the land as a park, including walking and conservation trails to enjoy the vast wildlife that surrounds this area.

3) **No Auto Mall**. Perhaps a computer store, sporting goods and restaurant would benefit the area.

As a resident of the Silvercrest Subdivision, I'd like to commend Douglas County for their fine work on the Home Depot and Target store projects. I experienced little disruption or inconvenience during the construction and completion of those stores. I believe the Douglas County planning department communicated well with neighbors in handled our concerns regarding traffic, landscaping, and lighting in a professional and satisfactory fashion.

I am concerned that future development in the north county area is being considered solely to increase the county's tax base. Increased

money to the county should not be the driving force in this decision-making process.

Thank you for your consideration.

Best regards,

Joi Davis
892 Meadow Vista
Carson City, NV 89705
(775) 267-4860

cc: Mimi Moss, Douglas County Planning Division
Douglas County Commissioners
Douglas County Planning Commission

North Douglas County Specific Plan

5/10

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to us @ Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

1. Unimproved recreational space in the loop of land broaded by N. Sunridge, Hwy 395, and the Sunridge development.

2. The remainer of land east of 395 divided into 1-2 acre parcels for large homes. Similar to "East Valley" area.

3. No large "box" stores east of Hwy 395 especially on ridge lines. These should be limited to west of Hwy 395.

4. If commercial to be included east of Hwy 395, limit it to single story professional office space.

To: Larry Werner

From : Bob Gaw, 3499 Mont Blanc Ct. C.C. 89705, Tel: 267-2420 5/17/00

Re: North Douglas Co. Planning

I am writing to you Larry, due to our association with the Master Plan process when I was a Planning Commissioner. Please pass along to Carol Dotson as my purpose is not to slight her, but to remind you of some of the factors associated with the parcel in question.

Comments:
As Susan Southwick stated at last weeks meeting the thinking of the Planning Commission was focused on the West side of US 395. We considered the East side to be BLM and supposedly to remain so. Thus, the lack of zoning.

The Goals and Policies as stated in the Master Plan were intended for the West side of US 395; e.g. the multi-family designations (until rezoned due to Home Depot and Target and neighbors)

The land exchange was intended (at that time) with the USFS for the parcel next to the church on the West side for "big box" development close to the 24 Hour Nautilus gym. The thinking at this time had nothing to do with the East side.

The 3 or 4 homes located off of Topsy Lane create an island for planning purposes. They are an aberration to say the least. I recall John Doughty mentioning that the original owner obtained 5 acres from BLM and has subdivided to family members not-so-legal one and quarter acre parcels.

The overall intent for the stated Goals and Policies is rather clear: park and open space as well as public access for this proposed land exchange.

Some Ideas:
1. Develop the East side of US 395 for industrial parks--not retail commercial. Douglas Co. present code would require certain design standards and landscaping. Parking and access roadway would be less than retail.

2. Develop clusters of SF 2-5 acre parcels for upscale housing.

3. Develop a large open space area integrating the above large lots.

4. Develop in conjunction with Carson City a regional park system that would tie into their Silver Ranch (?) open space park by the Carson River.

5. Reserve a 50 acre school site.

May 17, 2000

Carol Dotson
Lumos and Associates
800 E. College Parkway
Carson City, NV 89706

Dear Ms. Dotson

I attended last week's meeting to discuss the development of the BLM land in north Douglas County, and I would like you to know my concerns of how the land should be developed. My house backs up to the BLM land in the Sunridge subdivision. I enjoy the fact that I can open my back gate and take my dog for a walk. I would like to see a "buffer" zone between the Sunridge subdivision and any new development. I think a dirt trail path would be ideal for people to walk their dogs, ride horses, ride motorcycles, ride bicycles, etc. In fact, a trail around the perimeter starting from 395 east, along the back of Sunridge, going east to the west side of the property owners along Center St. would give an ideal buffer zone for most of the property owners who bought the property because of the open land uses.

In addition to keeping some of the land for open use, I would not like to see any muti-family dwellings. I feel this area should be developed to have single family housing in the upper-middle income range. I would like to see the lot sizes for the property be no smaller than 1/3 acre sites, with emphasis on large muti-acre site, especially those sites that will be close to the houses on Center St.

As far as the high school, I feel the school should be situated to be off 395 and not in the middle of a subdivision. The added traffic of having teenagers driving through a subdivision to go to school would create more traffic that the subdivision does not need. A person at the meeting suggested that having the drivers driving on 395 would be a problem, but I feel that most of the students would be driving on 395 to get to the school any way.

Thank you for entertaining my ideas. Please feel free to contact me if you have any questions.

Sincerely,

Mary Harmon

Mary Harmon
3598 Haystack Drive
Carson City, NV 89705
(775) 267-5018 home
(775) 684-5633 work

North Douglas County Specific Plan
Public Meeting and Workshop

SIGN-IN SHEET

NAME	*ADDRESS*	*PHONE*
Paul & Arlene Lumley	3467 Cindy's Trail C.C. NV, 89705	267-3401
Melissa Lindell	CFA / 1150 Corporate	Reno 89502 856-1150
Dan Grayuski	Fehr & Peers Assoc. 5310 Kietzke LA. # 103	Reno 89511 826-3200
Monte WALTERS	1008 TOPSY LANE C.C.	684 6999
Stacey Breneman	1008 Topsy Ln CC	684-6711
NEIL & DEBRA MUHRINGER	3753 Lyla Lane cc	267-1130
Martha Laird	1051 TOPSY LN	883-0825
JOHN T. BIALE	610 MARTIN ST	882-2773
HENRY WEILER	1010 HAYSTACK DR	267-5736
Steven Erven	1680 Toni Ct.	267-2712
J. PABLO VALLES	6777 SADDLEHORN Rd	2679473
REV JAMES SETELIK	CORPUS CHRISTI CATHOLIC CHURCH	882-1967
Kurt Lytle	3759 Lyla Ln C.C.	(702) 397-2835
RICHARD FAIREAX	962 SUNUP CT.	(775) 267-3643
Bob Stevens	795 Jack Valley Rd	775-267-2501
Antoinette Marcella	990 Haystack Dr.	267-2935
Ray MARCELLA	" " "	" "
Bill Krauch	1193 Zaso cc	882-7078
CLIFF HANSEN	3591 Hwy 395	742-4893
TIM WINANS	Carson Valley Community Church	2652920
Dave Fairbank	224 Kingsbury	588-7300
Ed & Elaine CANFIELD	1088 HAYSTACK	
Friedward F Winterberg	5395 Goldenrod Drive Reno	849 2739

North Douglas County Specific Plan
Public Meeting and Workshop

SIGN-IN SHEET

NAME	ADDRESS	PHONE
Steve Weissinger	842 Blue Rock Rd Gardnerville, Nevada 89410	265-4318
Dennis Conway	3590 Center Dr. CC NV 89705	267-5928
Rich Harmon	3598 Haystack CC NV 89705	267-5018
MIKE BAXTER	7373 CENTER DR CC NV 89701	267 0503
MARK GUSS	3757 LYLA LA CC NV 89705	882-5966
Don & Susan Southwick	3368 Alpine View Ct. CC NV 89705	267-3223
Barbara Patten	1030 Haystack CC 89705	267-0138
Alfred J Sarjo	1032 HAYSTACK DR	775-267-0455
Mary Shuler	928 Ranchview Cir	267-4184
Mike Johnson	P.O Box 3390 Stateline 89449	588-6677
Dorothy & Marty Huntzinger	1116 US5 Carson City	882-5436
JP & ER Griffin	760 Jack's Valley CC	883-8531
John & Bambi TORRES	986 STARLeaf Ct CC	267-5448
Leah Seslar	897 Valley Vista Dr CC	267-1906
Metcalf's, Brett & Elaine	3777 Lyla Ln Minden	882-1015
Bruce & Nan Monteith	1025 RIDGEVIEW CT. C/C	267-3509
Holland Akerley	Corpus Christi Ch.	
Jeffrey Galloway	1014 Ridgeview Dr	267-2335
BILL WELLMAN	SUNRIDGE DEVEL.	267-4448
[illegible]	1399 America Way (89444)	721-4744
Ron Kruse	977 Lehigh Cir	267-3232
Elaine Kruse	"	"
Steve Weaver	879 Coloma Dr	267 3662
Kurt Lytle	P.O. Box 2202 OVERTON NV, 89040	(I own 3759 Lyla Ln please send any info to P.O. Box 2202 Overton 89040 (702) 397-2

North Douglas County Specific Plan
Public Meeting and Workshop

SIGN-IN SHEET

NAME	*ADDRESS*	*PHONE*
Norman L. Metcalf	3714 Lyla Ln.	267-5532
Dean E. Metcalf	3722 Lyla Ln.	
Andrew & Stacie Clinger	1002 Ridgeview Dr.	
Bob Jake Gau	3499 Mt. Blanc	267-2420
Hal & Mariana Mazon	1003 Blue Ridge Ct.	
Gregow	985 Rolling Ridge Ct	267-5340
Joi Davis	892 Meadow Vista	2674866
Shelley Blotter	3600 Haystack Dr	267-3947
Nancy Ballis	981 Sunburst Dr	267-4802
Ellen Cohen	3586 Haystack	882 7599
Jeri Wilson	999 Haystack	267-1015
Claudia Marin	1018 Haystack	267-4112
Steve Eddy	3549 Sunridge	267 0808
Robert + Barbara Seaman	1031 Mica	267-4157
Jeff Kelley	3031 Kitchen Dr	845-5284
Carolyn Foster	994 Sunview Dr	267-5135
Roger C. Forcella	986 Ridgeview Dr	267-5110
Ellen Holler	Douglas County	782-9821
Joanne Ridenberg	1007 Blue Ridge	267-3096
Richard Hartley	532 Meridian Ct Gardnerville City	883-8704
Kathie Colleen	PO Box 1914 CC	882-9177
Jeannette Alley	P.O. Box 848 Gard.	782-3759
Bill Van Bruggen	1393 Saratoga Minden	267-4792
Chuck Salerno	3543 Smoketree Dr. CC	267 5773

WALKER RESOURCE MANAGEMENT PLAN AMENDMENT
NORTH DOUGLAS COUNTY SPECIFIC PLAN
Carson Valley Community Church
May17, 2000 @ 6:30 p.m.

Public Meeting Agenda

Introduction

- General overview of the project;
- Introduction of County, BLM, and Consultant Team members;

Purpose of Meeting

- Explanation of the public scoping process;
- Project timeline and opportunities for review and comment;
- Solicit input regarding the human environment;

Project Background

- Review of the first scoping meeting and results;
- Requirements for consistency of local planning;
- Previous BLM planning decisions that resulted in listing the land for disposal;
- Acquisition criteria for other lands in Douglas County;
- Cooperative effort between the BLM and the County;
- The NEPA and Specific Plan Processes;

The NEPA Process

- Review of issues typically identified for analysis in similar Environmental Assessments;
  - ✓ Lands
  - ✓ Soils
  - ✓ Geologic Resources
  - ✓ Cultural Resources
  - ✓ Vegetation
  - ✓ Water Resources
  - ✓ Wildlife
  - ✓ Threatened, Endangered, or Candidate Species
  - ✓ Wild Horses
  - ✓ Recreation
  - ✓ Visual Resource Management
  - ✓ Hazardous Materials
  - ✓ Socio-economics
  - ✓ Traffic
  - ✓ Noise
- Review of alternatives already identified for analysis in the Environmental Assessment;
  - ✓ *No Action Alternative*
  - ✓ *Proposed Action*

Identify and Discuss Community Issues, Concerns, and Alternatives

Closing Comments/Future Scheduling

8:30 p.m. – Adjourn

Dear Members of the Community:

The Bureau of Land Management (BLM), Carson City Field Office, and Douglas County will jointly direct preparation of a County Specific Plan and Walker Resource Management Plan Amendment and environmental assessment. The Resource Management Plan Amendment will identify specific tracts of BLM managed public lands in the North Douglas County specific Planning Area for potential disposal through exchange or under the Recreation and Public Purposes Act (R&PP) and criteria for BLM acquisition of private lands or interests in private lands within Douglas County, Nevada. The environmental assessment, to be produced by a third-party contractor, will analyze the impacts (direct, indirect, and cumulative) of the potential disposal of BLM managed public lands and criteria for acquisition of private lands or interests in private lands by the BLM.

An important component to this process includes public scoping to identify issues of concern for the human environment. This is the second of these planned meetings. The first meeting was held May 10th and focused on the identification of key issues, goals, and objectives and a vision for the project area. The intent of this second meeting is to allow the public an opportunity to identify issues and concerns to be addressed in the plan amendment and the Environmental Analysis. Comments will be accepted until June 2, 2000.

Planning criteria have been developed to ensure that the plan amendment is tailored to the issues identified and ensure that unnecessary data collection and analysis would be avoided. These criteria may change in response to public comment and coordination with state and local governments or other Federal agencies. The criteria developed for the North Douglas County Plan Amendment are described below. The plan amendment will address the following decisions in the North Douglas County Planning Area:

1. Identify specific parcels of public lands for potential disposal through exchange, or under the R&PP Act to private entities.
2. Identify specific parcels of public lands for potential transfer to the Washoe Tribe or to another Federal agency for management on behalf of the Tribe.
3. Adopt criteria for BLM acquisition of private lands or interests in lands within Douglas County.
4. Approximately 430 acres of BLM managed public lands located in North Douglas County will be affected by the decisions regarding land disposal through exchange, R&PP Act or transfer to the Tribe or other Federal agency for management on behalf of the Tribe.
5. A significant cultural resource site important to the Washoe Tribe exists on these lands and will require inventory, delineation, management and protection.
6. Criteria for BLM acquisition of lands or interests in lands will focus on the acquisition of conservation easements in the Carson River Flood Plain in order to protect agricultural lands and the associated open space values, wildlife habitat, and flood plain functions. Approximately 25,000 of private lands in the flood plain are expected to be threatened by development in the future.
7. Additional acquisition criteria will be developed or adopted for sensitive lands elsewhere in Douglas County.
8. No lands will be transferred out of or into Federal ownership as a direct result of this plan amendment. Specific exchange proposals or leases under the R&PP will be considered and analyzed case by case after the joint County Specific Plan and BLM Resource Management Plan Amendment are completed.

Included in this packet are the criteria for acquisition, proposed schedule, and a pre-addressed comment form.

CRITERIA FOR ACQUISITION OF CONSERVATION EASEMENTS IN THE CARSON VALLEY

On July 31, 1998, the Sierra Front/Northwest Great Basin Resource Advisory Council voted unanimously to recommend criteria to be used by the BLM to identify and set priorities for acquiring agricultural conservation easements in the Carson Valley. The easements are part of a cooperative effort by BLM and rural counties in Nevada to preserve important agricultural lands in Douglas County from the imminent threat of development, while making public lands available for community expansion, elsewhere in the state, through the land exchange process. BLM will use these criteria to set priorities and determine which lands should be preserved among those proposed to BLM by land owners in the Carson Valley. The criteria are ranked with the highest priority first. Properties that are being considered will then be ranked based on the values present or offered on each property.

1. **The land is an active agricultural operation.** Since the primary purpose of the conservation easement is to preserve productive agricultural lands, it is critical that property is an operating farm or capable of being part of a viable farm operation.

2. **The land is subject to imminent threat from development, and protection is in conformance with the Douglas County Master Plan.** The Master Plan contemplates the transfer or purchase of development rights on certain agricultural lands, and that high density development will occur in "receiving areas".

3. **The land is within the 100-year floodplain.** To allow the Carson River and its tributaries to utilize the natural floodplain and protect future development from flood damage, it is in the public interest to retain the agricultural use of the floodplain.

4. **The land contains important wetlands or riparian wildlife habitat.**

5. **The agricultural character of the land enhances scenic values.**

6.(tie) **The landowner is willing to sell a recreational access easement on the property.** It may be in the public interest to acquire access where such access does not interfere with the conservation purpose of the easement.

6.(tie) **The land is of sufficient parcel size to be considered farmland.**

8. **The land contains important cultural or historic values that would be protected by the acquisition.**

9. **The landowner is willing to discount the sale of the conservation easement to BLM.** In many cases, it is in the landowner's interest to sell only a part of a conservation easement, and donate the remainder to a private land trust or other public entity as a tax benefit. Acquiring the conservation easement at a fraction of the value allows BLM to purchase more easements which is in the public interest.

10. **The land has other unique values and acquisition would be in the public interest.**

North Douglas County BLM Plan Amendment - Schedule

Establish BLM Plan Amendment Team.....	Monday April 17, 2000
Scope issues with BLM Team.....	Week of April 16. 2000
Develop planning criteria for public review.....	Week of April 16, 2000
Publish notice of intent (NOI) to amend the Walker RMP in the Federal register.....	Week of April 23, 2000
Publish legal notices in local and regional newspapers. (Record Courier and Nevada Appeal).....	Week of May 1, 2000
30 day minimum scooping and planning criteria review period (30 days).....	April 28 through May 31, 2000
Public scooping meeting.....	May 10, 2000
Public scooping meetings in Douglas County.....	May 17, 2000 County (Workshop #2)
Develop Proposed Plan Amendment.....	June 1 – August 1, 2000
Preliminary Plan to County Commissioners for Review....	August 8, 2000
Develop Environmental Assessment.....	June 1- August15, 2000
Write Finding of No Significant Impact.....	August 15 – September 1, 2000
Proposed Plan. EA. FONSI to Douglas County Commissioners for Approval at Commissioners Meeting...	September 7, 2000
Release Proposed Plan for Governor's consistency review and concurrent Protest period (60 days).....	Week of September 10. 2000
Public Meeting(s) in Douglas County.....	September 25 – October 27, 2000 (County Workshop #3)
Analyze and respond to comments.....	November 12 – December 12, 2000
Resolve Protests.....	?????
Publish Notice of Significant Change if applicable.....	????
Write and Release Decision Record (DR) with Plan Amendment.....	January 15, 2001

North Douglas County Specific Plan

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to: John Singlaub: Bureau of Land Management: Carson City Field Office; 5665 Morgan Mill Road: Carson City. Nevada 89701. Your input will assist us in the identification of your issues and concerns. Feel free to use additional pages.

Fold

John Singlaub
Bureau of Land Management
Carson City Field Office
5665 Morgan Mill Road
Carson City, Nevada 89701

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BLM/NORTH DOUGLAS COUNTY SPECIFIC PLAN AREA LAND FACTS

- BLM Lands in the Specific Plan Area Approximately 440 Acres.
- Approximately 315 Acres Classified for Recreation and Public Purposes (R&PP).
- However, Planning Decisions for the Area Identify 160 Acres for R&PP and 320 Acres for Urban Suburban Purposes Consistent With Local Comprehensive Plans or the Views of Local Governme Authorities.
- Approximately 144 Acres currently under R&PP Patent, Lease or Application.
- Approximately 97.5 Acres under R&PP Application to Churches.
- However, Only about 44 of these acres are currently classified for Disposal Through R&PP.
- R&PP Land Patented 15 Acres (Carson Valley Community Church and Museum).
- 2.5 Acres Under R&PP Lease For Fire/Police Station.
- 40 Acres Needed for Joint Carson City/Douglas High School.

F. Lands retained in public ownership would be managed to protect open space, visual, recreation, watershed, and wildlife resources. Protection of these resources would be given priority over other land uses.

G. Management of mineral materials in the planning area would be determined through a joint aggregate resources plan to be developed with Carson City.

5. **Within the Reno Planning Area covered by the Management Framework Plan**

A. Identify the following tracts as suitable for disposal for urban or suburban purposes, consistent with the local comprehensive plans or the views of local governmental authorities.

Pyramid Planning Unit		Acres Public Land	Pine Nut Planning Unit		Acres Public Land
D1	Red Rock Valley	80	D3	Carson Plains	860
D5	Cold Springs Valley	370	D4	Edmonds Drive	20
D6	Lemmon Valley	3,840	D5	Fish Springs Flat	340
D7	Spanish Spr. Valley	1,870	D6	Carson Valley	40
D9	Reno & U.S. 395 N.	660	D7	Indian Hill Area	320
D10	Mustang Interchange	40	D8	Johnson Lane	3,120
D11	U.S. 395 south	480	D9	Carson City(Eagle Val.)	80
D12	Pleasant Valley	80	D11	U.S. Route 395	40
D13	Washoe Valley	400	D12	U.S. Route 50 (SR 17)	240
D14	Patrick	580			
	Total	**8,320**			**5,060**

B. Identify the following tracts as available for transfer out of Federal ownership to state, county, or local government agencies, or to non-profit corporations and associations, for recreation and public purposes.

Pyramid Planning Unit		Acres Public Land	Pine Nut Planning Unit		Acres Public Land
P1&P2	Lemmon Valley	2,050	P1&P2	Eagle Valley	80
P4	Honey Lake Valley	4,270	P3	Carson Valley	3,920
P5	Sun Valley East	920	P5	Indian Hill	160
P6	Sun Valley West	240	P6	Carson Plains	160
P9	Huffaker Hills	210	P7&P8	Mound House	160
P12	Steamboat Hot Spr.	40	P9	Hills N. Carson City	2,250
P16	School Sites	390	P10	Carson River Canyon	210
P17	Galena.Thomas,Whites Cr	30	P11	Six Mile Canyon	320
			P12	Mud Lake	80
			P13	Diamond Valley	40
			P15	Airport	100
			P16	S. Edmonds Drive	60
			P17	C Hill	120
	Total	**8,150**			**5,660**

.2 Lands.

.21 Determinations.

A. Resource Management Planning. The following lands related determinations are required in every resource management plan unless one of the exceptions discussed in BLM Manual Section 1620.06 applies.

1. Land Disposals. The public lands are to be retained in Federal ownership unless, as a result of land use planning, it is determined that disposal of a particular parcel will serve the national interest (43 USC 1701(a)(1)). Accordingly, identify in the plan those lands, if any, which meet established criteria for disposal under one or more statutory authorities. Assign any lands identified to one or both of the following disposal categories. Lands not determined to meet disposal criteria in the RMP can not be subsequently considered for disposal unless the plan is amended.

a. Lands Which Meet Section 203 Disposal Criteria. These are lands which meet one or more of the criteria set forth in Section 203 of FLPMA for disposal by sale. The lands must be illustrated on a map or otherwise identified by tract in the RMP. For tracts so identified, the plan must clearly state which of the three disposal criteria apply.

b. Lands Which Meet Other Disposal Criteria. These are lands which meet disposal criteria under other authorities such as those providing for land exchanges, State indemnity selections, agricultural entries, and conveyances under the Recreation and Public Purposes Act. The RMP must be explicit as to (1) the location of the lands involved, (2) the disposal authorities under which the lands may be conveyed, (3) the conditions, including activity planning requirements, if any, which must be met in order to allow conveyance, and (4) the management objectives to be served by disposal. These determinations must be sufficiently developed so as to allow the BLM manager to determine if subsequent proposals are in conformance with the plan. (Where exchanges are proposed, see BLM Manual Section 1625.1 for supplemental program guidance concerning acquisitions.)

2. Land Use Authorizations. The plan may identify where and under what circumstances land use authorizations such as major leases and land use permits may or may not be granted in the planning area. Where appropriate, include in this determination the use of leases and permits to resolve known or suspected trespass.

3. Land Classifications. (Reserved)

4. Withdrawals. (Reserved)

TECHNICAL MEMORANDUM
NORTH DOUGLAS COUNTY SPECIFIC PLAN
MAY 17, 2000 MEETING SUMMARY

On Wednesday, May 17, 2000 the second in a series of public meetings was held at the Carson Valley Community Church to continue the public involvement process for the North Douglas County Specific Plan project. As with the first meeting held on May 10, turnout was good with approximately 70 members of the community in attendance.

The purpose of the meeting was to explain the environmental public scoping aspect of the project, introduce the BLM plan amendment/environmental assessment timeline for the project, provide an opportunity for review and comment of environmental issues, and solicit input regarding the human environment. To achieve these meeting goals, an agenda was developed that included discussion of the project history and background, a review of the National Environmental Policy Act (NEPA) process, the Environmental Assessment (EA) process, a review of action alternatives to date, and public comment. A brief project background, the planning criteria to be used in the environmental process, and a project schedule were distributed along with the agenda as a handout. Following is a brief summary of meeting events:

- The meeting began with Mimi Moss of the Douglas County Community Development Department providing a brief introduction of project team members, project history, and upcoming meeting dates. Mimi informed the audience that additional meetings would possibly be held next month to continue the public review process.

- Mike McQueen of the BLM then addressed the audience with a review of the BLM Resource Management Plan (RMP) amendment process and the Environmental Assessment process. Mike informed the audience that these tasks would be conducted concurrently with the Douglas County specific planning process and that all the plans will need to be consistent and conform to one another. After providing an in depth project background and issues to be addressed, Mike referred to the meeting handout and went over land statistics and facts. Several questions were asked at this point regarding non-profit applications and the quantity and location of the proposals. Mike then discussed the planning criteria developed to date concerning land acquisitions and disposal and finished his presentation by reviewing the project schedule and meeting dates.

- At this point Carol Dotson of Lumos and Associates was asked to provide additional history regarding the project and the specific planning process. After defining what a specific plan is, Carol discussed the purpose and benefits of public input, the specific planning process, and the North County Specific Plan. Carol then provided a brief summary of the proposed project approach, followed by discussion of numerous key issues and the outcome of the first public meeting. Carol finished by specifying some of the goals and visions indicated by verbal and written comments made at the first public meeting held on May 10.

- John Singlaub, Carson City Field Office Manager for the BLM, then addressed the audience providing a detailed review of the environmental planning criteria and land exchange process. John explained why the BLM initially listed the lands within the planning area for disposal and stated that the BLM would like the community's vision regarding how the lands should be disposed and what they should be used for.

- Several questions were raised at this point regarding current zoning designations, master plan elements, and subsequent existing non-conforming uses. Larry Werner of Lumos and Associates, who worked on the Douglas County Master Plan during its development, discussed the Master Plan process and history, as well as perspectives toward the planning area at that time. Pete Wysocki, of the Douglas County Community Development Department, then provided additional input regarding the zoning and non-conformity issues of some of the existing uses in the area. Pete also explained the methodology that allowed for this existing development.

- The meeting then moved to public comment and discussion of key issues. **Attached is a complete listing of key issues raised during public comment at the meeting and a summary of the written comments submitted to date.**

Next Step

Based upon data collection and research, information from the public meetings, and written comments, the preparation of a preliminary conceptual plan will begin. The next pubic meeting is scheduled for the middle of June to discuss a conceptual land use plan for the area.

North Douglas County Specific Plan
Carson Valley Community Church
May 17, 2000 @ 6:30 p.m.
PUBLIC MEETING COMMENTS

Key Issues Raised During the Public Comment Portion of the Meeting:

1) Previous zoning designations of Agricultural 1-acre and Forest and Range 19-acre / 40-acre.

2) Friction zone created by public land for disposal adjacent to previous disposal lands now developed.

3) Non-conformance of existing parcels with existing zoning.

4) Keep land at current elevation – minimum cut and fills.

5) Identify infrastructure provider.

6) Need to preserve open space.

7) Limit "large box" development – keep retail development off of hilltops and ridgelines.

8) Need enforcement of existing public lands.

9) Need large buffer / trail system.

10) Limit use of open space – more passive uses (i.e. prohibit motor vehicles).

11) Don't allow pre-construction grading of lots where graded lots remain undeveloped for long periods of time.

12) Existing commercial zoning on the west side of Highway 395 is inappropriate and undesirable.

13) Place industrial uses/zoning (non-retail) on the east side of Highway 395.

14) Protect scenic values.

15) Need to develop tourist attraction – R.V. Park.

16) Number of churches applying to use public land – too many asking for too much land.

17) Need to supply church site to accommodate existing population.

18) Surrounding / adjacent land use – ensure consistency with existing land uses and development.

19) Look at BLM retention alternatives / no-action – leave site as is.

20) Keep large portion of land as R&PP to maintain open areas.

21) Traffic concerns about congestion and safety (cross traffic, signals, and air pollution).

22) Habitat preservation / relocation / environment

23) Would like plan to include recreation (sports) fields and ballfields?

24) Develop a family oriented community.

25) Develop schools with sports fields (soccer) as buffer.

26) Develop bike paths and routes.

27) Develop horse trails with connections to Carson river and Carson City trails.

28) Develop design guidelines with sensitivity for plan area (e.g. lighting, etc.)

29) Project to increase tax base / revenues.

30) Appropriate buffer and compatible uses (same).

31) This is a good planning opportunity – take advantage of it.

32) Develop unique community identity (not Minden or Carson City).

Key Issues Submitted as Written Comments:

1) "Designated land use should not duplicate that being committed independently within the area just south of Sunridge. This area includes the development by Sunridge (Las Vegas Paving) and by Washoe Tribe. Churches make good neighbors and should be accommodated as much as possible. Land grading should be held to a minimum. Hill tops with good vistas should not be allocated for commercial retail. They destroy the aesthetic appearance of the neighborhood. Consider a safer way to cross over 395 – keep retail on the west side of 395 – include soccer fields + other playing fields. Trails and access to Carson River."

2) "Keep up the good work. We have a wonderful opportunity to build a quality community. A public high school and a Lutheran high school plus new churches would result in a fantastic community."

3) "Recommending no-action alternative."

4) "I live in one of eight houses on the northeast section of Minden just next to Carson City border, and of course I'm not too happy about the Government trading off this area to Douglas County and their "Master Plan for this area....I would cast my vote for please leave this area as is – do nothing. I went to both meeting. I believe the BLM & Douglas County is making a major mistake in believing that building up this area is going to stoppeople from going to Costco, Wal-mart, Raley's or any other stores in Carson City. All it is going to do is add more traffic to an already congested area and when Costco goes in and another traffic light is installed, this going to be a disaster to all who commute to and from Douglas County to Carson & the Reno area's. Also please consider all the animal life in this area and the environmental issues. Also as stated in the community meeting, the issue of tourist coming down Hwy 50 from beautiful Lake Tahoe area to see rows of houses and businesses instead of open spaces as it is now. Please for once consider the people in the area and just the money you can make. (tax dollars). On a personal level. I moved to Lyla Ln to lice out in the less populated area. To be able to go outside and look at the great beauty of the mountains and lands around me. I paid more money for the house and land for this reason. If my neighbors and I had wanted to live in a master community we would have purchased a house in Carson City or Minden township, not 10 miles outside of Minden and 2 miles outside of Carson City. Please leave us be, or let us have an option to purchase some of the lots around us, or buy us out and lets us find a another paradise."

5) "A portion of the southwest corner of the specific plan area (south and west of N. Sunridge Dr.) has been described by a member of the BLM/county/consultant team as a special view-shed site. This description characterizes the site in relation to contiguous properties of Sunridge Heights development. The site is open space (except for the R&PP area of Carson Valley Community Church). It includes a number of sloping surfaces merging into the gully descending diagonally to the southwest. Mountain terrain in the background completes the view-shed. We respectfully suggest that the view-shed site be designated open-space transition zone. The zone provides for the evolution of the developed specific plan area to contiguous Sunridge Heights, and of the existing (and possibly to be enlarged) R&PP area of the Carson Valley Community Church to contiguous Sunridge Heights."

North Douglas County Specific Plan

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to: John Singlaub: Bureau of Land Management: Carson City Field Office; 5665 Morgan Mill Road: Carson City. Nevada 89701. Your input will assist us in the identification of your issues and concerns. Feel free to use additional pages.

- [illegible] designated land [illegible] would not be [illegible] being committed, [illegible] within the area just South of Sunridge. This area includes the development by Sunridge ([illegible]) and by Washoe tribe.

- Churches make good neighbors and should be accomodated as much as possible.

- Land grading should be held to a minimum. Big cut & fill is ugly. Leave natural and avoid lots of [illegible]

- Hill tops with good vistas should not be allocated for commercial retail. They [illegible] the asthetic appearance [illegible] the neighborhood.

- Consider a safer way to cross [illegible] 395 - a bridge could really help; at least a pedestrian/bicycle bridge. (Particularly if a major school is included in the plan.)

Keep retail on the west side of 395. Have a [illegible] area from which you can walk to multiple stores.

3 Soccer fields & other [illegible] fields - could be associated with schools [illegible] Trails & access to Carson River.

BOB & BARBARA SEMANS
1031 MICA DRIVE

North Douglas County Specific Plan

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Keep up the good work. We have a wonderful opportunity to build a quality community. A public high school and a Lutheran/Christian school plus new churches would result in a fantastic community

Richard Hartley
532 Meriden Court
Carson City, NV 89701

North Douglas County Specific Plan

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Recommending "no action"

5-25-2000

John Singlaub
Bureau of Land Management
Carson City Field Office
5665 Morgan Mill Road
Carson City, NV 89701

Dear John Singlaub:

I live in one of eight houses on the North-East section of Minden just next to Carson City border, and of course I'm not too happy about the Government trading off this area to Douglas County and their " Master Plan" for this area.....
I would cast my vote for "please leave this area as is- do nothing".

I went to both meetings. I believe the BLM & Douglas County is making a major mistake in believing that building up this area is going to stop people from going to Costco, Wal-mart, Raley's or any other stores in Carson City. All it is going to do is add more traffic to an already congested area and when Costco goes in and another traffic light is installed, this is going to be a disaster to all who commute to and from Douglas county to Carson & the Reno area's.
Also please consider all the animal life in this area and the environmental issues.
Also as stated in the community meeting, the issue of tourist coming down Hwy 50 from Beautiful Lake Tahoe area to see rows of houses and businesses instead of open spaces as it is now. Please for once consider the people in the area and just the money you can make. (tax dollars).

On a personal level. I moved to Lyla Ln to live out in the less populated area. To be able to go outside and look at the great beauty of the mountains and lands around me. I paid more money for the house and land for this reason. If my neighbors and I had wanted to live in a master community we would have purchased a house in Carson City or Minden township, not 10 miles outside of Minden and 2 miles outside of Carson City.

Please leave us be, or let us have an option to purchase some of the lots around us, or buy us out and lets us find a another paradise.

Lynn Guss
3757 Lyla Ln, Carson City, NV 89705
775-882-5966

cc: Douglas County Commissioners
Senators Harry Reid & Richard Bryan

North Douglas County Specific Plan

MAY 31, 2000

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to us @ Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

A PORTION OF THE SW CORNER OF THE SPECIFIC PLAN AREA (SOUTH AND WEST OF NORTH SUNRIDGE DRIVE) HAS BEEN DESCRIBED BY A MEMBER OF THE BLM/COUNTY/CONSULTA TEAM AS A SPECIAL VIEW-SHED SITE. THIS DESCRIPTION CHARACTERIZES THE SITE IN RELAT TO CONTIGUOUS PROPERTIES OF SUNRIDGE HEIGHTS DEVELOPMENT.

THE SITE IS OPEN SPACE (EXCEPT FOR THE R&PP AREA OF CV COMMUNITY CHURCH IT INCLUDES A NUMBER OF SLOPING SURFACES MERGING INTO THE GULLY DESCENDING DIAGONALLY TO THE SOUTHWEST. MOUNTAIN TERRAIN IN THE BACKGROUND COMPLETES THE VIEW-SHED.

WE RESPECTFULLY SUGGEST THAT THE VIEW-SHED SITE BE DESIGNATED OPEN-SPACE TRANSITION ZONE. THE ZONE PROVIDES FOR THE EVOLUTION OF THE DEVELOPED SPECIFIC PLAN AREA TO CONTIGUOUS SUNRIDGE HEIGHTS, AND OF THE EXISTING (AND POSSIBLY TO BE ENLARGED) R&PP AREA OF THE CARSON VALLEY COMMUNITY CHURCH TO CONTIGUOUS SUNRIDGE HEIGHTS.

Annemarie Hailer
Henry Hailer
1010 HAYSTACK DR.
CARSON CITY, NV 89705-8069
267-5736

North Douglas County Specific Plan MAY 31, 2000

COMMENT SHEET

Please provide below your comments regarding the project and either drop them off before leaving or mail them to: John Singlaub; Bureau of Land Management; Carson City Field Office; 5665 Morgan Mill Road; Carson City, Nevada 89701. Your input will assist us in the identification of your issues and concerns. Feel free to use additional pages.

THESE COMMENTS PORTRAY A CONCEPT. THEY ARE A PARTIAL ANSWER TO A QUESTION ASKED AT THE PUBLIC MEETING OF MAY 17: "WHAT DO WE WANT FOR OUR COMMUNITY"?

A VISUALLY-PLEASING COMPATIBILITY WITH THE PHYSICAL CHARACTERISTICS OF THE AREA AND WITHIN AND AMONG THE STRUCTURAL ELEMENTS OF THE DEVELOPMENT:

1. MINIMUM DISTURBANCE TO THE CURRENT GROUND SURFACE AND/OR RESTORATION OF THE SURFACE, SIMILAR TO ORIGINAL CONDITION.
2. NO CHANGES TO RIDGE LINES EXCEPT AS A LAST RESORT TO SOLUTION OF A PHYSICAL PROBLEM.
3. NO GRASS AREAS EXCEPT FOR PUBLIC RECREATIONAL SPACES (RE. WATER CONSERVATION).
4. NO STRUCTURES AT RIDGE CRESTS.
5. EXCEPT FOR COMMERCIAL AREAS, NO STRUCTURE HIGHER ABOVE BASE GROUND LINE THAN ONE-STORY EQUIVALENT, INCLUDING SIMULATED STEEPLES.
6. MEDIUM AND DARKER SHADES OF EARTH-TONE COLORS FOR EXTERIOR SURFACES OF ALL TYPES OF STRUCTURES, IN DULL FINISH.
7. NO REFLECTIVE SURFACES ON STRUCTURES. (SOLAR PANELS ARE NOT CONSIDERED REFLECTIVE.)
8. USE OF "NON LIGHT-POLLUTING" EXTERIOR EQUIPMENT.
9. SIGNAGE, INCLUDING IN COMMERCIAL AREAS, OF SUBDUED COLOR INTENSITY AND BRIGHTNESS.
10. SOME TYPE OF AESTHETIC "BARRIER" AROUND THE EXTERIOR DISPLAY OF AUTOMOBILES AT SALES OUTLETS, ETC.

CONCERNING ROAD INTERSECTIONS WITH HGY 395:

PROVIDE NO CONVENTIONAL INTERSECTIONS BETWEEN JACK'S VALLEY RD./NORTH SUNRIDGE DR. AND CLEAR CREEK RD. ON 395, USE DEDICATED EXIT LANES AND MERGING ENTRANCE LANES FROM SIDE STREETS - FOR RIGHT TURNS. FOR LEFT TURN PROCEDURES, USE CONNECTING ROADWAY FROM SIDE STREET TO ABOVE NOTED ROADS, THEN TO 395.

Agnemarie Heiler
Hans Weiler

1010 HAYSTACK DR.
CARSON CITY, NV 89705-8069

5/17

North Douglas County Specific Plan
Public Meeting and Workshop

SIGN-IN SHEET

NAME	*ADDRESS*	*PHONE*
Duane & Ann Carpenter	181 Old Clear Crk. Rd.	885-8135
Paul & Arlene Lumley	3667 Andys Tr.	267-3401
Jerry Pope	3669 Cinderella Tr.	267-2037
Bob Stevens	795 Jacks Valley Rd.	267-2501
Antoinette Marella	990 Haystack Dr.	267-2935
Hal Mason	1003 Blue Ridge Ct	267 9832
Eileen Cohen	3586 Haystack	88
Ray Marella	990 HAYSTACK DR	267-2935
Norman Metcalf	3714 Lyla Ln	267-5532
Kacie McCowan	POB 19104 CC 89702	882-9177
Velda C. McNeil	1399 American Way	89444
Ed & Ellamae Cunnell	1008 Haystack Dr	267-5724
HENRY WEILER	1010 HAYSTACK DR	267-5736
Martha Laird	1052 Topsy Lane	883-0825
[illegible] + MARK GUSS	3757 LYLA LN	882-5966
NEIL + DEBBIE MEHRINGER	3753 LYLA LN	267-1130
DON WINNE	912 W. Telegraph St.	882-1469
Bob Gaw	3499 MT. Blanc	CC. 267-2420
Britt + Elnette Metcalf	3737 Lyla Ln 89705	882 1015
Richard Lockley	532 MERIDIAN CT, CARSON CITY	883-8744
TED RUPERT	992 HAYSTACK DR	267-0019
Mary Harmon	3598 Haystack Dr	267-5018
Rick Harmon	" " " "	"
Mark Falconer	~~1026 Topsy Lane~~ Nevada State Museum 600 N. Carson Street CC 89701	687-4811 x223

North Douglas County Specific Plan
Public Meeting and Workshop

SIGN-IN SHEET

NAME	*ADDRESS*	*PHONE*
Robert Lauder	3362 Co-Toz	882 0279
Tom Botter	3600 HAYSTACK DR	2673947
Roger E. Porcella	986 Lakeview Dr.	267-5110
Melissa Lindell	CFA 1150 Corporate Reno 89502	856-1150
Fr. James Setelik	Corpus Christi Catholic Church	882-1967
Harold Votipka	3686 Green Acre	89705
Richard Wheaton	3647 HWY 395 So C.C.	89705
Paul Kruse	977 Longhill Cir CC	89705
Alan Wallace	919 US 395 S.	Gardnerville
Jerry Vaccaro-Sullivan	3726 Lyla Ln.	267-5955
Sheila Anderson	3585 Cherdlee Dr.	89705
Chris Bonaggio	P.O. Box 2285	Minden 89423
Steve R. Weissinger	842 Blue Rock Rd.	Gardnerville Nv 89410
Don Mineck	PO Box 4620	Lake Tahoe Nv 89449
Nancy Bullis	981 Sunburst Dr	C.C. 89705 267-4807
Paul Foster	994 Sunview Dr.	Carson City Nv 89705
Harold Votipka	3686 Green Acre	C.C. Nv. 89705
Dean F. Guzman	2621 Northgate Ln	C.C. Nv. 89706

5/17

North Douglas County Specific Plan
Public Meeting and Workshop

SIGN-IN SHEET

NAME	*ADDRESS*	*PHONE*
James P. Griffin	766 Jack's Valley Rd	883-8531
[illegible] Valley	3011 Kirchen Dr.	841-5284
[illegible]	1032 HAYSTACK DR	775-267-0455
Jacques Etchegoyhen		782-2188
ART BAER	3411 PRINCETON	267-3543
MARTIN HUNTZINGER	1116 W 5TH	882-5436
BARBARA SEMANS	1031 MICA	267-4157
ROB SEMANS	1031 MICA	267-4157

North Douglas County Specific Plan
Carson Valley Community Church
June 21, 2000 @ 3:00 p.m.
PUBLIC MEETING AGENDA

3:00 p.m. ***Open House***

I. ***Display Conceptual Land Use and Zoning Maps/Alternatives***

II. ***Conduct Open Question and Answer Session***

6:30 p.m. ***Presentation / Meeting***

I. ***Introductions***

- Introduction of Consultant Team Members:
- Introduction of Douglas County Representatives:

II. ***Purpose of Meeting***

- Review purpose of the specific plan.
- Review outcome of previous public meetings.
- Present conceptual land use and zoning maps/alternatives.
- Discuss elements and basis of each alternative.
- Solicit input regarding conceptual land use alternatives.

III. ***Review Purpose and Goal of the North County Specific Plan***

- Develop conceptual land use designations.
- Guide future land use and growth of area.

IV. ***Review Outcome of Previous Public Meetings***

- May 10, 2000 meeting.
- May 17, 2000 meeting.
- Meeting comments.
- Presentation board with comments used as a basis for conceptual land use alternatives

V. Presentation and Discussion of Conceptual Land Use and Zoning Maps/Alternatives

- Alternative 1
- Alternative 2
- Alternative 3
- Alternative 4

VI. Public Comment

- Land use and zoning maps/alternatives
- Project to date

VII. Closing Comments and Future Scheduling

8:30 p.m. – Adjourn

TECHNICAL MEMORANDUM
NORTH DOUGLAS COUNTY SPECIFIC PLAN
JUNE 21, 2000 MEETING SUMMARY

On Wednesday, June 21, 2000 the public involvement process for the North Douglas County Specific Plan continued with the third in a series of planned public meetings. Held at the Carson Valley Community Church, the focus of this third meeting was to introduce conceptual land use and zoning map alternatives for the specific planning area. The meeting agenda included introducing the project team, reviewing the purpose and goal of the specific plan, a review of previous public meetings and their outcome, presentation and discussion of conceptual land use alternatives and zoning, and public comment. Several handouts were provided along with the meeting agenda, including minutes and comments from the first two public meetings, a table of allowed uses by code for the zoning designations proposed on the conceptual land use maps, and public comment sheets.

Over 50 members of the community attended the meeting, which ran from 3:00 to 8:30 p.m. Conducted in two parts, the first portion of the public meeting and workshop began at 3:00 p.m. with the second portion beginning at 6:30 p.m. The first part of the workshop was held in a neighborhood style, open house format that allowed members of the community to arrive at their convenience, review the proposed conceptual land use alternatives, and ask questions in an informal setting. The second part of the meeting was conducted as a formal presentation with an official public comment and answer session. Following is a brief summary of meeting events:

- As mentioned above, the public workshop and meeting began with a neighborhood style, open house presentation of the conceptual land use alternatives and zoning maps for the planning area. Four conceptual land use map alternatives were placed on display for informal review and discussion between 3:00 and 6:30 p.m. Attendance during this portion of the meeting was good and numerous public comments were recorded. Several requests were made for reduced copies of the alternatives presented.

- The formal presentation portion of the meeting began at 6:30 p.m. with Pete Wysocki of the Douglas County Community Development Department providing a brief introduction of project team members. Pete cautioned the audience that the land use alternatives and zoning maps being presented were conceptual only and that the purpose of the meeting was not to approve a single alternative, but rather to solicit input regarding the alternatives. After a short discussion, Pete turned the meeting over to Carol Dotson of Lumos and Associates.

- Carol began her presentation by reviewing the meeting agenda and handouts. Stressing the importance of the public involvement process, Carol proceeded to review the specific planning process and the purpose and goal of the North County Specific Plan. A review of the public comments and key issues from previous public meetings followed with Carol pointing out specific comments used as a basis for certain land use alternatives. A discussion of development design guidelines ensued, focussing on potential multi-family residential and commercial development. The meeting then moved toward presentation of the conceptual land use alternatives and zoning maps.

- At this point Pete Wysocki reiterated that the land use alternatives and zoning maps being presented were conceptual only and that the purpose of the meeting was not to approve a single alternative, but rather to solicit input regarding the alternatives. Pete also informed the audience that the planning commission would be holding a no-action meeting on July 11, 2000 to review conceptual land use and zoning alternatives, and solicit additional public comments. Pete concluded by reviewing the remaining elements and future hearings of the public involvement process for the North County Specific Plan. Questions were subsequently raised regarding notification of these hearings and if reduced copies of the conceptual zoning maps would be distributed. Pete responded that at this time, due to the conceptual nature of the maps, reduced copies would not be mailed. Larry Werner of Lumos and Associates offered to make available a limited number of maps (in reduced form) at their Minden office by Tuesday afternoon (6-26-00).

- Carol then resumed her presentation with a brief discussion of each land use alternative and zoning map. Carol indicated the similarities and differences of each alternative and discussed the premise upon which they were created.

- Several questions were raised at this point and the public comment portion of the meeting began. Potential multi-family residential development and its implications (i.e. impacts, benefits, potential design, etc.) and compatibility issues associated with proposed land uses versus existing land uses were discussed at length. Buffer treatments and examples were reviewed and various modifications to the alternatives were discussed. Many of the comments and questions raised were in regard to the following issues:

  - What is the land development process for the planning area?
  - When can development occur?
  - How will construction occur and how will it be managed?
  - How will the BLM lands be parceled or disposed of?
  - How will the phasing and development of infrastructure (roads, water, sewer, etc.) occur?
  - What is the status of the State owned property and what are the plans for the BIA/Washoe Tribal land?
  - Will Highway 395 be widened or improved? Will there be a frontage road? What are plans for the Topsy Lane intersection?
  - What will be the policy regarding existing infrastructure (i.e. septic, water, etc.) when new infrastructure is developed? Will there be forced hook-ups? Who pays for infrastructure improvements and hook-ups?
  - What is the development feasibility of the proposed zoning designations?
  - What is the County's ideal vision for the planning area?
  - How will circulation be addressed? A "back" road out of Douglas County to Carson City is needed – use Center Lane?

- To help answer some of these questions, Mike McQueen of the BLM addressed the audience and explained how the BLM would approach the land disposal process. It was noted that it would probably be several years before actual development of any BLM parcels took place.

- Dan Holler, Douglas County Manager, also addressed the audience at this point in an effort to address the aforementioned questions and issues. Dan noted that the provision of infrastructure would influence the phasing and timing of development in the area and that the County would exercise control of design and construction issues during the design review process. Dan informed the audience of initial circulation and improvement plans for the planning area and for Highway 395, which include traffic lights and eventually overpasses for the Topsy Lane and N. Sunridge Drive intersections. Circulation plans will be addressed in more detail later in the planning process and coordination with Carson City will be conducted.

- After further discussion of various issues and questions, the meeting concluded at approximately 8:30 p.m. **Attached is a complete listing of key issues and public comments solicited at the meeting. A summary of written comments submitted is also provided.**

Next Step

The public involvement process for the North County Specific Plan will continue July 11, 2000 when the planning commission holds a no-action public meeting to review conceptual land use and zoning map alternatives.

North Douglas County Specific Plan
Carson Valley Community Church
June 21, 2000 @ 3:00 p.m.
PUBLIC MEETING COMMENTS

Key Issues Raised During the Public Comment Portion of the Meeting:

1) Move multi-family zoning located in southern portion of planning area to the north or central portions of the planning area.

2) Place multi-family zoning around the general commercial zoning and closer to the major road collectors to facilitate more efficient public transportation and to allow seniors or lower income individuals to walk to services.

3) Need more access or alternate roadways between Douglas County and Carson City (i.e. north to Carson City and South to Douglas County). Create a "back" road out of Douglas County – perhaps use Center Lane.

4) Locate fire station adjacent to Highway 395 (to decrease response time and reduce impacts).

5) Place tourist commercial designation on east side of Highway 395 frontage.

6) Utilize Planned Unit Development residential concept (facilitate mixed use and density options).

7) Need a minimum 40-foot open space buffer north of Haystack Dr.

8) Do not place commercial within "loop" area on south corner of N. Sunridge Dr. and Highway 395.

9) Proposed tourist commercial land use designation offers variety and is a good idea.

10) Create 'neo-traditional" community similar to old Minden with a center core. Place single family residential, open space and some mixed use commercial / mulit-family residential in the center of the plan area. Place all other uses along the plan area boundaries with general commercial on backside of hill to the northeast. Leave existing residential as residential! Think people friendly, walkable, hospitable, view enhanced profit food chain!

11) Need more percentage of open space in plan area. Environmental aspects need more consideration.

12) Leave entire "loop" area north of Haystack Dr. as open space.

13) Leave all commercial uses on the west side of Highway 395.

14) Replace multi-family zoning with single family residential.

15) If developed, create additional height restrictions for multi-family residential.

16) Put single family residential 1-acre minimum around existing single family residential on Lyla Lane.

17) Decrease proposed residential densities in favor of larger lots and lower densities.

18) Create additional height restrictions for all development within the planning area.

19) Do not place tourist commercial land uses in the plan area.

20) State what the County's ideal vision for the area is.

21) Carefully consider the value of existing viewsheds and ridgelines versus value of potential lands to be acquired. Develop conceptual renderings of what final development of the area will look like.

22) Address quality of life issues – do not like any of the alternatives proposed.

23) No casinos.

24) Provide additional open space north of Sunridge development.

25) Support Tourist Commercial zoning for entire area surrounding Lyla Way with a buffer.

<u>Key Issues Submitted as Written Comments:</u>

1) "The multi-family housing at the south end of the planning area should be moved to the north end (near the general commercial zone) to protect the existing property values of the residents on Haystack and also to protect the property from intruders."

2) "I'm concerned with the effect on residential zoning in relation to where it overlays the Schultz ditch in the extreme northeast corner of the SFR zone."

3) "Fire station should be next to Highway 395 so access to Highway 395 is instantaneous from which the fire trucks can go either south or north and not have to go through residential areas to go south through Sunridge or north through planned residential uses. Main retail should be on west side only of Highway 395 to avoid

cross highway traffic. Residential area closest to Sunridge should be single family. Multi-family should be moved further north. Keep in mind reducing need to drive and providing for an environment suitable for public transportation. Maximize the sharing of parking (parking lots, being paved, cause drainage problems.)"

4) "1) Multiple family units should be surrounding retail area: a) provides a focus for public transportation b) older and lower-income families can walk to stores c) less traffic in general. 2) Needs a central road going north into Carson City. 3) Retail areas should be compared to square footage areas that can be supported by the area population. For example, a supermarket may require $1 a day in sales per square foot of space. We may want to decrease the retail area. 4) All retail should be on one side of 395. You don't want a lot of people crossing back and forth."

5) "Move multifamily area to north end of plot plan."

6) "Very concerned with property value going down, extra noise, and privacy that we will loose. We live on Haystack Dr. that backs up to the BLM land. We paid an extra $1,000 to live in our home and we're told that BLM owned it so nothing would be built there. We are not happy about this and we expecially do not want any comercial stores on the corner of 395 and N. Sunridge (look on alternative 3). This will block the view of all the homes and we have nothing to hide our view being on a hill and then sloping down and then the property behind us graduating up the hill where the proposed stores would be – we say no way! Our property value will go down!"

7) "A large open space is needed just north of Sunridge. Most of these people bought these homes based on being adjacent to BLM land, so that they could walk their large dogs. I'm against having buildings such as schools that must have lights on through the dark hours. Open space is needed where the majority of the houses are on this north end. Also I would like to see the trails stay."

8) "We believe the areas requested for nonprofit churches should be located closer to the residential areas as opposed to intersecting the commercial area."

9) "Put GC on the northeast backside of hill. Put PF, NC, OC, MU, and MFR along boundaries of property. In the center, put SFR, MU, MFR with open space in the center of community along the line of neo-traditional (old Minden). Create something special with great views, buffers, and desire to be part of by the developers. Create a vision a person can see. Leave the current residential as residential. Do not repeat the same junk we see as we drive around the rest of the country. This does not have a vision which was expressed at other meetings. This is from a text book and not people friendly!"

10) "I support Tourist Commercial the area surrounding Lyla Lane with a buffer."

11) "Please keep commercial projects along Highway 395, north of Sunridge Ave. Parking lights should be monitored for softer lighting. The buffer zone could be larger, park-like so we can still walk our dogs and children can walk safely. Residential lots would be kept to one-acre lots. No multi-family units. Where will all our wildlife go? There are beautiful wildflowers, sagebrush, rabbits, birds singing, ground squirrels, etc., all lost because of progress!"

12) "After reviewing the proposed zoning, we are suggesting that an 'open space' buffer is appropriate along the whole length of the Sunridge development. This would allow the present residents who border the BLM land to access the 'open space' from our back gates as we do today. The width of the open space should be approximately 100 feet."

North Douglas County Specific Plan

COMMENT SHEET

Please provide below your comments regarding the project or items discussed during the meeting. You may give your comments to us before leaving or mail them to; Lumos and Associates, 5401 Longley Lane, Ste 15, Reno Nv. 89511. Your input will help us create a project that captures the goals and vision of the community. Feel free to use additional pages or the back if necessary.

After reviewing the proposed zoning, we are suggesting that an "open space" buffer is appropriate along the whole length of the Sunridge development. This would allow the present residents who boarder the BLM land to access the "open space" from our back gates as we do today. The width of the open space should be ~100 ft.

Tom and Shelley Blotter
3600 Haystack Dr.
Carson City NV 89705
267-3947

North Douglas County Specific Plan

COMMENT SHEET

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The Multi Family Housing at the South End (MF) Should be moved to the North End (GC) To protect the existing property ~~Lots~~ & values of the residents on Hopkins also to protect the property from intruders

Barbara Petitt

COMMENT SHEET

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I'M CONCERNED WITH THE EFFECT OF RES. ZONING IN RELATION TO WHERE IT OVERLAYS THE SCHULZ DITCH IN THE EXTREME N E COR OF ZONE #SFR8000-34ac & AND SFR8000-50ac.

PETE BACHSTADT
882-4880

6/21/00

North Douglas County Specific Plan

COMMENT SHEET

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Fire station should be next to Highway 395 so access to Hwy 395 is instantaneous from which the fire trucks can go either south or north & not have to go through residential areas to go south thru Sunridge or north thru planned residential use.

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Residential area closest to Sunridge should be single family. Multi-family should be moved further north.

Keep in mind reducing need to drive and providing for an environment suitable for public transportation. Maximize the sharing of parking (parking lots being paved, cause drainage problems).

Barbara Kenna

North Douglas County Specific Plan 1015 Mica Dr.

COMMENT SHEET

W B Duncan

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1) Multiple Family units should be surrounding retail area:
   a) provides a focus for public transportation
   b) Older and lower-income families can walk to stores
   c) Less traffic in general

2) Needs a central road going north into Carson City.

3) Retail areas should be compared to square footage areas that can be supported by the area population. For example, a supermarket may require 1^{00}/day sales per square foot of space. We may want to decrease the retail area.

4) All retail should be on one side of 395. You don't want a lot

North Douglas County Specific Plan

COMMENT SHEET

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(1) MOVE MULTIFAMILY AREA TO NORTH END OF PLOT PLAN

L. Bruce Montieth

North Douglas County Specific Plan

COMMENT SHEET

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We're concerned with property values going down, extra noise, & privacy that we will loose. We live on Hagglund Dr that backs up to the BLM land. We paid an xtra $1,000 to live in our home & we were told that BLM owned it so nothing would be built there. We are not happy about this & we especially do not want any commercial stores on the corner of 395 & N. Sunridge (look on Alternative 3) This will block the view of all the homes & we have nothing to hide our view being on a hill & then sloping down & then the property behind us graduating up the hill there. The proposed stores will be - we say no way! Our property value will go down!

North Douglas County Specific Plan

COMMENT SHEET

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I large open space is needed just north of Sunridge. Most of these people bought these homes based on being adjacent to B.L.M land, so that they could walk their large dogs. I'm against having buildings, such as schools, that must have lights on through the dark hours. Open space is needed where the majority of the houses are on the north end. Also I would like to see the Trails stay.

Eileen Cohen

Elmstock

North Douglas County Specific Plan

COMMENT SHEET

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WE BELIEVE THE AREAS REQUESTED FOR CHURCH NON PROFIT SHOULD BE LOCATED CLOSER TO THE RESIDENTIAL AREAS AS OPPOSED TO INTERSECTING THE COMMERCIAL AREA

North Douglas County Specific Plan

COMMENT SHEET

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Put GC on the NE Backside of hill
Put PF; NC; OC; MU & MFR Along
Boundries of Property—
in the Center Put SFR; MU; MFR
W/open Space in the Center of
Community along the line of
Neo-Traditional (old Minded)
Create Something Special w/
great Views; Buffers & desire
to be kept off by the developers.
Create A Vision A person CAN see.
Leave the current Residential-Residential
Do not Repeat The Same junk
We See As We drive AROUND the
Rest of the Country.

This does not have A Vision which
was expressed at other meetings.
This is from A text book & Not
People FRIENDLY!

DOUGLAS COUNTY
COMMUNITY DEVELOPMENT
DEPARTMENT
Planning Division

1594 Esmeralda
P.O. Box 218
Minden, NV 89423

Fax

To: Carol Dotson	**From:** Pete Wysocki
Fax: 775-827-6122	**Pages:** 1
Phone:	**Date:** 06/26/00
Re:	**Pone :** 775-782-6213

☐ Urgent ☑x For Review ☐ Please Comment ☐ Please Reply ☐ Please Recycle

Comments:

Hi again Carol,

I just received a phone call from Kurt Lytle, who owns the last parcel on north Lyla Way. He supports TC zoning for that entire area and of Lyle Way with a buffer. He couldn't make Wednesday's workshop, but he wants us to include his comment in the record.

Thanks, Pete

TOTAL P.01

North Douglas County Specific Plan

COMMENT SHEET

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Please keep commercial projects along Highway 395, north of Sunridge ave. Parking lights should be monitored for softer lighting.

The buffer zone could be larger, parklike so we can still walk our dogs and children can walk safely. Residential lots would be kept to one acre lots. No multi-family units.

Where will all our wildlife go? There are beautiful wildflowers, sagebrush, rabbits, birds singing, ground squirrels, etc., all lost because of progress!

Thank you –

Mr. & Mrs. Roy Marcella

Director
Department of Conservation
and Natural Resources

PAMELA B. WILCOX
Administrator

Gover

To Melanie Woodin	From Larry Werner
Co. Carol	Co.
Dept.	Phone #
Fax #	Fax #

STATE OF NEVADA

DEPARTMENT OF CONSERVATION AND NATURAL RESOURCES

Division of State Lands

June 21, 2000

Lawrence Warner
Lumos and Associates
1478-B 4th Street
Minden, Nevada 89423

Dear Mr. Warner:

During the open house session conducted for the North Douglas County Specific Plan today, I had a chance to discuss with you proposed land use designations for 10 acre parcel on which the State of Nevada has a patent from the Bureau of Land Management (BLM) under the Recreational and Public Purpose Act. The legal description of the parcel is: Lots 11, 12, 17 and 18, Section 5, T.14 N., R. 20 E. Current use consists of a storage building with some outside storage on a portion of the property. Additional uses and structures on the property will require BLM approval and must be consistent with the plan of development on file with the BLM. The State is precluded from selling the land, since it was acquired for public purposes. Abandonment of state use would require relinquishment of the property back to the BLM.

Three of the display maps (Alternatives 1, 2 and 4) indicated a proposed Office Commercial designation for the state property and surrounding properties. Alternative 3 indicated a Tourist Commercial designation for the same area. It is my understanding that a public use, including a storage building, such as that which currently exists on the state property, is not consistent with those designations. The zoning classification(s) which could be applied to implement the plan could also preclude future expansion of public and storage use on the property. It would appear that any of the specific plan designations, other than possibly Public Facility, would be adverse to future state needs for the parcel.

We hereby request that the state parcel be redesignated on the North Douglas County Specific Plan to a designation that will allow the state to make appropriate use of the undeveloped portion of the parcel, consistent with the uses currently located on the parcel.

Please keep this agency informed of future workshops and hearings regarding the specific plan. Thank you for your attention to this matter.

Sincerely,

Mike Del Grosso
Deputy Administrator

cc: Mike Hillerby, Department of Museums, Library and Arts

North Douglas County Specific Plan
Public Meeting and Workshop
June 21, 2000

SIGN-IN SHEET

NAME	ADDRESS	PHONE
Mike DelGrosso	NV Div. of State Lands, 333 W. Nye Lane, Room 118, Carson City	89706
Robert Pahlman	1777 Evergreen Ct Minden, NV 89423	782-8982
Paul Mazon	1003 Blue Ridge Ct. Lake City	
Alfred J Sazio	1032 Haystack Dr	267-0455
Robert & Barbara Semans	1031 Mica Dr.	267-4157
[illegible] Pesavold	BCDC	752-4715
Bob & Rosemary Hunn	2649 Summer Hill CC	267-4797
Pablo Valles	6777 Saddlehorn Rd CC	267 9473
Bob & Peg Petten	1030 Haystack	267-0138
Mr & Mrs P.C. Moschogianis	1000 Sunnycrest Dr C.C.	267-3153
Donald & Kathleen Schulz	P.O. Box 12395 Zephyr Cove 89448	588-853-2
Bruce & Nan Monteith	1025 Rideview Ct. CC.	267-3589
Don Winne	912 W. Telegraph St C C Nv.	89703
F. Winterberg	5395 Goldenrod Drive Reno, NV	89511
Jim McGowan	P.O. Box 1914 C.C. NV	89702
Mary Barron	3598 Haystack CC NV	89705
Shaun Leverington	983 Shadow Ln CC NV	89705
[illegible]	1395 American Way Wellington	89444
Brian Henderson	1003 Blueridge Ct / CC NV	89705
Joanna Bowman (REALTOR)	RE/MAX Realty Affiliates Gardnerville	
Kelly Bullis	981 Sunburst Dr. CC-89705	267-4807
Eileen Colen	3586 Haystack Dr	
Pat & Antoinette Marcella,	991 HAYSTACK Dr	267-2935

North Douglas County Specific Plan
Public Meeting and Workshop
June 21, 2000

SIGN-IN SHEET

NAME	ADDRESS	PHONE
HENRY WEILER	1010 HAYSTACK DR	267-5736
MIKE SOLOMON	PO Box 3390 Stateline	
Chris Koning	1000 Haystack Dr	
Jon Dumas	897 Meadow Vista CC NV 89705	267-4866
CHRIS BINAFLOG	P.O. BOX 2285 MINDEN	782-3656
Shelley Blotter	3600 Haystack Dr NV, 89705	267-3947
Metcalfs	3777 Lyla Ln CC 89705	882-1015
N.L. METCALF	3714 LYLA LN. CC 89705	267-5532 883-0525
Martha Kazik	1051 Topsy LN (PO Box 214 Carson City NV 89702)	
Deacon Roger E. Powell	986 Ridgeview Dr. (Corpus Christi Church)	882-3965
Ryan Huss	3757 LYLA LN CARSON CITY	89
DARIN DINMORE		
SULLIVAN	3726 Lyla Ln.	
ROY MAGHOP	982 BLUE RIDGE DR CARSON	267-9427
DON WINNE	912 W. Telegraph St. CC 89703	
NEIL MEHRINGER	3753 Lyla Lane CC	267-1136
Jeff Galloway	1014 Ridgeview DR CC NV	267-2989
Dave Fairbank	224 Kingsbury NV	588-7300
Valerie Vossler	1049 Dressler Ln.	265-2724
Rob Lauder	3362 Co-Tez, CC NV 89701	885 7626
EARL ISAACSON	INDIAN HILLS / SHEPHERD OF SIERRA	
F. CORDEL	3592 Haystack	267-2990
Craig Lipell Whitener	1804 Haystack dr.	267-5917

North Douglas County Specific Plan
Public Meeting and Workshop
June 21, 2000

SIGN-IN SHEET

NAME	ADDRESS	PHONE
Jim Winans	1000 Foothill Rd G.V	
Martin Huntzinger	1116 W. 5TH Carson City	882-5436
Dick Whitton	N. Sunridge & 395	

DOUGLAS COUNTY

COMMUNITY DEVELOPMENT
1594 Esmeralda Avenue, Minden, Nevada 89423

Bob Nunes
DIRECTOR

775-782-9005
775-782-9010
FAX: 775-782-9007

Planning Division
Engineering Division
Building Division
Regional Transportation
Water/Sewer Utility
Road Maintenance
Code Enforcement

AGENDA

DOUGLAS COUNTY PLANNING COMMISSION

JULY 11, 2000

The regular meeting of the Douglas County Planning Commission will be held on **Tuesday, July 11, 2000**, beginning at **1:00 p.m.** The meeting will be in the Courtroom of the Douglas County Administrative Building, 1616 Eighth Street, Minden, Nevada. The time of agenda items is approximate. The Planning Commissioners reserve the right to take items in a different order to accomplish business in the most efficient manner. There will be a recess for dinner after Item VIII and the Planning Commission will reconvene at **6:00 p.m.** for Item IX (Draft Open Space Plan). **Given the nature of Item IX, it is possible that a quorum of the Douglas County Board of Commissioners may be present for and participate in the consideration of this item. This notification constitutes notice within the meaning of Nevada Revised Statutes 241.020 for this gathering of the members of the Douglas County Board of Commissioners.

Notice to Persons with Disabilities: Members of the public who are disabled and require special assistance or accommodations at the meeting are requested to notify the County Clerk's Office in writing at P.O. Box 218, Minden, Nevada 89423 or by calling 782-9012 at least 20 hours in advance.

I. **Pledge of Allegiance.**

II. **Call to Order and Determination of Quorum.**

III. **Approval of Agenda.**

IV. **Disposition of June 13, 2000 Planning Commission Meeting Minutes.**

V. **Public Comment (Items which are not specifically listed on the Agenda).**

VI. Public Hearings - Discussion and Possible Action.

(1) DA 00-064 - Variance
Applicant: Barton Memorial Hospital
Owner: Barton Memorial Hospital
Request: Variance to increase the maximum size of a single above ground fuel storage tank from 1,050 gallons to 3,000 gallons for use by the existing Care Flight helicopter operation. Community Development staff is recommending approval; however, the Planning Commission may approve, modify, or deny the request.
Location: 1107 Highway 395 – APN 1220-10-610-010
Case Planner: Dale Conner (Direct Line: 782-6212)

(2) AP 00-003 – Appeal of Decision (DA 00-085) → Continued
Applicant: DGD Development
Owner: DGD Development
Request: Appeal of Decision of a Minor Design Review, DA 00-085, for the construction of a 53,000 square foot addition to an existing commercial complex, adjoining the existing Target store. The applicant is appealing conditions of approval numbers 1(A), 1(E), 2, 15 and 20 pursuant to the Minor Design Review approval letter dated June 7, 2000. Community Development staff is recommending that the Planning Commission deny the appeal and uphold the conditions of approval. The Planning Commission may approve, modify or deny the appeal request.
Location: North Valley Plaza, Jacks Valley Road (APN 13-110-18)
Case Planner: Lee Plemel (Direct Line: 782-6218)

(3) Presentation and discussion of the draft land use and zoning maps for the North County Specific Plan.
Applicant: Douglas County Community Development Department
Request: Review and solicit public comments on the draft land use and zoning maps for the North County Specific Plan area. (Final action will be considered by the Planning Commission and Board of Commissioners at their August and September 2000 meetings.)
Location: The North County Specific Plan area encompasses approximately 640 acres and is generally located on the east and west sides of US Highway 395, north of the Sunridge Subdivision and Jacks Valley Road.
Case Planner: Pete Wysocki (Direct Line: 782-6213)

VII. **Planning Matters – Discussion and Possible Action.**

(4) Nominations for the 2000 Award of Excellence for Project Design.

VIII. **Administrative.**

(5) Discussion regarding any correspondence received since the June 13, 2000 Planning Commission meeting.

*** **Item IX will not be heard until 6:00 p.m.**

IX. **Public Hearing - Discussion and Possible Action.**

(6) Draft Open Space and Agricultural Lands Protection Implementation Plan

X. **Adjournment.**

Copies of this notice are posted at the Douglas County Administrative Building, Judicial and Law Enforcement Center, Douglas County Administration Building - Lake Tahoe, Genoa Post Office, Gardnerville Post Office, Minden Post Office, Round Hill Post Office, Kingsbury Post Office, Glenbrook Post Office, and the Douglas County Libraries - Minden and Zephyr Cove.

TIMING FOR AGENDA ITEMS IS APPROXIMATE UNLESS OTHERWISE INDICATED

DOUGLAS COUNTY
PLANNING COMMISSION

AGENDA ACTION SHEET

1. **TITLE/RECOMMENDATION:** **Discussion on the draft Land Use and Zoning Maps for the North County Specific Plan area. Staff recommends that the Planning Commission: 1) Review the draft Land Use and Zoning Maps for the North County Specific Plan area; 2) Solicit public comments; 3) Give any direction to staff the Planning Commission deems appropriate.**

2. **PREPARED BY:** *Pete Wysocki, AICP - Community Development Department*

3. **MEETING DATE:** *July 11, 2000* **TIME REQUIRED:** *1 hour*

4. **AGENDA:** *Public Hearing* **PUBLIC HEARING REQ'D:** *Yes*

5. **BACKGROUND INFORMATION:** *Please see the attached staff report.*

6. **COMMITTEE/TOWN/GID/OTHER AGENCY REVIEW OR APPROVAL:** *N/A*

7. **REVIEWED BY:**
   _____ Planning Manager

8. **ACTION:**
   _____ Approved
   _____ Approved With Modifications
   _____ Denied
   _____ Continued

COMMUNITY DEVELOPMENT
1594 Esmeralda Avenue, Minden, Nevada 89423

Bob Nunes
DIRECTOR

775-782-9005
775-782-9010
FAX: 775-782-9007

Planning Division
Engineering Division
Building Division
Regional Transportation
Water/Sewer Utility
Road Maintenance
Code Enforcement

MEMORANDUM

Date: July 11, 2000

To: Douglas County Planning Commission

From: Pete Wysocki, AICP, Senior Planner
Direct Line 782-6213

Subject: Presentation of the draft Land Use and Zoning Maps for the North County Specific Plan

I. RECOMMENDATION

1) Review the draft Land Use and Zoning Maps for the North County Specific Plan area; 2) Solicit public comments; 3) Give any direction to staff the Planning Commission deems appropriate.

II. BACKGROUND

In 1998, the BLM had indicated the desire to dispose of approximately 440 acres of BLM land in north Douglas County. In order to develop a land use plan for the BLM land, the County has proceeded to prepare a specific plan for the area. The North County Specific Plan area is approximately 624 acres and is generally located north of the Sunridge subdivision and Jacks Valley Road. The North County Specific Plan area includes the 440 acres of BLM land on the east side of Highway 395, approximately 35 acres of USFS land on the west of Highway 395 and several privately owned parcels. In April 2000, the County hired Lumos and Associates to assist the County in the preparation of the North County Specific Plan and assist the BLM in the preparation of a BLM plan amendment and an environmental assessment.

The BLM identified the 440 acres as land suitable for disposal or exchange in 1983. This means that the BLM can sale or exchange this land with private property owners for other land or purchase of conservation easements; hence, allowing private development on the 440 acres. Currently, the BLM land is zoned FR-40. On the east side of Highway 395 there are 17

privately owned parcels that are zoned FR-19. Approximately 9 of those parcels contain single-family residences. One parcel is owned by the Sate of Nevada (State Archives). The USFS parcel on the west side of Highway 395 is currently zoned Office Commercial, while the privately owned parcels are zoned General Commercial.

As the Planning Commission may be aware, the area generally north of Jacks Valley Road and north of North Sunridge Drive has generated a lot of development interest. In order to have orderly development in this area, the North County Specific Plan will achieve the following:

1. Establish land use and zoning;
2. Provide general layout and capacities for water and sewer lines;
3. Identify drainage areas;
4. Establish connection points with Highway 395 and a layout of collector roads;
5. Prepare an Environmental Assessment of the BLM land; and
6. Prepare a BLM plan amendment to allow future private development on the BLM land.

To date, 3 public workshops were held (May 10, May 17 and June 21) on the North County Specific Plan, specifically to obtain public comments on the potential land uses within the planning area. All workshops were held at the Carson Valley Community Church, located off North Sunridge Drive. The workshops were very well attended. Minutes and comments from the meetings are attached to this report. Four alternative land use and zoning maps were presented to the public at the June 21 meeting. Based on those 4 maps and the public comments, 2 maps have been prepared for the Planning Commission to review. The Planning Commission may pick one of the 2 alternatives, a combination of the two, or provide additional input and recommend changes. Once the final draft land use and zoning maps are prepared, the consultants will begin work on the water, sewer and road layout.

The final draft land use and zoning maps and the draft Specific Plan are scheduled to be reviewed by the Planning Commission at the August 8, 2000 meeting as part of a Master Plan Land Use Map and Zoning Map amendment application. The Board of Commissioners is scheduled to review the Plan and the Master Plan Land Use and Zoning Map amendment application at their September 7, 2000 meeting.

An archeological survey of the area has been completed. Some Washoe Tribe artifacts have been discovered. However, overall, no endangered or sensitive plant or animal species have been identified.

III. DISCUSSION

Staff and the consultants will discuss the thought process behind the draft maps at the meeting. However, while reviewing the maps, the Planning Commission should consider the following:

- As it currently exists, the BLM land has been identified for disposal. Most likely, the land will be exchanged allowing private development. The County has an opportunity to establish zoning that is felt to be most desirable and compatible for the entire planning area and avoid piecemeal development without identified infrastructure needs.

- This area of the County is ideal for regional commercial development due to its proximity to Carson City and Lake Tahoe, and the existing surrounding higher density development.

- Future development should be compatible with the topography and surrounding land uses.

- Access to Highway 395 is limited to Topsy Lane and North Sunridge Drive. Vista Grande Boulevard will be extended along the westerly boundary of the planning area and be connected to Topsy Lane. NDOT is scheduled to install a traffic light at Topsy Lane in 2001.

- The purpose of the North County Specific Plan is general in nature in that it will establish the zoning and provide a general layout of the infrastructure. The intent of the Plan is not to create design standards for the area. Design standards for the area can be adopted in the future after this Plan is adopted. However, staff feels that the current Design Criteria and Improvements Standards manual will be used effectively to ensure appealing and compatible development.

- Multi-family residential development is needed in Douglas County. There are only approximately 5 vacant parcels in Carson Valley that are currently zoned MFR, inlcuding only 1 (1.4 acres) parcel in the Indian Hills area.

- Since the proposed land use and zoning boundaries do not follow any particular property lines they should be flexible (to a degree) so that detailed adjustments can be made in the future as part of specific development applications.

- Value of the BLM land is directly related to the zoning established by the County. A higher value of the land will yield a higher selling price allowing for acquisition of more agricultural land or conservation easements.

- There are currently 5 patent application pending with the BLM for church facilities. The church sites are located throughout the planning area.

- Regardless of the zoning, the existing single-family residential uses should be allowed to continue.

- Buffering between the existing single-family residential uses and future commercial uses should be provided via open space belts or setback requirements.

pete/reports/awardsp

2) Northwest corner of Muller Lane and Highway 395

Case Planner: Lee Plemel (Direct Line: 782-6218)

Lee Plemel, Community Development addressed the Board concerning this issue. There was a film presentation. The issues of this application are the justification of the expansion of a commercial area for the community and the second issue is the expansion of the development along the agricultural corridor between Minden and Indian Hills area. Staff recommends that this be continued at the applicant's request.

Valida McMichael stated that she is opposed because of the water issue.

Chairman Hellman asked if the rumor that Park Cattle Co. is negotiating with WalMart is true?

Dan Holler stated that WalMart is interested in Douglas County and has looked at approximately six sites.
Mark Neuffer asked for clarification of the restriction of 450 acres of agricultural land within the floodplain for agricultural uses.

Keith Rubin, R.O. Anderson Engineering, representing the applicant explained as part of the overall proposal we are working with staff on a draft specific plan that would actually implement this Master Plan amendment we are seeking by offering a conservation easement along the Carson River of 450 acres which would retire them for development. Sewer would be connected to a planned sewer line coming down from Genoa Lane.

Valida McMichael stated that if you give them infrastructure, they will come.

MOTION by Hayes/Gardner to continue item #8 DA 00-096-Master Plan Amendment; carried unanimously.

(9) **DA 00-086 – Master Plan Map Amendment and Zoning Map Amendment**
Applicant: Douglas County Community Development Department
Request: Adoption of the North County Specific Plan, establishing Commercial, Residential and Community Facilities land use designations and General Commercial, Neighborhood Commercial, Tourist Commercial, Office Commercial, Single-Family Residential 8,000, Single-Family Residential 12,000, Multi-Family Residential, and Public Facilities zoning districts on approximately 624 acres located in the Indian Hills/Jacks Valley Community Plan Area. The Community Development Department

recommends that the Planning Commission recommend approval of the request to the Board of Commissioners. However, the Planning Commission may approve, deny or modify the request.

Location: Generally north of North Sunridge Drive and Jacks Valley Road, directly south of Carson City.

Case Planner: Pete Wysocki (Direct Line: 782-6213)

Pete Wysocki, Community Development stated that staff submitted two alternative zoning maps for the North County Specific Plan at the last Planning Commission Meeting. Since that time staff has taken the Board's direction together with public comment. It was the consensus of the Board to use Alternative Map #2 with various minor modifications.

Carol Dodson, Lumos & Associates presented to the Board the North County's Specific Plan as well as the Master Plan Amendment that is associated with it. The Plan is organized into six chapters with an extensive appendix. Chapter 1 is the Plan definition; Chapter 2 is the Environmental Resources; Chapter 3 is the Land use and design; Chapter 4 is the Traffic and Circulation; Chapter 5 is the Public Services and Facilities and Chapter 6 is the Conclusion/Consistent with the Master Plan. There was a film presentation that outlined the different zoning boundaries. We tried to keep the Plan flexible.

We tried to accommodate the non-conforming areas the best we could because they are established uses in those areas and there was a lot of public input with respect to that. We tried to help them to transition through this process overall.

Glen Martel, Project Engineer addressed the Board regarding traffic and circulation. Once again, the zones are very flexible. There are four engineering sections to look at. Transportation, water, wastewater area and the storm drainage will be the main focus. Transportation is basically flow areas. There is no water service on the east side with the exception of private wells. One option is expanding the area from Indian Hills, agreement with Carson City and the other is to develop a site internally specifically for this area. With the wastewater issue, there are a few private septic systems, expanding with Indian Hills, joining with Carson City or the North Valley Plant. The storm drainage will follow the existing flow with maintenance as needed.

Carol Dodson stated that all planning projects need continual fine tuning. With the Plan's adoption it will insure the public services and facilities are provided as well as the land uses be similar to surrounding areas and patterns adjacent to the site overall. A staff report was handed out to the Board delineating some changes the staff would like to see included in the draft plan.

Mike McQueen, BLM Planner stated that BLM does support the idea of County planning on this land prior to the disposal of the land in any way, shape or form. Part of the plan amendment would enable BLM to purchase conservation easements on the floodplain on the Carson River. By putting County planning on this, we should get a more true value from those lands.

Rick Gardner suggested more verbiage concerning the flexibility of the zoning.

Dan Holler stated that when the land is laid out, that is when the flexibility will come into play.

Valida McMichael stated her concerns regarding SFR and quality MFR. This is an opportunity to take SFR and change it to MFR.

Michael Hayes stated that he agrees with Valida McMichael regarding the needs of MFR. This is an opportunity to do this.

Mark Neuffer asked that if the plan is adopted as written, what happens to someone who wants more MFR and less SFR, are we locked in? Is it our roll here today to amend these different zones? I would like to increase the MFR zoning.

Mark Neuffer indicated on the map, all of the SFR 8,000 and 12,000 change to MFR.

Mimi Moss indicated that public input said that they wanted one acre lots on the eastside. There was no support for MFR.

Valida McMichael stated that her take on public comment was that they did not want any development. We need to get the most bounce for our dollar. MFR will solve many needs for Douglas County and SFR does not.

PUBLIC COMMENT

Suzie Warren, realtor in the area, sold many units in the area. Many of the investors paid extra for the view. They were told there would be no MFR, there would be a 200' buffer zone. They were willing to allow the plan change at that point. We need to keep the integrity of the community. The public must have some type of say in what happens to our community. There are areas that are already zoned for MFR.

Staff explained some of the discrepancies wherein the public was duly noticed and supplied with a draft map of the project and the alternative plans that were before the Board regarding the buffer zone 200' or 50'.

Robert Morris stated that the public has a right to petition.

Mike McQueen, BLM stated that the public would have input on the design and buffer zone accommodating the PF.

Debra Mehringer stated she has been involved with this project from the very beginning. What we are seeing in this draft plan is not what the public has indicated they wanted. The County is looking at numbers, dollars and revenue. They are not building it on the people's say. We purchased our land at a prime rate. We like it the way it is. If we wanted a city environment, we would move there. We don't want a small L.A. in Douglas County. Highway 395 cannot handle increased traffic. This project is moving too fast, environmental impact needs more research. The public is not being heard. We need to work together to make this work. This land use plan was not made with public input.

Al Sassian is opposed to the MFR.

Diane Fournier resident of Sunridge addressed the Board. We are all aware that there has to be development. No one who lives in the area has ever said they want MFR. There are other areas in Douglas County that are already MFR zoned. She is very opposed to MFR. This area was zoned as SFR, leave it that way. There are many decisions to be thought through and more information is necessary. It is now zoned residential, don't change it to multi-family residential.

Chairman Hellman explained that this is BLM land and what the Board is trying to do is hard zone the land. This will enable the BLM to move through their process and put it out to competitive bid to sell. This will also enable conservation easements to be purchased in the Carson Valley.

Jerry Vacaro addressed the Board stating that he concurs with Ms. Mehringer concerns. He is opposed to MFR. It is inconsistent with existing zoning. We are asking you to make a plan consistent with the public comment.

Lynn Gus stated that when building their home three years ago the zoning has been changed twice. Now it is being change again to commercial.

Valida McMichael stated that last month the Planning Commission was given two alternatives. One showed the existing residential properties as residential. One showed the residential properties as commercial. We were informed by staff that the existing residents preferred commercial zoning. When we incorporated the two alternatives we moved the line over to make the existing residential, commercial instead of residential. I am now hearing that you want to remain residential. There is a conflict.

Pete Wysocki clarified his statement of last month's meeting and he said that the Metcalf family recognized the benefit of going commercial.

Jay Lather stated the reason for changing the zoning was a benefit to the homeowners.

Dan Holler stated that the homeowner does not have to use land as commercial. You can use it as residential. You don't have to go to that use.

Valida McMichael said the set backs are larger for commercial than they are for residential. The homeowners may have a problem with that.

Mike McQueen, BLM brought up the question that the public has asked, "Why are you doing this without a developer in place?" In 1982 BLM identified all these lands available for disposal. We have three methods for disposal, sale, exchange and RMPP. If we go sale, the money goes to Treasury, it leaves the County. Our intent in engaging the County in the zoning process was to avoid BLM creating a hodge/podge development. The intent was to have a better product in the end, to have a land layout in total.

Dan Holler stated that there is a time pressure on this project. There are patents for churches. The concerns for us was traffic, roads, water, sewer issues and exchange purposes. There is interest in the layout from potential developers. There is much frustration when the public states they are not being heard. The County is trying to listen to all sides. We definitely hear concerns on the issues of MFR and buffer zones. The County recognizes the traffic issue on Hwy. 395. Without this development Hwy 395 will end up being a major collector street. We need to have something else in terms of an access point into Douglas County from Carson City on a long term perspective. We have tried to look at the project in other terms than dollars and cents.

MOTION by Gardner/Neuffer to approve Building Application D A 00-086 – Master Plan Map Amendment and Zoning Map Amendment by adopting Resolution PC 2000-06 Adopting the North Douglas County Specific Plan and Master Plan Land Use Designation as set forth in the Plan with the following changes:
1. The 3.4.2 on page 27 of the Plan we adopt the Transitional Zone Option 1) A maximum variance of 20% of the total area being proposed.
2. There is a recommendation that the Planning Commission has an appetite to increase the MFR up to 20% and that 20% would include the SFR 8,000 at the north end of the project. Use flexibility to tie the two SFR 8,000 parcels together through the open space; carried unanimously.

Michael Hayes stated that this is a decision that will ultimately be made by the

Board of County Commissioners. I think that having up to 20% of that area for MFR is a modest amount of MFR. It is a good start.

Mark Neuffer realizes the MFR is a hot, emotional issue but it is not responsible to take it out and leave it out of a 600 acre specific plan. I am a proponent of the MFR.

Devere Dressler feels it is exclusionary. MFR must stay in.
Valida McMichael states she has trust in staff to come up with a good mixed use of Multi Family Housing.

Mimi Moss stated that what staff would like is to have a land use plan that meets the Planning Commission's criteria and take it to the Board and then the 20% flexibility on a transitional zone apply to that.

Valida McMichael stated that the SFR to the north is Indian land, leave it alone. The SFR to the south, the 8,000 that buffers to the open space, leave that alone. In between the two, come up with 20% of MFR.

Jay Lather stated that nobody wants to see this area developed. It is something that the Planning Commission must review as part of this governmental entity. We have to proceed with this plan. We tried to accommodate every argument to accomplish this goal.

MOTION by Gardner/Hayes to forward Resolution PC 2000-6 to the Douglas County Board of Commissioners; carried unanimously.

MOTION by Gardner/Hayes to approve of an ordinance adopting consistency zoning for the project area set forth in North Douglas County Specific Plan; carried unanimously.

(10)Review of the Draft Open Space Plan.

Mimi Moss addressed the Board regarding the Open Space Plan schedule. This will be the last time the Planning Commission will review the Open Space Plan in this type of forum. The County Commissioners will hear this August 24th and the potential adoption at their following meeting in the valley. The Planning Commission is asked to discuss and propose changes regarding the text at this time. With your changes forward your recommendation to the Board for approval.

Rich Gardner stated his concerns regarding the TDR Program. We have been told to create this tool box. In this Open Space Plan we have the tools that will go into the tool box. One concern is whether the TDR Program will work and the second is the conceptual sales tax.

in the middle which is owned by the Park Family and being entertained by WalMart and when the sewer for this is going to run two miles to Genoa Lane, but there won't be any development when you have the infrastructure there, which is highway, sewer line and water line and you just took $100,000 and the public input from Minden and said "thank you very much", but this project has not even been to Minden. It doesn't sound right! They are short circuiting the process. If you were to give direction, it would be to start with the Town of Minden, Master Plan Amendment, a request that the urban service area be changed, public hearings and when it comes to you, you have a tidy package. You owe the Town of Minden more than this.

Toni Markle stated that she hopes that if the Board turns this project down, they don't send it to Gardnerville.

It is the general consensus of the Board that this project may have merit, however it needs to go through the proper process. The issues is received and filed.

DISCUSSION AND POSSIBLE ACTION ON DEVELOPMENT APPLICATION 00-086 FOR DOUGLAS COUNTY, ADOPTING THE NORTH COUNTY SPECIFIC PLAN, INCLUDING A MASTER PLAN LAND USE MAP AMENDMENT AND ZONING MAP AMENDMENT, AND ESTABLISHING LAND USE AND CONSISTENCY ZONING FOR THE NORTH COUNTY SPECIFIC PLAN AREA

Pete Wysocki introduced Carol Dodson and Glen Martell of Lumos & Associates and Mike McQueen from BLM to answer questions regarding this item. He gave a quick background of the project proposed for the North County. This is a planning document and should be flexible. The BLM is in support of the proposed zoning and the adoption of the Specific Plan.

Carol Dodson, Director of Planning with Lumos & Associates addressed the Board regarding the Specific Plan as well as the associated Master Plan. The purpose of the Specific Plan was to propose Master Plan Land Use Map and Zoning Map amendments for the project area and to evaluate infrastructure needs for future development. Also, the establishment of hard zoning on the BLM land increases the market value of the land.

She reiterated land use and zoning maps outlining the various zoning. There is a mixture of commercial, multi-family and high density to

provide a variety of good land use. Open space is a very important issue to keep in mind while planning a project.

Glen Martell, Project Engineer, Lumos & Associates addressed the Board regarding traffic, transportation, water, sewer, storm drainage and soils. He described how they are appropriate and fit into the Master Plan. He summarized the future of signalization of the area. He summarized the future needs of pump stations. He summarized the utilization of a drainage path and open space to work together.

Carol Dodson stated that the adoption of the Specific Plan will alter the previous land use designation as well as the service boundaries. Therefore, a Master Plan Amendment has been requested.

Dan Holler addressed the Board regarding five specific issues. The existing church is interested in a 50' open space for a trail access and 100' of no build area. We could probably move up to that 200' previously discussed and IHGID has expressed interest in maintaining it. The area that is currently occupied by the Sheriff's Sub-Station, we might extend the public facility area down to make room for a fire station versus the open space issue there. There are 9.12 acres proposed for another church. They have asked for an extension to 12 acres. The public has requested the MFR be reduced. The recommendation would be to do the Master Plan Modification but leave the zoning of the residential at one or two acres. The recommendation may be to take out the MFR but if a developer comes in with a MFR issue, it must go through the process.

Commissioner Kite stated that the public says that if the MFR goes away the problems go away.

Commissioner Curtis concurs with Commissioner Kite. As a community, we probably do need MFR but I have no appetite for it.

Chairman Etchegoyhen stated that if the community really does not want MFR, then so be it. We need to choose the zoning we want or else it will be planned for us.

Robert Pulman asked the Board to please consider zoning 35-40 acres PF to hopefully build a non-profit hospital.

Susan Neighbors asked why did the Planning Commission think it was an ideal area for MFR? When there is more density, there is more crime and then more taxes.

Pete Wysocki stated that typically MFR is located next to high density development such as Sunridge. It is usually located near a major transportation route where you can have egress and ingress without additional traffic going through smaller neighborhoods. It is usually used as a buffer between commercial and single family.

Reed McKenzie stated he doesn't think MFR should be in that area. He owns a larger lot and the smaller ones are creeping closer to him. It detracts from his area.

Richard Bramen stating this proposed project will cut major migration of the mule deer. BLM and Forest Service owns no land in Nevada. High density housing is defined as slum and opposes any high density housing.

Al Sazio stated that Sunridge and the golf course is nestled away from the traffic and city lights. Now there is this proposed development. Our open space is limited to the drainage ditch. Where is the open space for the animals? The traffic is bottle necked now, what will it be like with this project? The population will not be able to support the proposed commercial zoning. We don't need this development there.

Roger Smith addressed his concerns regarding the projected traffic flow. If we have this development, it will be unsafe for the children to go to the park.

Ken Crater addressed the Board representing Home Depot. Their store has been very successful and sales tax has increased 10% in Douglas largely attributable to that site. They support the preparation of the Specific Plan, it eliminates the fear of the unknown. However, it will be a substantial generator of traffic. This will require additional traffic signals. Look at traffic signal progression. Allow acreage for interchange. Home Depot would like to work with the County to help this project progress smoothly.

Commissioner Weissinger asked if Home Depot has addressed concerns regarding debris and trash around their site and resident concerns about lighting, those types of issues?

Ken Crater answered he can't answer, but will certainly bring up the issue tomorrow morning. He is in contact with their real estate division and is sure he can get someone's attention.

Ron Kruse, Vice Chairman, IHGID addressed Board regarding the buffer. He would like to see the buffer at least 200' or more and IHGID is willing to maintain and create trails. Don't want to see the neighborhood turn into another "Bay Area". We are all here because there is space and room.

Elaine Sule stated that when they purchased in Sunridge there was open space on the golf course surrounding. They purchased for the open space feeling. There were no street lights, they could see the stars at night. We are very opposed to high density development.

Commissioner Weissinger stated that it has been clear from the beginning that the public feels that if MFR was taken out, they could support the project. There was a petition signed to support this strong feeling.

Al Sazio commented that he understood that the decisions from these meetings were from the input of the people. He got a petition together stating the public's input to keep open space, no development whatsoever but he has not heard any mention of this. We were told from the beginning there would be 50% open space. The public input was thrown in the garbage can. It seems this project is a pre-set deal. It will be done regardless of the wishes of people. There are four Commissioners making the decisions for a majority of us. The District Attorney said that you can't change zoning without noticing the people. We were double crossed. The day after you sent the map to us, you make up these four maps. You deliberately send us one map and the next day, you change it and come up with these four maps. I come to these meetings, I give my name, I give a long speech and I get a one word thing in the minutes. "I want more space to walk at dog". It's like I'm an idiot up here talking. The last time I went to a meeting, they changed my name to "Al _____".

Chairman Etchegoyhen stated that you are seeing an evolution of these maps because of what the community is saying. I think we are trying to adapt them. We are a representative democracy. The five of us are elected by 42,000 shareholders in this old company we call home. It is in Commissioner Kite's district. It is in an important part of Douglas County. We have to look out for the issues of all of Douglas County. We are trying to find the best place to put something that is coming and trying to do the best job with it. People are coming, it is a matter of where we put them. That is what we are trying to balance. We are not

going to develop this and the Valley too, that is the trade off. We are trying to keep what is near and dear. It is complicated issue of balance.

Commissioner Weissinger stated that one thing that can't be lost in this process is the fact that if the County was not involved, you would see little bits and pieces of this 440 acres pop up with a little commercial here, a little MFR there and you wouldn't be sitting here with the opportunity to voice your comments. There will be a product no matter what, however with the County involved, it will be a better product.

Dan Holler requested from the Board some direction.

Regarding the residential units, is the preference to leave it with the Master Plan designation with residential zoning?

MOTION by Weissinger/Curtis to approve the recommendation of staff to rezone the eight existing residences on Lyla Lane and Topsy from general commercial to SF one acre; carried unanimously.

Regarding the issue of MF;

MOTION by Kite/Curtis to remove all MF from the area; carried unanimously.

MOTION by Kite/Weissinger to approve SF with 8,000' minimum lots, make it all single family and no commercial; carried unanimously.

Regarding the buffer zone being that area that falls directly below the parcel currently owned by the Carson Valley Community Church be a 50' with a 100' setback, the rest of it extending 200' minimum with the opportunity to work with some additional land for a park area.

MOTION by Kite/Curtis to approve a 200' buffer with IHGID responsible for the maintenance of said area; carried unanimously.

In the area where the Sheriff Substation is, we need to provide enough public facility there to accommodate a potential Fire Station.

Pete Wysocki suggested that the 20% modification could play into this issue. It can be adjusted later with the flexibility of the plan.

MOTION by Curtis/Weissinger to approve an open space trail as designated on the map; carried unanimously.

MOTION by Kite/Weissinger to approve Application 00-086 for Douglas County, adopting the North County Specific Plan, including a Master Plan Land Use Map Amendment and Zoning Map Amendment, and establishing land use and consistency zoning for the North County Specific Plan area to include items 1 through 3 of the staff report; carried unanimously.

Pete Wysocki clarified for the public exactly what the current ruling means. There is no multi-family, there is a 200' buffer and Lyla Lane will be zoned SFR 1.

DISCUSSION AND POSSIBLE ACTION ON ORDINANCE 2000-932, ADOPTING CONSISTENCY ZONING FOR THE NORTH COUNTY SPECIFIC PLAN AREA (1ST READING)

Chairman Etchegoyhen read the ordinance, by title, into the record.

MOTION by Weissinger/Curtis to approve Ordinance 2000-932, adopting consistency zoning for the North County Specific Plan area (1st reading); carried unanimously.

COUNTY MANAGER

The following item #32 was taken out of order from the original agenda.

DISCUSSION AND POSSIBLE ACTION ON ADOPTION OF THE COUNTY OPEN SPACE IMPLEMENTATION PLAN

DISCUSSION AND POSSIBLE ACTION PRESENTATION OF PROPOSED LAND EXCHANGE BETWEEN THE BENTLY FAMILY LIMITED PARTNERSHIP AND THE BUREAU OF LAND MANAGEMENT AND THE UNITED STATES FOREST SERVICE

Dan Holler commented on this item brought before the Board. There have been neighborhood meetings and rumors relating to this item and they are probably no where near reality of what is actually being proposed. He asked the Board and the public to listen to representatives from both Bently Family Limited Partnership and the Federal Agencies. We would get a better understanding of what is being proposed and what the steps will be in the process.

Bill Shaw, employee of Donald Bently addressed the Board. He has been involved in this process for the past couple of years. Mr. Bently and his

Appendix B
TRAFFIC CALCULATIONS and SUPPLEMENT

mos and Associates, Inc.

800 E. College Parkway
rson City, NV 89706

Phone: 775-883-7077 Fax: 775-883-7114
Mail:

OPERATIONAL ANALYSIS

tersection:
ity/State: Douglas County
nalyst: Young
oject No: 4940.000
me Period Analyzed: 2010 PM Peak
Date: 07/25/2000
st/West Street Name: Jacks Valley Road
rth/South Street Name: U.S. 395

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	500	179	100	356	142	600	250	1039	342	630	2171	450
'F	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
15 Vol	132	47	26	94	37	158	66	273	90	166	571	118
Ln Vol												
Grade		0			0			0			0	
eal Sat	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
arkExist												
NumPark												
Heavy Veh	0	0	0	0	0	0	0	0	0	0	0	0
. Lanes	2	1	1	2	1	1	2	3	1	2	3	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
ne Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
OR Vol			50			450			250			300
Adj Flow	526	188	53	375	149	158	263	1094	97	663	2285	158
nSharedLn												
op Turns												
NumPeds			0			0			0			0
mBus	0	0	0	0	0	0	0	0	0	0	0	0

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound	Westbound	Northbound	Southbound

hit Unmet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
rriv. Type	3	3	3	3	3	3	4	4	4	4	4	4	4	4
hit Ext.	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Factor		1.000			1.000			1.000			1.000			
ost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
xt of g	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
ed Min g		0.0			0.0			0.0			0.0			

PHASE DATA

Phase Combination		1	2	3	4			5	6	7	8
B	Left	A	A			NB	Left	A			
	Thru		A	A			Thru			A	
	Right		A	A			Right			A	
	Peds		X				Ped			X	
VB	Left	A				SB	Left	A	A		
	Thru			A			Thru		A	A	
	Right			A			Right		A	A	
	Peds		X				Ped		X	X	
B	Right					EB	Right				
B	Right					WB	Right				
reen		15.0	8.0	12.0				14.0	15.0	35.0	
ellow		4.0	0.0	4.0				5.0		4.0	
ll Red		1.0	0.0	1.0				1.0	0.0	1.0	

ycle Length: 120.0 secs

VOLUME ADJUSTMENT WORKSHEET

Appr./ Movement	Mvt Volume	PHF	Flow Rate	No. Lanes	Lane Group	RTOR	Adjusted Flow Rate In Lane Grp	Prop. Left Turns	Prop. Right Turns
Eastbound									
Left	500	0.95	526	2	L		526		
Thru	179	0.95	188	1	T		188		
Right	100	0.95	53	1	R	50	53		
estbound									
Left	356	0.95	375	2	L		375		
Thru	142	0.95	149	1	T		149		
Right	600	0.95	158	1	R	450	158		
orthbound									

Thru	1039	0.95	1094	3	T		1094
Right	342	0.95	97	1	R	250	97
uthbound							
Left	630	0.95	663	2	L		663
Thru	2171	0.95	2285	3	T		2285
Right	450	0.95	158	1	R	300	158

* Value entered by user.

SATURATION FLOW ADJUSTMENT WORKSHEET

pr/ ne Group	Ideal Sat Flow	f W	f HV	f G	f P	f BB	f A	f LU	f RT	f LT	Adj Sat Flow
stbound							Sec LT Adj/LT Sat:				
L	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
T	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
Westbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
R	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
rthbound							Sec LT Adj/LT Sat:				
L	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.91	1.000	1.000	5187
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
uthbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.91	1.000	1.000	5187
R	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615

CAPACITY ANALYSIS WORKSHEET

pr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)	Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
stbound							
Pri.							
c.							
ft	L	526	3502	# 0.15	0.250	876	0.60
Thru	T	188	1900	0.10	0.183	348	0.54
ght	R	53	1615	0.03	0.183	296	0.18
Westbound							
Pri.							

hru	T	149	1900	0.08	0.117	222	0.67
ight	R	158	1615	# 0.10	0.117	188	0.84
orthbound							
ri.							
ec.							
eft	L	263	3502	# 0.08	0.133	467	0.56
hru	T	1094	5187	0.21	0.308	1599	0.68
ight	R	97	1615	0.06	0.308	498	0.19
outhbound							
ri.							
ec.							
eft	L	663	3502	0.19	0.308	1080	0.61
hru	T	2285	5187	# 0.44	0.433	2248	1.02
ight	R	158	1615	0.10	0.433	700	0.23

Sum (v/s) critical = 0.76

ost Time/Cycle, L = 5.00 sec Critical v/c(X) = 0.80

LEVEL OF SERVICE WORKSHEET

ppr/ ane rp	Ratios v/c	g/C	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Del d2	Res Del d3	Lane Group Delay	LOS	Approach Delay	LOS
astbound												
	0.60	0.250	39.7	1.000	876	0.19	1.2	0.0	40.9	D		
	0.54	0.183	44.4	1.000	348	0.14	1.7	0.0	46.1	D	42.3	D
	0.18	0.183	41.4	1.000	296	0.11	0.3	0.0	41.7	D		
estbound												
	0.76	0.142	49.5	1.000	496	0.31	6.6	0.0	56.1	E		
	0.67	0.117	50.8	1.000	222	0.24	7.7	0.0	58.5	E	56.8	E
	0.84	0.117	51.9	1.000	188	0.38	27.4	0.0	79.3	E		
orthbound												
	0.56	0.133	48.7	1.091	467	0.16	1.6	0.0	54.7	D		
	0.68	0.308	36.4	0.979	1599	0.25	1.2	0.0	36.8	D	40.3	D
	0.19	0.308	30.5	0.979	498	0.11	0.2	0.0	30.1	C		
outhbound												
	0.61	0.308	35.4	0.979	1080	0.20	1.0	0.0	35.7	D		
	1.02	0.433	34.0	0.857	2248	0.50	23.2	0.0	52.3	D	48.6	D
	0.23	0.433	21.4	0.857	700	0.11	0.2	0.0	18.5	B		

Intersection Delay = 47.1 (sec/veh) Intersection LOS = D

mos and Associates, Inc.

800 E. College Parkway
rson City, NV 89706

Phone: 775-883-7077 Fax: 775-883-7114
Mail:

OPERATIONAL ANALYSIS

tersection:	
City/State:	Douglas County, NV
Analyst:	Young
oject No:	4940.000
me Period Analyzed:	2010 PM Peak w/ Project
Date:	07/25/2000
st/West Street Name:	Topsy Lane
rth/South Street Name:	U.S. 395

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	400	130	260	331	131	572	190	1650	299	545	2660	420
HF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
15 Vol	105	34	68	87	34	151	50	434	79	143	700	111
Ln Vol												
Grade		0			0			-4			4	
leal Sat	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
arkExist												
umPark												
Heavy Veh	0	0	0	0	0	0	0	0	0	0	0	0
. Lanes	2	1	1	2	1	1	2	3	1	2	3	1
GConfig	L	T	R	L	T	R	L	T	R	L	T	R
ne Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
OR Vol			130			450			150			50
Adj Flow	421	137	137	348	138	128	200	1737	157	574	2800	389
nSharedLn												
op Turns												
NumPeds			0			0			0			0
umBus	0	0	0	0	0	0	0	0	0	0	0	0

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound	Westbound	Northbound	Southbound

nit Unmet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
rriv. Type	3	3	3	3	3	3	4	4	3	4	4	4
nit Ext.	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Factor		1.000			1.000			1.000			1.000	
ost Time	3.0	3.0	3.0	3.0	3.0	2.0	3.0	3.0	2.0	3.0	3.0	3.0
xt of g	4.0	4.0	4.0	4.0	4.0	2.0	4.0	4.0	2.0	4.0	4.0	4.0
ed Min g		0.0			0.0			0.0			0.0	

PHASE DATA

hase Combination	1	2	3	4		5	6	7	8
B Left	A				NB Left	A			
Thru			A		Thru			A	
Right			A		Right			A	
Peds		X	X		Ped		X	X	
B Left	A	A			SB Left	A	A		
Thru		A	A		Thru		A	A	
Right		A	A		Right		A	A	
Peds			X		Ped			X	
B Right					EB Right				
B Right					WB Right				
reen	16.0	2.0	16.0			9.0	13.0	53.0	
ellow	4.0		4.0			4.0	0.0	4.0	
ll Red	1.0	0.0	1.0			1.0	0.0	1.0	

ycle Length: 129.0 secs

VOLUME ADJUSTMENT WORKSHEET

ppr./ ovement	Mvt Volume	PHF	Flow Rate	No. Lanes	Lane Group	RTOR	Adjusted Flow Rate In Lane Grp	Prop. Left Turns	Prop. Right Turns
astbound									
Left	400	0.95	421	2	L		421		
Thru	130	0.95	137	1	T		137		
Right	260	0.95	137	1	R	130	137		
estbound									
Left	331	0.95	348	2	L		348		
Thru	131	0.95	138	1	T		138		
Right	572	0.95	128	1	R	450	128		
orthbound									

Thru	1650	0.95	1737	3	T		1737
Right	299	0.95	157	1	R	150	157
uthbound							
Left	545	0.95	574	2	L		574
Thru	2660	0.95	2800	3	T		2800
Right	420	0.95	389	1	R	50	389

* Value entered by user.

SATURATION FLOW ADJUSTMENT WORKSHEET

Appr/ Lane Group	Ideal Sat Flow	f W	f HV	f G	f P	f BB	f A	f LU	f RT	f LT	Adj Sat Flow
stbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
T	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
Westbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
R	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
rthbound							Sec LT Adj/LT Sat:				
L	1900	1.000	1.000	1.020	1.000	1.000	1.00	0.97	----	0.950	3572
	1900	1.000	1.000	1.020	1.000	1.000	1.00	0.91	1.000	1.000	5291
	1900	1.000	1.000	1.020	1.000	1.000	1.00	1.00	0.850	----	1647
outhbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	0.980	1.000	1.000	1.00	0.97	----	0.950	3432
-	1900	1.000	1.000	0.980	1.000	1.000	1.00	0.91	1.000	1.000	5083
R.	1900	1.000	1.000	0.980	1.000	1.000	1.00	1.00	0.850	----	1583

CAPACITY ANALYSIS WORKSHEET

Appr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)		Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
stbound								
Pri.								
ec.								
eft	L	421	3502	#	0.12	0.132	462	0.91
hru	T	137	1900		0.07	0.132	250	0.55
ight	R	137	1615		0.08	0.132	213	0.64
estbound								
Pri.								

hru	T	138	1900	0.07	0.147	280	0.49	
ight	R	128	1615	# 0.08	0.140	225	0.57	
orthbound								
ri.								
ec.								
eft	L	200	3572	# 0.06	0.078	277	0.72	
hru	T	1737	5291	0.33	0.419	2215	0.78	
ight	R	157	1647	0.10	0.411	677	0.23	
outhbound								
ri.								
ec.								
eft	L	574	3432	0.17	0.217	745	0.77	
hru	T	2800	5083	# 0.55	0.519	2640	1.06	
ight	R	389	1583	0.25	0.519	822	0.47	

Sum (v/s) critical = 0.81
ost Time/Cycle, L = 13.00 sec Critical v/c(X) = 0.90

LEVEL OF SERVICE WORKSHEET

ppr/ ane rp	Ratios v/c	g/C	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Del d2	Res Del d3	Lane Group Delay	LOS	Approach Delay	LOS
astbound												
	0.91	0.132	55.3	1.000	462	0.43	22.2	0.0	77.4	E		
	0.55	0.132	52.4	1.000	250	0.15	2.5	0.0	54.9	D	71.9	E
	0.64	0.132	53.1	1.000	213	0.22	6.5	0.0	59.6	E		
estbound												
	0.53	0.186	47.4	1.000	652	0.14	0.9	0.0	48.3	D		
	0.49	0.147	50.6	1.000	280	0.11	1.4	0.0	51.9	D	49.3	D
	0.57	0.140	51.9	1.000	225	0.16	3.4	0.0	55.3	E		
orthbound												
	0.72	0.078	58.1	1.118	277	0.28	8.9	0.0	73.9	E		
	0.78	0.419	32.5	0.874	2215	0.33	1.9	0.0	30.3	C	34.8	C
	0.23	0.411	24.7	1.000	677	0.11	0.2	0.0	24.9	C		
outhbound												
	0.77	0.217	47.5	1.044	745	0.32	5.0	0.0	54.5	D		
	1.06	0.519	31.0	0.736	2640	0.50	36.2	0.0	59.1	E	58.3	E
	0.47	0.519	19.8	0.736	822	0.11	0.4	0.0	15.0	B		

Intersection Delay = 51.2 (sec/veh) Intersection LOS = D

mos and Associates, Inc.

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Phone: 775-883-7077 Fax: 775-883-7114
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OPERATIONAL ANALYSIS

tersection:	
ity/State:	Douglas County
nalyst:	Young
oject No:	4940.000
me Period Analyzed:	2010 PM Peak
Date:	07/26/2000
st/West Street Name:	Topsy
rth/South Street Name:	Commercial

VOLUME DATA

	Eastbound			Westbound			Northbound			Southbound		
	L	T	R	L	T	R	L	T	R	L	T	R
Volume	488	101	488	24	56	24	514	1	42	42	1	556
F	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
15 Vol	128	27	128	6	15	6	135	1	11	11	1	146
Ln Vol												
Grade		0			0			0			0	
eal Sat	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
rkExist												
NumPark												
Heavy Veh	0	0	0	0	0	0	0	0	0	0	0	0
. Lanes	2	1	1	1	1	1	2	1	1	1	1	1
LGConfig	L	T	R	L	T	R	L	T	R	L	T	R
ne Width	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0	12.0
OR Vol			200			0			0			200
Adj Flow	514	106	303	25	59	25	541	1	44	44	1	375
nSharedLn												
op Turns												
NumPeds			0			0			0			0
mBus	0	0	0	0	0	0	0	0	0	0	0	0

Duration 0.25 Area Type: All other areas

OPERATING PARAMETERS

	Eastbound	Westbound	Northbound	Southbound

nit Unmet	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
rriv. Type	3	3	3	3	3	3	3	3	3	3	3	3
nit Ext.	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
Factor		1.000			1.000			1.000			1.000	
ost Time	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
xt of g	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0	3.0
ed Min g		0.0			0.0			0.0			0.0	

PHASE DATA

hase Combination	1	2	3	4			5	6	7	8
B Left	A	A			NB	Left	A	A		
Thru		A	A			Thru		A	A	
Right		A	A			Right		A	A	
Peds		X	X			Ped		X	X	
B Left	A				SB	Left	A			
Thru			A			Thru			A	
Right			A			Right			A	
Peds			X			Ped			X	
B Right					EB	Right				
B Right					WB	Right				
reen	10.0	4.0	10.0				8.0	2.0	17.0	
ellow	3.0	3.0	3.0				3.0	3.0	3.0	
ll Red	1.0	1.0	1.0				1.0	1.0	1.0	

ycle Length: 75.0 secs

VOLUME ADJUSTMENT WORKSHEET

ppr./ ovement	Mvt Volume	PHF	Flow Rate	No. Lanes	Lane Group	RTOR	Adjusted Flow Rate In Lane Grp	Prop. Left Turns	Prop. Right Turns
astbound									
Left	488	0.95	514	2	L		514		
Thru	101	0.95	106	1	T		106		
Right	488	0.95	303	1	R	200	303		
estbound									
Left	24	0.95	25	1	L		25		
Thru	56	0.95	59	1	T		59		
Right	24	0.95	25	1	R	0	25		
orthbound									

Thru	1	0.95	1	1	T		1
Right	42	0.95	44	1	R	0	44
ıthbound							
Left	42	0.95	44	1	L		44
Thru	1	0.95	1	1	T		1
Right	556	0.95	375	1	R	200	375

* Value entered by user.

SATURATION FLOW ADJUSTMENT WORKSHEET

ɔr/ ıe Group	Ideal Sat Flow	f W	f HV	f G	f P	f BB	f A	f LU	f RT	f LT	Adj Sat Flow
stbound							Sec LT Adj/LT Sat:				
L	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
T	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
Westbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	----	0.950	1805
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
R	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
rthbound							Sec LT Adj/LT Sat:				
L	1900	1.000	1.000	1.000	1.000	1.000	1.00	0.97	----	0.950	3502
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615
uthbound							Sec LT Adj/LT Sat:				
	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	----	0.950	1805
T	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	1.000	1.000	1900
R	1900	1.000	1.000	1.000	1.000	1.000	1.00	1.00	0.850	----	1615

CAPACITY ANALYSIS WORKSHEET

pr/ Mvmt	Lane Group	Adj Flow Rate (v)	Adj Sat Flow Rate (s)		Flow Ratio (v/s)	Green Ratio (g/C)	--Lane Group-- Capacity (c)	v/c Ratio
stbound								
Pri.								
c.								
ft	L	514	3502		0.15	0.253	887	0.58
Thru	T	106	1900		0.06	0.253	481	0.22
ght	R	303	1615	#	0.19	0.253	409	0.74
Westbound								
ri.								

hru	T	59	1900	0.03	0.147	279	0.21
ight	R	25	1615	0.02	0.147	237	0.11
orthbound							
ri.							
ec.							
eft	L	541	3502	# 0.15	0.200	700	0.77
hru	T	1	1900	0.00	0.320	608	0.00
ight	R	44	1615	0.03	0.320	517	0.09
outhbound							
ri.							
ec.							
eft	L	44	1805	0.02	0.120	217	0.20
hru	T	1	1900	0.00	0.240	456	0.00
ight	R	375	1615	# 0.23	0.240	388	0.97

Sum (v/s) critical = 0.59
ost Time/Cycle, L = 8.00 sec Critical v/c(X) = 0.66

LEVEL OF SERVICE WORKSHEET

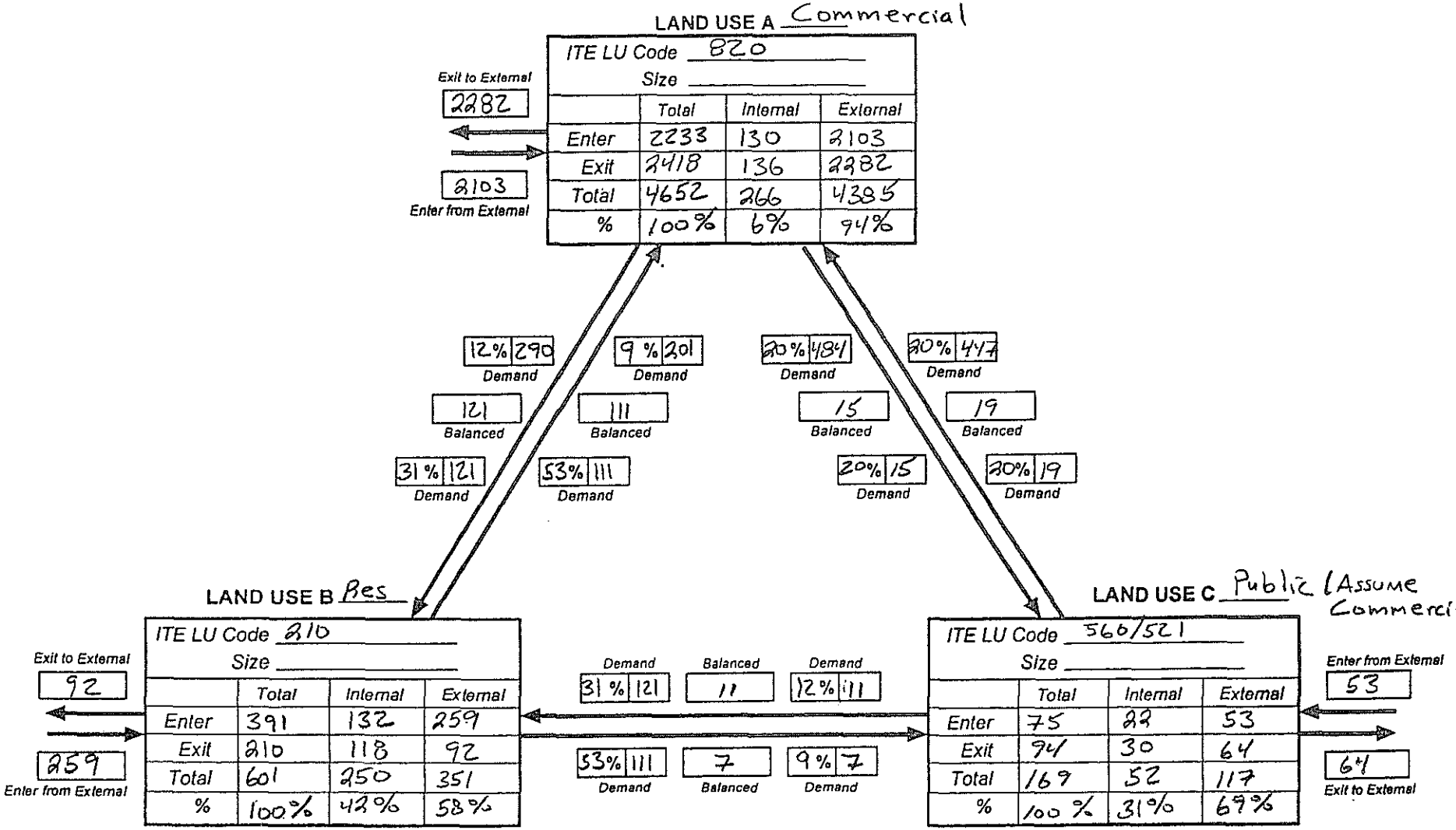
ppr/ane rp	Ratios v/c	Ratios g/C	Unf Del d1	Prog Adj Fact	Lane Grp Cap	Incremental Factor k	Incremental Del d2	Res Del d3	Lane Group Delay	Lane Group LOS	Approach Delay	Approach LOS
astbound												
	0.58	0.253	24.5	1.000	887	0.17	1.0	0.0	25.5	C		
	0.22	0.253	22.1	1.000	481	0.11	0.2	0.0	22.4	C	24.9	C
	0.74	0.253	25.7	1.000	409	0.30	7.1	0.0	32.8	C		
estbound												
	0.09	0.147	27.7	1.000	265	0.11	0.2	0.0	27.8	C		
	0.21	0.147	28.2	1.000	279	0.11	0.4	0.0	28.6	C	28.3	C
	0.11	0.147	27.7	1.000	237	0.11	0.2	0.0	27.9	C		
orthbound												
	0.77	0.200	28.4	1.000	700	0.32	5.4	0.0	33.8	C		
	0.00	0.320	17.3	1.000	608	0.11	0.0	0.0	17.4	B	33.7	C
	0.09	0.320	17.8	1.000	517	0.11	0.1	0.0	17.9	B		
outhbound												
	0.20	0.120	29.8	1.000	217	0.11	0.5	0.0	30.2	C		
	0.00	0.240	21.7	1.000	456	0.11	0.0	0.0	21.7	C	30.0	C
	0.97	0.240	28.2	1.000	388	0.47	36.8	0.0	65.0	E		

Intersection Delay = 29.4 (sec/veh) Intersection LOS = C

Analyst Young
Date 10/19/00

MULTI-USE DEVELOPMENT TRIP GENERATION AND INTERNAL CAPTURE SUMMARY

Name of Dvlpt North County Specific Plan
Time Period PM Peak



Net External Trips for Multi-Use Development

	LAND USE A	LAND USE B	LAND USE C	TOTAL
Enter	2103	259	53	2415
Exit	2282	92	64	2438
Total	4385	351	117	4853
Single-Use Trip Gen. Est.	4652	601	169	5422

Source: Kaku Associates, Inc.

INTERNAL CAPTURE 10%

Douglas County
North County Specific Plan
Trip Generation

Topsy Lane

ITE Land Use	Land Use	Area	Units-SF/	Total	ADT		AM Peak Hour						PM Peak Hour			
		(Acres)	Acre	SF/Units	Rate		Rate	Hour	% In	% Out		Rate	Hour	%In	% Out	
560	Public Facilities (Church) (SF)	0	3500	0	9.11	0	0.72	0	0	0		0.66	0	0	0	
	Public Facilities (Archive)	10														
521	Public Facilities (School) (Students)	0														
820	Commercial (Shopping Center) (SF)	83.85	9500	796,575	Ln(T)=0.643Ln(x)+5.866	25,886	Ln(T)=0.596Ln(x)+2.329	550	336	215		Ln(T)=0.660Ln(x)+3.403	2,470	1,186	1,284	
210	Single Family Residential (8,000 SF) (Units)	63.13	4	253	9.57	2,417	0.75	189	47	142		1.01	255	163	92	
210	Single Family Residential (12,000 SF) (Units)	22.31	3	67	9.57	641	0.75	50	13	38		1.01	68	43	24	
	Sub-Total					28,943		790	396	394			2,793	1,392	1,401	
	Subtract 10% Capture Rate					26,049		711	356	355			2,513	1,253	1,261	

Jacks Valley Road

ITE Land Use	Land Use	Area	Units-SF/	Total	ADT	ADT	AM Peak Hour				PM Peak Hour				
		(Acres)	Acre	SF/Units	Rate		Hour Rate	Hour	% In	% Out	Hour Rate	Hour	%In	% Out	
560	Public Facilities (Church) (SF)	30	3500	105,000	9.11	957	0.72	76	41	35	0.66	69	37	32	
	Public Facilities (Archive)	0													
521	Public Facilities (School) (Students)	44.42		500	3.24	1,620	0.92	460	276	184	0.2	100	38	62	
820	Commercial (Shopping Center) (SF)	69.47	9500	659,965	Ln(T)=0.643Ln(x)+5.866	22,936	Ln(T)=0.596Ln(x)+2.329	492	300	192	Ln(T)=0.660Ln(x)+3.403	2,182	1,047	1,134	
210	Single Family Residential (8,000 SF) (Units)	56.69	4	227	9.57	2,170	0.75	170	43	128	1.01	229	147	82	
210	Single Family Residential (12,000 SF) (Units)	16.16	3	48	9.57	464	0.75	36	9	27	1.01	49	31	18	
	Sub-Total					28,147		1,234	669	565		2,629	1,301	1,328	
	Subtract 10% Capture Rate					25,332		1,111	602	509		2,366	1,170	1,196	
	Total					51,381		1,821	958	864		4,880	2,423	2,456	

Left Turn Lane Lengh Calculations

U.S. 395 - Topsy Intersection

	Volume	K	Cycle Length	p	L
Eastbound	190	2	130	0	343
Westbound	331	2	130	0	598
Northbound	190	1.5	130	0	257
Southbound	545	1.5	130	0	738

U.S. 395 - Commercial Intersection

	Volume	K	Cycle Length	p	L
Eastbound	488	2	75	0	508
Westbound	24	2	75	0	25
Northbound	514	2	75	0	535
Southbound	42	2	75	0	44

U.S. 395 - Jacks Valley Intersection

	Volume	K	Cycle Length	p	L
Eastbound	500	2	130	0	903
Westbound	356	2	130	0	643
Northbound	250	1.5	130	0	339
Southbound	630	1.5	130	0	853

Appendix C

CULTURAL RESOURCE INVENTORY – "RESULTS"

The following represents the "results" section of the *Class III Cultural Resource Inventory for the North Douglas County Specific Plan Project* conducted by Western Cultural Resources Management, Inc. Consult the Bureau of Land Management, Carson City Office for a copy of the report in its entirety.

RESULTS

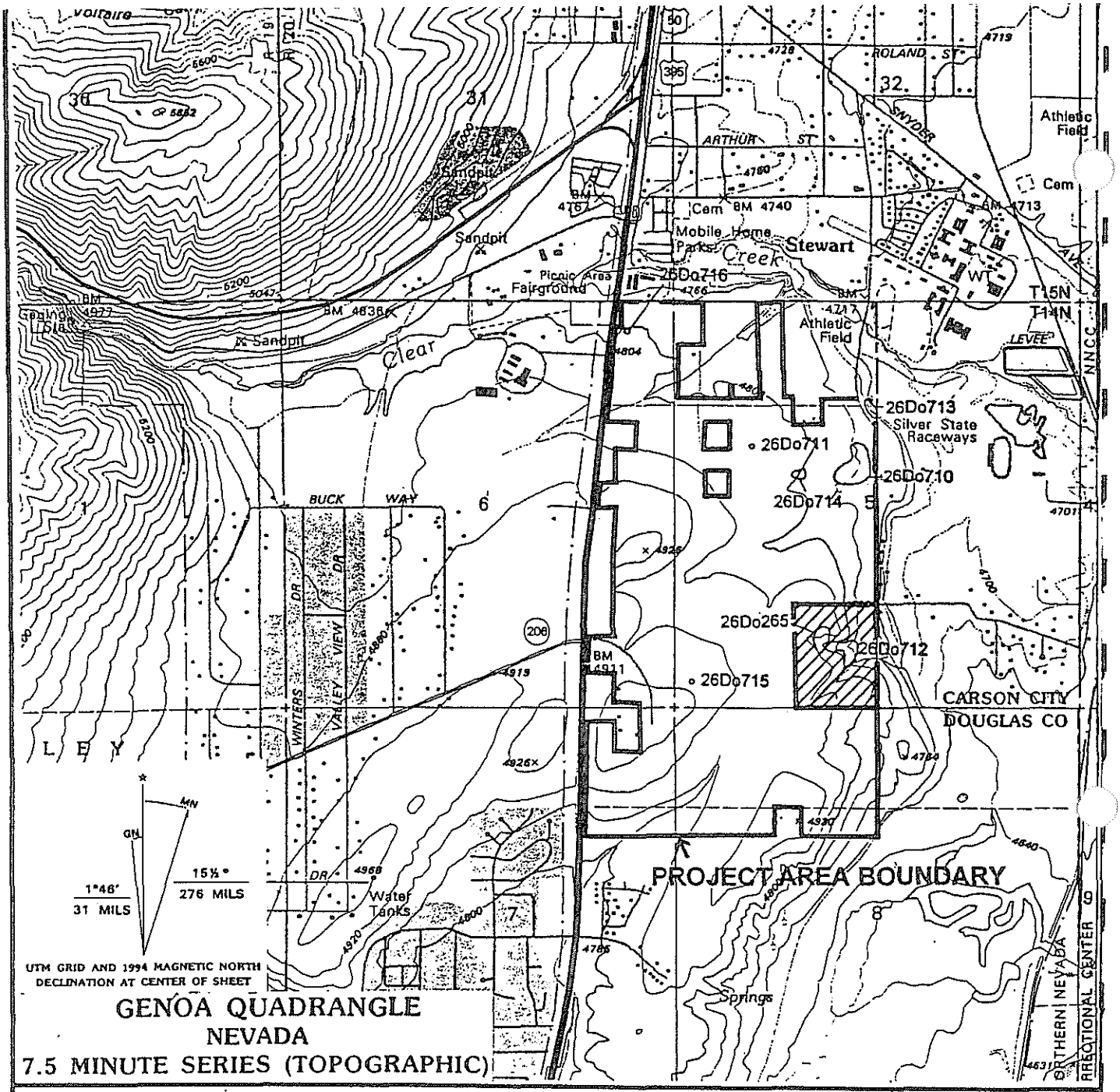
Field survey revealed that the central portion of the project area has been disturbed by off-road recreational use, the dumping of yard and construction debris and numerous two track roads. Also, an improved dirt road (Topsey Lane) and a paved road (North Sunridge Drive) bisect the project area from east to west.

The cultural resource inventory identified a total of seven previously undocumented sites and one previously recorded site (Figure 3). In addition, 20 isolated artifacts and 2 isolated features were discovered. Evidence of an historic road depicted on GLO Plat Map dating to 1866 and bisecting Section 5 from west to east was not observed during any of the north/south orientated transects. The seven sites consist of a depression with associated structural lumber and refuse, one large and two smaller diffuse refuse scatters, a ditch segment, a sparse scatter of basalt and chert flakes with an associated rock feature, an extensive bedrock milling feature containing 25 mortars and 3 grinding slicks and a rock concentration, and a dense distribution of obsidian and chert flaked stone debitage and tool fragments. These resources are summarized and discussed below. The site records are included in the Appendix.

SITE SUMMARIES

Smithsonian Number: 26Do265
Agency Number: CrNV-3-1118
Site Type: Bedrock Milling Feature
Cultural/Temporal Affiliation: The advent of mortar technology is associated with the Late Archaic and post dates 1200 B.P. (Elston et al. 1994:1-21, 1-24).

Site Description: This site, described as consisting of 17 bedrock mortars, was first recorded by Brian Hatoff (1978). Eight additional mortars, and three grinding slicks were incorporated into an IMACS short-form that was prepared by BLM archaeologists in the Spring of 2000 (McCabe and Lasell 2000). A complete IMACS form was prepared by WCRM during this project to further describe the milling features and document an associated rock feature located approximately 80 m to the north. The site is situated at the edge of an easterly trending ridge of the Carson Range. This



NORTH DOUGLAS COUNTY SPECIFIC PLAN
PROJECT SITE LOCATION MAP

SITE LOCATION

30 ACRE PARCEL TO BE TRANSFERRED TO THE BUREAU OF INDIAN AFFAIRS

SCALE 1:24 000

1 .5 0 KILOMETERS 1 2

1000 0 METERS 1000 2000

1 .5 0 1

MILES

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000

FEET

CONTOUR INTERVAL 40 FEET

NEVADA

QUADRANGLE LOCATION

BLM REPORT #: CRR-3-1988

FIGURE 3

location overlooks the Carson River flood plain located to the east. Moderately incised seasonal drainages are located to the north and south. The site consists of 25 bedrock mortars, 3 grinding slicks and one rock concentration. Thirteen of the mortars are formed in natural depressions that range in size from 80 to 21 cm in diameter. Larger conical shaped mortars (n=6) (Numbers 1-3, 7, 8 and 12) are from 24 to 15 cm in diameter with depths from 13 to 10 cm. Nine mortars are cup shaped with diameters from 20 to 10 cm and depths ranging from 6 to 3 cm. The remaining 10 mortars are shallow saucer shaped depressions from 5 to 15 cm in diameter with depths of 1 to 3 cm. No artifacts were observed. Slope-wash, exacerbated by off-road recreational use is present on the west side of the exposed bedrock. These sediments may be obscuring additional milling features or artifacts. Wyman Sargeant, a member of the Washoe Tribe of Nevada and California, identified a concentration of stones located on the ridge immediately north of the feature as possibly marking the location of a burial (Notes on file at Nevada State Museum, Carson City). A single concentration of 7 cobbles is present on this ridge, approximately 80 m at 5 degrees from the center of the milling feature. Presumably this is the feature that was referred to by Sargeant. The site boundaries were expanded to include this feature.

Bedrock mortars have been interpreted as marking camp sites (Freed 1966:75), therefore this locale may have functioned as, or be part of a large campsite. Although artifacts are rare on the site, an obsidian projectile point mid-section was observed as a result of a field review conducted by the BLM on October 19, 2000. Ethnographic data gathered by Rucks indicates that large numbers of mortars reflect the social aspects associated with milling activities, in which a large group of women participated (1995:126). Contemporary Washoe related that mortars were primarily used in the processing of pine nuts and acorns, although other plants such as grasses, roots, and unspecified medicines were once processed (Rucks 1995:67,102-103). McCarthy (1993:283 in Rucks 1995:65) presents data indicating that the smooth slick adjacent to work areas is the result of acorn oil. Therefore the slicks present at this site may be the result of processing acorn, that was either acquired directly or by trade from the west slopes of the Sierra Nevada, or Sierra Valley area to the north. Ethnographic evidence gathered by McCarthy on the processing of acorn provides some insight into the depths of the mortars. Shallow mortars (starter mortars) less than 5.5 cm in depth were used for breaking up the nut meats, mortars from 5.5 to 9.5 cm in depth were used to grind the nuts into a fine flour. Deeper mortars over 9.5 cm in depth are too deep for oily acorn flour and were used for less oily resources such as seeds and berries (McCarthy 1993:282). Therefore, the varying depths of the mortars at this site may reflect the processing of a variety of plant resources

Site Condition: Although impacted by off road vehicle use, the overall site condition is good.

Expected Project Impacts: The site may be impacted by commercial and residential development.

Significance and National Register Eligibility: Significant, Eligible. This extensive milling feature site qualifies as a short-term residential site discussed in the prehistoric context of this report. In consultation with the BLM, the Washoe Tribe of Nevada and California have expressed that they consider the feature to be of importance to their tribal history (Bowyer personal communication with Ed Stoner June 2000). As such, the site qualifies under Criterion a. Specific individuals associated with the site were not identified, thereby precluding the resource from qualifying under Criterion b. Unique methods of construction are not present, therefore the site does not meet the requirements of Criterion c. Regarding archaeological deposits, no artifacts have been observed at the site either during the initial recordation by Hatoff in 1978, subsequent recordings conducted by BLM archaeologists in March of 2000, or during this project. While relic collectors may have removed many artifacts from the site, which is easily accessed, it seems likely that some small number of artifacts would remain and may be buried under alluvial deposits at the base of the milling feature. Therefore, block exposures around the feature have the potential to yield archaeobotanical remains that may be used to address mobility and land-use, and possibly lithic materials that may further define lithic resources and technology. Studies by McCarthy (1993) have indicated that resource specific milling tasks are reflected by the size and type of the individual milling feature. Therefore, an in depth analysis of the patterning among the individual milling features coupled with ethnographic data, and consultation with Washoe elders, may provide additional data that can be used to interpret task specific activities and subsistence resources that were prepared at this site. Because the site has the potential to further an understanding of prehistory it is recommended eligible under Criterion d.

Management Recommendations: This site is recommended eligible to the NRHP under Criteria a and d. The site and 30 acres encompassing the site (Figure 3) will be transferred to the Bureau of Indian Affairs (BIA). The BIA will hold the land in trust for the Washoe Tribe of Nevada and California. The transfer of the 30 acres encompassing the site from one federal agency to another does not constitute an adverse effect. It is not known what uses, if any, the Washoe Tribe of Nevada and California will make of the land. Any future projects, however, which may constitute a federal undertaking will be addressed by the BIA.

Smithsonian Number: 26Do710
Agency Number: BLM No. CrNV-03-5328
Site Type: Historic Refuse
Cultural/Temporal Affiliation: Historic European American - Late 19th Century to 1960s.

Site Description: This site, consisting of an extensive historic refuse deposit within 10 concentrations (A-J), is located to the east of Center Road south of Carson City and west of the Carson River. The site dimensions are 135 m E-W and 150 m N-S. The entrance to the historic Schulz Ranch is located directly to the east of the site, although interviews with Rose Parker (2000 personal communication) failed to reveal a connection with the ranch. Vegetation within and surrounding the site consists of tall sagebrush, bitterbrush, wild peach, rabbit brush, and cheat grass. The artifact concentrations are dominated by household items, and lack industrial constituents. The debris found on the site is consistent with domestic and ranch activities. Tin cans (500 +) are dominated by sanitary cans, with tobacco tins with hinged lids, key wind coffee tins, and smaller (less than 4 inch tall) solder dot milk tins. The majority of the tins have been opened with a rotary opener. All of the glass and ceramic artifacts are fragmented. Colors of the glass are clear, brown, green, amethyst, dark blue, white, aqua, light aqua, light amber, and "uranium" or "Vaseline" green that fluoresces under black light. Miscellaneous artifacts are galvanized wash tubs, car parts, gray enamel ware, barrel hoops, bailing wire, shoe and other leather fragments, metal corset stays, a 15 gallon drum, upholstery spring, metal strapping, hack saw blade, wire nails, cut nails, cast iron stove fragments, galvanized pipe fittings, bolts, ash shovel, Model A rim (missing wooden spokes). Abundant coal slag or "clinkers" indicates that a coal fired stove was periodically cleaned and dumped with the household refuse at the site. Burned, misshapen, glass is located in Concentration D. It is likely that the glass was burned prior to its disposal. Non-artifactual constituents consist of juvenile cow bone. All of these constituents appear to be limited to the surface.

Artifacts at the site the vast majority of the refuse at this site appears to post-date the 1930s. This is evidenced by the dominance of solder dot milk tins that are less than 4 inches in height. These cans have been found in assemblages that post date 1931 (Bowyer and Speulda 1996). Other artifacts dating from the 1930s are cone top and flat top beer cans with church key opener. These dates are substantiated by the presence of sanitary tins which date from 1904 (Rock 1990), numerous bottles bearing the 1928-1954 Owens Illinois trademark symbol and Hazel Atlas bottles with a time-frame from 1920-1964. Although cut nails dominate in pre 1890 assemblages and amethyst glass

pre-dates 1920, these items are present in extremely small numbers and may represent recycling and the delayed discard of materials.

Large sanitary cans indicate the presence of a large family group. This is consistent with early farming and ranching households, that were composed of several children, who were considered as assets to the daily operation. The presence of cooking oil containers indicates a diet that included fried foods. Unfortunately, bone was limited to a small number of large mammal long bones and unfused condyle fragments, indicating the butchering of juvenile livestock.

All of the 10 concentrations (A-J) were inventoried in detail. While similarities in the tin can assemblages were noted among the concentrations, specialty items such as nails, a metal file, auto and stove parts, were unique to all of the concentrations. There are approximately 50 pieces of amethyst glass located throughout the site, from a number of vessels including a patent medicine bottle, a jar with a lightning closure, and a tall 5 or 6 paneled jar or vase. The lack of complete or nearly complete ceramics and bottles, coupled with the proximity to development indicates that many items may have been removed by relic hunters.

Finally, it should be noted that a chert projectile point fragment was noted on the site during an onsite visit by the BLM. This point could not be relocated during the onsite visit conducted on October 19th by the BLM and the WCRM Project Manager nor was it relocated during the re-recording of the site by Tom Langheim of WCRM on October 27th, 2000.

Site Condition: Good. Approximately 25 percent of the site area appears to be deflated, with some horizontal mixing of the deposits also present.

Anticipated Project-Related Impacts: The site may be impacted by commercial and residential development.

Significance and National Register Eligibility: As a refuse dump the site, while apparently linked to the nearby Schulz Ranch, lacks the clear and documentable associations to ranching in the area. As a result the site can not be considered significant under Criteria a or b. The lack of a built environment or evidences of an architectural presence precludes the site from being considered eligible under Criteria c. This site is recommended as eligible for inclusion in the National Register

of Historic Places under Criterion d for the information it holds about local ranching life during the 20th century. The site has clear focus and thus the necessary integrity for inclusion in the NRHP. Moreover, it has the ability to address research concerns iterated in the Refuse Deposits property type discussion including:

> The material in the scatter represent does represent a particular theme - agricultural activities and it does indicate participation in world systems, and it is somewhat dominated by goods from the national and/or international markets.
>
> Careful study of the artifacts at the site can help recreate the ranch household and its composition.
>
> The refuse appears to have been derived from a single kind of source - a nearby ranch household.
>
> Finally, under the heading of chronology the material all appears to date from a single period of time.(early to mid 20th century) and thus the information held by the site can contribute to our understanding of culture history from that period.

In summary the site lacks the associations and integrity to be recommended as eligible for inclusion in the National Register of Historic Places under Criteria a, b or c but it does hold significant quantities of information and meets the registration requirements for a refuse deposit as outlined in the survey report. Therefore, the site is recommended eligible to the NRHP under Criterion d.

Management Recommendations: According to 36 CFR citation 800.5 (a)(2)(vii) "transfer, lease, or sale of property out of Federal ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance" constitutes an adverse effect (Federal Register 1999). It is recommended, in order to mitigate adverse effects; that a treatment plan be prepared and implemented prior to the transfer.

Smithsonian Number: 26Do711
Agency Number: CrNV-03-5329
Site Type: Depression with Structural and Refuse Remains
Cultural/Temporal Affiliation: European American - Post 1940

Site Description: This site is situated on lower alluvial fan deposits east of the Carson Range, and upslope of the Carson River flood plain. The site consists of a shallow (one foot deep) depression, 10 feet in length and 65 inches in width. Three 5 by 5 and ½ inch posts and one inch thick nominal lumber, some of which contain wire nails, are associated with the depression. Three sanitary cans and a piece of sheet metal are scattered around the perimeter of the feature. Scattered charcoal is located on the surface within the depression and one piece of lumber is burned on one side. A 25 by 25 cm shovel probe was placed within the feature and excavated to a depth of 20 cm. No cultural material was found within the depression. Sanitary tins post date 1904 (Rock 1990). However, the lack of artifacts with manufacturing end dates preclude accurate dating of the site. Vegetation consists primarily of bitterbrush and tall sagebrush, with lesser quantities of wild peach, rabbit brush and cheat grass. The entire site dimensions are approximately 5 meters in diameter.

Site Condition: The overall site condition is poor (greater than 50 percent disturbed), since fluvial and aeolian processes have eroded the depression. Burned structural materials indicates the fire may have destroyed some of the constituents.

Expected Project Impacts: The site may be impacted by commercial and residential development.

Significance and National Register Eligibility: Non-Significant, Not Eligible. Since the site cannot be associated with an historical theme, it has limited value in addressing research domains. The artifacts and structural material lack association with a particular event or residence (Criterion a), and cannot be traced to the lives of significant individuals (Criterion b). The minimal structural remains and the depression lack engineered features or architectural elements precluding the site from qualifying under Criterion c. There are no signs of buried materials, associations between the artifact constituents can not be ascertained, and there is a lack of data that may be used to address gender, age, or ethnicity, or remains that might further address lifeways and consumptive habits or changes in these habits over time. Because of these deficiencies the site does not quality under

Criterion d. Therefore, this site is recommended not eligible for inclusion in the National Register of Historic Places as outlined in Criteria a-d.

Management Recommendations: No further work is recommended.

Smithsonian Number: 26Do712
Agency Number: CrNV-03-5330
Site Type: Historic Refuse Deposit
Cultural/Temporal Affiliation: 20th Century European American

Site Description: This dispersed scatter of historic refuse is located at the base of a steep ridge immediately upslope of the Carson River flood plain. The site is situated at the base of easterly trending slopes that descend from the Carson Range. A seasonal drainage and unimproved dirt road bisect the site from east to west and a second seasonal drainage forms the southern site boundary. Artifacts consist of a gray enamel wash basin, 7 sanitary cans or can lids, 7 solder dot milk tins, 2 lard buckets with bail handle, a section of corrugated riveted pipe, 2 automobile tires (size 6.70-15), a smashed lap seam bucket with modified wire handle, 3 clear glass jar tops with screw lids, and 2 steel beverage cans with church key opening. These artifacts are set on a background scatter of contemporary refuse consisting of aluminum beer cans; clear, green and brown beer bottle fragments, plastic beverage bottles, styrofoam, miscellaneous clothing, plastic fragments, and small pieces of PVC pipe. The refuse appears to represent accumulated debris from numerous dumping events that may date from the 1930s until present. Vegetation consists primarily of tall sagebrush with lesser amounts of wild peach, rabbit brush, bitterbrush, and cheat grass. The site measures 40 m north/south by 40 m east/west.

Site Condition: Site condition is poor since the artifacts are widely scattered possibly as a result fluvial processes.

Expected Project Impacts: The site may be impacted by commercial and residential development.

Significance and National Register Eligibility: Non Significant, Not Eligible. Records searches have found no information about this site to indicate its function, purpose or time setting. Without these clear links no associations of the significant events, patterns, trends or persons can be made.

Thus, the site can not be considered significant under Criteria a or b. The lack of a built environment or evidences of an architectural presence the site can not be considered eligible under Criteria c. Finally, the apparent lack of subsurface deposits and the limited and scattered nature of the surface materials indicate that the site does not have the the archaeological data potential to be considered a significant repository of information about 20th century ranching and ranch life in the Carson City area. In summary the site lacks the associations and integrity to be recommended as eligible for inclusion in the National Register of Historic Places under any of the four criteria.

Management Recommendations: No further work is recommended.

Smithsonian Number: 26Do713
Agency Number: CrNV-03-5331
Site Type: Ditch Segment
Cultural/Temporal Affiliation: European American - Late 19th to early 20th Century.

Site Description: This site consists of a hand or machine dug irrigation canal located at the toe of slopes descending from the Carson Range to the west and upslope of the Carson River flood plain to the east, within the Carson Valley. The segment of the canal located within the project is approximately 80 m in length. The depth is currently 2 feet with a width of 12 feet. A one foot high berm 8 feet in width is located on the downslope (northeast) side of the feature. Originally the ditch may have been either hand dug or excavated using a horse drawn scraper or plow. The ditch has been in use since at least the beginning of the 20th Century (Rose Parker, 2000 personal communication). Ms. Parker, who grew up on the ranch and still owns a small portion, also stated that the ditch originates at a small dam located on Clear Creek approximately 1,000 m to the northwest, and is a seasonal source of water for the Schulz Ranch and one other small farm. Other than two smashed sanitary cans and a barrel hoop located within 5 m on the upslope side of the ditch, no artifacts were observed in association with the irrigation segment Vegetation consists primarily of tall sagebrush, bitterbrush and rabbit brush. Willows are located to the southeast and grasses including bunch grass are within the drainage.

Site Condition: This ditch segment does appear to have been impacted and there is no indication of modifications or realignments, therefore overall condition of this segment is excellent.

Expected Project Impacts: The site may be impacted by commercial and residential development.

Significance and National Register Eligibility: Non-Significant, Not Eligible. Currently the ditch segment is part of a feeder that diverts water from Clear Creek to the Schulz Ranch and one other small farm located to the east of the project area. Historically, the function was most likely similar to that of today, supplying water during the late spring and early summer to the Schulz Ranch. The physical appearance of the feature suggests that the method of construction was by hand, or horse drawn plow and/or scraper, methods that were common in Carson Valley and throughout Nevada in the late 19th and early 20th Centuries. Although the physical characteristics of the resource provide information concerning the method of construction of small farm irrigation systems in Carson Valley and Nevada, the ditch segment is part of a system that was of nominal importance to the development of farming or ranching in the region and is not therefore eligible under Criterion a. Record searches and interviews indicate that the ditch is associated with the Schulz Ranch, however historic documents and interviews failed to identify significant individuals as outlined in Criterion b. While the segment maintains integrity that reflects the original construction methods, the resource does not possess significant engineered features, or elements that demonstrate an evolution in the construction of irrigation systems constructed during the late 19th and early 20th centuries (Criterion c). Other than the two smashed tins and a barrel hoop, no archaeological deposits that may aid in determining use or method of construction were observed in association with the segment, precluding the segment from qualifying as a contributing element under Criterion d. Therefore, the site is not recommended as eligible under Criteria a-d.

Management Recommendations: No further work is recommended.

Smithsonian Number: 26Do714
Agency Number: CrNV-03-5332
Site Type: Historic Refuse Deposit
Cultural/Temporal Affiliation: 20th Century European-American

Site Description: This sparse scatter of historic refuse is located on a southeast facing slope of the lower easterly facing fan that descends from the Carson Range to the west. The Carson River flood plain is located to the east. An ephemeral wash is located approximately 20 m to the south. Artifacts consist of 2 cooking oil tins, a key wind can top, a 5 gallon kerosene can missing a top, a

tin canister and amethyst, aqua and clear colored glass fragments. The artifacts are widely dispersed in an area measuring 35 m east/west and 10 m north/south, on a southeast/northwest trending 5 degree slope. Vegetation consists of tall sagebrush, bitterbrush, wild peach, rabbit brush and cheat grass.

Site Condition: The artifacts are widely scattered and lack meaningful associations, therefore overall site condition is poor.

Expected Project Impacts: The site may be impacted by commercial and residential development.

Significance and National Register Eligibility: Non Significant, Not Eligible. The artifact assemblage at this site appears to be the remains of sporadic deposits from the early 1900s, based upon the presence of amethyst glass and the widely distributed artifact constituents. The limited number of artifacts, coupled with a lack of household debris, suggests that the cans and glass artifacts are not the result of a residential dump, but rather several small dumping events. Because of a lack of association with an historic theme, the site can not be associated with a specific event or pattern (Criterion a), and cannot be traced to the lives of significant individuals (Criterion b). There are no structures, engineered features or related artifacts associated with the site (Criterion c). There are no signs of buried materials and there is a lack of integrity, since associations between the scattered artifact constituents can not be ascertained. As a result the site lacks data that may be used to address gender, age, or ethnicity, or remains that might further address lifeways and consumptive habits or changes in these habits over time (Criterion d). Therefore, this site is recommended not eligible for inclusion in the National Register of Historic Places as outlined in Criteria a-d.

Management Recommendations: No further work is recommended.

Smithsonian Number: 26Do715
Agency Number: CrNV-03-5333
Site Type: Lithic Scatter
Cultural/Temporal Affiliation: Aboriginal/Unknown

Site Description: This site located on the lower easterly trending alluvial fan of the Carson Range, overlooks the Carson River flood plain located to the east. The site is on barren ground and surrounding vegetation consists primarily of tall sagebrush and bitterbrush, with lesser numbers of wild peach and cheat grass. The site, measuring approximately 6.5 m in diameter consists of 71 pieces of flaked stone debitage dominated by obsidian (n=55, 77 percent), with lesser amounts of chert (n=11, 15 percent), mineralized wood (n=3, 4 percent), basalt (n=1, 2 percent), and sinter (n=1, 2 percent). Thirteen flaked and ground stone tools consist of 1 small andesite pestle fragment, 6 Stage II obsidian biface fragments, 1 Stage III obsidian biface fragment, 1 chert core, 1 mineralized wood core tool, and 2 assayed cobbles of chert and mineralized wood. A shovel probe placed in the center of the artifact concentration indicated that the artifacts are limited to the surface. No artifacts were observed in the road bed along the south side of North Sunridge Drive.

It is clear that the artifacts on the site are in a secondary depositional context. The site was revisited by the WCRM Project Manager and the BLM and the following observations were made: 1) The site is located immediately adjacent to North Sunridge Drive in an area in which the surface was disturbed by blading during road construction; 2) the disturbed area is covered with the same material used to construct the modern roadbed; and 3) the road was built in the late 1990s and the lithic materials observed were deposited after the road was constructed. We can only speculate as to the reasons for this concentration of lithic materials. It is possible that the lithic materials were part of the road building materials and were deposited when the road was constructed. This, however, is unlikely given the concentration and diversity of material types and tools. It is also possible that the site represents the detritus from a modern flintknapper with poor ethics. Finally, it is possible that a local collector abandoned the collection by the roadside.

In summary, the lithic materials that constitute the "site" are in a secondary depositional context and were deposited on artificial fill which is part of a road constructed in the late 1990s.

Site Condition: The site condition is poor, since the artifacts are in a completely secondary depositional context.

Expected Project Impacts: The site may be impacted by residential and commercial development.

Significance and National Register Eligibility: Non-Significant, Not Eligible. Surface examination of the site and surrounding area, and excavation of a small shovel probe indicate that this small dense deposit of flaked stone debitage and tool fragments is limited to the surface and deposited directly on top of road-base gravels. The road was constructed in the late 1990s. Therefore, as redeposited material the artifacts lack association and preclude interpretation of the activities and/or events that they may represent and the data can be used to address changes in mobility and land-use, lithic resources and technology, or trade and exchange as outlined in the research domains for this project. Therefore, the site is recommended not eligible to the NRHP under Criteria a-d.

Management Recommendations: No further work is recommended

Smithsonian Number: 26Do716
Agency Number: CrNV-3-5334
Site Type: Lithic Scatter
Cultural/Temporal Affiliation: Aboriginal/Unknown.

Site Description: This site is situated on a small knoll and north facing slope that overlooking Clear Creek to the north. This location is on the easterly trending alluvial fan that descends from the Carson Range. The site, measuring 26 m by 22 m, consists of 1 red chert flake, 5 basalt flakes and a concentration of six cobbles (Feature One) from 7 to 23 cm in size arranged in a circular pattern 31 by 32 cm in size. A small probe (Shovel Probe One) placed within the flake distribution failed to identify the presence of subsurface deposits. A second probe (Shovel Probe Two) was placed directly adjacent to the rock cluster. No charcoal, ash, darkened soil or artifacts were identified within this second probe unit, therefore the rock cluster may be a survey or claim marker. The lack of subsurface cultural materials coupled with the dispersed nature of the artifacts suggests that erosional process have compromised site integrity. Vegetation, on site and in the vicinity consists primarily of tall sagebrush with lesser quantities of bitterbrush, wild peach, rabbit brush, and cheat grass.

Site Condition: The diffuse scatter of artifacts coupled with a lack of subsurface deposits indicates that erosional processes have compromised more than 50 percent of the site integrity, therefore overall site integrity is poor.

Expected Project Impacts: Commercial and residential development.

Significance and National Register Eligibility: This small dispersed lithic scatter is probably associated with subsistence procurement or processing, discussed in the prehistoric context of this report. It does not contain data that can be related to significant events in history (Criterion a), or lives of specific individuals as outlined in Criterion b. Other than a small concentration of cobbles that lacked charcoal, ash, changes in soil color, or artifacts, no constructed features were observed, precluding the site from qualifying under Criterion c. Regarding the archaeological deposits, the basalt and chert debitage is widely dispersed and may be the remains of separate events or artifacts from a single event that have become scattered by erosional processes. Further, the site lacks evidence of subsurface deposits, other artifact constituents (e.e., ground stone, shell beads, or large amounts of obsidian) or features that have the potential to provide additional data classes necessary to address chronology, mobility and land-use, lithic procurement and technology, and trade and exchange. Therefore, this site is not recommended eligible to the National Register as outlined in Criterion d.

Management Recommendations: No further work is recommended.

ISOLATED FINDS

A total of 20 isolated artifacts and 2 isolated features were observed during inventory of the North Douglas County Specific Plan Project. The isolated items are primarily historic (n=16) with the remainder (n=4) consisting of prehistoric flaked stone artifacts. Tin cans (n=14) dominant the historic artifacts and consist of 5 gallon fuel cans (n=6), small solder dot milk tins (n=4), hinged tobacco tins (n=2), and one each hole-in-cap tin, and one-pound key wind coffee tin. The remaining historic items are a metal wash basin, that may have been enameled, and five amethyst glass fragments of the same container. Prehistoric artifacts consist of a gold chert utilized flake, an obsidian pressure flake, a basalt flake fragment, and an obsidian Stage II biface fragment (See Appendix) that was associated with yard waste, suggesting a secondary deposition.

Both of the isolated features (Table 5) are claim markers consisting of a dimensioned 4 X 4 post with a single hinged tobacco tin, and aluminum tag attached. These markers were both found lying on the ground and the claim papers were illegible. Nominal sized lumber dates to just before World War II (Howard 1989:16), therefore the claim markers most likely post date 1940.

Table 4 Isolated Artifacts

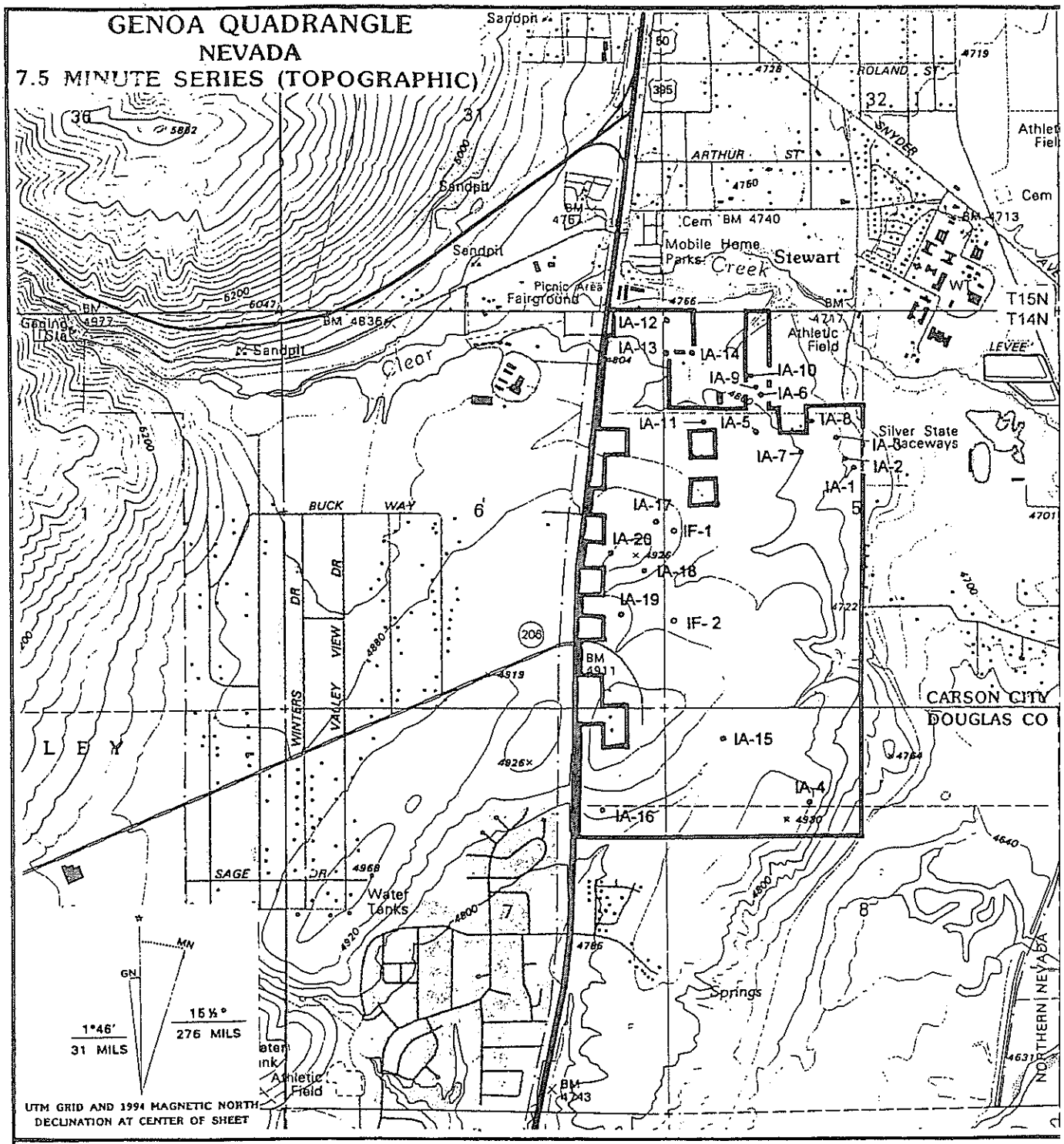
Isolate No.	UTM Coordinates	Legal Location	Description
1	261300 mE 4332230 mN	NW SE SE of Section 5	5 gallon fuel can
2	261260 mE 4332180 mN	NW SE NE of Section 5	Hinged tobacco tin
3	261340 mE 4332240 mN	NW SE NE of Section 5	5 gallon fuel can
4	261100 mE 4330880 mN	NW NE SE of Section 8	Gold chert utilized flake with complex dorsal surface and planar platform. micro chipping on distal margins 26.1 x 27.6 x 7.1 mm
5	260900 mE 4332400 mN	NW SW NE of Section 5	Soldered dot milk can 3 15/16" tall
6	260920 mE 4332520 mN	NW NE SW of Section 5	5 gallon fuel can, missing top
7	261280 mE 4332090 mN	NW SE NW of Section 5	Metal wash basin may have been enameled, rusted 14" diameter x 2 ½" high

Table 4 Isolated Artifacts (Continued)

Isolate No.	UTM Coordinates	Legal Location	Description
8	261140 mE 4332420 mN	NW SE NE of Section 5	Stage II opaque obsidian biface fragment with remnant notch; snap fracture at each end, missing one margin. 23.1 x 27.6 x 7.7 mm (associated with yard waste)
9	260900 mE 4332540 mN	NW NW SE of Section 5	5 gallon fuel can, missing top
10	260880 mE 4332600 mN	NW NW SE of Section 5	5 gallon fuel can, missing top
11	260690 mE 4332410 mN	NW SW NW of Section 5	5 gallon fuel can, missing top
12	260540 mE 4332830 mN	NW NW NW of Section 5	Obsidian pressure flake, semi-translucent gray; missing distal end
13	260540 mE 4332720 mN	NW NW NW of Section 5	2 ½" Solder dot milk tin
14	260660 mE 4332690 mN	NW NW NW of Section 5	Hole-in-cap can, 4 ½" tall, 3 3/8" diameter
15	260220 mE 4330870 mN	NE NE SW of Section 8	2 ½" Solder dot milk tin
16	260220 mE 4330870 mN	NE NE SW of Section 7	Basalt flake fragment with build up of small step fractures on one side; 1 x 2 cm
17	260490 mE 4332020 mN	SE NE NE of Section 6	1 lb key wind coffee tin
18	260420 mE 4331830 mN	SE NE SE of Section 6	2 ½" Solder dot milk tin
19	260270 mE 4331640 mN	SE SE NW of Section 6	Hinged tobacco tin
20	260280 mE 4331900 mN	SE NE NW of Section 6	5 amethyst glass fragments, largest is 1 x 2 inches; all appear to be from the same container.

Table 5 Isolated Features

1	260540 mE 4331990 mN	SW NW NW of Section 5	Dimensioned 4" x 4" post with hinged tobacco tin and aluminum tag inscribed with "Location Monument Metal "X" # 9"
2	260520 mE 4331610 mN	SW SW NW of Section 5	Dimensioned 4" x 4" post with hinged tobacco tin and aluminum tag inscribed with "Location Monument Metal "X" # 1"



NORTH DOUGLAS COUNTY SPECIFIC PLAN
PROJECT ISOLATE LOCATION MAP

o ISOLATED FEATURE LOCATION
o ISOLATED ARTIFACT LOCATION

SCALE 1:24 000

1 .5 0 KILOMETERS 1 2
1000 0 METERS 1000 2000
1 .5 0 1
MILES
1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10000
FEET

NEVADA
QUADRANGLE LOCATION

CONTOUR INTERVAL 40 FEET

BLM REPORT #: CRR-3-1988

FIGURE 4

MANAGEMENT RECOMMENDATIONS

Management recommendations are based on evaluation of a site's potential NRHP eligibility recommendation and potential project impacts to that site. For sites that are recommended as not eligible to the NRHP, or that are recommended as eligible but will not be impacted by the proposed project, a finding of **No Historic Properties Affected** is proposed. For eligible sites that will be impacted, a recommendation of **Adverse Effect** is proposed pursuant to the implementation of a suitable plan to mitigate the effects. Such a plan might include data recovery in the form of excavation or testing, artifact collection and analysis, or historical research.

RESOURCE RECOMMENDATIONS

In order to be considered as Eligible to the NRHP, a cultural resource must satisfy at least one of four significance criteria as defined by 36 CFR part 60.4. The resource must contain qualities:

36 CFR 60.4a	that are associated with events significant to broad patterns of history; or
36 CFR 60.4b	that are associated with the lives of persons significant in the past; or
36 CFR 60.4c	that embody the distinctive characteristics of a type, period, or methods or construction; represent the work of a master; possess highly artistic values; or represent a distinguishable entity whose components lack individual distinction; or
36 CFR 60.4d	that have yielded or may yield information important to history or prehistory.

The historic period resources must be significant under at least one of those four significance criteria (a-d) to be eligible for listing on the National Register (36 CFR 60; 36 CFR 63; National Register Bulletin 15). Furthermore, the Secretary of Interior's Standards and Guidelines (USDI, NPS 1983) stipulate that the four criteria are to be applied within historic contexts. The contexts identify the thematic, geographical, and chronological framework within which the significance evaluation takes place, thus adding specific detail to the four criteria.

Beyond the application of the above criteria, a resource must retain sufficient integrity to maintain the character that makes it significant, in order to be considered eligible for nomination to the NRHP. Integrity can be physical or relate to integrity of place and setting in which the site's relationship to the surrounding landscape is considered.

POTENTIAL PROJECT IMPACTS

Upon completion of the proposed land exchange historic properties located within the project will no longer be protected by "Federal ownership or control, without legally enforceable restrictions or conditions to en-sure long-term preservation of the property's historic significance", as outlined in Section 800.5(a)(2) of Section 106 of the National Historic Preservation Act. Therefore, the proposed land exchange has the potential to adversely affect historic properties located within the proposed land exchange.

RECOMMENDATION SUMMARY

Eight sites were identified either within or directly adjacent to the proposed land exchange. (Table 6). Three of these sites are historic refuse deposits (26Do710, 26Do712, and 26Do714); one consists of a depression, structural material, and historic refuse (26Do711); one is segment of an irrigation conveyance system (26Do713); two are prehistoric lithic scatters (26Do715 and 26Do716); and one is a prehistoric milling feature with an associated rock concentration (26Do265). Two of the three historic refuse deposits (26Do712 and 26Do714), the structural remains (26Do711), and the two lithic scatters (26Do715 and 26Do716) are recommended as not eligible to the NRHP, since they: cannot be associated with patterns in history or prehistory (Criterion a), are not associated with a significant individual (Criterion b), contain no engineered or unique architectural features (Criterion c), and do not possess significant archaeological potential (Criterion d), and lack integrity. Although the ditch segment (26Do713) can be linked to historic ranching, it does not display unique elements of construction or design that sets it apart from other early ditch systems in Carson Valley or Nevada (Criterion c, nor was it an extensive system that was of importance in the development of farming and ranching within the region (Criterion a). Further the site lacks an association with historically significant individuals (Criterion b), and archaeological constituents are not present (Criterion d). Site 26Do710, an historic refuse scatter, is recommended eligible to the NRHP under Criterion d because it holds significant quantities of information and meets the registration requirements for a

refuse deposit as outlined above. Pending review by the BLM in consultation with the SHPO it is recommended that prior to transfer of the property from Federal control a treatment plan be developed to mitigate adverse affects at site 26Do710.

Site 26Do265, consists of an extensive milling feature and an associated rock concentration, containing 25 mortars and 3 grinding slicks. The site has been identified as an important element of tribal history by the Washoe Tribe of Nevada and California. In addition, there is a the potential for buried constituents that may further address settlement and land-use, and lithic resource procurement and technology. Also, analysis of patterning among the milling features, coupled with consultation with Washoe tribal members may provide information on subsistence processing activities and work patterns associated with milling activities. Therefore, the site is recommended eligible under Criteria a and d.

A total of 30 acres encompassing site 26Do265 will be transferred from the BLM to the BIA and held in trust for the Washoe Tribe of Nevada and California. This transfer does not constitute an adverse effect since the site will remain under federal management.

Table 6 NRHP Evaluations

Site No. Smithsonian/BLM	Description	NRHP Recommendation	Comments
26Do265 CrNV-03-1118	Prehistoric Milling Site	Eligible under Criteria a and d	No Adverse Effect
26Do710 CrNV-03-5328	Historic Refuse Deposit	Eligible under Criterion d	Mitigation of adverse affects
26Do711 CrNV-03-5329	Historic Depression	Not Eligible under Criteria a-d	Not Applicable
26Do712 CrNV-03-5330	Historic Refuse Deposit	Not Eligible under Criteria a-d	Not Applicable
26Do713 CrNV-03-5331	Historic Ditch	Not Eligible under Criteria a-d	Not Applicable
26Do714 CrNV-03-5332	Historic Refuse Deposit	Not Eligible under Criteria a-d	Not Applicable
26Do715 CrNV-03-5333	Prehistoric Lithic Scatter	Not Eligible under Criteria a-d	Not Applicable
26Do716 CrNV-03-5334	Prehistoric Lithic Scatter	Not Eligible under Criteria a-d	Not Applicable

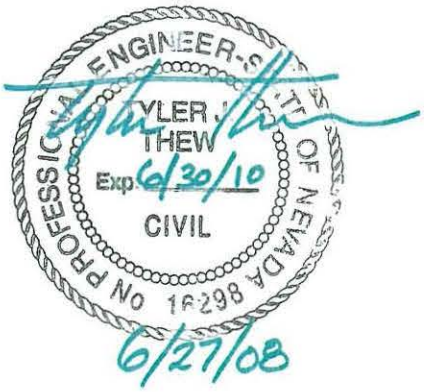
APPENDIX D

CONCEPTUAL WATER SYSTEM ANALYSIS

NORTH DOUGLAS COUNTY SPECIFIC PLAN

AMENDMENT #2

JUNE 2008



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5.2 ANALYSIS

5.2.1 Water System

The Big George master plan amendment proposes 504 residential units (with the potential of up to 630 with affordable housing density bonus units), approximately 2.75 acres of commercial development and some open space irrigation. Using the common assumption of 1500 gallons per acre per day for commercial and 700 gallons per day per equivalent dwelling unit (EDU) this results in a total of 636 EDU's. For single family homes the 700 gallons per day per EDU includes the landscape irrigation around the single family home. For multi family homes the 700 gallons per day per EDU includes the units share of the landscape irrigation around the multi family dwelling as well as its share of the open space irrigation.

The required average daily flow for 636 EDU's at 0.49 gallons per minute per EDU is 309 gallons per minute. Based upon the Douglas County Design Criteria and Improvement Standards the required water production is 1.0 gallons per minute per EDU or 636 gallons per minute. This is also the expected maximum day flow. It is expected that the peak hour domestic flow is 5 times the average daily flow or 1545 gallons per minute. The minimum required fire flow is 1500 gallons per minute. The required storage for emergency reserve is 700 gallons per EDU or 445,000 gallons and the required storage for fire flow is 2 hours at 1500 gallons per minute or 180,000 gallons.

With 636 EDU's at a required 1.12 acre feet per EDU 712 acre feet of underground water rights are required. A portion of these are already owned by the applicant with the remaining water rights to be purchased.

The specific plan for North Douglas County estimated that the Big George property would have 261 EDU's based upon average densities of 4.5 EDU's per acre for SFR-8000 land use, and 3.0 EDU's per acre for SFR-12000 land use. However, because clustering is allowed per the current land use designations, the Big George property is allowed 5.44 EDU's per acre for SFR-8,000 land use, and 3.63 EDU's per acre for SFR-12,000 land use for a total of 366 EDU's on the BGV property. The specific plan therefore underestimated the EDU's for the Big George property by 105 EDU's.

The master plan amendment contemplates 270 more EDU's than allowed by current zoning (an increase of 375 EDU's from the specific plan estimate).

Water is proposed to be provided in accordance with the Capital Facility Plan for the North County/West Valley Water System (CFP) dated August 2007 prepared by Forsgren Associates Inc. The CFP identifies improvements to the water system required to serve the North Douglas County Specific Plan (NDCSP) area. In accordance with this plan additional groundwater wells will be developed in the James Canyon area and the water conveyed to Lower James Canyon Tank. The James Canyon Booster Pump Station would be enlarged as well as the transmission line from the booster pump to the

Upper James Canyon Tank. A new transmission line would be constructed from the booster pump to the Jacks Valley Tank. Also, according to the Capital Facility Plan additional water storage would be provided in the Jacks Valley/North County area. There are existing transmission lines in the North Valley water system that connect to the Jacks Valley Tank and pass along the north edge of the Big George property. Within the Big George property looped water mains would be constructed.

The CFP assumed that the BGV property would only realize the 261 EDU's estimated in the specific plan however, as noted previously, the existing zoning in the specific plan allows for 375 EDU's. The CFP also did not take into account additional EDU's that will be generated by a proposed casino within the North Douglas County Specific Plan area. Based on a verbal communication with Manhard Consulting Ltd. (the engineering firm representing the proposed casino) the preliminary estimate of water supply needs for the casino are 90 gpm during average day and 225 gpm maximum day.

The CFP modeled the proposed North County water system using WaterCad and provided the model on a CD attached to the report. The WaterCad model provided with the report is a static water system model with the pumps off during maximum day demand (Model 1 on the CD provided in the appendix of this report). All modeling discussed herein refer to a static maximum day fire flow condition with pumps off. A dynamic water model that includes transient analysis and active controls of the pumps and valves is not available and was not analyzed as part of this master plan amendment submittal.

The CFP water model does not include fire flow at the Wal-Mart site which is anticipated to control the water system design. East Fork Fire and Paramedic District (EFFPD) has identified a required fire flow at the Wal-Mart site of between 3,500 and 4,000 gpm (per verbal communication with Steve Eisele on June 25, 2008) however, the CFP identifies a fire flow of 4,500 gpm for 4 hours (Appendix D, page D-1). Douglas County engineering staff has determined that a 4,000 gpm demand is to be used for the purposes of this analysis (per verbal communication with Ron Roman on June 26, 2008). The CFP text states that the proposed improvements contained in the CFP adequately meet the fire flow requirements for velocity, pressure and demand, however these results could not be duplicated using the model provided with the CFP.

The water system proposed by the CFP was duplicated and a fire flow of 4,000 gpm was added at the Wal-Mart site, additional flows at the BGV property and for the proposed casino was not included in this model (Model 2 on the CD provided in appendix). The model shows that the existing 14" water main from Jacks Valley Road to Topsy Lane (P286 in the models) has a velocity of 10.8 feet per second which exceeds the maximum velocity of 10 feet per second allowed by Douglas County Design Criteria. Pressures were above 20 psi at all junctions in the model.

In order to meet Douglas County criteria for fire flow approximately 2,600 feet of 8-inch water line is needed parallel to the existing 14-inch water line (Model 3 on the CD provided in the appendix) in addition to the improvements already identified in the CFP.

Additionally a Pressure Reducing Valve (PRV) will also be required on the 8-inch line prior to its connection to the Wal-Mart Pressure Zone. The 8-inch parallel water line is necessary to serve the existing land use approvals at the NDCSP area even if the casino and BGV amendment are not accounted for. With the 2,600 feet of 8-inch main in place there are no improvements to the distribution system required to serve the additional 105 EDU's and the proposed casino that are currently allowed (but not accounted for in the current CFP) and for the 270 additional EDU's proposed with the Master Plan Amendment (Model 4 on the CD provided in the appendix). A summary of the water models provided on the CD in the appendix is provided below.

Table 5.1 Summary of Water Models

Model Label	Change from CFP model	Additional Improvements to CFP
1	None	
2	+4,000 gpm fire flow	*refer to Model 3*
3	+4,000 gpm fire flow	2,600 LF 8-inch Water
4	Model 3 +Casino +105 EDU+270 EDU	2,600 LF 8-inch Water

The CFP, as previously discussed, identifies future storage and water supply needs for the North County Area. The CFP estimates that 1,117,900 gallons of storage and 1,304 gpm of water supply are needed. There is no increase in fire flow storage required as the fire flow for the Wal-Mart site controls the fire storage requirement for the NDCSP area. The increases in capacity over those presented in the CFP that could be realized by the proposed Master Plan Amendment are:

Supply: 105 gpm (currently zoned but not accounted for in CFP)
270 gpm (per Master Plan Amendment)
Total: 375 gpm

Operating Storage: 375 EDU x 700 gallons = 263,000 gallons.

Emergency Storage: 263,000 gallons x 0.75 = 197,250 gallons

Total Storage: 460,250 gallons.

The total additional storage and water supply needs to meet future build out including the assumed casino requirements and upon approval of the Master Plan Amendment are provided in Table 3-3A in the appendix. A summary of Table 3-3A is provided below.

Supply:

375 gpm (BGV)
225 gpm (Assumed for Casino)
1,304 gpm (Identified in CFP)
Total: **1,904 gpm** (Increase from existing available supply)

Operating Storage:

262,500 gallons (BGV)
157,500 gallons (Assumed for Casino)
1,095,900 gallons (Identified in CFP)
Total: **1,515,900 gallons** (Increase from existing available storage)

Emergency Storage:

196,875 gallons (BGV)
118,125 gallons (Assumed for Casino)
822,900 gallons (Identified in CFP)
Total: **1,137,000 gallons** (Increase from existing available storage)

This report provides a conceptual water system analysis and plan for the proposed North Douglas County Specific Plan and Master Plan Amendments proposed by Big George Ventures and in general shows the feasibility of the project. The proposed improvements conceptually comply with Douglas County Code, design criteria and improvement standards. This report should be considered a planning level document. A detailed water system analysis and plans are needed prior to construction.

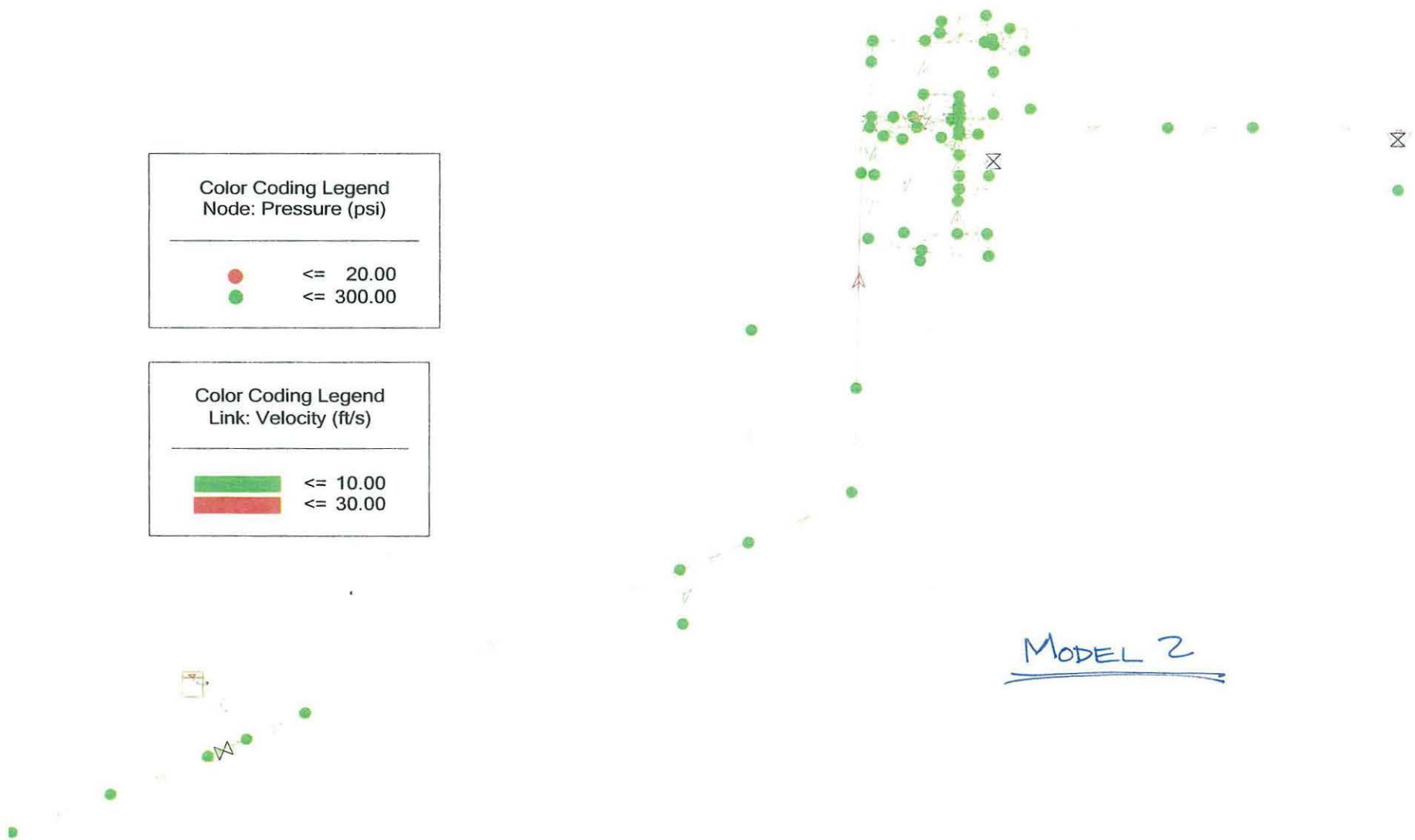
A CD with the water models and supporting information is provided in the Appendices.

Water Model Descriptions

Model Label	Change from CFP model	Additional Improvements to CFP
1	None	
2	+4,000 gpm fire flow	*refer to Model 3*
3	+4,000 gpm fire flow	2,600 LF 8-inch Water
4	Model 3 +Casino +105 EDU+270 EDU	2,600 LF 8-inch Water

Note: CFP refers to *Capital Facility Plan, North County/West Valley Water System, Douglas County, Nevada*, dated August 2007 prepared by Forsgren Associates, inc.

Scenario: Base - Future Demand



Scenario: Base - Future Demand

PIPE LEGEND

GREEN ≤ 10 FPS
RED > 10 FPS

JUNCTION LEGEND

GREEN > 20 psi
RED ≤ 20 psi

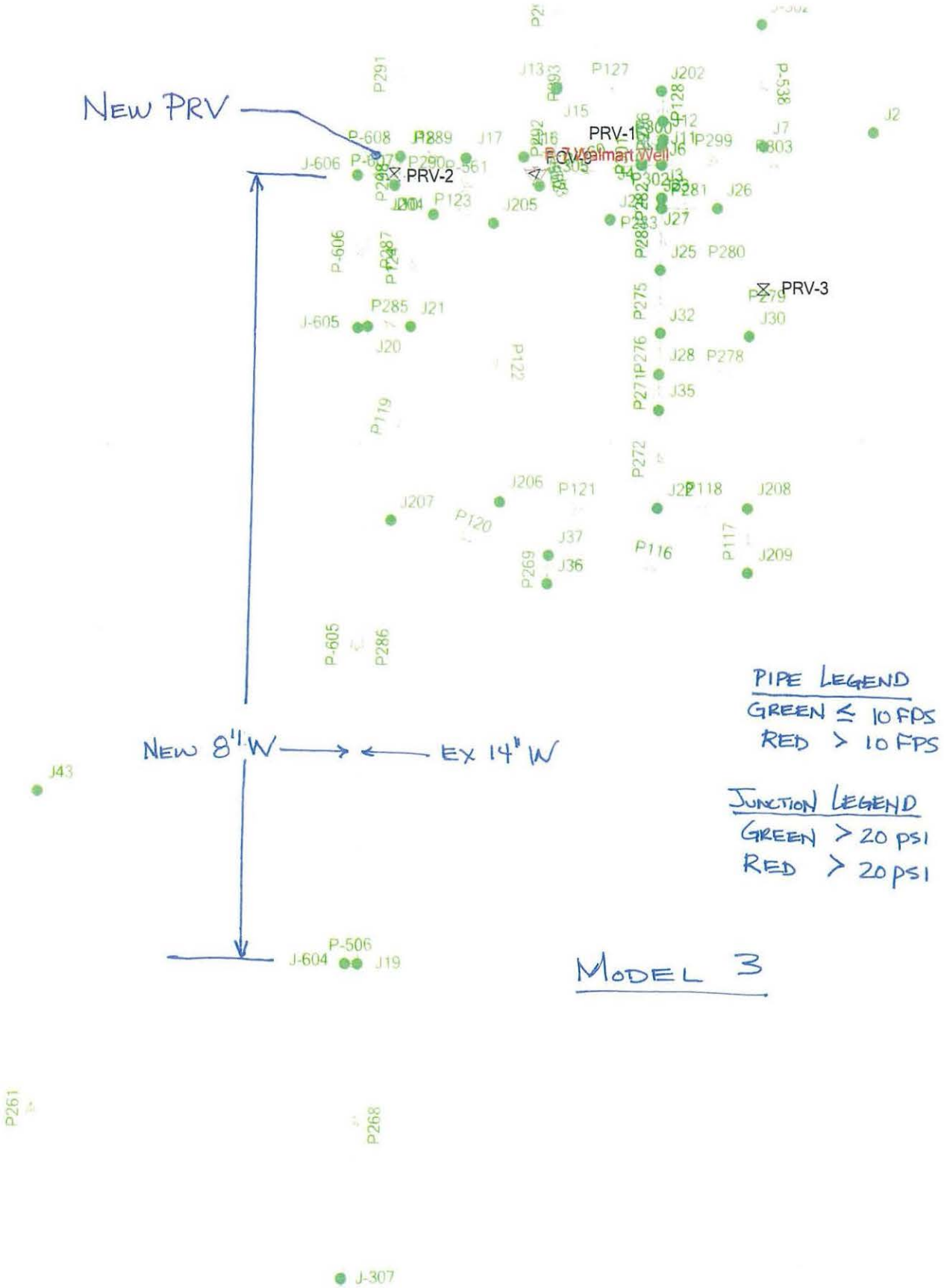
← VELOCITY EXCEEDS 10 fps IN EX 14" W

CFP MODEL
+ 4000 gpm Fire Flow only

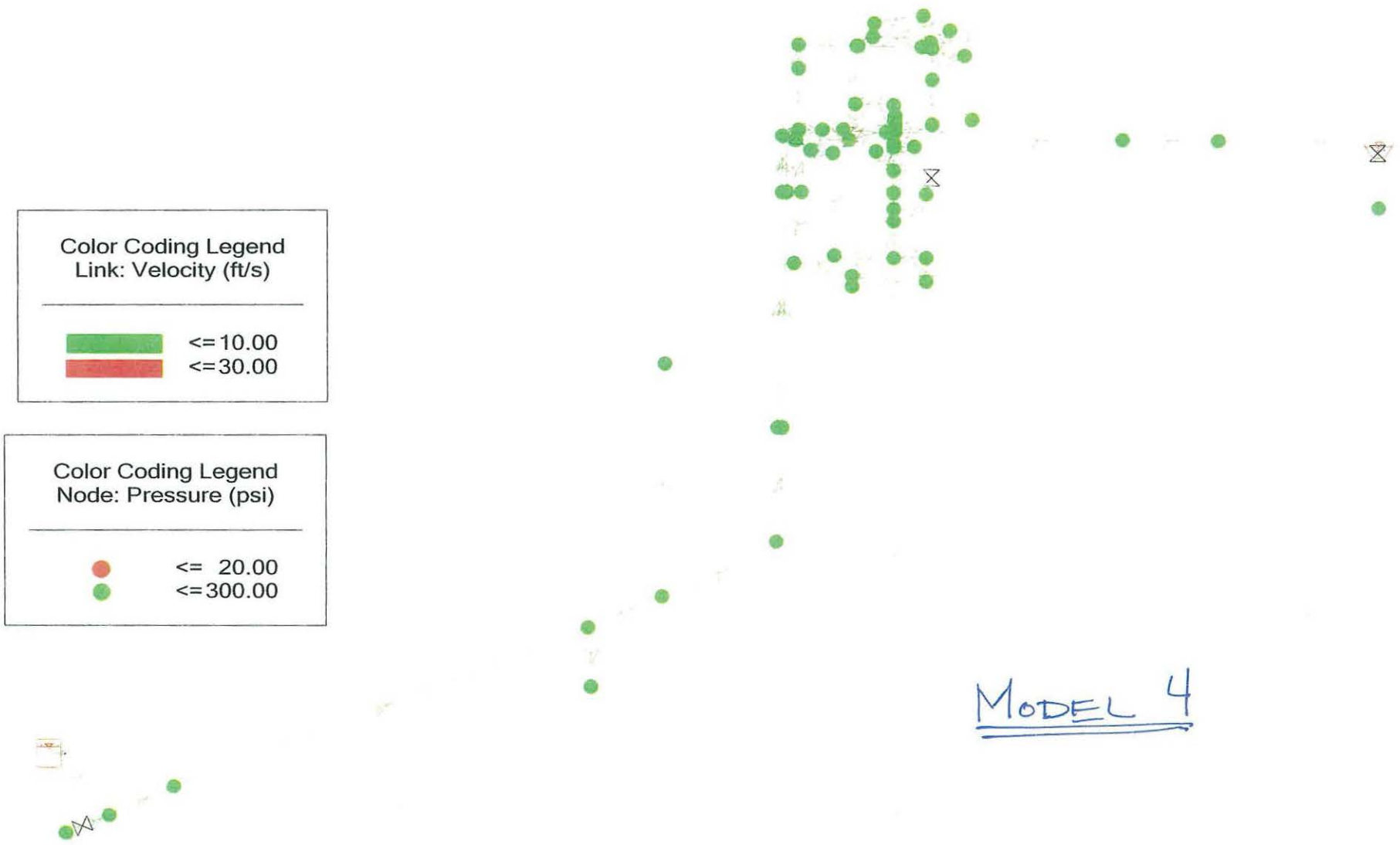
MODEL 2

Scenario: Base - Future Demand

Scenario: Base - Future Demand



Scenario: Base - Future Demand



Scenario: Base - Future Demand

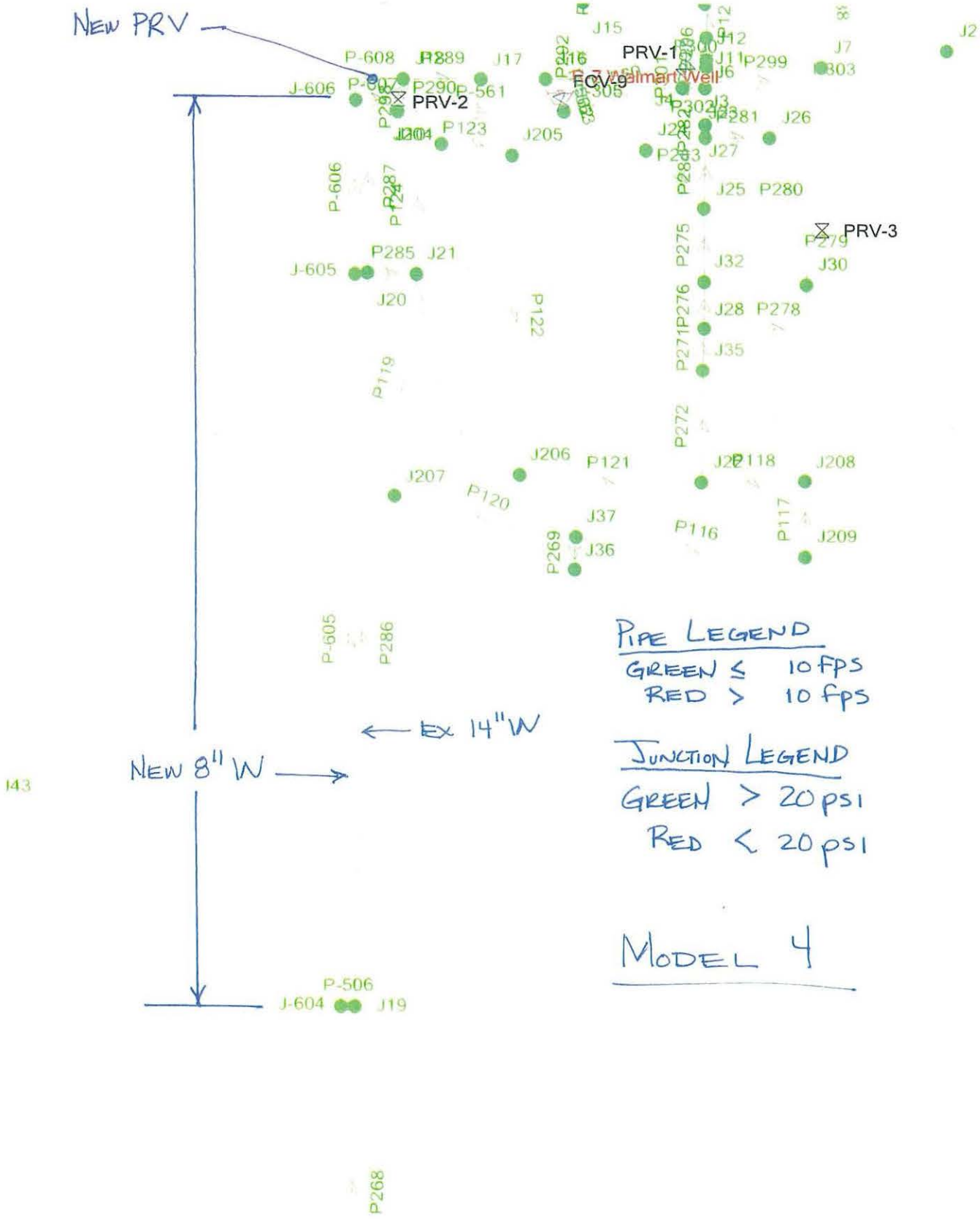


Table 3-3 (Amended) - Future Storage and Water Supply Needs

		Future Storage Needs (Gallons)				Existing Storage			Supply			
SERVICE AREA	Est. EDU's	Operating Storage (Gallons)	Emergency (75% of Operating)	Fire	Total Storage Future Required (Gallons)	Tank Name	Capacity (Gallons)	Difference (Gallons)	Future Max Day Demand (gpm)	Existing Source	Yield (gpm)	Difference (gpm)
A. North County												
1. North County Area	1,288	901,300	676,000	1,080,000	2,657,300	Jacks Valley	2,000,000		1,416	Wal-Mart Well	100	
2. Jacks Valley Road Area	278	194,600	146,000	120,000	460,600		NA		338	Topsey Well	350	
3. Proposed Casino *	225	157,500	118,125		275,625				225			
4. BGV Property (Current Zoning)	105	73,500	55,125		128,625				105			
5. BGV MP Amendment	270	189,000	141,750		330,750				270			
Subtotal	2,166	1,515,900	1,137,000	1,200,000	3,852,900		2,000,000	1,852,900	2,354		450	1,904
B. West Valley												
1. Walleys Resort	237	224,600	168,500	510,000	903,100	Genoa	410,000		156	Genoa #4 (Walleys)	410	
2. Genoa/Genoa Lakes	597	417,900	313,400	Included Above	1,241,300	Genoa Lakes	730,000		1,194	Genoa Lakes #1 & #2	360	
3. Canyon Creek/Montana						Eagle Ridge	307,800			Sierra Shadows	120	
- Upper	82	57,400	44,000	120,000	221,400	Upper James	1,034,000		82			
- Lower	493	345,300	258,800	Included Above	874,100	Lower James	500,000		493	Simek #1 & #2	465	
Subtotal	1,409	1,045,200	784,700	630,000	3,239,900		2,981,800	258,100	1,925		1,355	570
C. Clear Creek	384	268,800	201,600	292,500	762,900		0		461	NA	0	
Subtotal	384	268,800	201,600	292,500	762,900		0	762,900	461		0	461
SYSTEM TOTALS	3,959	2,829,900	2,123,300	2,122,500	7,855,700		4,981,800	2,873,900	4,740		1,805	2,935

Capital Facility Plan: North County/West Valley Water System
Douglas County Nevada
Revision Date: 8/10/2007
** Assumed Values for Service Area*

Table 3-3 from Capital Facility Plan, North Court / West Valley Water System, Douglas County, NV, Aug. 2007
Amended to Include Potential Big George Ventures and Proposed Casino Impacts

APPENDIX E

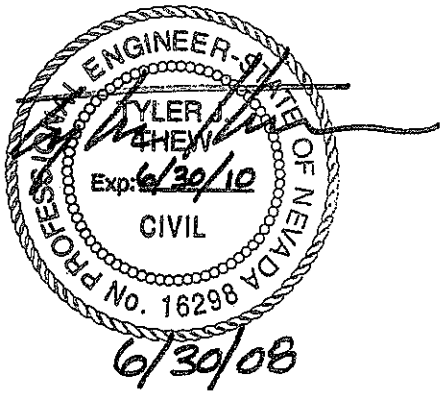
CONCEPTUAL SEWER SYSTEM ANALYSIS

NORTH DOUGLAS COUNTY SPECIFIC PLAN

AMENDMENT #2

JUNE 2008

(revised 6/30/08)



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5.2.2 Waste Water System

Sewer Service

The Big George master plan amendment proposes 504 residential units (with the potential of up to 630 with affordable housing density bonus units), and approximately 2.75 acres of commercial development. It is estimated that this will require approximately 650 sewer equivalent dwelling units (EDU's). Based upon the 200 gallons per day per EDU used by Manhard Consulting Ltd. in their work for Douglas County on the North Valley Specific Plan the Big George site would produce 130,000 gallons per day.

The estimated sewage flow from the Big George property in the report titled: *Sewer Analysis for North Valley Specific Plan Area, Topsy Lane Infrastructure, by Manhard Consulting Ltd. dated April 2008* is 364 EDU's and 72,800 gallons per day. Therefore, this master plan amendment proposes an increase of 314 EDU's and 62,800 gallons per day. Using the same peak factor used by Manhard of 3.0 the peak flow will increase by 130 gallons per minute (gpm) or 0.188 million gallons per day (MGD) with the proposed master plan amendment.

Sewer service is proposed to be provided in accordance with the above report by Manhard Consulting Ltd. Sewage flows from the site will be collected in gravity mains constructed by Big George and conveyed to the proposed gravity mains within Topsy Lane and Center Drive. This will flow to the proposed Topsy Lift Station. From there sewage will flow first in a proposed force main then an existing gravity line to the existing Sunridge Lift Station. From the Sunridge lift station it will be conveyed by the existing force main to the North Valley Wastewater Treatment Plant.

Conveyance Capacity

- Topsy Lane and Center Drive Gravity Line Capacity – Appendix 2 of the Manhard sewer analysis referenced above provides a table showing the half full capacity of the proposed gravity sewer main along Topsy Lane and Center Drive adjacent to the Big George Ventures property. The table incorrectly references the half full capacity of the pipes in MGD however the accompanying calculations show that the table actually references the half full capacity in cubic feet per second (cfs). Table C-1: Gravity Sewer Capacity provided with this report converts the sewer design flows from MGD to cfs in order to verify that sufficient capacity is available using the calculations provided in the Manhard report. Table C-1 shows that the capacity of the gravity sewer mains proposed in the Manhard report are sufficient to convey the design flows used in the Manhard report along with the flow estimated to be generated by the additional EDU's proposed by the Big George Ventures specific plan and master plan amendment.

- Proposed Topsy Lane Lift Station and Force Main - The report states that the Topsy Lift Station will initially have pumps for 550 gpm and those will be replaced as development occur with pumps of 1100 gpm at full build out (Manhard report – Appendix 3). The proposed Topsy Lift Station and force main is designed for a total future capacity of 1330 gpm. With the proposed master plan amendment as flows increase the pumps will need to be replaced or modified to be capable of handling the new expected flow at full build out of 1,230 gpm (1,100 +130).

- Gravity Line from the Topsy Force Main to the Sunridge Lift Station – This existing gravity line was designed assuming a sewer flow of 270 gpm from the Clear Creek development area would go through the line. The sewer flows from the Clear Creek development area are now going to be directed to the Indian Hills treatment plant therefore 270 gpm of capacity is available in this line. The flow from the additional EDU's generated by the proposed specific plan and master plan amendments is 130 gpm therefore this line has adequate capacity for the increase in flow.

- Sunridge Lift Station and Force Main – The Sunridge Lift Station has three pumps and was designed so that one pump could handle all the flow to the lift station. The current capacity of the lift station is 1,250 gpm and it was designed so that the capacity could be increased to 1510 gpm in order to receive sewer flows from the future Clear Creek development area. The sewer flows from the Clear Creek development area are now going to be directed to the Indian Hills treatment plant and the Sunridge Lift Station no longer needs to account for these flows. At full build out including the additional flows from this specific plan amendment the Sunridge Lift Station will have a peak inflow of 1,230 gpm from the Topsy Lift Station and 150 gpm from the gravity main in Sunridge. The total inflow will therefore be 1,380 gpm which exceeds the current pump capacity. The Sunridge Lift Station is designed so that there are two options to increase its capacity. The first option is to allow two pumps to come on (currently only one of the three pumps is used). The feasibility of this option requires a detailed review of the existing pumps that is beyond the scope of this report. The second option is to replace all three existing pumps.

In summary the existing and proposed conveyance facilities can handle the expected increase in peak flows of 130 gpm (0.188 MGD). The only modifications necessary are:

1) when the pumps in the Topsy Lift Station are replaced they need to be replaced with pumps capable of 1230 gpm instead of the proposed 1100 gpm pumps, and
2) when the Topsy Lift Station is modified the existing Sunridge Lift Station needs to also be modified to allow two of the existing pumps to come on or replace the Sunridge pumps with new pumps capable of producing 1380 gallons per minute.

Treatment and Disposal Capacity

The Big George Property is within the North Valley Wastewater Treatment Plant (NVWWTP) Service area. The treatment works is operated by the Douglas County Utility Division and currently has an average day capacity of 0.45 MGD. Per discussions with Ron Roman of the Douglas County Utility Division, the NVWWTP plant is currently at capacity given their will serve commitments. One of these will serve commitments is to Big George Ventures for this site, (APN 1420-05-201-006) that contemplates 364 EDU's. Therefore, in accordance with the requested County format for master plan amendments:

> 0.45 MGD existing Capacity + 0.0628 MGD required additional capacity = .5128 MGD required capacity

The facility plan for the NVWWTP proposes expansion to 1.6 MGD average daily flow. It is understood that if the plant were to expand to 1.6 MGD there would be capacity available for the expected flows from the Big George Master Plan amendment.

Summary

This report provides a conceptual sewer system analysis and plan for the North Douglas County Specific Plan and Master Plan Amendments proposed by Big George Ventures and in general shows the feasibility of the project. The proposed improvements conceptually comply with Douglas County Code, design criteria and improvement standards. This report should be considered a planning level document. A detailed sewer system analysis and plans are needed prior to construction.

Table C-1: Gravity Sewer Capacity

Analysis of Capacity available in proposed sewer conveyance system provided in the "Sewer Analysis for Noth Valley Specific Plan Area Topsy Lane Infrastructure" dated April 29, 2008.

*Manhole #	**Manhole #	Manhard Design Flow (MGD)	Additional BGV Design Flow (MGD)	Total Design Flow (MGD)	Total Design Flow (cfs)	Size (in.)	Slope (ft./ft.)	1/2 Full Velocity (fps)	1/2 Full Capacity (cfs)	Capacity Available for Additional BGV EDU's
1	T1	0.701	0	0.701	1.1	12	0.016	5.8	2.3	Y
	T2	0.701	0	0.701	1.1	12	0.016	5.8	2.3	Y
2	T3	0.867	0	0.867	1.3	12	0.012	4.9	1.9	Y
	T4	0.867	0	0.867	1.3	12	0.012	4.9	1.9	Y
3	T5	0.867	0.188	1.055	1.6	12	0.012	4.9	1.9	Y
	T6	0.867	0.188	1.055	1.6	12	0.012	4.9	1.9	Y
4	T7	1.110	0.188	1.298	2.0	12	0.015	5.6	2.2	Y
	T8	1.110	0.188	1.298	2.0	12	0.020	6.4	2.5	Y
	T9	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T10	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T11	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T12	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T13	1.110	0.188	1.298	2.0	12	0.045	9.6	3.8	Y
	T14	1.110	0.188	1.298	2.0	12	0.015	5.6	2.2	Y
5	C1	1.110	0.188	1.298	2.0	15	0.015	6.5	4.0	Y
	C2	1.110	0.188	1.298	2.0	15	0.008	4.6	2.8	Y
6	C3	1.274	0.188	1.462	2.3	15	0.014	6.3	3.9	Y
	C4	1.274	0.188	1.462	2.3	15	0.008	4.6	2.8	Y
	C5	1.274	0.188	1.462	2.3	15	0.008	4.6	2.8	Y

* per Manhard Appendix 1 Estimated Sewage Flow Rates - Full B/O

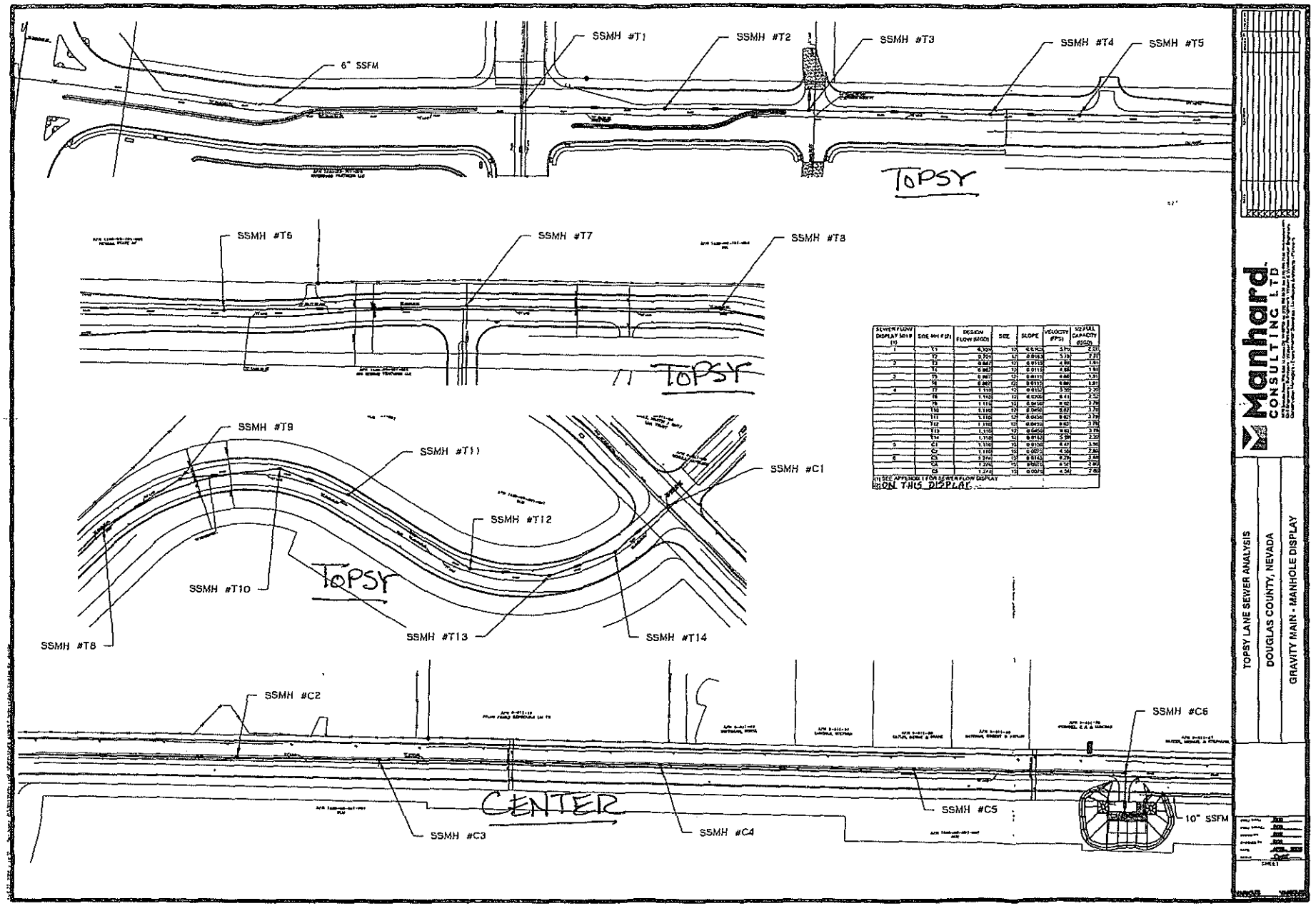
** per Manhard Appendix 2, Gravity Main - Manhole Display

NOTE: THIS SHOULD BE CFS

SEWER FLOW DISPLAY MH # (1)	SITE MH # (2)	DESIGN FLOW (MGD)	SIZE	SLOPE	VELOCITY (FPS)	1/2 FULL CAPACITY (~~MGD~~)
1	T1	0.701	12	0.016	5.79	2.27
	T2	0.701	12	0.016	5.79	2.27
2	T3	0.867	12	0.012	4.86	1.91
	T4	0.867	12	0.012	4.86	1.91
3	T5	0.867	12	0.012	4.86	1.91
	T6	0.867	12	0.012	4.86	1.91
4	T7	1.110	12	0.015	5.59	2.20
	T8	1.110	12	0.020	6.41	2.52
	T9	1.110	12	0.045	9.62	3.78
	T10	1.110	12	0.045	9.62	3.78
	T11	1.110	12	0.045	9.62	3.78
	T12	1.110	12	0.045	9.62	3.78
	T13	1.110	12	0.045	9.62	3.78
	T14	1.110	12	0.015	5.59	2.20
5	C1	1.110	15	0.015	6.45	3.96
	C2	1.110	15	0.008	4.56	2.80
6	C3	1.274	15	0.014	6.29	3.86
	C4	1.274	15	0.008	4.56	2.80
	C5	1.274	15	0.008	4.56	2.80

(1) SEE APPENDIX 1 FOR SEWER FLOW DISPLAY
(2) SEE GRAVITY MAIN - MANHOLE DISPLAY IN APPENDIX 2

ORIGINAL TABLE FROM MANHARD SEWER ANALYSIS


SSMH #T1
SSMH #T2
SSMH #T3
SSMH #T4
SSMH #T5
6" SSFM
TOPSY
SSMH #T6
SSMH #T7
SSMH #T8
TOPSY
SSMH #T9
SSMH #T11
SSMH #C1
SSMH #T12
SSMH #T10
TOPSY
SSMH #T8
SSMH #T13
SSMH #T14
SSMH #C2
SSMH #C6
CENTER
SSMH #C3
SSMH #C4
SSMH #C5
10" SSFM
Manhard CONSULTING LTD
TOPSY LANE SEWER ANALYSIS
DOUGLAS COUNTY, NEVADA
GRAVITY MAIN - MANHOLE DISPLAY

EXCERPTS FROM:

SEWER ANALYSIS FOR

NORTH VALLEY SPECIFIC PLAN AREA

TOPSY LANE INFRASTRUCTURE

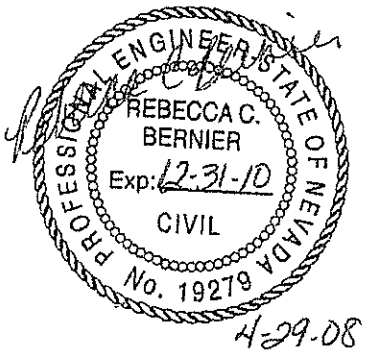
DATED: APRIL 29,2008

PREPARED BY: MANHARD CONSULTING LTD.

Sewer
Analysis
For
North Valley Specific Plan Area
Topsy Lane Infrastructure

Prepared for:

Riverwood Partners, LLC
P.O. Box 18475
Reno, NV 89511
(775) 842-6008



4-29-08

Prepared by:

Manhard
CONSULTING

3476 Executive Pointe Way, Ste 12
Carson City, Nevada 89706

April, 2008

Introduction:

The purpose of this report is to support the sewer infrastructure improvements in the North Valley Specific Plan Area, by updating the previous analyses done by Capital Engineering in 2005.

There have been two report previously completed for Douglas County by Capital Engineering in 2005. The Sunridge Drive report (included in Appendix 4 of this report) addressed the design of Sunridge Drive gravity mains and the Sunridge Lift Station which included the flows from the future Topsy Lift Station. The construction of the Sunridge Drive Improvements including the Sunridge Lift Station was completed in 2005. The Topsy Lane report (included in Appendix 5 of this report) addressed the flows into the proposed Topsy Lane gravity mains and the proposed Topsy Lift Station. The Topsy Lane Improvements were not constructed.

This report will incorporate the land use changes in this area and address, the sizing of the Topsy Lane gravity mains and lift station, and other changes to the existing sewer system needed to accommodate the planned flows.

Background:

Currently there are two lift stations in this area, the Wal Mart Lift Station, located off of the west side of Topsy Lane and the Sunridge Lift Station located by the Sunridge Golf Course. Since the previous report was completed, there have been changes that affect overall sewer flows. The Beverly Hillbillies Casino was approved, which increase the flows significantly. The Clear Creek Development Project is in design and the flows will no longer be entering the Douglas County sewer collection system. In discussions with Douglas County Engineering, it was deemed acceptable to assume that Jacks Valley residential flows will enter Indian Hills Sewer Collection System. Additionally, Douglas County has received preliminary subdivision improvement plans for the land east of the Beverly Hillbillies Casino and the Riverwood Shopping Center.

Proposed Topsy Lane Infrastructure:

With the addition of the Riverwood Shopping Center, located along U.S. Highway 395 between Topsy and Sunridge, the Topsy Lane Infrastructure is now required. This infrastructure includes gravity mains running east from the Riverwood Shopping Center along Topsy Lane, then south along Center Drive to the proposed Topsy Lift Station. The Topsy Lift Station will be built in phases. Initially the lift station pumps will be sized to serve all properties within Douglas County along Topsy Lane and Center Drive based on current zoning and preliminary drawings submitted to Douglas County, with the exception of the Beverly Hillbillies Casino. The initial design of the lift station will support phase 1 of the casino, with the ultimate design supporting the anticipated full buildout of the casino and surrounding area. The complete design of the lift station pumps and force main sizing are included in Appendix 3 of this report.

Proposed Casino Flows:

The sewer flows for the Beverly Hillbillies Casino have been calculated and estimated three different ways, according to Douglas County Code for fees, according to the City of Reno for sewer flow, and based on actual water usage information provided by Douglas County for a similar sized casino in South Lake Tahoe. Using the Douglas County code by EDUs (equivalent dwelling units) – we have approximately 600 (this number is based on a preliminary calculation done by Douglas County to determine sewer hook up fees), discharging 600x200=120,000 average day = 360,000 peak flow. Following City of Reno based on the number of rooms, we have 720 for ultimate buildout, which will discharge 720x650=468,000 peak flow. And finally, using water usage data we received, Harvey's Casino, which has 740 rooms uses 72,782,644 gallons per year = 199,404 average day. In our discussions with Ron Roman and Carl Ruschmeyer it was decided to proceed with the sewer flows based on real usage

data. In our calculations we used 200,000 gallons per day average day flow, with a peaking factor of 3 for the lift station design, as in accordance with Douglas County code. Phase one of the casino will have approximate 260 rooms, for this initial design, we have assumed we will have half of the ultimate buildout flow, or 100,000 gallons per day.

All of the anticipated flows are displayed in Appendix 1. There are two displays. One shows the ultimate buildout flows and pumps and the other shows the initial flows and pumps. The buildout flows display shows the flow from the Topsy Lift Station to be 1050 gallons per minute, whereas Appendix 3, shows the flow as 1170. The impeller for the ultimate design will be trimmed down to be close to 1050. The initial flow display shows slightly more than 1250 gallons per minute reaching the Sunridge Lift Station. This will only occur when all developments along Sunridge Drive are constructed. Additionally the proposed facilities for the Sierra Lutheran High School will not generate the projected flows as calculated by land use. When the Sierra Lutheran High School, Hilltop Church expansion and Fire Station are all fully operational, we will see less flow than the estimated flow rates shown. This area will be further discussed, as the design of the high school is closer to completion.

Flow Capacity of Pipes:

All pipes were designed to meet Douglas County's standards. Douglas County's standards include:

1. d/D = 0.5 max; for D<15"
2. Vmin [@ d/D = .5] = 2 fps; If d/D<0.5 – Vmin =1.8 fps
3. min slopes – see table 5.2 in Douglas County's development standards
4. Vmax [@ d/D = .8] = 10 fps
5. n = 0.013

Using the data from the "Estimated Sewage Flow Rates" analysis, included Appendix 1, each reach of the sewer was calculated minimizing pipe size while conforming to Douglas County's standards. All pipes meet Douglas County's standards. Calculations are provided in Appendix 2 of this report.

Changes to Existing Sewer Infrastructure:

The Sunridge Lift Station is the controlling factor in this area. The existing lift station has three pumps and was designed for one pump to handle all of the sewer flow for this area. The design memo for the lift station is included with Appendix 4. The Sunridge Lift Station can handle at least 1250 gallons per minute with no modifications. With the addition of the Topsy Lane Lift Station, the Sunridge Lift Station has to handle the flows from two lift stations in parallel. For the initial flows, this is not an issue, however for full buildout it will be necessary to re route the sewer flows from the Wal Mart Lift Station to the new Topsy Lift Station so these pump stations are not operated in parallel. The Topsy Lift Station is designed for these additional flows.

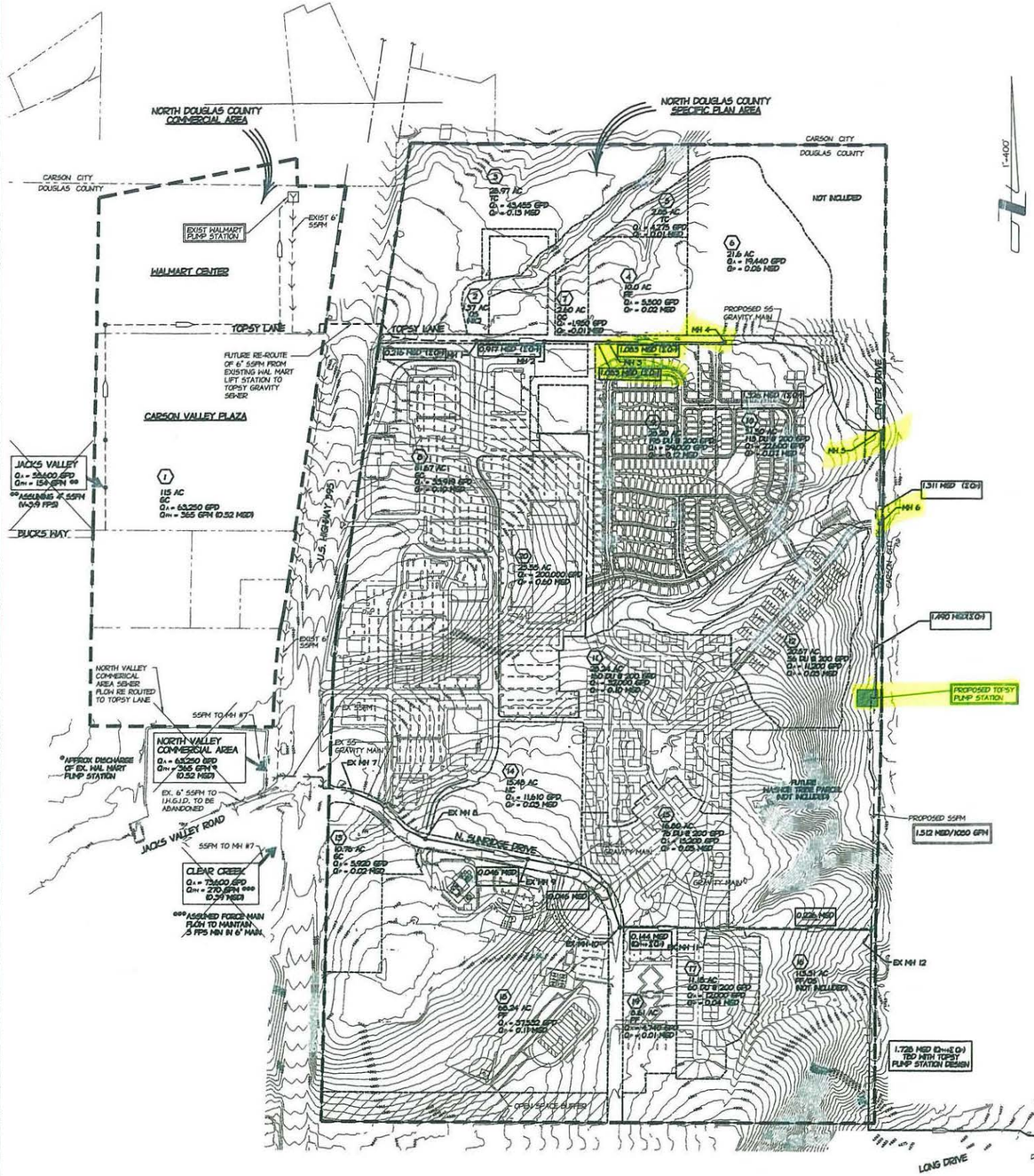
With one pump on, the Sunridge Lift Station operates at a minimum of 1250 gpm. Ultimately (with rerouting the Wal Mart Lift Station flows) the Sunridge gravity mains convey approximately 150 gpm peak flow (using a peaking factor of 3, because we are using these flows for lift station design), which leaves the flow from Topsy Lift Station limited to 1100 gpm. Due to the small amount of the proposed developments going forward at this point, the Topsy Lift Station will initially have smaller pumps designed to meet the minimum velocity of the 10" force main requirement of 3 feet per second.

Conclusion:

The Topsy Lane Lift Station will be constructed to handle the flows for the surrounding area in full buildout with the exception of the approved Hillbillies Hotel and Casino. When the casino reaches full buildout, the Wal Mart Lift

Station flows will be rerouted to the Topsy Lane gravity mains, and the Topsy Lane Lift Station will have bigger pumps put in. Even with full buildout in place, no modifications will be needed at the Sunridge Lift Station. The gravity mains in Topsy Lane will be constructed with Riverwood improvements and are sized for full buildout including the re route of flows from the Wal Mart Lift Station. All pieces of the proposed infrastructure have been designed in accordance with Douglas County Standards.

APPENDIX 1
SEWAGE FLOWS



ESTIMATED SEWAGE FLOW RATES SUMMARY

USING ZONING AND LAND PLANS

DESCRIPTION	LOCATION ID (1)	ZONING	ACRES	# of DWELLING UNITS (DU) (2)	AVERAGE SEWER FLOW/ACRE (1) (GPD/ACRE)	AVERAGE SEWER FLOW/DU (200 GPD/UNIT)	Q_A AVERAGE DAILY FLOW (GPD/ INCREMENTAL AREA) (2)
GRAVITY FLOWS FROM NORTH DOUGLAS COUNTY SPECIFIC PLAN AREA - EAST OF U.S. 395	2	PF/OS	1.37		0		0
	3	TC	28.97		1,500		43,455
	4	PF	10.00		550		5,500
	5	TC	2.85		1,500		4,275
	6	SFR-8000	21.60		900		19,440
	7	OC	2.60		750		1,950
	8	GC	61.67		550		33,918
	9	SFR-8000	28.20	195	N/A	200	39,000
	10	SFR-12000	31.50	115	N/A	200	22,600
	11	SFR-8000	28.24	160	N/A	200	32,000
	12	SFR-12000	20.57	56	N/A	200	11,200
	13	GC	10.76		550		5,920
	14	NC	15.48		750		11,610
	15	SFR-8000	16.50	76	N/A	200	15,200
	16	PF/OS	113.31		0		0
	17	SFR-8000	11.18	60	N/A	200	12,000
	18	PF	68.24		550		37,532
	19	PF	8.61		550		4,740
	20	TC	23.55		(2)		200,000
		TOTALS:	505.5				500,341

Q_A = 1.501 MGD (AREAS 2-20)
Q_A = 1.717 MGD (AREAS 1-20)

FLOWS FROM WEST OF U.S. 395 BEING INTRODUCED INTO GRAVITY SYSTEM VIA FORCE MAIN TO SUNRIDGE DR.	1	GC	115.00		550		63,250
	~~Clear Creek~~		~~N/A~~		~~(3)~~		~~73,600~~
	~~Jacks Valley Rd~~		~~N/A~~		~~(3)~~		~~556,600~~

(1) GC USE 550 GPD/ACRE BASED ON REVIEW EXISTING SEWAGE RATES FROM WAL-MART CENTER AND CARSON VALLEY PLAZA FLOWS
PF USE 550 GPD/ACRE BASED ON TABLE 5.7 NORTH COUNTY SPECIFIC PLAN
OC USE 750 GPD/ACRE BASED ON TABLE 5.7 NORTH COUNTY SPECIFIC PLAN
NC USE 750 GPC/ACRE BASED ON TABLE 5.7 NORTH COUNTY SPECIFIC PLAN
TC USE 1500 GPD/ACRE BASED ON CAPITAL ENGINEERING ESTIMATE
SFR-8000 USE 4.5 LOTS PER ACRE @ 200 gpd/EDU (NOTE DOUGLAS COUNTY USED 5 LOTS PER ACRE IN AUG 2003 REPORT)
TC= USE 200 GPD/EDU BASED ON CAPITAL ENGINEERING RECOMENDATION PER 10/14/04 MEMORANDUM

(2) FLOWS FOR CASINO AREA ARE BASED ON WATER USAGE FOR SIMILAR SIZED CASINO

ASSUMED SYSTEM LOADING LOCATIONS

SUB-SYSTEM	MANHOLE #	LOCATION	FLOW FROM AREA(S)	Q_A AVERAGE DAILY INCREMENTAL AREA FLOWS (GPD)	Q_P PEAK HOUR INCREMENTAL AREA FLOWS (GPD) (1)	ΣQ_P SUMMATION PEAK HOUR FLOWS (MGD)	Q_{FM} FORCE MAIN FLOWS (MGD) (2)	$Q_{PH} + SQ_P$ TOTAL PEAK GRAVITY FLOWS PLUS 55PM FLOWS (MGD) (2)	COMMENTS
TOPSY								0.216	
	1	"C" 18+33	8, 20	233,919	701,757		0		
	2	"C" 22+67	3, 4, 5, 7	55,180	165,540	0.701	0	0.917	
	3	"C" 27+25				0.867	0	1.083	
	4	"C" 34+95	6, 9, 10	81,040	243,120	0.867	0	1.083	
	5	"C" 48+50				1.110	0	1.326	
	6	"C" 30+50	11, 12, 14	54,810	164,430	1.110	0	1.326	
				Σ=424,949		1.274		1.490	
	TOPSY PUMP STA.	"C" 36+50	(ALL OF ABOVE)				1,512		PUMP TO MH #12 (ASSUME PUMPING 1050 GPM)
SUNRIDGE	7	"SR" 12+75	1	0	0	0	0	0.000	
	8	"SR" 18+50	13, 25% of 18	15,303	45,909		0	0.046	
	9	"SR" 27+50				0.046	0	0.046	
	10	"SR1" 10+25	75% of 18, 19	32,869	98,667	0.046	0	0.046	
	11	"SR1" 16+00	15, 17	27,200	81,600	0.144	0	0.144	
	12	"SR1" 27+00		0	0	0.226	0	0.226	
				Σ=75,372		0.226	1,512	1.726	INTRODUCE 55PM FLOW FROM TOPSY PUMP STA.
	SUNRIDGE PUMP STA.	"SR1" 63+50						N/A	PUMP TO NVMWTP
	NVMWTP	"SR1" 235+18	TOTAL FLOW				1,800		

(1) 3.0 I PEAKING FACTOR PEAKING FACTOR RECOMMENDED FOR PUMP STATION DESIGN

NOTES

1. EXISTING SFR-1 PARCELS ASSUMED TO BE ABSORBED WITHIN SURROUNDING ZONING DISTRICT CLASSIFICATION FOR SEWAGE FLOW RATE ESTIMATE.
2. PEAK DESIGN FLOWS SHOWN FOR SUNRIDGE GRAVITY SYSTEM INCLUDE EXPECTED 55PM FLOWS BEING INTRODUCED INTO SYSTEM FROM WEST OF U.S. 395.
3. FORCE MAIN FLOWS FROM TOPSY and SUNRIDGE PUMP STATIONS SHOWN ARE APPROXIMATE ONLY, PENDING DESIGN OF PUMP STATIONS.

LEGEND

- CURRENT NORTH COUNTY SERVICE AREA
- EXIST 55PM
- EXIST SANITARY SEWER GRAVITY MAIN
- PROPOSED SANITARY SEWER GRAVITY MAIN
- PROPOSED SANITARY SEWER FORCE MAIN
- (16) LOCATION ID
- Q_A AVERAGE DAILY FLOWS
- Q_P PEAK FLOWS PER LOCATION FOR GRAVITY MAIN DESIGN (3.5 I PEAKING FACTOR)
- Q_{FM} FORCE MAIN FLOWS ENTERING GRAVITY SYSTEM
- 0.40 MGD PEAK DESIGN FLOW FOR PRINCIPAL GRAVITY MAIN REACHES

DRAWN BY | CHECKED | DATE | REVISIONS

Manhard CONSULTING LTD
3478 Buskirk Avenue, Suite 1000, Pleasant Hill, CA 94523 tel (925) 627-4100 fax (925) 627-4111 www.manhard.com
Civil Engineers • Surveyors • Water Resource Engineers • Water & Wastewater Engineers
Construction Managers • Environmental Scientists • Landscape Architects • Planners

NORTH VALLEY SPECIFIC PLAN AREA
DOUGLAS COUNTY, NEVADA
ESTIMATED SEWAGE FLOW RATES - FULL B/O

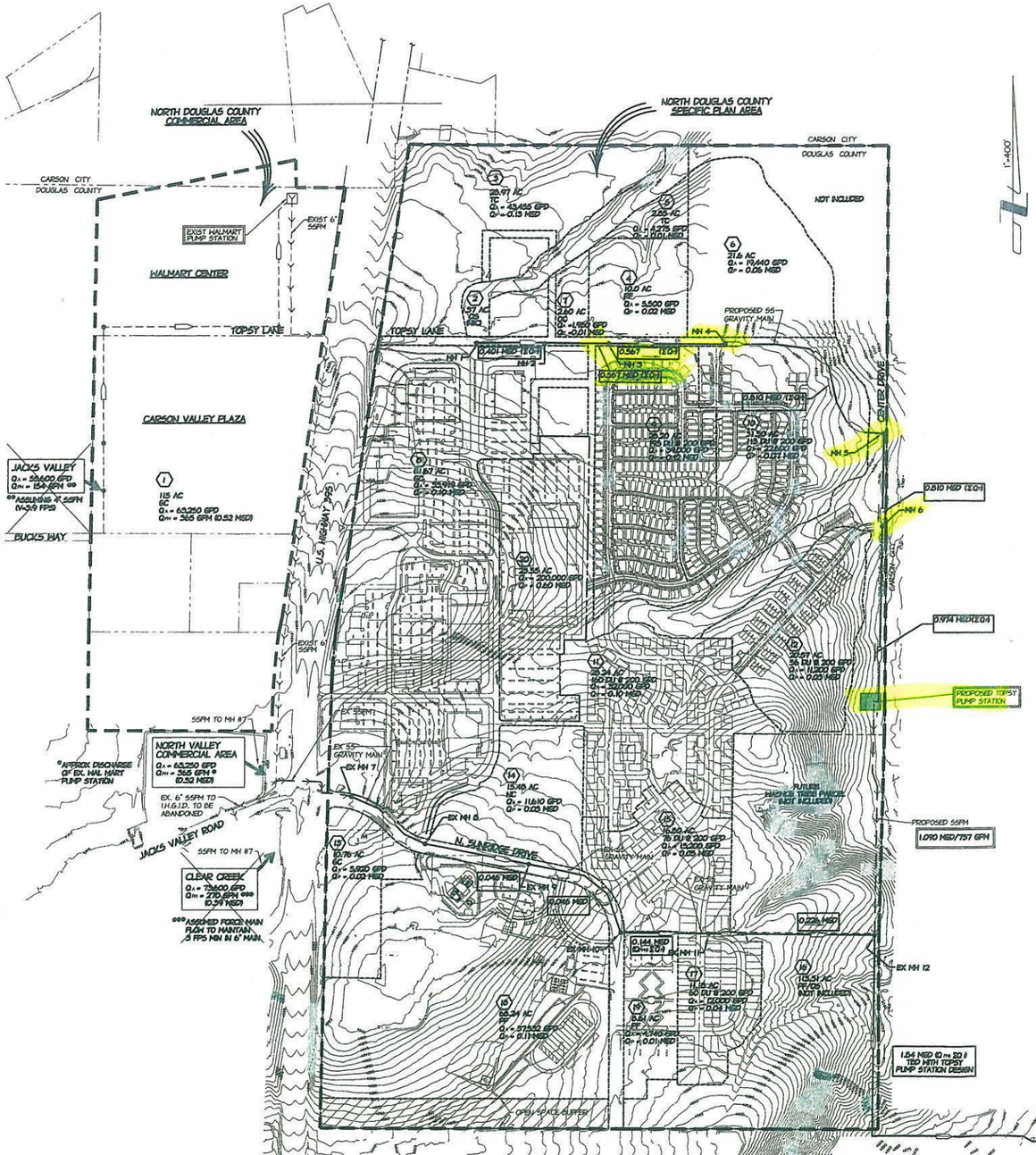
PROFESSIONAL ENGINEER STATE OF NEVADA
MARK A. ROTTER
Exp: 12-31-09
CIVIL
No. 6747

PROJ. MGR.:	MAR
PROJ. ASSOC.:	RCB
DRAWN BY:	RCB
CHECKED BY:	MAR
DATE:	APR 2008
SCALE:	1" = 400'

SHEET 1 OF 1

RPLDCN 070449

April 27, 2008 - 12:25 Dwg Name: P:\PROJECTS\Valley\ENGR\EXHIBITS\OVERALL SEWER FLOWS FOR LEFT STATIONS.dwg Updated By: rbamber



1"=400'

ESTIMATED SEWAGE FLOW RATES SUMMARY

USING ZONING AND LAND PLANS

DESCRIPTION	(1) LOCATION ID	ZONING	ACRES	# of DWELLING UNITS (DU) (2)	AVERAGE SEWER FLOW/ACRE (1) (GPD/ACRE)	AVERAGE SEWER FLOW/DU (200 GPD/UNIT)	Q_A AVERAGE DAILY FLOW (GPD/ INCREMENTAL AREA) (2)
GRAVITY FLOWS FROM NORTH DOUGLAS COUNTY SPECIFIC PLAN AREA - EAST OF U.S. 395	2	PF/OS	1.37		0		0
	3	TC	28.97		1,500		43,455
	4	PF	10.00		550		5,500
	5	TC	2.85		1,500		4,275
	6	SFR-8000	21.60		900		19,440
	7	OC	2.60		750		1,950
	8	GC	61.67		550		33,919
	9	SFR-8000	28.20	195	N/A	200	39,000
	10	SFR-12000	31.30	113	N/A	200	22,600
	11	SFR-8000	28.24	160	N/A	200	32,000
	12	SFR-12000	20.57	56	N/A	200	11,200
	13	GC	10.76		550		5,920
	14	NC	15.46		750		11,610
	15	SFR-8000	16.80	76	N/A	200	15,200
	16	PF/OS	113.31		0		0
	17	SFR-8000	11.18	60	N/A	200	12,000
	18	PF	68.24		550		37,532
	19	PF	8.61		550		4,740
	20	TC	23.55		(2)		200,000
		TOTALS	505.5		-		500,341
							Q_P = 1.501 MGD (AREAS 2-20)
							Q_P = 1.717 MGD (AREAS 1-20)
FLOWS FROM WEST OF U.S. 395 BEING INTRODUCED INTO GRAVITY SYSTEM VIA FORCE MAIN TO SUNRIDGE DR.	1	GC	115.00		550		63,250
	~~Skyer Crest~~		~~N/A~~		~~(2)~~		~~73,600~~
	~~Jacks Valley Rd~~		~~N/A~~		~~(2)~~		~~55,600~~

(1) GC USE 550 GPD/ACRE BASED ON REVIEW EXISTING SEWAGE RATES FROM WAL-MART CENTER AND CARSON VALLEY PLAZA FLOWS
PF USE 550 GPD/ACRE BASED ON TABLE 5.7 NORTH COUNTY SPECIFIC PLAN
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NC USE 750 GPD/ACRE BASED ON TABLE 5.7 NORTH COUNTY SPECIFIC PLAN
TC USE 1500 GPD/ACRE BASED ON CAPITAL ENGINEERING ESTIMATE
SFR-8000 USE 4.5 LOTS PER ACRE @ 200 gpd/EDU (NOTE: DOUGLAS COUNTY USED 5 LOTS PER ACRE IN AUG 2003 REPORT)
TC+ USE 200 GPD/EDU BASED ON CAPITAL ENGINEERING RECOMENDATION PER 10/14/04 MEMORANDUM

(2) FLOWS FOR CASINO AREA ARE BASED ON WATER USAGE FOR SIMILAR SIZED CASINO

ASSUMED SYSTEM LOADING LOCATIONS

SUB-SYSTEM	MANHOLE #	LOCATION	FLOW FROM AREA(S)	Q_A AVERAGE DAILY INCREMENTAL AREA FLOWS (GPD)	Q_P PEAK HOUR INCREMENTAL AREA FLOWS (GPD) (1)	ΣQ_P SUMMATION PEAK HOUR FLOWS (MGD)	Q_{FM} FORCE MAIN FLOWS (MGD) (2)	$Q_{FM} + \Sigma Q_P$ TOTAL PEAK GRAVITY FLOWS PLUS 55FM FLOWS (MGD) (2)	COMMENTS
TOPSY									
	1	"T1" 18+33	8, 20	133,919	401,757		0		
						0.401			
	2	"T1" 22+67	3, 4, 5, 7	55,180	165,540		0		
						0.567			
	3	"T1" 27+25					0		
						0.567			
	4	"T1" 34+95	6, 9, 10	81,040	243,120		0		
						0.810			
	5	"T1" 40+50					0		
						0.810			
	6	"C1" 30+50	11, 12, 14	54,810 X-324,949	164,430		0		
						0.974			
	TOPSY PUMP STA	"C1" 36+50	(ALL OF ABOVE)				1.090		PUMP TO MH #12 (ASSUME PUMPING 757 GPM)
SUNRIDGE	7	"SR" 12+75	1	0	0	0	0		
								0.526	
	8	"SR" 18+50	13, 253 of 16	15,303	45,909		0		
						0.046		0.572	
	9	"SR" 27+50					0		
						0.046		0.572	
	10	"SR1" 10+25	75% of 15, 19	32,869	98,667		0		
						0.144		0.670	
	11	"SR1" 16+00	15, 17	27,200	81,600		0		
						0.226		0.752	
	12	"SR1" 27+00		0	0		1.090		INTRODUCE 55FM FLOW FROM TOPSY PUMP STA.
	SUNRIDGE PUMP STA.	"SR1" 63+50		Σ -75,392		0.226		1.842	
								N/A	PUMP TO MHMTP
	MHMTP	"SR1" 235+18	TOTAL FLOW				1.842		

(1) 3.0:1 PEAKING FACTOR PEAKING FACTOR RECOMMENDED FOR PUMP STATION DESIGN

NOTES

1. EXISTING SFR-1 PARCELS ASSUMED TO BE ABSORBED WITHIN SURROUNDING ZONING DISTRICT CLASSIFICATION FOR SEWAGE FLOW RATE ESTIMATE.
2. PEAK DESIGN FLOWS SHOWN FOR SUNRIDGE GRAVITY SYSTEM INCLUDE EXPECTED 55FM FLOWS BEING INTRODUCED INTO SYSTEM FROM WEST OF U.S. 395.
3. FORCE MAIN FLOWS FROM TOPSY and SUNRIDGE PUMP STATIONS SHOWN ARE APPROXIMATE ONLY, PENDING DESIGN OF PUMP STATIONS.

LEGEND

- CURRENT NORTH COUNTY SERVICE AREA
- EXIST 55FM
- EXIST SANITARY SEWER GRAVITY MAIN
- PROPOSED SANITARY SEWER GRAVITY MAIN
- PROPOSED SANITARY SEWER FORCE MAIN
- (16) LOCATION ID
- Q_A AVERAGE DAILY FLOWS
- Q_P PEAK FLOWS PER LOCATION FOR GRAVITY MAIN DESIGN D.5:1 PEAKING FACTORS
- Q_{FM} FORCE MAIN FLOWS ENTERING GRAVITY SYSTEM
- 0.40 MGD PEAK DESIGN FLOW FOR PRINCIPAL GRAVITY MAIN REACHES

DRAWN BY | CHECKED BY | DATE | REVISIONS

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NORTH VALLEY SPECIFIC PLAN AREA
DOUGLAS COUNTY, NEVADA
ESTIMATED SEWAGE FLOW RATES - INITIAL

PROFESSIONAL ENGINEER - STATE OF NEVADA
MARK A. ROTTER
Exp: 12-31-09
CIVIL
No. 6747

PROJ. MGR:	MAR
PROJ. ASSOC:	RCB
DRAWN BY:	RCB
CHECKED BY:	MAR
DATE:	APR 2008
SCALE:	1"=400'

SHEET 1 OF 1

RPLDCN 070449

April 22, 2008 - 13:48 Dwg Name: P:\PROJ\NVLV\DWG\EXHIBITS\PHASE 1 SEWER FLOWS FOR LIFT STATIONS.dwg Updated By: rbertrer

APPENDIX 2
GRAVITY SEWER CALCULATIONS

*NOTE PER ROA ENGINEERING
THIS SHOULD BE CFS

SEWER FLOW DISPLAY MH # (1)	SITE MH # (2)	DESIGN FLOW (MGD)	SIZE	SLOPE	VELOCITY (FPS)	1/2 FULL CAPACITY (MGD)
1	T1	0.701	12	0.016	5.79	2.27
	T2	0.701	12	0.016	5.79	2.27
2	T3	0.867	12	0.012	4.86	1.91
	T4	0.867	12	0.012	4.86	1.91
3	T5	0.867	12	0.012	4.86	1.91
	T6	0.867	12	0.012	4.86	1.91
4	T7	1.110	12	0.015	5.59	2.20
	T8	1.110	12	0.020	6.41	2.52
	T9	1.110	12	0.045	9.62	3.78
	T10	1.110	12	0.045	9.62	3.78
	T11	1.110	12	0.045	9.62	3.78
	T12	1.110	12	0.045	9.62	3.78
	T13	1.110	12	0.045	9.62	3.78
	T14	1.110	12	0.015	5.59	2.20
5	C1	1.110	15	0.015	6.45	3.96
	C2	1.110	15	0.008	4.56	2.80
6	C3	1.274	15	0.014	6.29	3.86
	C4	1.274	15	0.008	4.56	2.80
	C5	1.274	15	0.008	4.56	2.80

(1) SEE APPENDIX 1 FOR SEWER FLOW DISPLAY
(2) SEE GRAVITY MAIN - MANHOLE DISPLAY IN APPENDIX 2

PIPES T1 & T2
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.016300	ft/ft
Depth	6.0	in
Diameter	12.00	in

Results		
Discharge	2.27	cfs
Flow Area	0.39	ft²
Wetted Perimeter	1.57	ft
Top Width	1.00	ft
Critical Depth	0.65	ft
Percent Full	50.00	
Critical Slope	0.007276	ft/ft
Velocity	5.79	ft/s
Velocity Head	0.52	ft
Specific Energy	1.02	ft
Froude Number	1.63	
Maximum Discharge	4.89	cfs
Full Flow Capacity	4.55	cfs
Full Flow Slope	0.004075	ft/ft
Flow is supercritical.		

PIPES T3-T6
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.011500	ft/ft
Depth	6.0	in
Diameter	12.00	in

Results		
Discharge	1.91	cfs
Flow Area	0.39	ft²
Wetted Perimeter	1.57	ft
Top Width	1.00	ft
Critical Depth	0.59	ft
Percent Full	50.00	
Critical Slope	0.006735	ft/ft
Velocity	4.86	ft/s
Velocity Head	0.37	ft
Specific Energy	0.87	ft
Froude Number.	1.37	
Maximum Discharge	4.11	cfs
Full Flow Capacity	3.82	cfs
Full Flow Slope	0.002875	ft/ft
Flow is supercritical.		

PIPE T7
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.015200	ft/ft
Depth	6.0	in
Diameter	12.00	in

Results		
Discharge	2.20	cfs
Flow Area	0.39	ft²
Wetted Perimeter	1.57	ft
Top Width	1.00	ft
Critical Depth	0.63	ft
Percent Full	50.00	
Critical Slope	0.007151	ft/ft
Velocity	5.59	ft/s
Velocity Head	0.49	ft
Specific Energy	0.99	ft
Froude Number	1.57	
Maximum Discharge	4.72	cfs
Full Flow Capacity	4.39	cfs
Full Flow Slope	0.003800	ft/ft
Flow is supercritical.		

PIPE T8
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.020000	ft/ft
Depth	6.0	in
Diameter	12.00	in

Results		
Discharge	2.52	cfs
Flow Area	0.39	ft²
Wetted Perimeter	1.57	ft
Top Width	1.00	ft
Critical Depth	0.68	ft
Percent Full	50.00	
Critical Slope	0.007704	ft/ft
Velocity	6.41	ft/s
Velocity Head	0.64	ft
Specific Energy	1.14	ft
Froude Number	1.80	
Maximum Discharge	5.42	cfs
Full Flow Capacity	5.04	cfs
Full Flow Slope	0.005000	ft/ft
Flow is supercritical.		

PIPES T9-T13
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.045000	ft/ft
Depth	6.0	in
Diameter	12.00	in

Results		
Discharge	3.78	cfs
Flow Area	0.39	ft²
Wetted Perimeter	1.57	ft
Top Width	1.00	ft
Critical Depth	0.83	ft
Percent Full	50.00	
Critical Slope	0.011067	ft/ft
Velocity	9.62	ft/s
Velocity Head	1.44	ft
Specific Energy	1.94	ft
Froude Number	2.71	
Maximum Discharge	8.13	cfs
Full Flow Capacity	7.56	cfs
Full Flow Slope	0.011250	ft/ft
Flow is supercritical.		

PIPE T14
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.015200	ft/ft
Depth	6.0	in
Diameter	12.00	in

Results		
Discharge	2.20	cfs
Flow Area	0.39	ft²
Wetted Perimeter	1.57	ft
Top Width	1.00	ft
Critical Depth	0.63	ft
Percent Full	50.00	
Critical Slope	0.007151	ft/ft
Velocity	5.59	ft/s
Velocity Head	0.49	ft
Specific Energy	0.99	ft
Froude Number	1.57	
Maximum Discharge	4.72	cfs
Full Flow Capacity	4.39	cfs
Full Flow Slope	0.003800	ft/ft
Flow is supercritical.		

PIPE C1
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.015000	ft/ft
Depth	7.5	in
Diameter	15.00	in

Results		
Discharge	3.96	cfs
Flow Area	0.61	ft²
Wetted Perimeter	1.96	ft
Top Width	1.25	ft
Critical Depth	0.80	ft
Percent Full	50.00	
Critical Slope	0.006739	ft/ft
Velocity	6.45	ft/s
Velocity Head	0.65	ft
Specific Energy	1.27	ft
Froude Number	1.62	
Maximum Discharge	8.51	cfs
Full Flow Capacity	7.91	cfs
Full Flow Slope	0.003750	ft/ft
Flow is supercritical.		

PIPE C2
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.007500	ft/ft
Depth	7.5	in
Diameter	15.00	in

Results		
Discharge	2.80	cfs
Flow Area	0.61	ft²
Wetted Perimeter	1.96	ft
Top Width	1.25	ft
Critical Depth	0.67	ft
Percent Full	50.00	
Critical Slope	0.005900	ft/ft
Velocity	4.56	ft/s
Velocity Head	0.32	ft
Specific Energy	0.95	ft
Froude Number	1.15	
Maximum Discharge	6.02	cfs
Full Flow Capacity	5.59	cfs
Full Flow Slope	0.001875	ft/ft
Flow is supercritical.		

PIPE C3
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.014300	ft/ft
Depth	7.5	in
Diameter	15.00	in

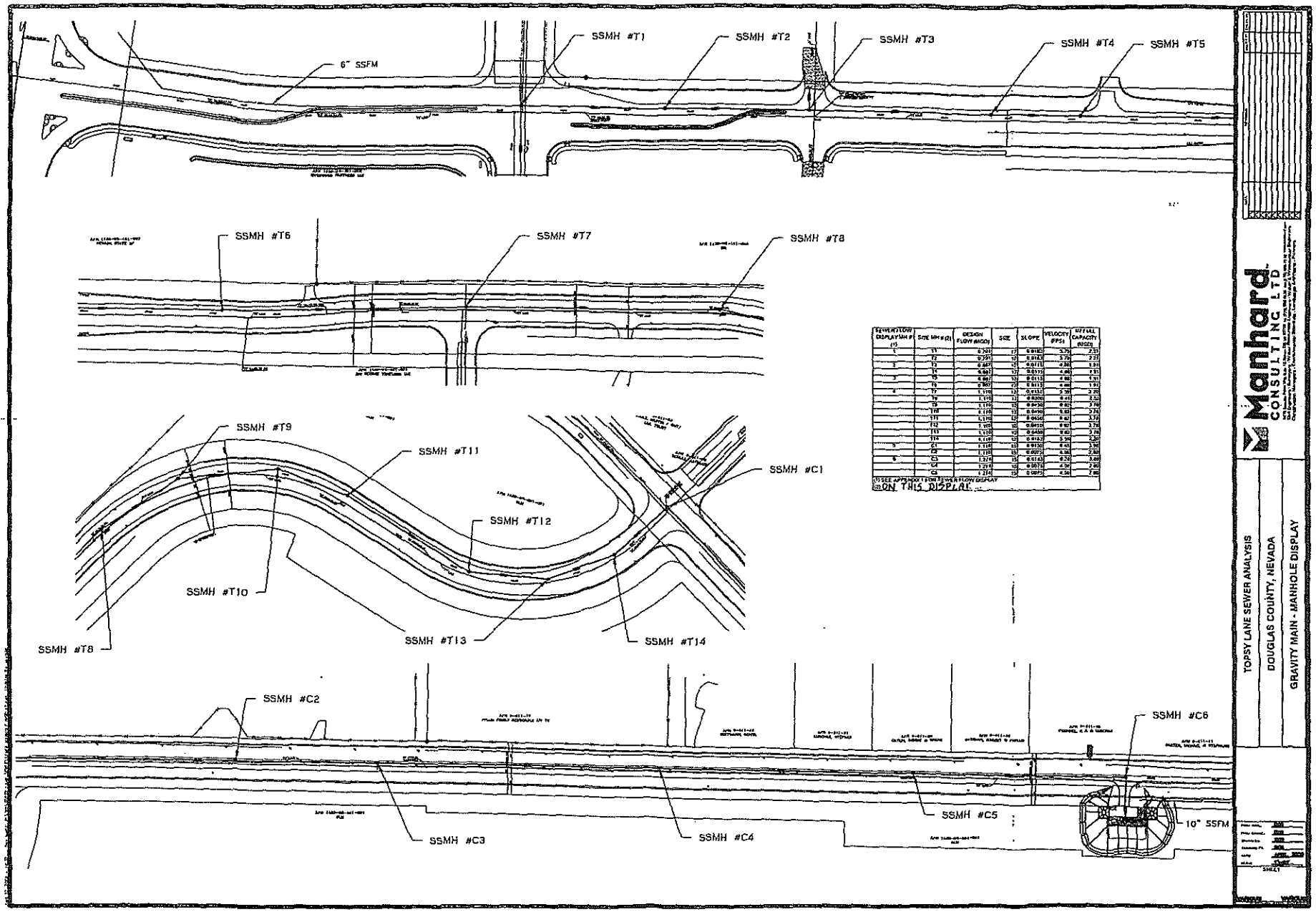
Results		
Discharge	3.86	cfs
Flow Area	0.61	ft²
Wetted Perimeter	1.96	ft
Top Width	1.25	ft
Critical Depth	0.79	ft
Percent Full	50.00	
Critical Slope	0.006660	ft/ft
Velocity	6.29	ft/s
Velocity Head	0.62	ft
Specific Energy	1.24	ft
Froude Number	1.58	
Maximum Discharge	8.31	cfs
Full Flow Capacity	7.72	cfs
Full Flow Slope	0.003575	ft/ft
Flow is supercritical.		

PIPES C5-C6
Worksheet for Circular Channel

Project Description	
Project File	c:\haestad\fmw\riverwoo.fm2
Worksheet	TOPSY LANE
Flow Element	Circular Channel
Method	Manning's Formula
Solve For	Discharge

Input Data		
Mannings Coefficient	0.013	
Channel Slope	0.007500	ft/ft
Depth	7.5	in
Diameter	15.00	in

Results		
Discharge	2.80	cfs
Flow Area	0.61	ft²
Wetted Perimeter	1.96	ft
Top Width	1.25	ft
Critical Depth	0.67	ft
Percent Full	50.00	
Critical Slope	0.005900	ft/ft
Velocity	4.56	ft/s
Velocity Head	0.32	ft
Specific Energy	0.95	ft
Froude Number	1.15	
Maximum Discharge	6.02	cfs
Full Flow Capacity	5.59	cfs
Full Flow Slope	0.001875	ft/ft
Flow is supercritical.		



SEWER FLOW DISPLAY MH # (1)	SMH # (1)	DESIGN FLOW (MGD)	SIZE	SLOPE	VELOCITY (FPS)	%FULL CAPACITY (MGD)
1	T1	0.301	12	0.0163	5.76	2.31
	T2	0.391	12	0.0163	5.76	2.31
2	T3	0.469	12	0.0113	4.98	1.91
	T4	0.661	12	0.0113	4.98	1.91
3	T5	0.867	12	0.0113	4.98	1.91
	T6	0.960	12	0.0113	4.98	1.91
4	T7	1.116	12	0.0113	5.38	2.06
	T8	1.116	12	0.0200	6.41	2.56
	T9	1.116	12	0.0150	5.82	2.76
	T10	1.116	12	0.0150	5.82	2.76
	T11	1.116	12	0.0150	5.82	2.76
	T12	1.116	12	0.0150	5.82	2.76
	T13	1.116	12	0.0150	5.82	2.76
	T14	1.116	12	0.0127	5.36	2.20
5	C1	1.116	12	0.0130	6.41	2.56
	C2	1.116	12	0.0073	4.98	2.80
6	C3	1.274	15	0.0143	6.26	3.80
	C4	1.274	15	0.0073	4.54	2.80
	C5	1.274	15	0.0073	4.54	2.80

(1) SEE APPENDIX I FOR SEWER FLOW DISPLAY ON THIS DISPLAY

Manhard CONSULTING LTD

TOPSY LANE SEWER ANALYSIS

DOUGLAS COUNTY, NEVADA

GRAVITY MAIN - MANHOLE DISPLAY

APPENDIX 3
LIFT STATION CALCULATIONS

ECO:LOGIC Engineering

MEMO

TO: Rebecca Bernier, P.E. Manhard Engineering

FROM: Eddy Quaglieri, P.E. EPQ

CC: Ray Kruth P.E. RK

DATE: 4/21/2008

RE: Design Conclusions for Topsy Lift Station

PURPOSE:

The purpose of this memorandum is to discuss the assumptions and findings for the re-design of the Topsy Lift Station. Included in this memo are detailed calculations for sizing both the wet well and the two parallel Flygt sewage pumps. The analysis of the lift station was conducted using pump data from each manufacturer meeting the design criteria. The wet well has been sized for the final build-out scenario, and the recommended pumps were chosen to be easily upsized to satisfy the build-out flow condition.

INTRODUCTION:

The proposed Topsy lift station will accept both domestic and commercial waste from a 15" gravity sewer line, and will pump it to the next gravity section via an approximately 1,600 ft 10" force main constructed of 10" PVC. Ground elevation at the proposed Topsy site is approximately 4722.00' and the inlet from the gravity sewer to the wet well was determined to be 4711.90'. The pump discharge elevations into and out of the force main will be 4701.71' and 4800', respectively.

DESIGN:

The initial and future design points, provided to us by Manhard Engineering, are satisfied by our final design. The first phase will meet a design requirement for the 550 gpm flow, while the second (and final) phase of the lift station will meet a design point of 1,100 gpm, which includes the flow from the future casino. Although not a design condition, the lift station and force main have a total future capacity of 1,330 gpm @ 118' of TDH.

The calculations for the wet well dimensions are dependent on an 8 ft diameter prefabricated wet well with enough storage to contain 3 minutes running at final build-out flows. This will result in a maximum of 10 starts per hour when running on one pump. The depth from the inlet elevation to the top of pump will be 6.19 ft. Four feet of additional depth will submerge the pump. The design calculations for the wet well can be seen in Appendix A.

Minor losses were estimated for a 10" diameter line from the pump discharge to the 10" force main including all valves and fittings. A roughness coefficient of 130 was used for all piping. The static and total dynamic heads for the Topsy lift station are 98.3' and 105.5', respectively. The hydraulic flow analysis was calculated using the Hazen-Williams method on an Excel spreadsheet. "Pump on" system curves, 1-pump curves, 2-pump curves, "pump off" system curves, and velocity curves were all developed using the spreadsheet analysis. Pump models were selected to satisfy the current flow situation as well as the future build-out. Both pump curves are displayed in Appendix B.

CONCLUSIONS:

The overall depth of the 8' diameter wet well was determined to be 23', which provides an operating band and 3 minutes of storage. The wet well was designed for the build-out flow condition.

The pump specifications determined from the hydraulic analysis are all based on a C-Factor of 130 and further interpreted with a C-factor of 140. The lift station is designed to handle the current flows as well as future build-out. The pump was chosen to be easily replaced by a larger pump for the build-out flow scenario. The current demand requires the Flygt NP 3171.091 HT. This pump satisfies the current demand as well as the minimum velocity requirement of Douglas County. The future build-out condition will require the Flygt NP 3202.090 HT pump. Both pumps will share the same 4" discharge elbow. The results of the analysis are found below.

Topsy Lift Station Pump Analysis		
Pump	**FLYGT NP 3171.091 HT**	**FLYGT NP 3202.090 HT**
Speed (RPM)	1775	1775
Hp	34	70
Shut Off Head (ft)	157	210
Operating Flow, C=130 (GPM)	757	1170
Operating Head, C=130 (ft)	105	114
Operating Flow, C=140 (GPM)	760	1185
Operating Head, C=140 (ft)	105	113

APPENDIX A

TOPSY LIFT STATION WET WELL ANALYSIS

Date: 4/10/2008
Created by: EPQ

Assumptions:

1. Flygt pumps can easily handle 10 starts per hour per Sales Rep. Pete Galati.
2. 8' diameter wet well.
3. Worst case is Q(influent)=1/2 pump rate. Assume fill time is 3 min. and pump run time is 3 min.
4. Used 1300 gpm due to possible future flows from Casino and future pump expansion.

Volume Calc.

Tmin=	6	minimum cycle time for pump (10 starts per hour)
Q(influent)=	650	pump capacity (gpm) (1/2 of pump Q)
Vreq=	1,950	volume required (gallons)

Cylindrical Sump

Volume=	1,950	gallons
	261	cu. ft.
	50.27	sq. ft.
diameter=	8	ft.
height=	5.19	ft.

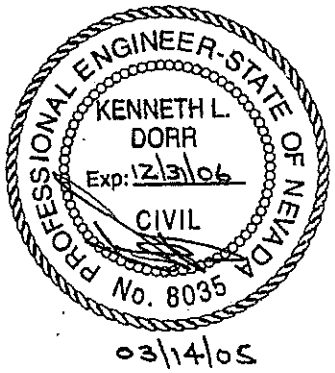
APPENDIX 4

PREVIOUS REPORT FOR SUNRIDGE LIFT STATION

NORTH DOUGLAS COUNTY

SUNRIDGE DRIVE
GRAVITY AND FORCE MAIN SANITARY SEWER SYSTEM ANALYSIS

Prepared For:
DOUGLAS COUNTY, NEVADA
February, 2005



03/14/05

Prepared By:

CAPITAL ENGINEERING
P.O. Box 3750 (775)882-5630 Fax(775)885-7282 Carson City, NV 89702

INTRODUCTION

This report has been prepared for Douglas County to present the design of the proposed Sunridge Drive sanitary sewer infrastructure anticipated to be constructed in early 2005. This infrastructure includes gravity mains, force mains, and one pump station to convey sewage from Sunridge Drive to the North Valley Wastewater Treatment Plant (NVWWTP). This system will serve the northern portion of the North Valley Specific Plan Area east and west of U.S. Highway 395.

The project begins as a gravity main on Sunridge Drive just east of U.S. Highway 395. The gravity main follows Sunridge Drive until Sunridge Drive turns south, at this point the gravity main goes east along the Section 8 North Section Line through an easement on Bureau of Land Management (BLM) property and joins up with the force main from the Topsy Lift Station. The gravity main runs south and then east along the Section 8 North Section Line behind the Sunridge Golf Course until it reaches the Sunridge Lift Station. From the Sunridge Lift Station sewage is pumped through a force main east along the Section 8 North Section Line and then south to the NVWWTP.

In this report are discussions about the expected sewage flows, the flow capacity of the pipes, flood and ground water issues, and the design of the Sunridge Lift Station. Also included in this report are Appendixes A through C. These appendixes contain the calculations and data to support the final design of the sewer system.

EXPECTED SEWAGE FLOWS

To estimate sewage flows data was taken from billing records and pump station output. Additionally Douglas County North Valley Sewage Flow prepared by Douglas County, December 2003 was used. A memo dated October 14, 2004 was prepared and reviewed by Douglas County. This memo showed our calculations and the average sewage flow rates determined from the above sources. The memo included a drawing titled Estimated Sewage Flow Rates depicting the flow rates and where the flows enter into the system. The memo and drawing are included in Appendix A. In our calculations we assumed a peaking factor of 3.5 to obtain our peak hour flows. These flows were used to determine the pipe sizes.

FLOW CAPACITY OF PIPES

All pipes were designed to meet Douglas County's standards. Douglas County's standards include:

1. d/D = 0.5 max; for D<15"
2. Vmin [@ d/D = .5] = 2 fps; If d/D<0.5 – Vmin =1.8 fps
3. min slopes – see table 5.2 in Douglas County's development standards
4. Vmax [@ d/D = .8] = 10 fps
5. n = 0.013

Using the data from the "Estimated Sewage Flow Rates" analysis, each reach of the sewer was calculated minimizing pipe size while conforming to Douglas County's standards. All pipes meet Douglas County's standards with the exceptions of "REACH 19" and "REACH 20". These reaches have a d/D of 0.7, which exceeds Douglas County's standard of 0.5. As discussed with Douglas County, exceeding the d/D requirement of these reaches was necessary to avoid

oversizing of pipes downstream of this reach, which have steeper slopes, allowing for a smaller size of pipe.

FLOOD AND GROUND WATER ISSUES

The force main from Sunridge Lift Station to the NVWWTP will be routed under the flood plains north of the Carson River, and under the Carson River. For this part of the project, permits have been applied for and will be issued prior to construction from NDEP, Division of State Lands and the United States Army Corp of Engineers.

According to the Geotechnical Investigation Report for Proposed North Valley/BLM Infrastructure for Douglas County prepared by Kleinfelder, dated January 19, 2004, ground water was detected in this area; contractor is responsible for obtaining permits for dewatering, storm water discharge, and air quality prior to construction.

SUNRIDGE DRIVE LIFT STATION

The Sunridge Lift Station is designed for both the initial and full buildout conditions. The initial design flow rate of 1239 gallons per minute is derived from the "Estimated Sewage Flow Rates" analysis, with the additional operational discharge flow from the Topsy Lift Station. The difference between the design flow into the Topsy Lift Station and the operational discharge from the Topsy Lift Station is approximately 158 gallons per minute. The full buildout flow rate of 1509 gallons per minute adds the additional estimated flow rate of 270 gallons per minute from the future Clear Creek development area.

Initially the Sunridge Lift Station will have three 45 hp pumps; each will handle the design flow rate of 1239 gallons per minute. The operational discharge will be approximately 1260 gallons per minute and the velocity in the 14" force main would be approximately 3.8 feet per second

At full buildout, there are two options. The first option is use the initial setup of the lift station allowing two pumps to come on and handle the flow of 1509 gallons per minute, producing a velocity of 4.8 feet per second and a discharge of 1510 gallons per minute. The second option is to change out the pumps with three 70 hp pumps, which will have a discharge of 1509 gallons per minute and a velocity of 3.9 feet per second. The lift station's site and electrical equipment have been designed to accommodate both options.

The Sunridge Lift Station meets Douglas County's standards. All calculations are shown in Appendix C.

CONCLUSION

Based on our analysis, the gravity sewer, lift station and force main proposed for the North Douglas County from Sunridge Drive to the North Valley Wastewater Treatment are adequate to serve both the current and future developments, based on the presented expected land use within the service area of the system.

APPENDIX F

GEORGETOWN VILLAGE

TRAFFIC IMPACT ANALYSIS REPORT

Douglas County, Nevada

Prepared for:

Big George Ventures, LLC
963 Topsy Lane
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Carson City, Nevada 89705

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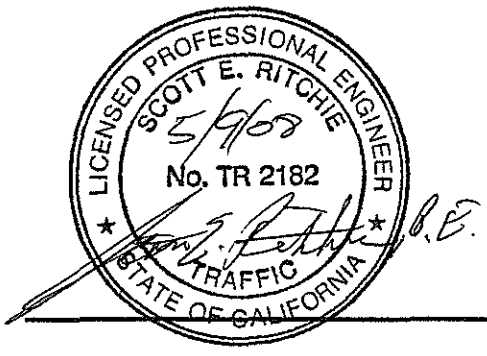

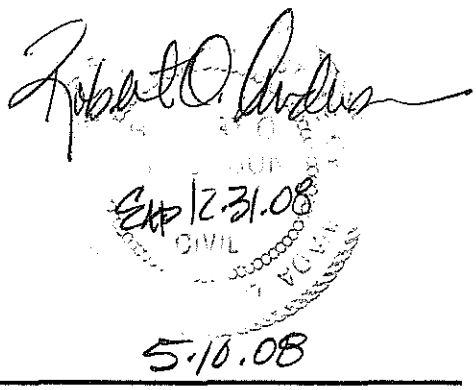

May 9, 2008

EXECUTIVE SUMMARY

PURPOSE

We have been retained by the Owner to perform a Traffic Impact Analysis report for the Georgetown Village Mixed-Use Subdivision Project in Douglas County, Nevada. The project is a Master Plan Amendment, Specific Plan Amendment and utilmately a planned unit development and is part of the North Douglas County Specific Plan. The project is planned to potentially include up to 100 single family dwelling units, 530 multi-family units, and 35,000 square feet of general commercial space located along the south side of Topsy Lane, the west side of Center Drive, east of U.S. Highway 395, north of North Sunridge Drive, approximately 11.5 miles north of Minden and 4 miles south of Carson City, Nevada. This Traffic Impact Analysis report analyzes the existing and future traffic impacts generated by the development as well as with and without several other North Douglas County Specific Plan projects or adjacent project scenarios.

CONCLUSIONS & RECOMMENDATIONS

The findings of the traffic study report are listed below:

1. All of the study area intersections operate at an acceptable level of service in existing conditions with and without the project. No mitigation is required for this project at any study area intersection based on existing plus project capacity needs.

   Five of the eight study intersections fail under existing conditions and future 2025 conditions plus this project plus the Schulz Ranch Project plus the full buildout of the North Douglas County Specific Plan: US 395 / Topsy Lane, Topsy Lane / Center Drive, US 395 / N. Sunridge Drive, N. Sunridge Drive / Site Access, and US 395 / Clear Creek Road. Please refer to Chapters 4 and 5 for further details on potential future mitigation of these intersections.

2. No additional turn lanes are warranted under existing plus project conditions.

3. Intersection sight distance should be adequate at the access points. However, the actual location of the site access was difficult to determine in the field at the time of the study. Sight distance should be verified in the field when a more developed site plan is available to the County.

4. Signal warrants are not met at any intersection under existing plus project conditions. However, signal warrants have been found to be met at Topsy Lane / Center Drive and North Sunridge Drive / Site Access under existing

plus the project, plus the Schulz Ranch Project, plus the full buildout of the North County Specific Plan as well as under future 2025 conditions, which considers the full buildout of the North County Specific Plan and the Schulz Ranch Project.

5. The site access location and internal traffic circulation were not analyzed due to insufficient information. However, the site plan does provide a secondary emergency accesses to the site.

6. The project is expected to generate an estimated total of 426 AM peak-hour trips (123 entering and 303 exiting), 729 PM peak-hour trips (419 entering and 311 exiting) and 7,807 average daily trips (new trips). Traffic generated by this development will not have a significant impact on the adjacent roadways with respect to capacity thresholds.

7. Mitigation measures are not recommended for this project under existing plus project conditions. However, this project may be responsible for a prorated share of future mitigation measures since this project's trip generation or traffic adds to the deficiency of five intersection failures in the future conditions.

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Chapter 1 INTRODUCTION

We have been retained by the Owner to perform a Traffic Impact Analysis report for the Big George Ventures Residential Subdivision Project in Douglas County, Nevada. The project is a planned unit development and part of the North Douglas County Specific Plan. The project is planned to consist of 100 single family dwelling units, 530 multi-family units, and 35,000 square feet of general commercial space located along the south side of Topsy Lane, the west side of Center Drive, east of U.S. Highway 395, north of North Sunridge Drive, approximately 11.5 miles north of Minden and 4 miles south of Carson City, Nevada. This Traffic Impact Analysis report analyzes the existing and future traffic impacts generated by the development as well as with and without several other North Douglas County Specific Plan projects or adjacent project scenarios. This report analyzes the traffic impacts generated by the development upon completion, which is assumed to be in the current year of 2008 for analysis purposes.

The purpose of this engineering study is to determine the impacts of the traffic generated by the proposed project and 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. The report is based on local ordinances, and provides a complete traffic engineering analysis of the intersections identified for analysis.

This analysis is conducted in conformance with the requests and requirements of Douglas County as identified in the North Douglas County Specific Plan. The with and without project traffic conditions are analyzed and discussed in detail in the subsequent sections. This engineering 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. The 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, capacity, and safety analysis in accordance with the Douglas County Design Criteria and Improvement Standards (Section 2.14.4) and the North Douglas County Specific Plan. In compliance with Carson City and Douglas County's standards, this traffic study contains both AM and PM as well as existing and future analyses for the following time frames: existing, existing plus project, and future 2025 buildout (as recommended by county staff). In addition,

several supplementary scenarios have been added to these analyses as listed below.

The scope of the traffic study was defined by Douglas County staff at a meeting with R.O. Anderson Engineering. This Traffic Impact Analysis report is prepared for submission to the County. Per direction from County Staff, the following intersections were identified for analysis:

1. US 395 / Topsy Lane
2. Topsy Lane / Project Site Access (collector roadway)
3. Topsy Lane / Center Drive
4. Snyder Avenue / Bigelow Drive **
5. Snyder Avenue / S. Edmonds Drive **
6. US 395 / Jacks Valley Road (SR 206) / North Sunridge Drive
7. North Sunridge Drive / Project Site Access (collector roadway)
8. US 395 / Clear Creek Avenue**

The asterisks on intersections four, five and eight denote the Carson City study intersections. All of the intersections above were analyzed in the trip generation, distribution, assignment, and level or service analyses of this report. Initially, this document presents existing traffic conditions and level of service analyses in the area under both existing AM and PM peak-hour conditions without the project. Next, the proposed development is assessed to determine the traffic that will be generated in peak-hour vehicle trips and daily vehicle trips. These additional vehicle-trips are then assigned to the nearby roadway system to determine the necessary future level of analysis, and to identify the impact on future intersection LOS, as well as to determine the level of significance of the impacts for the AM and PM peak hour conditions.

Traffic related issues addressed in this report are consistent with Douglas County requirements. The issues are:

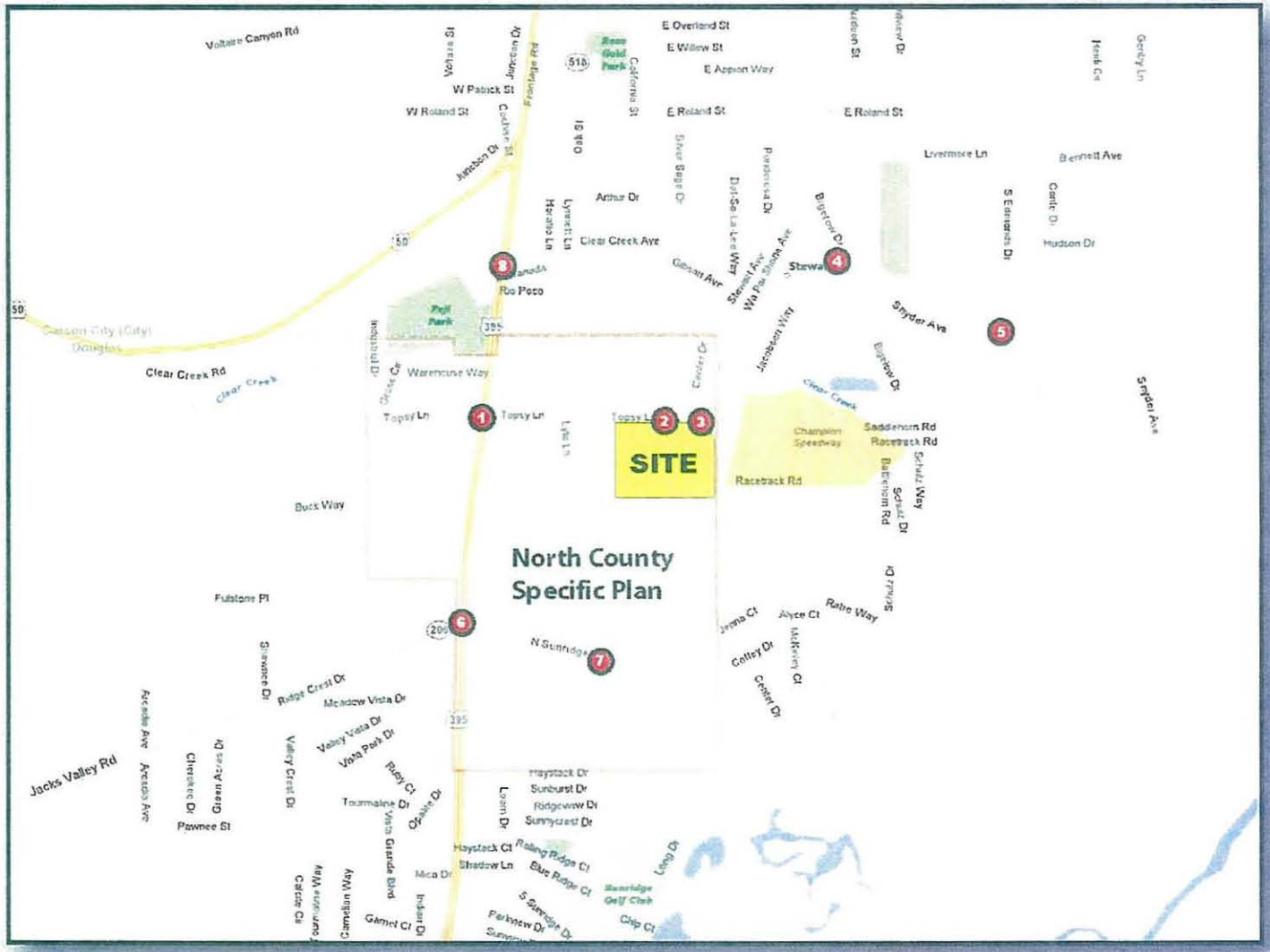
- Existing AM and PM peak hour traffic conditions
- Site generated traffic volumes, their distribution, and assignment to identified study area intersections
- Capacity analysis of the required intersections during the existing AM and PM peak hour conditions (with and without the project)
- Capacity analysis of the required intersections during the existing AM and PM peak hour conditions (with the project plus "other" NDCSP projects)
- Capacity analysis for year 2025 during the PM peak hour growth rate conditions for the Douglas County intersections
- Safety analysis of the proposed conditions
- Recommendations for mitigation of traffic impacts and conclusions

The results of this traffic study are used to develop recommendations to mitigate project traffic impacts. This analysis considers the following traffic scenarios:

1. Existing No Project – AM
2. Existing No Project – PM
3. Existing Plus Project – AM
4. Existing Plus Project - PM
5. Existing Plus Project Plus Schulz – AM
6. Existing Plus Project Plus Schulz - PM
7. Existing Plus Project Plus Schulz Plus Retail– AM
8. Existing Plus Project Plus Schulz Plus Retail - PM
9. 2025 Future Growth Rate Conditions – PM
10. Recommended Mitigations – PM

The identified study area is shown in **Figure 1**.

FIG 1: STUDY INTERSECTIONS AND PROJECT VICINITY MAP



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LEGEND
HIGHWAYS/FREEWAYS
STREETS
1 STUDY INTERSECTION

RTE
Roundabouts & Traffic Engineering

FIG 1: STUDY INTERSECTIONS AND PROJECT VICINITY MAP

RTE
Roundabouts & Traffic Engineering

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 comparison to project conditions. Roadway conditions were studied to identify if the roadways are currently operating in a safe and efficient manner. The following discussion presents information regarding the project site, turning movement traffic volumes, and traffic conditions in the study area. The study area and the impacted intersections were defined based on information provided by R.O. Anderson and data gathered in the field prior to starting the analysis.

ROADWAY CHARACTERSTICS

Data was gathered on the roadways impacted by the project for the purpose of analyzing the capacity of the existing roadway system. The pertinent information regarding these roadways is described below.

U.S. Highway 395 (US 395) runs in a north/south direction to the west of the project site connecting the Minden Gardnerville areas to the south to Carson City and Reno areas to the north. It is classified as a Principal Arterial and is primarily a four-lane highway with two lanes in each direction, a substantial median, and left/right turn pockets. However, near the project site area there are three lanes southbound and two lanes northbound. The speed limit near this project varies between 45 miles per hour in the north to 65mph in the south. This highway is within the jurisdiction of the Nevada Department of Transportation.

Clear Creek Avenue runs in an east/west direction to the north of the project site connecting to Old Clear Creek Road and Lupin Drive (Frontage Road) at US 395. Old Clear Creek Road has commercial big box developments immediately to the west of US 395 and extends to a few residential homes further west. Clear Creek Avenue connects the Frontage Road to Snyder Avenue to the east. The speed limit near the intersection is assumed at 35 miles per hour. This roadway is within the jurisdiction of NDOT and Carson City.

Topsy Lane runs in an east/west direction to the north of the project site connecting Vista Grande Blvd to the west (Wal-Mart Superstore area) through US 395 to Center Drive to the east. The speed limit near this project is assumed at 25 miles per hour when completed since it is classified as a local street. Topsy Lane is a four lane roadway for a short section between the Wal-Mart driveway and US 395 with a posted speed limit at 30 mph. This roadway is within the jurisdiction of Douglas County.

Center Drive runs in a north/south direction on the east side of the project site area. Center Drive is a low volume, narrow, rural residential roadway with one lane in each direction and no turn lanes. The speed limit is 25 mph with graded shoulders. This roadway is within the jurisdiction of Douglas County.

Snyder Avenue runs in an east/west direction to the north of the project site area and runs east of US 395 to Gentry Lane (east of S. Edmonds Drive), then turns south for over a mile before becoming a dirt road. It functions as a minor collector roadway for the surrounding rural residential area near the study intersections. It is a low volume roadway with one lane in each direction and no turn lanes with a speed limit of 35 miles per hour. This roadway is within the jurisdiction of Carson City.

S. Edmonds Drive runs in a north/south direction to the north of Snyder Avenue to Fairview Avenue in Carson City. It functions as a minor collector roadway for a rural residential area near the study intersections. It is a low volume, narrow, rural residential roadway with one lane in each direction and no turn lanes. This roadway is within the jurisdiction of Carson City.

Bigelow Drive runs in a north/south direction to the north and south of Snyder Avenue in Carson City. It functions as a minor collector roadway for a rural residential area near the study intersections. It is a low volume, narrow, rural roadway with one lane in each direction and no turn lanes or striping with a speed limit of 35mph. This roadway is within the jurisdiction of Carson City.

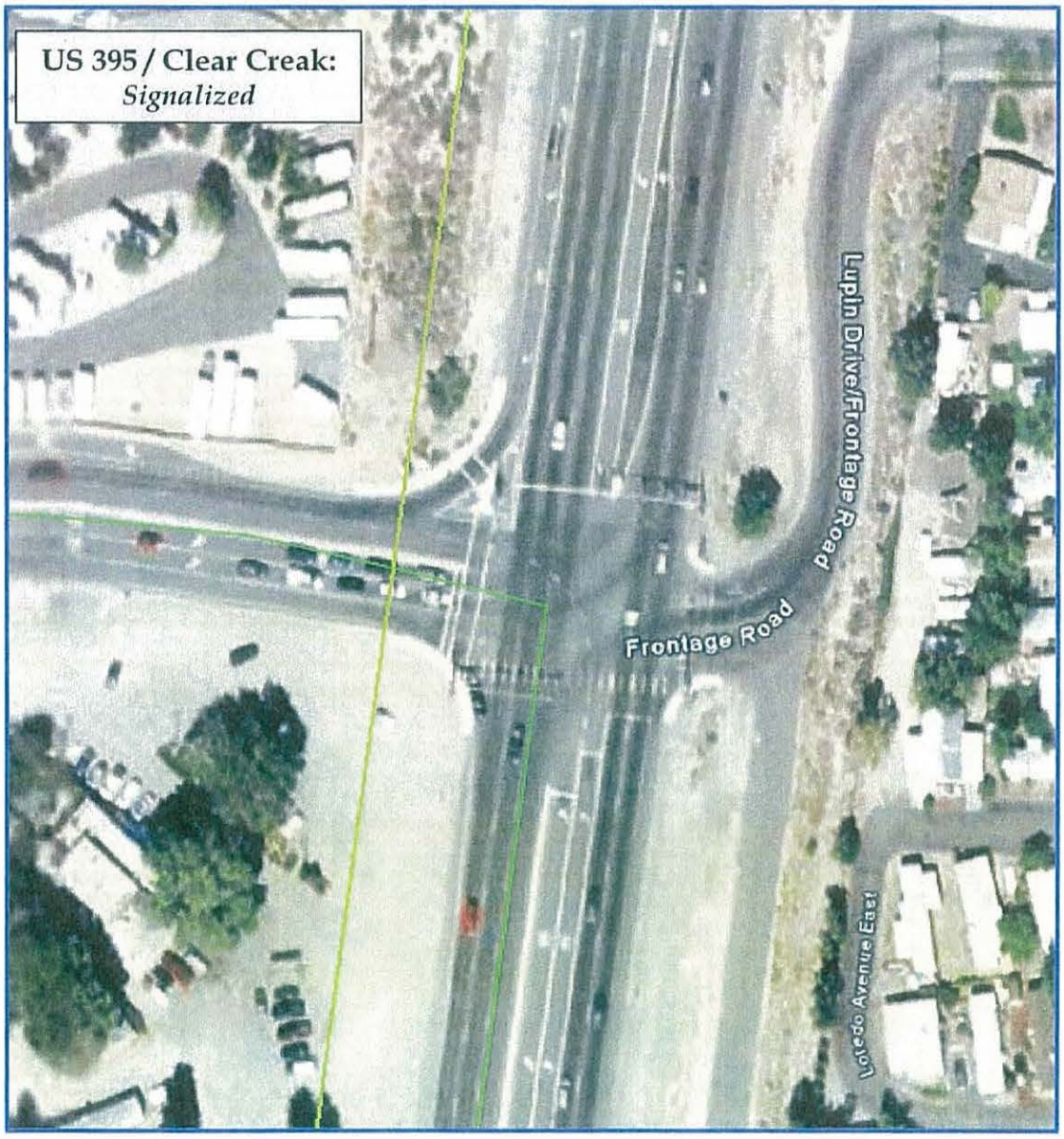
North Sunridge Drive runs in an east/west direction near its intersection with US 395 and turns south through a residential subdivision to Mica Drive to the south of the project site. The speed limit near this project is assumed at 25 mph.

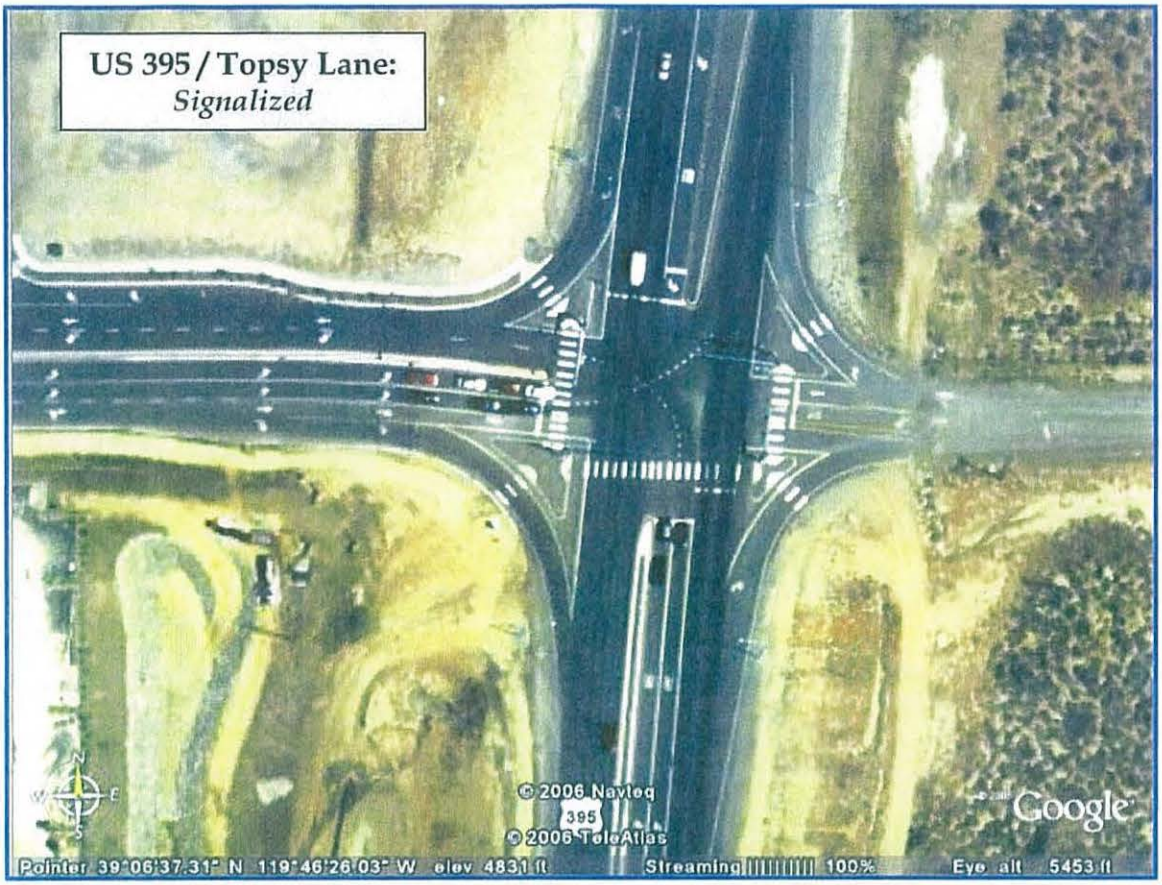
INTERSECTION CHARACTERISTICS

Based on the scoping meeting held between Douglas County and R.O. Anderson, the following intersections were identified for analyses:

1. US 395 / Topsy Lane
2. Topsy Lane / Project Site Access (collector roadway)
3. Topsy Lane / Center Drive
4. Snyder Avenue / Bigelow Drive **
5. Snyder Avenue / S. Edmonds Drive **
6. US 395 / Jacks Valley Road (SR 206) / North Sunridge Drive
7. North Sunridge Drive / Project Site Access (collector roadway)
8. US 395 / Clear Creak Avenue

The project area is defined as the vicinity of the site encompassed by the study area intersections. **Figure 2** displays the existing intersection lane configurations and traffic controls at the intersections. In addition, since recent aerial photography has been completed for most intersections, the available lane configurations and descriptions are best shown with illustrations. The "site access" intersections currently do not exist and will be completed with this project's construction (intersection numbers 2 and 7).




US 395 / Topsy Lane:
Signalized
© 2006 Navteq
395
© 2006 TeleAtlas
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Pointer 39°06'37.31" N 119°46'26.03" W elev 4831 ft
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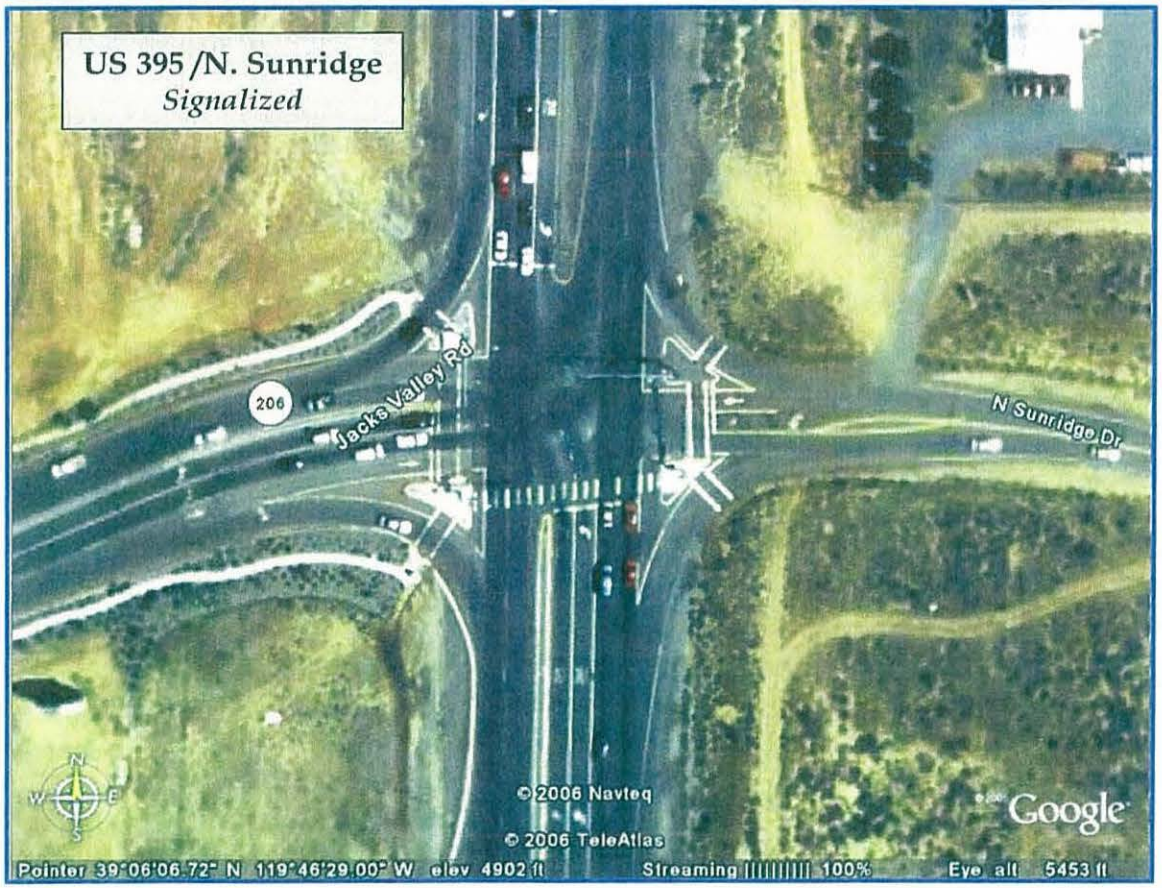
Eye alt 5453 ft

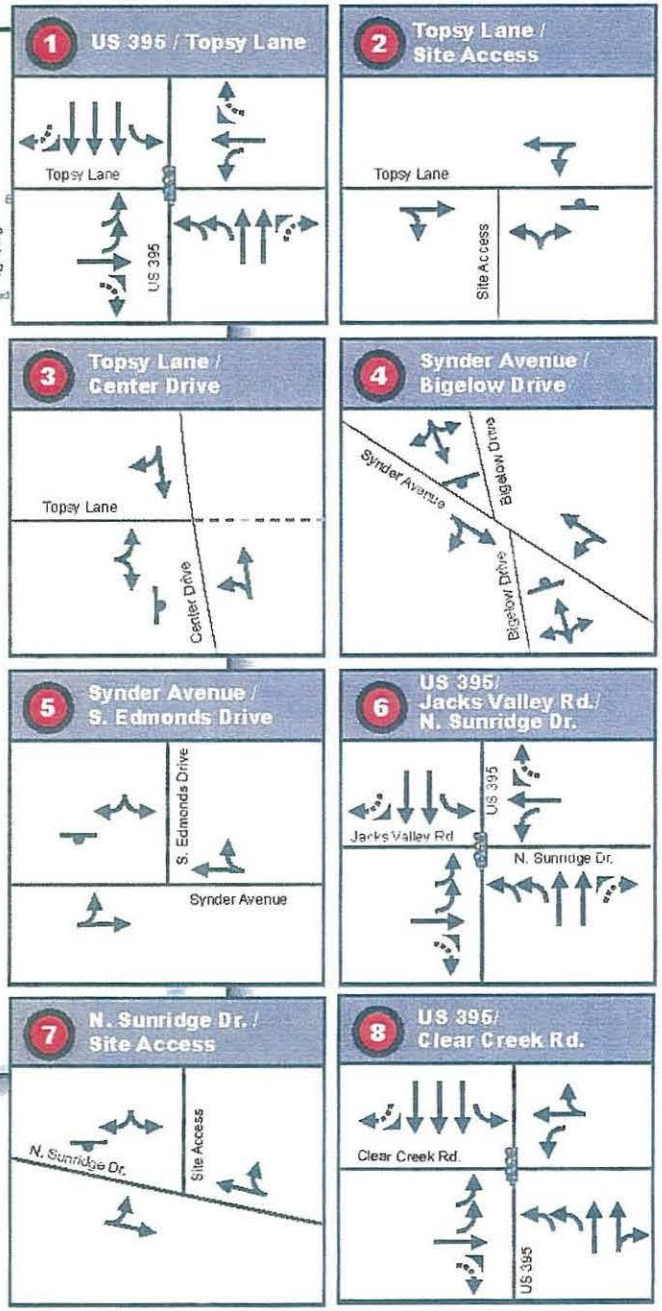

US 395 /N. Sunridge
Signalized
206
Jacks Valley Rd
N Sunridge Dr
© 2006 Navteq
© 2006 TeleAtlas
Google
Pointer 39°06'06.72" N 119°46'29.00" W elev 4902 ft
Streaming 100%
Eye alt 5453 ft


Snyder Avenue /
Bigelow Drive:
Unsignalized
518
© 2006 Navteq
© 2006 TeleAtlas
Google
Pointer 39°07'01.21" N 119°45'17.74" W elev 4718 ft
Streaming 100%
Eye alt 5453 ft


Snyder Avenue /
S. Edmonds Drive
Unsignalized
Snyder Ave
© 2006 Navteq
© 2006 TeleAtlas
Google
Pointer 39°06'52.16" N 119°44'45.68" W elev 4690 ft
Streaming 100%
Eye alt 5358 ft

Additional text descriptions for the two major intersections on US 395 may be found in the Traffic and Circulation Chapter of the North Douglas County Specific Plan. **Figure 2** displays the existing intersection lane configurations and traffic controls at the intersections.

FIGURE 2: LANE CONFIGURATION AND TRAFFIC CONTROL



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LEGEND
HIGHWAYS/FREEWAYS
STREETS
1 STUDY INTERSECTION

EXISTING TRAFFIC VOLUMES

Existing traffic volume data is the basis for the analysis of the capacity and safety of the roadway. Traffic volume data was gathered for the major intersections in the site vicinity from field traffic counts conducted by Roundabouts & Traffic Engineering (RTE) and R.O. Anderson (ROA) staff at the intersections to determine the traffic turning movement volumes. A new traffic model was built for this project to reflect the new traffic conditions of the area in 2008 as well as the assumed circulation conditions in 2025. New count data was input into the existing conditions traffic model for this analysis to obtain current conditions at the identified intersections.

As required by the County, both the AM and PM peak-hour traffic volumes have been analyzed at all required intersections for the existing (2008) conditions with and without project. Existing AM and PM peak-hour turning movement volumes, as presented in Figure 3, have been compiled for the study intersections requiring LOS analyses. The source and basis foundation for these volumes were obtained from actual field counts conducted by RTE and R.O. Anderson staff. All AM and PM traffic counts were conducted during June, 2006 and April 2008.

These volumes were checked against Figure 4-5 in the North Douglas County Specific Plan count data for accuracy. The counts conducted in the field were within the same relative range as those found in Figure 4-5 deeming the counts valid for analyses. Hence, no adjustments were applied to these traffic volumes for existing conditions.

FIGURE 3: Existing AM/PM Peak Hour Volumes

1 US 395 / Topsy Lane

		0, *0*
54 1369 4	US 395	0, *9*
170 1937 8		3, *22*
Topsy Lane		
107, *400*	101 2025 7	
1, *9*	*124 1471 18*	
18, *229*		

2 Topsy Lane / Site Access

		4, *10*
Topsy Lane		0, *0*
7, *25*	Site Access	0 0
0, *0*		*0 0*

3 Topsy Lane / Center Drive

1 10 0		0, *0*
19 29 0		0, *0*
Topsy Lane		0, *0*
2, *11*	Center Drive	3 19 0
0, *0*		*10 12 0*
5, *14*		

4 Synder Avenue / Bigelow Drive

2, *0*	Bigelow Drive	0, *1*
0		148, *174*
0		4, *8*
4		
0		
Synder Avenue		
0, *1*	Bigelow Drive	
123, *164*		4
3, *16*		*10*
		0, *0* 8, *4*

5 Synder Avenue / S. Edmonds Drive

132 17	S. Edmonds Drive	8, *17*
123 4		1, *14*
Synder Avenue		
91, *157*		
15, *19*		

6 US 395/ Jacks Valley Rd./ N. Sunridge Dr.

132 1030 14	US 395	93, *52*
484 1845 88		2, *7*
Jacks Valley Rd		2, *3*
340, *395*	N. Sunridge Dr.	
3, *5*	48 1960 4	
12, *43*	*99 1310 5*	

7 N. Sunridge Dr. / Site Access

0 0		
0 0	Site Access	
N. Sunridge Dr.		0, *0*
0, *0*		97, *62*
21, *98*		

8 US 395 / Clear Creek Rd.

56 933 9		7, *2*
211 2118 17		3, *29*
Clear Creek Rd.		96, *211*
104, *218*	US 395	
4, *31*	27 1975 134	
13, *2*	*86 1520 163*	

SCALE 0 .2 .4 MILES

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LEGEND
HIGHWAYS/FREEWAYS
STREETS
1 STUDY INTERSECTION
123, *123* AM/PM TRAFFIC VOLUMES

RTE Roundabouts & Traffic Engineering

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 it will generate, 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

According to the applicant, the project is planned to consist of 100 single family dwelling units, 530 multi-family units, and 35,000 square feet of general commercial space located along the south side of Topsy Lane, the west side of Center Drive, east of U.S. Highway 395, north of North Sunridge Drive, approximately 11.5 miles north of Minden and 4 miles south of Carson City, Nevada. This report analyzes the traffic impacts generated by the development upon completion, which is assumed to be in the current year for analysis purposes. The preliminary proposed site plan provided is shown below in **Figure 4**.

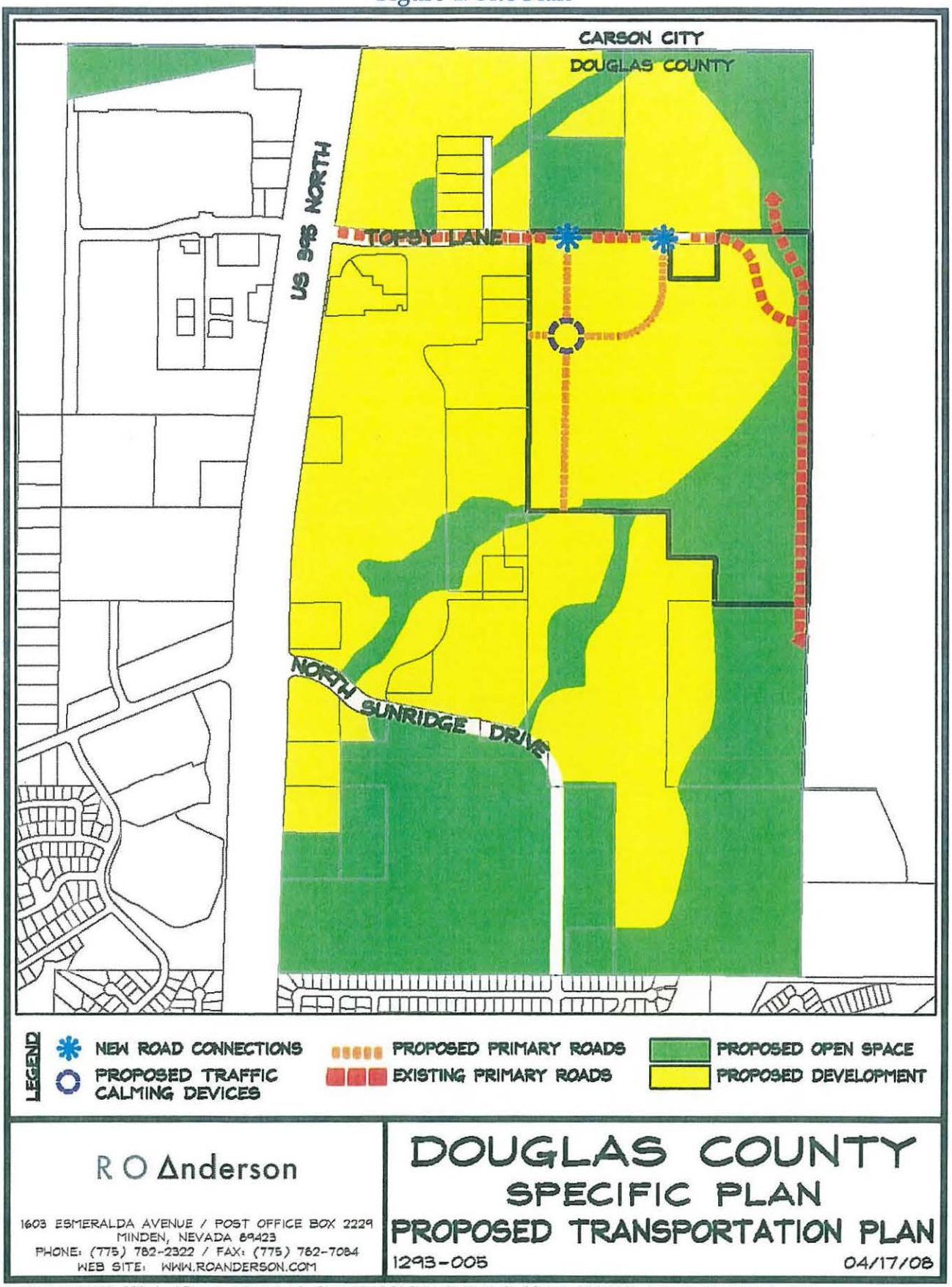
Access

Properly located access points are essential to allow for the safe and orderly movement of traffic in and out of a site. Accesses to/from the site as specified on the site plan (**Figure 4**) are as follows:

- *Full accesses onto Topsy Lane: These two intersections currently do not exist, but will be improved with asphalt to comply with county standards.*

- *Full accesses onto North Sunridge Drive from an assumed extension of internal roadways: These intersections currently do not exist, but will be improved to comply with county standards.*

Figure 4: Site Plan



TRIP GENERATION, DISTRIBUTION & ASSIGNMENT

Trip Generation

Trip generation estimates were prepared for the proposed development using the Institute of Transportation Engineers (ITE) *Trip Generation Manual, 7th Edition* and the ITE *Trip Generation Handbook,* ITE 2004. These estimates are based on observed traffic-generation rates for similar land uses nationwide. An estimate of the number of trips generated by the proposed project was developed in order to analyze the existing traffic generation impacts. Trip generation is the evaluation of the number of vehicle-trips that will either have an origin or destination at the project site. Specifically, the AM and PM peak hour project generated trips on an average weekday need to be determined in order to apply the resulting trips to current policy requirements.

A trip generation analysis was conducted during the AM and PM peak hours of a typical weekday for the land uses identified. Based upon the information provided by the developer, the multi-family units equate to an Apartment Units use (Lane Use Code 220) and the single family dwelling units equate to Single Family Detached Housing (Land Use Code 210). The 35,000 square feet of commercial space is currently undefined and should be considered general commercial or Shopping Center (Land Use Code 820). All of these ITE land uses best fit the site's currently proposed land use descriptions. The Single Family Detached Housing land use is defined by ITE as follows:

> *"Single family detached housing includes all single family detached homes on individual lots. A typical site surveyed is a suburban subdivision."*

The Apartments land use is defined by ITE as follows:

> *"Apartments are rental dwelling units that are located within the same building with at least three other dwelling units, for example quadraplexes and all types of apartment buildings. The studies included in this land use did not identify whether the apartments were low-rise, mid-rise, or high-rise."*

The Shopping Center land use is defined by ITE as follows:

> *"A shopping center is an integrated group of commercial establishments that is planned, developed, owned and managed as a unit. A shopping center's composition is related to its market area in terms of size, location and type of store. A shopping center also provides on-site parking facilities sufficient to serve its own parking demands. Shopping centers, including neighborhood centers, community centers, regional centers and*

super regional centers, were surveyed for this land use. Some of these centers contained non-merchandising facilities, such as office buildings, movie theaters, restaurants, post offices, banks, heath clubs and recreational facilities."

The land use descriptions and data points specified by the ITE manual for these land uses are consistent with and applicable to this project. However, the *ITE Trip Generation Manual* has several independent variables for the land use. For example, the number of dwelling units, persons, vehicles, or acres may be used for the Single-Family Detached Housing land use depending on the accuracy of the various types of data provided in the ITE Manual. Based on the information provided by the developer, the ITE Manual recommendations, as well as specific data for all of the independent land uses' variables, it was determined that the "number of dwelling units" independent variable would generate the most accurate and consistent results for this project's characteristics during the peak hours between 7:00 and 9:00 AM and 4:00 and 6:00 PM for both Land Use Codes 210 and 220. Likewise, the "1000 Sq. Feet Gross Leasable Area" independent variable would generate the most accurate and consistent result for this project's shopping center characteristics during the peak hours between 7:00 and 9:00 AM and 4:00 and 6:00 PM.

In addition, the ITE manual provides weighted average rates and fitted curve equations for each of the independent variables for these land uses. Due to the available data points, data point range, and recommendations in the *ITE Trip Generation Handbook,* the traffic engineer is directed to use the provided regression equations for all of these land uses based on the sizes and locations of the development. Therefore, the regression equation methods were used for this project in accordance with ITE's "Recommended Procedure for Selecting Between Trip Generation Average Rates and Equations" (*Trip Generation Handbook,* ITE 2004).

Table 1 summarizes the average daily vehicle-trips, AM, and PM peak-hour trips on a typical weekday peak hour of adjacent street traffic for one hour between 7:00 and 9:00 AM and between 4:00 and 6:00 PM based on the ITE equations. As shown in **Table 1**, the project would generate an estimated total of 426 AM peak-hour trips (123 entering and 303 exiting), 729 PM peak-hour trips (419 entering and 311 exiting), and 7,807 average daily trips occurring during normal weekday and peak hours of adjacent street traffic. It should be noted that due to the rural nature and location of the site, no additional reductions from non-automobile trips or alternative modes of transportation (Transportation Impact Factors) were applied to the primary trip generation to remain conservative. If the County or NDOT determine these reductions are appropriate and applicable the impacts of this project would be less than those identified herein.

TABLE 1: TRIP GENERATION - BIG GEORGE VENTURES TIA Rev.

Land Use	ITE Land Use Code	Quantity	Unit	Weekday Trip Rates / Equations: AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily	Weekday Trips: AM Peak Hour In	AM Peak Hour Out	AM Peak Hour Total	PM Peak Hour In	PM Peak Hour Out	PM Peak Hour Total	Daily
Single-Family Detached Housing	210	100	Dwelling Units	*T=0.70(X)+9.43*			*LN(T)=0.90 Ln(X)+0.53*			EQN[3]	20	60	**79**	68	40	**107**	1040
Multi-Family / Apartments	220	530	Dwelling Units	*T=0.49(X)+3.73*			*T=0.55(X)+17.65*			EQN[3]	53	211	**263**	201	108	**309**	3336
General Commercial	820	35,000	Square Feet	*LN(T)=0.60 Ln(X)+2.29*			*LN(T)=0.66 Ln(X)+3.4*			EQN[3]	51	33	**83**	150	163	**313**	3432
									TOTAL PROJECT TRIP GENERATION:		*123*	*303*	***426***	*419*	*311*	***729***	*7807*

NOTE 1: Trip rates are based on ITE's Trip Generation Manual, 7th Edition (Institute of Transportation Engineers)

NOTE 2: All trips have been rounded to the nearest integer. Some answers may appear one trip different than the actual calculations due to proper rounding of the calculations.

NOTE 3: ITE Average Weekday Traffic Logarithmic Equations: 210: LN(T)=0.92 Ln(X)+2.71; 220: T=6.01(X)+150.35; 820: LN(T)=0.65 Ln(X)+5.83

Source: RTE

Big George TIA Tables Rev.xls

Trip Distribution and Assignment

The distribution of traffic arriving and leaving the project site is identified based upon existing traffic patterns, regional roadways and destinations, the location of commercial and other residential areas within the local and regional area, and the relative convenience of travel via the various existing and potential routes. In particular, the location of commercial centers, employment centers, the local post office, and educational facilities within the local and regional area are accounted for in the analyses. However, in order remain consistent and provide indisputable results, this traffic study uses the same distribution values approved in the North Douglas County Specific Plan for this area, which is shown in the document's Figure 4-2 of the Traffic and Circulation Chapter (page 33). Typically, it is standard engineering practice to assess the AM and PM peak-hour traffic from proposed developments and combine a general trip distribution as it statistically quantifies the worst-case scenario for roadway traffic impacts under the residential land use code. The AM and PM peak-hour traffic distribution may be found in **Table 2** below.

Table 2: Big George Ventures Trip Distribution & Assignment

Model Gate #	Location / Area	% Project Distribution	AM Trip Assignment	PM Trip Assignment
1	North of the Site Area	45%	192	328
2	South of the Site Area	25%	107	182
3	West of the Site Area	10%	43	73
4	Northeast of the Site Area	10%	43	73
5	Southeast of the Site Area	10%	43	73
	TOTAL	*100%*	*426*	*729*

Note: Numbers have been rounded to the nearest integer or percent

Note: Trip Distribution Uses the North Douglas County Specific Plan Site Trip Distribution Figure 4-2

Source: RTE Big George TIA Tables Rev.xls

The project generated traffic turning movement volumes are calculated by applying the directional distribution percentages in **Table 2** above to the project generated traffic in **Table 1** and applying these volumes to the study area intersections. The assigned project-generated turning movement volumes at each study area intersection for the peak-hours are shown in **Figure 5**.

Following the project generated traffic volumes are the existing plus project traffic volumes. The existing with project turning movement volumes are shown in **Figure 6**. This data is also shown in the attached traffic calculations and Traffix modeling output in the **Appendices**.

FIGURE 5: Project Generated Traffic Volumes

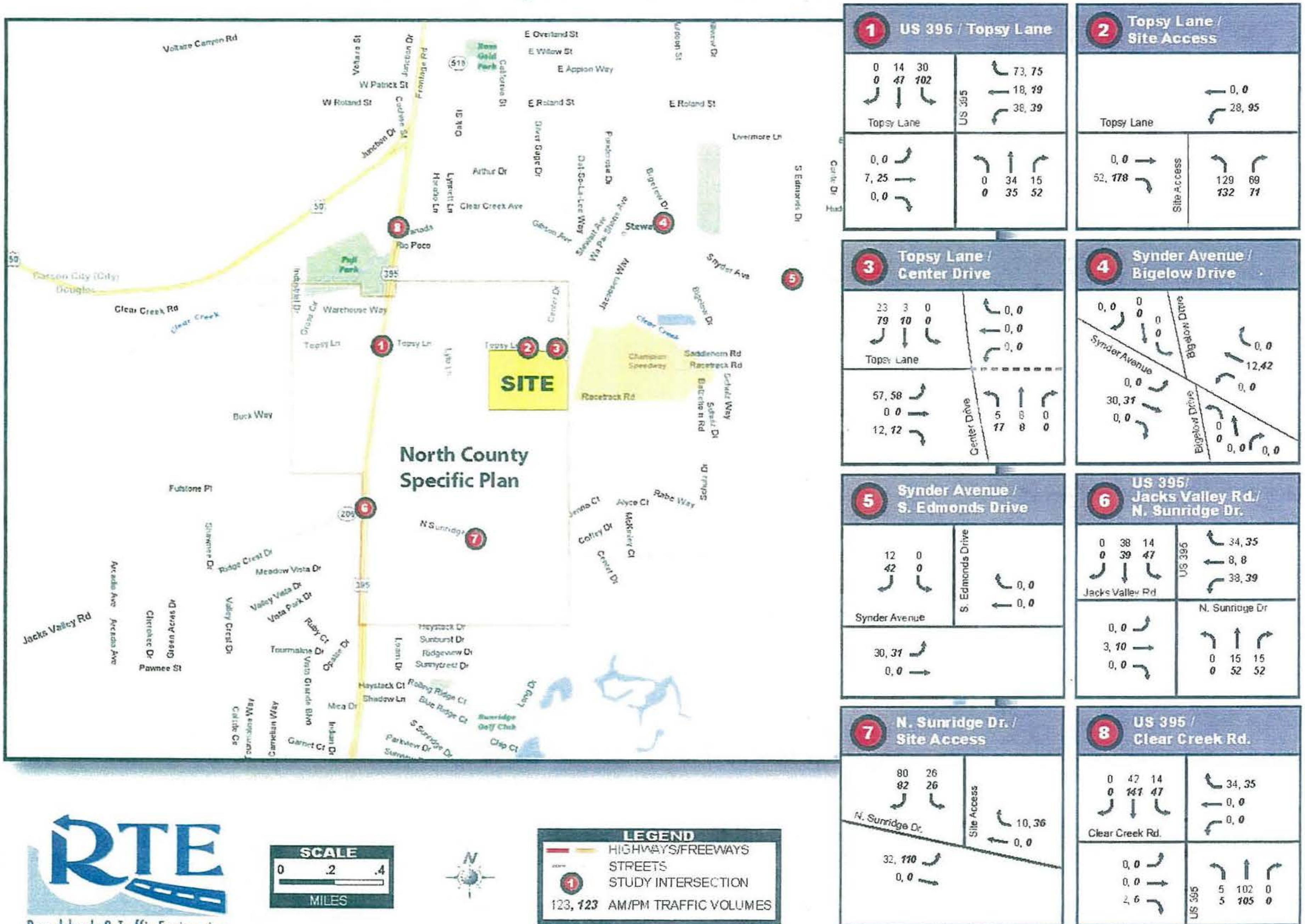


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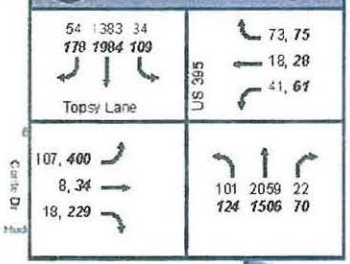
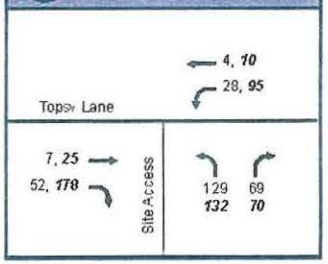
FIGURE 6: Existing Plus Project

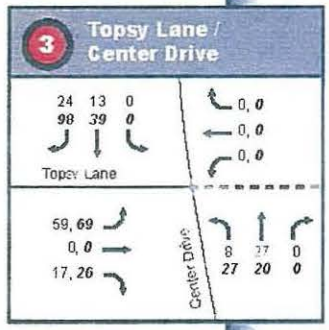
1 US 395 / Topsy Lane



2 Topsy Lane / Site Access

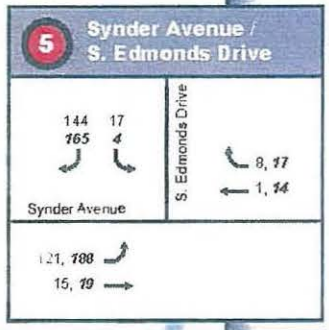


3 Topsy Lane / Center Drive

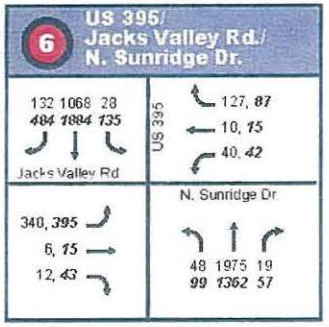


4 Synder Avenue / Bigelow Drive

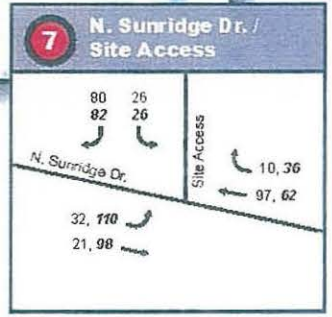
5 Synder Avenue / S. Edmonds Drive



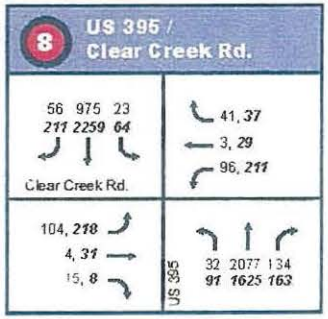
6 US 395/ Jacks Valley Rd./ N. Sunridge Dr.



7 N. Sunridge Dr. / Site Access



8 US 395 / Clear Creek Rd.



Roundabouts & Traffic Engineering

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LEGEND
HIGHWAYS/FREEWAYS
STREETS
1 STUDY INTERSECTION
123, 123 AM/PM TRAFFIC VOLUMES

ADDITIONAL PROJECT AREA TRAFFIC

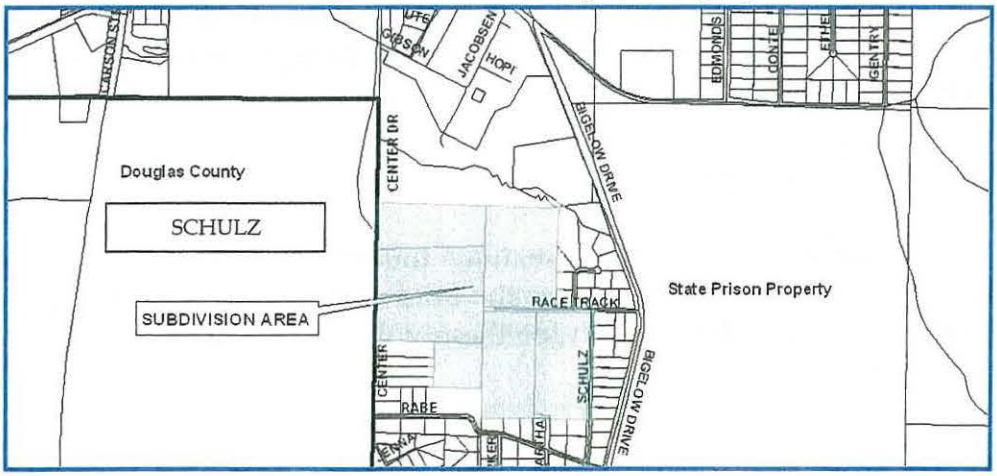
Additional existing conditions traffic scenarios are included in this report to account for "other" potential project traffic including the North Douglas County Specific Plan. These project traffic volumes have been added to the existing plus project traffic volumes as described below for each scenario.

Schulz Ranch Development

The Schulz Ranch Development's project generated trips were added to the "2008 Existing Plus Project" traffic volumes to account for the buildout traffic volumes of the Schulz Ranch project. The Schulz Ranch Development consists of 530 single family dwelling units on 125.8 acres in the Race Track Road vicinity, which is between Center Drive and Bigelow Drive in Carson City. The "Existing Plus Project Plus Schulz" Ranch Development traffic volumes are presented in **Figure 7**. As quoted from the conditions of approval document,

> *"Construction of Topsy Lane will be required from US 395 to Center Drive as two lanes with on-street bike lanes. In addition, the traffic analysis provides recommendations for off-site intersection improvements at the intersection of Snyder Avenue and Bigelow Drive as well as Snyder Drive and Edmonds Drive. These improvements include widening to accommodate left hand turn lanes. Bigelow Drive from the site to Snyder Avenue will be required to be upgraded to two lanes with on-street bike lanes to provide upgraded access to the Snyder collector. Pedestrian crossing signage and striping will be required at off-site controlled intersections including Center/Topsy and Center/Clear Creek to assure safe pedestrian crossing in these areas. The traffic study analyzes the cumulative impacts including development of the Douglas County area to the east of the site as well as projecting to post-freeway development in developing the recommendations for the project."*

Additional Schulz Ranch Development details may be found in Carson City's file numbers TSM-05-144 and ZMA-05-157. A map of the project is shown below.



Retail Development (North Douglas County Specific Plan)

The "Retail" development actually consists of all of the land uses identified in the North Douglas County Specific Plan's Traffic and Circulation Section minus the Big George project. The trip generation is identified in the specific plan in Tables 4.1 and 4.2. Specifically, the Big George Ventures subdivision's square footage by type (8,000sf or 12,000sf) was backed out of the 210 land uses in Tables 4.1 and 4.2 to arrive upon the remaining percentage of square footage types of single family dwellings. This equates to a percentage of total trip generation remaining in Tables 4.1 and 4.2 for the 210 land use without interfering with the assumed density of dwellings in the specific plan's trip generation.

The remaining single family trip generation as well as all of the other land uses in Table 4.1 were totaled for a final "Retail 4.1" trip generation that would access on Topsy Lane. A separate "zone" accounted for this traffic between the Big George site access onto Topsy Lane and US 395 (west of the Big George site access), which is consistent with the North County Specific Plan's Transportation Plan Map (Figure 4-5). The calculated land area for the 8,000sf and 12,000sf residential ITE 210 land uses occupied by Big George were 100% and 89% respectively.

Likewise, the remaining single family trip generation as well as all of the other land uses in Table 4.2 were totaled for a final "Retail 4.2" trip generation that would access onto North Sunridge Drive. A separate "zone" accounted for this traffic located east of the Big George site access on North Sunridge Drive, which is consistent with the North County Specific Plan's Transportation Plan Map (Figure 4-5). The calculated land area for the 8,000sf and 12,000sf 210 lane uses occupied by Big George were 100% and 89% respectively. The calculated land area for the 8,000sf and 12,000sf residential ITE 210 land uses occupied by Big George were 5.5% and 100% respectively.

The Retail development's final project generated trips were added to the "existing plus project plus Schulz" scenario's traffic volumes to account for the buildout traffic volumes of the Retail development. This equates to a scenario titled "Existing Plus Project Plus Schulz Plus Retail". The traffic volumes are presented in **Figure 8**.

FUTURE TRAFFIC VOLUMES

The future 2025 PM peak-hour turning movement volumes, as presented in **Figures 9**, have been estimated for the study intersections as discussed below. The source and basis foundation for these volumes are discussed in this section of the report.

Based on the traffic volume data that was gathered for the major intersections in the site vicinity under the Existing Traffic Volumes section of the pervious chapter, RTE and ROA considered an increase in the existing traffic volumes at an annual average linear growth rate of 5.5% per year for 17 years for the US 395 route, which is essentially a growth factor of 2.05 times (over twice) the existing traffic volumes. This is significantly higher than the Douglas County Transportation Plan's growth percentages, which is outdated. The 5.5% growth rate was verified using annual average daily traffic volumes per year for at least a five year period on US 395 near the project site. Supplementary data was obtained from the Nevada Department of Transportation's *Annual Traffic Report* for traffic count stations on US 395. The NDOT count station ID numbers along US 395 are 05-0045 (US 395 0.4 miles north of Jacks Valley Road) and 05-0046 (US 395 0.4 miles north of Mica Drive).

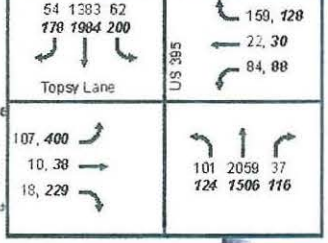
However, this growth rate would "double count" for the known specific plan area and surrounding projects. Other traffic data along the Douglas County roadways near the study site show a 1.0% to 2.5% growth rate on these rural roadways. This is slightly higher and consistent with other studies conducted in the area indicating growth factors of near 1.7 along US 395 and 1.2 for Douglas County roadways for a ten year period. In addition, these higher growth rates were also considered based on comments from County staff identifying a higher realized growth rate for this area of the County.

However, with the availability of relatively accurate project traffic volumes identified in the approved Schulz Ranch Project, the proposed Big George Project, and the remaining portions of the North Douglas County Specific Plan projects, the project area is near total buildout and is already being increased by these growth rates (or higher) with these projects. Hence, a conservative 1.0% growth rate per year (17% total growth) was used in this study area in addition to the all of the projects mentioned above in order to arrive upon the future cumulative project volumes. This approach is conservative, appropriate, and does not "double count" known project generated trips in the growth rate for the study area.

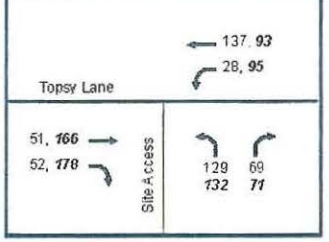
Therefore, the future 2025 scenario traffic volumes account for all of the North Douglas County Specific Plan project development as fully built out, this project (Big George), and the Schulz Ranch Development to the east in addition to the 17% growth specified above. No significant improvements or changes to the existing roadway infrastructure were identified to include in these future analyses. The cumulative future 2025 turning movement volumes at each applicable study area intersection for the PM peak-hour are shown in **Figure 9**. This data is also shown in the attached traffic calculations and Traffix modeling output in the **Appendices**.

FIGURE 7: Existing Plus Project Plus Schulz

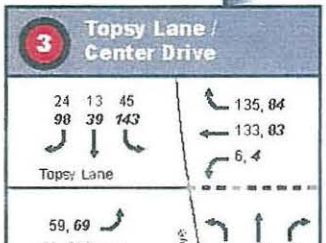
1 US 395 / Topsy Lane



2 Topsy Lane / Site Access

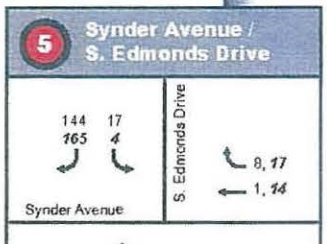


3 Topsy Lane / Center Drive



4 Synder Avenue / Bigelow Drive

5 Synder Avenue / S. Edmonds Drive



6 US 395 / Jacks Valley Rd. / N. Sunridge Dr.

7 N. Sunridge Dr. / Site Access

8 US 395 / Clear Creek Rd.

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LEGEND
HIGHWAYS/FREEWAYS
STREETS
1 STUDY INTERSECTION
123, 123 AM/PM TRAFFIC VOLUMES

FIGURE 8: Existing Plus Project Plus Schulz Plus Retail

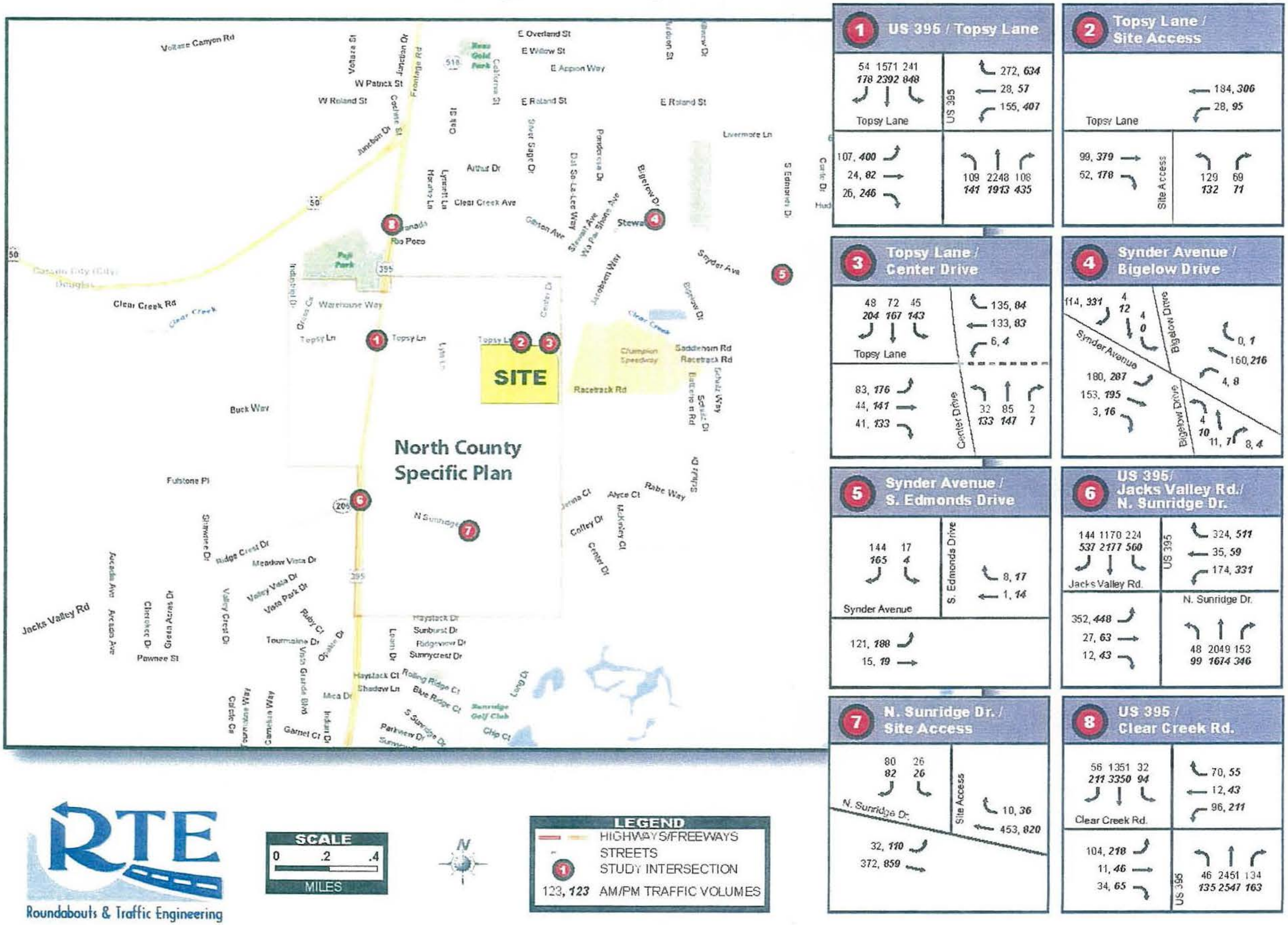
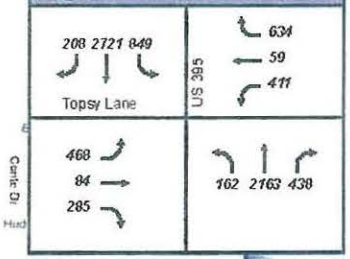
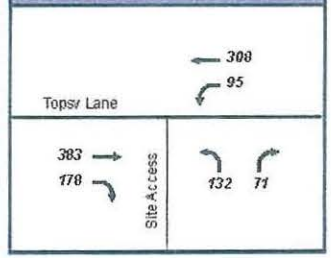


FIGURE 9: 2025 Future Growth Rate Plus Project Plus Schulz Plus Retail

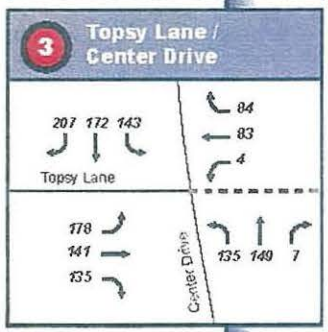
1 US 395 / Topsy Lane



2 Topsy Lane / Site Access

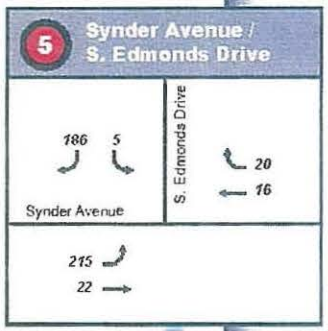


3 Topsy Lane / Center Drive

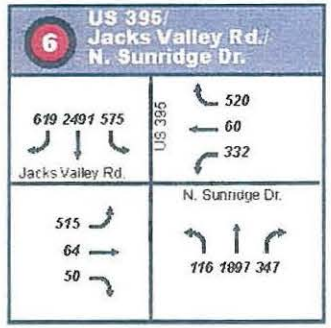


4 Synder Avenue / Bigelow Drive

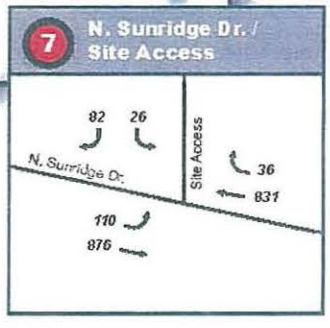
5 Synder Avenue / S. Edmonds Drive



6 US 395/ Jacks Valley Rd./ N. Sunridge Dr.



7 N. Sunridge Dr. / Site Access



8 US 395 / Clear Creek Rd.

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HIGHWAYS/FREEWAYS
STREETS
1 STUDY INTERSECTION
123 PM TRAFFIC VOLUMES

Chapter 4 CAPACITY ANALYSIS

DESCRIPTION

Traffic operations are 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, as presented in the *Highway Capacity Manual* (Transportation Research Board, 2000). The LOS for most jurisdictions at intersections is 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 very long delays of operation for a driver, forcing the driver to wait for adequate gaps in conflicting traffic. The criteria are based on the theory of gap acceptance for side-street stop-sign-controlled approaches. A detailed description of LOS criteria is provided in the **Appendices**.

Under the HCM methodology, a signalized intersection operating at LOS "F" is considered to have failed. For signalized intersections under this methodology, LOS is primarily measured in terms of average delay. The 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 may also be 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 are 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.

Generally, LOS "D" and LOS "E" are considered the thresholds of acceptable operation for signalized and unsignalized intersections, respectively. However, the Douglas County Master Plan specifies an ***existing*** LOS C for all streets with the exception of major arterials where the LOS may be reduced to LOS D. NDOT allows an ***existing*** LOS D at their intersections.

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 in 2008.*
- *Existing background traffic on the study area's major roadways was analyzed based on existing count data.*
- *Traffic generation estimates for the project have been prepared for the years of 2008 and 2025. These estimates were prepared for the existing AM and PM peak hours of the surrounding roadway 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.*
- *Cumulative traffic impacts of projects in the area were included in the future 2025 conditions at all intersections.*
- *If required, roadway improvements have been addressed at appropriate intersections to maintain acceptable levels of operation and threshold criteria. This procedure was conducted for project-related impacts for existing and future conditions. The future cumulative conditions consider all specified projects listed herein under Future Traffic Volumes.*

All signalized and unsignalized intersections were analyzed using the Highway Capacity Manual (HCM) 2000 methodologies. The intersections were evaluated using the Traffix software package, which is based upon HCM 2000 methodologies. LOS calculations and traffic models for the study area intersections for the previously defined peak hours have been completed and evaluated (calculations can be found in the attached **Appendices**).

EXISTING LOS ANALYSIS

This traffic section of the engineering study analyzes the study area intersections under existing conditions with and without the site-generated vehicular trips. The study area intersections were evaluated to determine existing operational conditions for both the AM and PM peak-hours. Using the traffic count data presented in the Existing Conditions Volumes in Chapter 2 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 analysis methodology used

is described above for unsignalized and signalized intersections to conduct this analysis. **Table 3** summarizes the results of the LOS analyses for the following scenarios:

1. Existing No Project – AM
2. Existing No Project – PM
3. Existing Plus Project – AM
4. Existing Plus Project - PM
5. Existing Plus Project Plus Schulz – AM
6. Existing Plus Project Plus Schulz - PM
7. Existing Plus Project Plus Schulz Plus Retail– AM
8. Existing Plus Project Plus Schulz Plus Retail - PM

As shown in **Table 3**, the existing with project level of service at the study area intersections is not significantly impacted with the project implemented. However, once the full buildout of the remaining portions of the North Douglas County Specific Plan are completed, five of the eight intersections require capacity mitigation measures (intersection numbers 1, 3, 6, 7, and 8).

In view of the fact that the results of the LOS analyses for this project do not operate unsatisfactory or create a significant impact for the study area intersections identified, no significant capacity mitigation measures are recommended at this time.

FUTURE LOS ANALYSIS

This traffic section of the engineering study analyzes the study area intersections under the future conditions analysis with and without the site-generated vehicular trips. Using the traffic count data as presented in the Future Cumulative Traffic Volumes in Chapter 3 of this study, it is possible to evaluate the LOS provided during peak periods on the required intersections serving the study area. The analysis methodology used is described above to conduct this analysis. **Table 4** summarizes the results of the LOS analyses for the future conditions.

As shown in **Table 4**, the same five intersections require capacity mitigation measures (intersection numbers 1, 3, 6, 7 and 8) in the future (2025) in order to maintain a LOS C on county roadways or LOS D on state roadways. Also shown in **Table 4**, are the recommended mitigation measures and the resulting LOS for these mitigation measures. Ultimately, with the full buildout of the North Douglas County Specific Plan area, the Schulz Ranch project, as well as the 17%

TABLE 3: LOS IMPACT - EXISTING CONDITIONS

Total Intersection LOS & Delay

# Intersection Description	AM Peak Total Intx Delay	AM Peak Total Intx LOS	PM Peak Total Intx Delay	PM Peak Total Intx LOS	Mitigation Required?
1) US 395 / Topsy Lane					
No Project	9.4	A	16.4	B	No
Plus Project	15.2	B	21.4	C	No
Plus Project Plus Schulz	21.6	C	25.6	C	No
Plus Project Plus Schulz Plus Retail	47.6	**D**	161.5	**F**	**Yes**
2) Topsy Lane / Project Site Access					
No Project	-	-	-	-	No
Plus Project	7.6	A	6.5	A	No
Plus Project Plus Schulz	5.4	A	5.9	A	No
Plus Project Plus Schulz Plus Retail	4.9	A	10.0	A	No
3) Topsy Lane / Center Drive					
No Project	2.0	A	3.1	A	No
Plus Project	5.1	A	4.1	A	No
Plus Project Plus Schulz	10.3	B	15.4	C	No
Plus Project Plus Schulz Plus Retail	11.3	B	516.3	**F**	**Yes**
4) Snyder Avenue / Bigelow Drive					
No Project	0.7	A	0.6	A	No
Plus Project	0.6	A	0.5	A	No
Plus Project Plus Schulz	3.3	A	3.5	A	No
Plus Project Plus Schulz Plus Retail	4.9	A	8.6	A	No
5) Snyder Avenue / S. Edmonds Drive					
No Project	7.7	A	7.0	A	No
Plus Project	7.8	A	7.4	A	No
Plus Project Plus Schulz	7.8	A	7.4	A	No
Plus Project Plus Schulz Plus Retail	7.8	A	7.4	A	No
6) US 395 / N. Sunridge Drive					
No Project	20.4	C	18.4	B	No
Plus Project	23.1	C	20.4	C	No
Plus Project Plus Schulz	23.3	C	21.1	C	No
Plus Project Plus Schulz Plus Retail	45.8	**D**	75.3	**E**	**Yes**
7) N. Sunridge Drive / Project Site Access					
No Project	-	-	-	-	No
Plus Project	4.7	A	4.7	A	No
Plus Project Plus Schulz	4.6	A	4.6	A	No
Plus Project Plus Schulz Plus Retail	2.3	A	71.2	**F**	**Yes**
8) US 395 / Clear Creek Road					
No Project	12.8	B	17.9	B	No
Plus Project	16.1	B	21.3	C	No
Plus Project Plus Schulz	19.3	B	23.9	C	No
Plus Project Plus Schulz Plus Retail	26.4	C	61.6	**E**	**Yes**

Source: RTE

Big George TIA Tables Rev.xls

TABLE 4: LOS IMPACT - 2025 FUTURE CONDITIONS

Total Intersection LOS & Delay Reported	2025 **PM** Peak Total Intx		2025 **PM** Peak **with Mitigation** Total Intx	
# Intersection Description	Delay	LOS	Delay	LOS
1) US 395 / Topsy Lane Growth Rate Plus Project Plus Schulz Plus Retail	183.9	**F**	51.2	D[1]
2) Topsy Lane / Project Site Access Growth Rate Plus Project Plus Schulz Plus Retail	10.2	B	-	-
3) Topsy Lane / Center Drive Growth Rate Plus Project Plus Schulz Plus Retail	554.7	**F**	6.7	A[2]
4) Snyder Avenue / Bigelow Drive Growth Rate Plus Project Plus Schulz Plus Retail	9.1	A	-	-
5) Snyder Avenue / S. Edmonds Drive Growth Rate Plus Project Plus Schulz Plus Retail	7.4	A	-	-
6) US 395 / N. Sunridge Drive Growth Rate Plus Project Plus Schulz Plus Retail	99.8	**F**	42.7	D[3]
7) N. Sunridge Drive / Project Site Access Growth Rate Plus Project Plus Schulz Plus Retail	67.9	**F**	3.7	A[4]
8) US 395 / Clear Creek Road Growth Rate Plus Project Plus Schulz Plus Retail	98.7	**F**	49.1	D[5]

Note 1: Added EB & WB Right Turn Lanes with Acceleration Lanes on US 395, Added 1 Additional NB Through lane (3 total), Dual SB & WB Left Turn Lanes Added, Assumes Overlap Signal Heads NB & SB

Note 2: Installed Single Lane Roundabout at the Intersection

Note 3: Added NB & SB Through Lanes (1 Additional Each Direction to 3 total), Overlap Signal Heads Assumed for All Legs.

Note 4: Installed Multi-Lane Roundabout at the Intersection

Note 5: Added 1 additional NB Through lane (3 total), Dual WB Left turn lane added, Assumes Overlap Signals Heads EB, WB, & SB

Source: RTE Big George TIA Tables Rev.xls

assumed growth in the area of other projects, the following improvements are needed in order for the three intersections to maintain LOS of C/D or better:

- US 395 / Topsy Lane:
  - On Topsy Lane the existing eastbound right turn lane should be extended at least 225 feet with an acceleration lane on US 395 for free flow right turn movements.
  - On Topsy Lane the existing westbound right turn lane should be extended at least 250 feet with an acceleration lane on US 395 for free flow right turn movements.
  - On US 395 an additional northbound through lane should be added (three through lanes total) between N. Sunridge Drive and Topsy Lane.

- On US 395 an additional southbound left turn (dual left turn) should be added.
- On Topsy Lane a additional westbound left turn lane (dual left turn) should be added.
- The signal should include "overlap" phasing and right turn signal heads for permitted right turns (green right turn arrow) for the northbound and southbound right turn movements.

➢ Topsy Lane / Center Drive:
- This intersection should ultimately be converted to a single lane modern roundabout (or a traffic signal).

➢ US 395 / North Sunridge Drive:
- On US 395 an additional northbound and southbound through lane should be added (three through lanes total each direction) and should comply with NDOT standards. These through lanes are needed at the intersection only with standard NDOT tapers.
- The signal should include "overlap" phasing and right turn signal heads for permitted right turns (green right turn arrow) for all legs.

➢ North Sunridge Drive / Site Access:
- This intersection should ultimately be converted to a partial two-lane modern roundabout (or a traffic signal).

➢ US 395 / Clear Creek Road:
- On US 395 an additional northbound through lane should be added (three through lanes total) and should comply with NDOT standards.
- On the Frontage Road an additional westbound left turn lane (dual left turn) should be added.
- The signal should include "overlap" phasing and right turn signal heads for permitted right turns (green right turn arrow) for the eastbound, westbound, and southbound right turn movements.

However, these recommendations are only needed with the full buildout of the North Douglas County Specific Plan area, the Schulz Ranch project, as well as an assumed growth in the area from other projects (assumed herein at 17% to the year 2025). As shown in **Table 3** above, the Big George Ventures project does not require capacity improvements. However, this project may be responsible for a prorated share of these mitigation measures since this project's traffic adds to the deficiency of these intersection failures in the future conditions. The calculations for the mitigated 2025 conditions can be found in the attached **Appendices**.

MITIGATION MEASURES

The study area intersections were analyzed for capacity based upon procedures presented in the Highway Capacity Manual. As identified above, none of the study area intersections operate unacceptably or create a significant impact under existing plus project conditions. Therefore, intersection improvements are not necessary to maintain adequate level of service and delay standards with this proposed project implemented.

Under future 2025 conditions, which considers the full buildout of the North County Specific Plan and the Schulz Ranch Project, the previous chapter identified the improvements needed to maintain the LOS threshold requirements. A summary of the details in the previous chapter are listed below:

US 395 / Topsy Lane:

- Extend the eastbound right turn lane with an acceleration lane on US 395
- Extend the westbound right turn lane with an acceleration lane on US 395
- Add one northbound through lane on US 395
- Add one southbound left turn on US 395
- Add one westbound left turn on Topsy Lane
- Verify overlap signal heads / phasing has been implemented

Topsy Lane / Center Drive:

- Install a single lane modern roundabout or signal

US 395 / North Sunridge Drive:

- Add a northbound and southbound through lane on US 395
- Verify overlap signal heads / phasing has been implemented

North Sunridge Drive / Site Access:

- Install a two-lane modern roundabout or signal

US 395 / Clear Creek Road:

- Add a northbound through lane on US 395
- Add one westbound left turn on the Frontage Road
- Ensure overlap signal heads / phasing has been implemented

However, these recommendations are only needed with the full buildout of the North Douglas County Specific Plan area, the Schulz Ranch project, as well as an assumed growth in the area from other projects (assumed herein at 17% to the year 2025). As shown in **Table 3** in the previous chapter, the Big George

Ventures project does not require capacity improvements. However, this project may be responsible for a prorated share of these mitigation measures since this project's traffic adds to the deficiency of these intersection failures in the future conditions. The calculations for the mitigated 2025 conditions can be found in the attached **Appendices**.

OTHER CONSIDERATIONS

Sight Distance at Site Access Locations

The site accesses currently do not exist without the project implemented. In addition, the proposed project has assumed future connections to the south onto North Sunridge Drive through the development of the projects to the south. Preliminary sight distance was analyzed in the general vicinity of the new access points. Exact field measurements were not performed since the exact site access locations were unknown at the time of the field visit and the site plan has been continually changing.

In general, no sight distance problems are anticipated at either access location based on the preliminary field review performed by RTE on Tuesday, June 27, 2006. Sight distance was clear of minimum tolerances for horizontal and vertical issues to both the east and west on Topsy Lane.

Signal Warrants

As anticipated, signal warrants are not met at any intersection under existing plus project conditions. However, signal warrants have been found to be met at two of the study area intersections under existing plus the project, plus the Schulz Ranch Project, plus the full buildout of the North County Specific Plan as well as under future 2025 conditions, which considers the full buildout of the North County Specific Plan and the Schulz Ranch Project. The two intersections are intersection numbers 3 and 7 (Topsy Lane / Center Drive and North Sunridge Drive / Site Access). The initial signal warrant analyses may be shown in the Appendices of the report for each unsignalized intersection in each scenario. Please refer to these signal warrant analyses shown in the Appendices for further information. In summary, **Table 5** shows the results of these analyses on the following page.

TABLE 5: SIGNAL WARRANT ANALYSIS SUMMARY

Appendices Contain Full Reports

# Intersection Description	Peak Hour Signal Warrant Met?
2) Topsy Lane / Project Site Access	
2006 No Project	No
2006 Plus Project	No
2006 Plus Project Plus Schulz	No
2006 Plus Project Plus Schulz Plus Retail	No
2025 Plus Project Plus Schulz Plus Retail	No
3) **Topsy Lane / Center Drive**	
2006 No Project	No
2006 Plus Project	No
2006 Plus Project Plus Schulz	No
2006 Plus Project Plus Schulz Plus Retail	Yes[1]
2025 Plus Project Plus Schulz Plus Retail	Yes[1]
4) Snyder Avenue / Bigelow Drive	
2006 No Project	No
2006 Plus Project	No
2006 Plus Project Plus Schulz	No
2006 Plus Project Plus Schulz Plus Retail	No
2025 Plus Project Plus Schulz Plus Retail	No
5) Snyder Avenue / S. Edmonds Drive	
2006 No Project	No
2006 Plus Project	No
2006 Plus Project Plus Schulz	No
2006 Plus Project Plus Schulz Plus Retail	No
2025 Plus Project Plus Schulz Plus Retail	No
7) N. Sunridge Drive / Project Site Access	
2006 No Project	No
2006 Plus Project	No
2006 Plus Project Plus Schulz	No
2006 Plus Project Plus Schulz Plus Retail	Yes[1]
2025 Plus Project Plus Schulz Plus Retail	Yes[1]

Note 1: Peak Hour Signal Warrant Rules 1, 2, and 3 Succeed (Met)

Source: RTE — Big George TIA Tables Rev.xls

Left Turn Storage and Queuing Analysis

Per the request of the County, the north and east approaches of the intersection of US 395 / N. Sunridge Drive was analyzed for the left turn lane storage capacity. Left turn lanes can be justified based on safety or capacity. The capacity analyses do not identify the need for left turn lanes at any of the intersections under the scenario of Existing Plus Project Plus Schulz. However,

safety can also justify the need for left turn lanes on uncontrolled legs of an intersection. The previous LOS section would identify any left turn lane needs at stop controlled or signalized legs of the intersections. Based on the capacity analysis, the study area intersections do not require any additional left turn lanes. Under the scenario of Existing Plus Project Plus Schulz, the existing southbound left turn lane needs only 125 feet of storage length (not including taper lengths) and the westbound left turn lane needs to be at least 50 feet in length (not including tapers). Hence, the existing turn lane lengths are adequate.

However, it should also be noted that with the final construction of Topsy Lane, the westbound approach at US 395 should be constructed to include a fully delineated left turn lane, through lane, and right turn lane with a left turn storage length of at least 125 feet and a right turn storage length of at least 125 feet (not including taper lengths) under scenario of Existing Plus Project Plus Schulz.

In addition, based on additional left turn lane warrant analyses and safety considerations with an increasing amount of eastbound left turns during the peak hour at the intersection of Snyder Avenue / S. Edmonds Road, an eastbound left turn lane is recommended in the future (if not constructed by others such as the Schulz Ranch project). Since the percentage of left turns and the conflicting turning movement volumes are well under the standard chart values for warranting a left turn lane, no chart is provided herein.

Emergency Vehicles

The new roadways internal and external to the proposed development should be reviewed by the local fire department staff for compliance. The site access location and internal traffic circulation were not analyzed at this time since a final site plan had not yet been developed showing internal roadways. However, the preliminary plan shows multiple access points and availability of secondary emergency accesses to the site. No emergency vehicle issues have been identified for this project at this time.

Known Improvements Completed by Other Projects

As stated above, the Schulz Ranch Project has conditions of approval that state the following from the conditions of approval document:

> *"Construction of Topsy Lane will be required from US 395 to Center Drive as two lanes with on-street bike lanes. In addition, the traffic analysis provides recommendations for off-site intersection improvements at the intersection of Snyder Avenue and Bigelow Drive as well as Snyder Drive and Edmonds Drive. These improvements include widening to*

accommodate left hand turn lanes. Bigelow Drive from the site to Snyder Avenue will be required to be upgraded to two lanes with on-street bike lanes to provide upgraded access to the Snyder collector. Pedestrian crossing signage and striping will be required at off-site controlled intersections including Center/Topsy and Center/Clear Creek to assure safe pedestrian crossing in these areas."

We concur with these recommendations as appropriate; however these improvements are not needed with just the implementation of the Georgetown Village project and without the Schulz Ranch development. These improvements should be constructed if the Schulz Ranch development proceeds. Additional Schulz Ranch Development details may be found in Carson City's file numbers TSM-05-144 and ZMA-05-157.

Financial Participation for Big George Ventures Project

Based on the trip generation estimates contained herein for the North County Specific Plan area as well as the adjacent Schulz Ranch Project, the Big George Ventures Development has the following ***percentages*** of new project generated traffic (impacts) at each of the study area intersections in the 2025 PM Conditions Plus Project Plus Schulz Plus Retail (remaining portions of the North County Specific Plan) scenario (Big George Trips/Total New Trips for All Projects):

1. US 395 / Topsy Lane: 393/3328 = **11.8%**
3. Topsy Lane / Center Drive: 184/1327 = **13.9%**
4. Snyder Avenue / Bigelow Drive: 73/709 = **10.3%**
6. US 395 / North Sunridge Drive: 282/2512 = **11.2%**
8. US 395 / Clear Creek Road: 339/2531 = **13.4%**

This project may be responsible for a prorated share of these mitigation measures since this project's trip generation or traffic adds to the deficiency of these intersection failures in the future conditions.

REFERENCES

1. *Highway Capacity Manual (2000), HCM Special Report 209*, 1985, Updated October 1994, Transportation Research Board, National Research Council.

2. *Trip Generation Manual*, Seventh Edition, Institute of Transportation Engineers.

3. *Manual on Uniform Traffic Control Devices*, 2003, Federal Highway Administration.

4. *Traffic Access and Impact Study for Site Development, A Recommended Practice*, 1991, Institute of Transportation Engineers.

5. *A Policy on The Geometric Design of Highways and Streets*, 1994, American Association of State Highway Transportation Officials.

APPENDIX

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Existing No Proj. AM
Command:	No Project
Volume:	AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	AM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Turning Movement Report
AM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 US395/Topsy													
Base	101	2025	7	4	1369	54	107	1	18	3	0	0	3689
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	101	2025	7	4	1369	54	107	1	18	3	0	0	3689
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	7	0	0	4	0	11
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	7	0	0	4	0	11
#3 Topsy/Center													
Base	3	19	0	0	10	1	2	0	5	0	0	0	40
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	3	19	0	0	10	1	2	0	5	0	0	0	40
#4 Snyder/Bigelow													
Base	4	0	8	4	0	2	0	123	3	4	148	0	296
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	4	0	8	4	0	2	0	123	3	4	148	0	296
#5 Snyder/S.Edmonds													
Base	0	0	0	17	0	132	91	15	0	0	1	8	264
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	17	0	132	91	15	0	0	1	8	264
#6 US395/N.Sunridge													
Base	48	1960	4	14	1030	132	340	3	12	2	2	93	3640
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	48	1960	4	14	1030	132	340	3	12	2	2	93	3640
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	21	0	0	97	0	118
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	21	0	0	97	0	118
#8 395/Clear Creek													
Base	27	1975	134	9	933	56	104	4	13	96	3	7	3361
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	27	1975	134	9	933	56	104	4	13	96	3	7	3361

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #1 US395/Topsy

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Cycle (sec): 100 Critical Vol./Cap. (X): 0.758
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 9.4
Optimal Cycle: 78 Level Of Service: A

****

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0	1	1 0 3	0	1	2 0 1	0	1	1 0 1	0	1
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	101	2025	7	4	1369	54	107	1	18	3	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:	101	2025	7	4	1369	54	107	1	18	3	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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	106	2132	7	4	1441	57	113	1	19	3	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	2132	7	4	1441	57	113	1	19	3	0	0
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.:	106	2132	7	4	1441	57	113	1	19	3	0	0
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	1.00
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1900
Capacity Analysis Module:												
Vol/Sat:	0.03	0.60	0.00	0.00	0.28	0.03	0.03	0.00	0.01	0.00	0.00	0.00
Crit Moves:		****		****			****				****	
Green/Cycle:	0.08	0.79	0.83	0.00	0.72	0.76	0.04	0.01	0.09	0.03	0.00	0.00
Volume/Cap:	0.39	0.76	0.00	0.76	0.39	0.04	0.76	0.05	0.12	0.05	0.00	0.00
Delay/Veh:	44.8	6.6	1.5	263.3	5.6	3.0	67.4	50.2	42.3	47.3	0.0	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:	44.8	6.6	1.5	263.3	5.6	3.0	67.4	50.2	42.3	47.3	0.0	0.0
HCM2kAvg:	2	18	0	1	6	0	3	0	1	0	0	0

****

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #1 US395/Topsy

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	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	xxxx	xxxxx
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	xxxx	xxxxx
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	xxxxx
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxx	xxxxx
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx
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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	0.95	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	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	1.00
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	0.00	0.00

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

****

Intersection #1 US395/Topsy

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.08	0.79	0.83	0.00	0.72	0.76	0.04	0.01	0.09	0.03	0.00	0.00
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.5	15.3	0.0	0.1	5.2	0.4	1.6	0.0	0.5	0.1	0.0	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00	0.00
Q2:	0.6	2.9	0.0	0.7	0.6	0.0	1.8	0.1	0.1	0.1	0.0	0.0
HCM2KQueue:	2.1	18.2	0.0	0.8	5.9	0.4	3.4	0.1	0.6	0.1	0.0	0.0
70th%Factor:	1.19	1.16	1.20	1.20	1.19	1.20	1.19	1.20	1.20	1.20	1.20	1.20
70th%HCM2kQ:	2.5	21.2	0.0	0.9	7.0	0.5	4.1	0.1	0.7	0.2	0.0	0.0
85th%Factor:	1.58	1.46	1.60	1.59	1.55	1.60	1.57	1.60	1.59	1.60	1.60	1.60
85th%HCM2kQ:	3.3	26.7	0.1	1.2	9.1	0.7	5.4	0.1	1.0	0.2	0.0	0.0
90th%Factor:	1.76	1.56	1.80	1.78	1.70	1.79	1.74	1.80	1.79	1.80	1.80	1.80
90th%HCM2kQ:	3.7	28.5	0.1	1.4	10.0	0.8	5.9	0.2	1.1	0.3	0.0	0.0
95th%Factor:	2.03	1.72	2.10	2.07	1.93	2.09	2.00	2.10	2.08	2.10	2.10	2.10
95th%HCM2kQ:	4.3	31.3	0.1	1.6	11.4	0.9	6.8	0.2	1.3	0.3	0.0	0.0
98th%Factor:	2.55	1.95	2.70	2.64	2.34	2.67	2.47	2.69	2.65	2.69	2.70	2.70
98th%HCM2kQ:	5.3	35.5	0.1	2.1	13.7	1.2	8.4	0.2	1.6	0.4	0.0	0.0

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name:	Site Access									Topsy Lane					
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 1! 0	0	0	0 0 0	0 0	0	0 1	0 0	0	0 1	0 0			
Volume Module: AM															
Base Vol:	0	0	0	0	0	0	0	7	0	0	4	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:	0	0	0	0	0	0	0	7	0	0	4	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
PHF Volume:	0	0	0	0	0	0	0	8	0	0	4	0			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Final Vol.:	0	0	0	0	0	0	0	8	0	0	4	0			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Capacity Module:															
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx			
Level Of Service Module:															
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*			
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT					
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*			
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx					
ApproachLOS:	*			*			*			*					

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 2.0 Worst Case Level Of Service: A[8.5]

Street Name:	Center Drive						Topsy Lane					
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 1 0	0	0	0 0 0	1	0	0 0 1!	0	0	0 0 1!	0	0
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	3	19	0	0	10	1	2	0	5	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:	3	19	0	0	10	1	2	0	5	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	3	21	0	0	11	1	2	0	6	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	3	21	0	0	11	1	2	0	6	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:	12	xxxx	xxxxx	xxxx	xxxx	xxxxx	39	xxxx	12	xxxx	xxxx	xxxxx
Potent Cap.:	1620	xxxx	xxxxx	xxxx	xxxx	xxxxx	977	xxxx	1075	xxxx	xxxx	xxxxx
Move Cap.:	1620	xxxx	xxxxx	xxxx	xxxx	xxxxx	976	xxxx	1075	xxxx	xxxx	xxxxx
Volume/Cap:	0.00	xxxx	xxxx	xxxx	xxxx	xxxx	0.00	xxxx	0.01	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	1045	xxxxx	xxxx	0	xxxxx
SharedQueue:	0.0	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.0	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	7.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.5	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.5			xxxxxx		
ApproachLOS:	*			*			A			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 0.7 Worst Case Level Of Service: B[10.2]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1! 0 0			0 0 1! 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	4	0	8	4	0	2	0	123	3	4	148	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:	4	0	8	4	0	2	0	123	3	4	148	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	4	0	9	4	0	2	0	137	3	4	164	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	4	0	9	4	0	2	0	137	3	4	164	0
Critical Gap Module:												
Critical Gp:	7.1	xxxx	6.2	7.1	xxxx	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	313	xxxx	138	316	xxxx	164	xxxx	xxxx	xxxxx	140	xxxx	xxxxx
Potent Cap.:	644	xxxx	915	640	xxxx	885	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx
Move Cap.:	641	xxxx	915	633	xxxx	885	xxxx	xxxx	xxxxx	1456	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	0.01	0.01	xxxx	0.00	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	801	xxxxx	xxxx	699	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	0.0	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd StpDel:	xxxxx	9.6	xxxxx	xxxxx	10.2	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx
Shared LOS:	*	A	*	*	B	*	*	*	*	A	*	*
ApproachDel:		9.6			10.2		xxxxxx			xxxxxx		
ApproachLOS:		A			B		*			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.7 Worst Case Level Of Service: A[9.2]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	0	0	0	17	0	132	91	15	0	0	1	8
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	17	0	132	91	15	0	0	1	8
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	19	0	147	101	17	0	0	1	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	19	0	147	101	17	0	0	1	9
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	224	xxxx	6	10	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	768	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	729	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	0.14	0.06	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1026	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.2	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.2	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.2			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #5 Snyder/S.Edmonds

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

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec):	90	Critical Vol./Cap. (X):	0.861
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	20.4
Optimal Cycle:	97	Level Of Service:	C

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	48	1960	4	14	1030	132	340	3	12	2	2	93
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:	48	1960	4	14	1030	132	340	3	12	2	2	93
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	51	2063	4	15	1084	139	358	3	13	2	2	98
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	2063	4	15	1084	139	358	3	13	2	2	98
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.:	51	2063	4	15	1084	139	358	3	13	2	2	98
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.01	0.55	0.00	0.01	0.29	0.08	0.10	0.00	0.01	0.00	0.00	0.05
Crit Moves:		****		****			****					****
Green/Cycle:	0.03	0.64	0.71	0.01	0.62	0.74	0.12	0.10	0.13	0.07	0.05	0.06
Volume/Cap:	0.47	0.86	0.00	0.86	0.47	0.10	0.86	0.02	0.05	0.02	0.02	0.86
Delay/Veh:	46.1	16.2	3.7	193.8	9.2	3.4	55.5	36.6	34.4	39.1	40.5	86.3
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:	46.1	16.2	3.7	193.8	9.2	3.4	55.5	36.6	34.4	39.1	40.5	86.3
HCM2kAvg:	1	26	0	2	8	1	8	0	0	0	0	5

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 US395/N.Sunridge

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	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.64	0.71	0.01	0.62	0.74	0.12	0.10	0.13	0.07	0.05	0.06
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.7	20.6	0.0	0.4	7.2	1.0	4.6	0.1	0.3	0.1	0.0	2.4
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.7	5.0	0.0	1.2	0.9	0.1	3.3	0.0	0.1	0.0	0.0	2.6
HCM2KQueue:	1.4	25.6	0.0	1.6	8.1	1.1	7.9	0.1	0.3	0.1	0.1	5.1
70th%Factor:	1.20	1.15	1.20	1.20	1.18	1.20	1.18	1.20	1.20	1.20	1.20	1.19
70th%HCM2kQ:	1.7	29.5	0.0	2.0	9.5	1.3	9.4	0.1	0.4	0.1	0.1	6.0
85th%Factor:	1.59	1.43	1.60	1.58	1.53	1.59	1.53	1.60	1.60	1.60	1.60	1.55
85th%HCM2kQ:	2.2	36.5	0.1	2.6	12.4	1.7	12.1	0.1	0.5	0.1	0.1	7.9
90th%Factor:	1.77	1.51	1.80	1.77	1.67	1.78	1.67	1.80	1.79	1.80	1.80	1.71
90th%HCM2kQ:	2.5	38.7	0.1	2.9	13.5	2.0	13.2	0.2	0.6	0.1	0.1	8.7
95th%Factor:	2.06	1.64	2.10	2.05	1.88	2.06	1.89	2.10	2.09	2.10	2.10	1.95
95th%HCM2kQ:	2.9	42.1	0.1	3.3	15.2	2.3	15.0	0.2	0.7	0.1	0.1	9.9
98th%Factor:	2.60	1.84	2.70	2.58	2.24	2.62	2.24	2.69	2.67	2.69	2.69	2.38
98th%HCM2kQ:	3.6	47.1	0.1	4.2	18.1	2.9	17.8	0.2	0.9	0.2	0.2	12.1

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

****

Intersection #7 N.Sunridge/Access

****

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

****

Street Name:	Site Access						N.Sunridge					
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	1! 0	0	0 0	1 0	0	0 0	1 0	0
Volume Module: AM												
Base Vol:	0	0	0	0	0	0	0	21	0	0	97	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:	0	0	0	0	0	0	0	21	0	0	97	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	0	0	23	0	0	108	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	0	0	23	0	0	108	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #7 N.Sunridge/Access

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:							#76					
Dist(miles):							0.250					
Speed (mph):							30.00					
SignalIndex:							#6					
Cycle Time:							90 secs					
InitVolume:							14	3				
Saturation:							1769	1881				
ArrivalType:							3	3				
G/C:							0.01	0.10				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.010	0.100				
gq1:							0.71	0.13				
gq2:							0.01	0.00				
gq:							0.71	0.13				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.550					
beta:							0.645					
ta (secs):							30.000					
F:							0.086					
f:							1.000	1.000				
vcmax:							109	22				
vcg:							108	11				
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:	0	0	0	0	0	0	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
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec): 110 Critical Vol./Cap. (X): 0.811
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 12.8
Optimal Cycle: 92 Level Of Service: B

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1 0		1 0 3	0 1		2 0 1	0 1		1 0	0 1	0
Volume Module: >> Count Date: 9 Apr 2008 << AM												
Base Vol:	27	1975	134	9	933	56	104	4	13	96	3	7
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:	27	1975	134	9	933	56	104	4	13	96	3	7
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	28	2079	141	9	982	59	109	4	14	101	3	7
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	28	2079	141	9	982	59	109	4	14	101	3	7
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.:	28	2079	141	9	982	59	109	4	14	101	3	7
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.90	1.07
Lanes:	2.00	1.89	0.11	1.00	3.00	1.00	2.00	1.00	1.00	1.00	0.34	0.66
Final Sat.:	3432	3305	224	1769	5083	1793	3467	1881	1811	1805	578	1348
Capacity Analysis Module:												
Vol/Sat:	0.01	0.63	0.63	0.01	0.19	0.03	0.03	0.00	0.01	0.06	0.01	0.01
Crit Moves:		****		****				****		****		
Green/Cycle:	0.03	0.78	0.78	0.01	0.75	0.81	0.06	0.00	0.03	0.07	0.01	0.02
Volume/Cap:	0.26	0.81	0.81	0.81	0.26	0.04	0.52	0.81	0.22	0.81	0.52	0.32
Delay/Veh:	53.2	9.4	9.4	214.4	4.3	2.0	52.2	312	53.3	82.0	75.1	58.9
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:	53.2	9.4	9.4	214.4	4.3	2.0	52.2	312	53.3	82.0	75.1	58.9
HCM2kAvg:	1	24	28	1	3	0	3	1	1	6	1	1

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 395/Clear Creek

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	1 0		1 0 3 0		1	2 0 1	0	1	1 0	0 1	0
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.90	0.90
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.90	1.07
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.90	1.07
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

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 395/Clear Creek

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.78	0.78	0.01	0.75	0.81	0.06	0.00	0.03	0.07	0.01	0.02
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.4	20.3	23.7	0.3	3.1	0.4	1.7	0.1	0.4	3.2	0.3	0.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.3	3.8	3.9	1.0	0.3	0.0	0.9	0.7	0.3	2.4	0.7	0.4
HCM2KQueue:	0.8	24.1	27.5	1.3	3.4	0.4	2.6	0.8	0.7	5.6	0.9	0.7
70th%Factor:	1.20	1.15	1.15	1.20	1.19	1.20	1.19	1.20	1.20	1.19	1.20	1.20
70th%HCM2kQ:	0.9	27.8	31.7	1.5	4.1	0.5	3.2	1.0	0.8	6.7	1.1	0.9
85th%Factor:	1.59	1.43	1.42	1.59	1.57	1.60	1.57	1.59	1.59	1.55	1.59	1.59
85th%HCM2kQ:	1.2	34.6	39.1	2.0	5.4	0.6	4.2	1.3	1.1	8.7	1.5	1.2
90th%Factor:	1.78	1.52	1.50	1.78	1.74	1.79	1.75	1.78	1.79	1.70	1.78	1.79
90th%HCM2kQ:	1.4	36.6	41.3	2.3	6.0	0.7	4.6	1.4	1.2	9.6	1.7	1.3
95th%Factor:	2.07	1.66	1.63	2.06	2.00	2.09	2.02	2.07	2.08	1.94	2.07	2.08
95th%HCM2kQ:	1.6	40.0	44.9	2.6	6.9	0.8	5.3	1.6	1.4	10.9	2.0	1.6
98th%Factor:	2.64	1.86	1.82	2.61	2.47	2.67	2.52	2.64	2.65	2.35	2.63	2.64
98th%HCM2kQ:	2.0	44.8	50.1	3.3	8.5	1.0	6.6	2.1	1.8	13.2	2.5	2.0

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Existing No Proj. PM
Command:	No 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:	Existing

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy													
Base	124	1471	18	8	1937	178	400	9	229	22	9	0	4405
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	124	1471	18	8	1937	178	400	9	229	22	9	0	4405
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	25	0	0	10	0	35
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	25	0	0	10	0	35
#3 Topsy/Center													
Base	10	12	0	0	29	19	11	0	14	0	0	0	95
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	10	12	0	0	29	19	11	0	14	0	0	0	95
#4 Snyder/Bigelow													
Base	10	0	4	0	0	0	1	164	16	8	174	1	378
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	10	0	4	0	0	0	1	164	16	8	174	1	378
#5 Snyder/S.Edmonds													
Base	0	0	0	4	0	123	157	19	0	0	14	17	334
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	4	0	123	157	19	0	0	14	17	334
#6 US395/N.Sunridge													
Base	99	1310	5	88	1845	484	395	5	43	3	7	52	4336
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	99	1310	5	88	1845	484	395	5	43	3	7	52	4336
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	98	0	0	62	0	160
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	0	0	0	0	0	0	0	98	0	0	62	0	160
#8 395/Clear Creek													
Base	86	1520	163	17	2118	211	218	31	2	211	29	2	4608
Added	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	86	1520	163	17	2118	211	218	31	2	211	29	2	4608

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec):	65	Critical Vol./Cap. (X):	0.749
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	16.4
Optimal Cycle:OPTIMIZED		Level Of Service:	B

Street Name:	US 395								Topsy Lane							
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:		Ovl				Ovl				Ovl				Ovl		
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0	
Lanes:	2	0	2	0 1	1	0	3	0 1	2	0	1	0 1	1	0	1	0 1
Volume Module: >> Count Date: 29 Jun 2006 << PM																
Base Vol:	124	1471	18		8	1937	178		400	9	229		22	9	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:	124	1471	18		8	1937	178		400	9	229		22	9	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:	0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95		0.95	0.95	0.95	
PHF Volume:	131	1548	19		8	2039	187		421	9	241		23	9	0	
Reduct Vol:	0	0	0		0	0	0		0	0	0		0	0	0	
Reduced Vol:	131	1548	19		8	2039	187		421	9	241		23	9	0	
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.:	131	1548	19		8	2039	187		421	9	241		23	9	0	
Saturation Flow Module:																
Sat/Lane:	1900	1900	1900		1900	1900	1900		1900	1900	1900		1900	1900	1900	
Adjustment:	0.90	0.93	0.94		0.93	0.89	0.94		0.92	1.00	0.96		0.95	1.00	1.00	
Lanes:	2.00	2.00	1.00		1.00	3.00	1.00		2.00	1.00	1.00		1.00	1.00	1.00	
Final Sat.:	3432	3538	1793		1769	5083	1793		3502	1900	1830		1805	1900	1900	
Capacity Analysis Module:																
Vol/Sat:	0.04	0.44	0.01		0.00	0.40	0.10		0.12	0.00	0.13		0.01	0.00	0.00	
Crit Moves:	****					****			****					****		
Green/Cycle:	0.05	0.58	0.60		0.01	0.54	0.70		0.16	0.15	0.20		0.02	0.01	0.00	
Volume/Cap:	0.75	0.75	0.02		0.75	0.75	0.15		0.75	0.03	0.67		0.64	0.75	0.00	
Delay/Veh:	46.8	11.8	5.3		168.7	12.9	3.4		31.6	23.8	28.7		63.5	156	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:	46.8	11.8	5.3		168.7	12.9	3.4		31.6	23.8	28.7		63.5	156	0.0	
HCM2kAvg:	3	13	0		1	12	1		6	0	6		2	1	0	

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #1 US395/Topsy

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 2 0 1			1 0 3 0 1			2 0 1 0 1			1 0 1 0 1		
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	xxxxx
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	1.00	1.00	1.00	1.00	1.00	xxxxx
Grade Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx
Parking Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx
Bus Stp Adj:	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	xxxx	xxxxx
Area Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	xxxxx
RT Adj:	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	xxxx	xxxxx
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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	0.95	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	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	1.00
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	0.00

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

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Intersection #1 US395/Topsy

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.05	0.58	0.60	0.01	0.54	0.70	0.16	0.15	0.20	0.02	0.01	0.00
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.2	10.4	0.1	0.2	9.5	1.1	3.8	0.1	4.0	0.4	0.2	0.0
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	0.00
Q2:	1.8	2.8	0.0	0.9	2.7	0.2	2.4	0.0	1.8	1.1	0.9	0.0
HCM2KQueue:	3.0	13.3	0.2	1.0	12.2	1.3	6.2	0.2	5.8	1.5	1.1	0.0
70th%Factor:	1.19	1.17	1.20	1.20	1.17	1.20	1.19	1.20	1.19	1.20	1.20	1.20
70th%HCM2kQ:	3.6	15.5	0.2	1.3	14.4	1.6	7.3	0.2	6.9	1.8	1.3	0.0
85th%Factor:	1.57	1.49	1.60	1.59	1.50	1.59	1.54	1.60	1.55	1.59	1.59	1.60
85th%HCM2kQ:	4.8	19.8	0.2	1.7	18.3	2.1	9.6	0.3	9.0	2.4	1.7	0.0
90th%Factor:	1.74	1.61	1.80	1.78	1.62	1.77	1.69	1.80	1.70	1.77	1.78	1.80
90th%HCM2kQ:	5.3	21.3	0.3	1.9	19.8	2.3	10.5	0.3	9.9	2.7	1.9	0.0
95th%Factor:	2.01	1.79	2.09	2.07	1.80	2.06	1.93	2.09	1.93	2.05	2.07	2.10
95th%HCM2kQ:	6.1	23.7	0.3	2.2	22.1	2.7	11.9	0.4	11.2	3.1	2.2	0.0
98th%Factor:	2.49	2.06	2.69	2.62	2.09	2.60	2.32	2.69	2.34	2.59	2.62	2.70
98th%HCM2kQ:	7.6	27.3	0.4	2.7	25.6	3.4	14.4	0.5	13.6	3.9	2.8	0.0

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name:	Site Access						Topsy Lane					
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	1! 0	0	0 0	0 0	0	0 0	1 0	0	0 0	1 0	0
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	25	0	0	10	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:	0	0	0	0	0	0	0	25	0	0	10	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	0	0	28	0	0	11	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	0	0	28	0	0	11	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 3.1 Worst Case Level Of Service: A[8.8]

Street Name:	Center Drive						Topsy Lane					
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 1	0	0 0	0 0	0 1	0	0 0	1!	0 0	0 0	1!	0 0
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	12	0	0	29	19	11	0	14	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	1.00
Initial Bse:	10	12	0	0	29	19	11	0	14	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
PHF Adj:	0.90 0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	11	13	0	0	32	21	12	0	16	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	13	0	0	32	21	12	0	16	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:	53 xxxx	xxxxx	xxxx	xxxx	xxxxx		78 xxxx		43	xxxx	xxxx	xxxxx
Potent Cap.:	1565 xxxx	xxxxx	xxxx	xxxx	xxxxx		929 xxxx		1033	xxxx	xxxx	xxxxx
Move Cap.:	1565 xxxx	xxxxx	xxxx	xxxx	xxxxx		924 xxxx		1033	xxxx	xxxx	xxxxx
Volume/Cap:	0.01 xxxx	xxxx	xxxx	xxxx	xxxx		0.01 xxxx		0.02	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Stopped Del:	7.3 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	982	xxxxx	xxxx	0	xxxxx
SharedQueue:	0.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	
Shrd StpDel:	7.3 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	8.8	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	A	*	*	*	*	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			8.8			xxxxxx		
ApproachLOS:	*			*			A			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

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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			12 feet			12 feet			12 feet	

Time Period: 0.25 hour

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[10.6]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	0	4	0	0	0	1	164	16	8	174	1
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:	10	0	4	0	0	0	1	164	16	8	174	1
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	11	0	4	0	0	0	1	182	18	9	193	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	0	4	0	0	0	1	182	18	9	193	1
Critical Gap Module:												
Critical Gp:	6.4	xxxx		6.2	xxxx	xxxx	4.1	xxxx	xxxx	4.1	xxxx	xxxx
FollowUpTim:	3.5	xxxx		3.3	xxxx	xxxx	2.2	xxxx	xxxx	2.2	xxxx	xxxx
Capacity Module:												
Cnflict Vol:	405	xxxx	191	xxxx	xxxx	xxxx	194	xxxx	xxxx	200	xxxx	xxxx
Potent Cap.:	606	xxxx	856	xxxx	xxxx	xxxx	1391	xxxx	xxxx	1384	xxxx	xxxx
Move Cap.:	602	xxxx	856	xxxx	xxxx	xxxx	1391	xxxx	xxxx	1384	xxxx	xxxx
Volume/Cap:	0.02	xxxx	0.01	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	658	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	10.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		10.6			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #4 Snyder/Bigelow

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

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.0 Worst Case Level Of Service: A[9.1]

Street Name:	S.Edmonds Drive									Snyder Avenue					
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	1! 0	0	0 1	0 0	0	0 0	0 1	0			
Volume Module: >> Count Date: 28 Jun 2006 << PM															
Base Vol:	0	0	0	4	0	123	157	19	0	0	14	17			
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	4	0	123	157	19	0	0	14	17			
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
PHF Volume:	0	0	0	4	0	137	174	21	0	0	16	19			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Final Vol.:	0	0	0	4	0	137	174	21	0	0	16	19			
Critical Gap Module:															
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	395	xxxx	25	34	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Potent Cap.:	xxxx	xxxx	xxxxx	614	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Move Cap.:	xxxx	xxxx	xxxxx	557	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx			
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	0.13	0.11	xxxx	xxxx	xxxx	xxxx	xxxx			
Level Of Service Module:															
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1028	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.1	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx			
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*			
ApproachDel:	xxxxxx			9.1			xxxxxx			xxxxxx					
ApproachLOS:	*			A			*			*					

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

****

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

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 80 Critical Vol./Cap. (X): 0.839
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 18.4
Optimal Cycle:OPTIMIZED Level Of Service: B

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	99	1310	5	88	1845	484	395	5	43	3	7	52
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:	99	1310	5	88	1845	484	395	5	43	3	7	52
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	104	1379	5	93	1942	509	416	5	45	3	7	55
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1379	5	93	1942	509	416	5	45	3	7	55
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.:	104	1379	5	93	1942	509	416	5	45	3	7	55
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.03	0.37	0.00	0.05	0.52	0.28	0.12	0.00	0.02	0.00	0.00	0.03
Crit Moves:	****				****		****				****	
Green/Cycle:	0.04	0.58	0.63	0.08	0.62	0.76	0.14	0.09	0.12	0.06	0.00	0.09
Volume/Cap:	0.84	0.64	0.00	0.64	0.84	0.37	0.84	0.03	0.20	0.03	0.84	0.35
Delay/Veh:	75.5	12.1	5.5	45.2	14.9	3.4	45.6	33.4	32.0	35.9	246	35.8
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:	75.5	12.1	5.5	45.2	14.9	3.4	45.6	33.4	32.0	35.9	246	35.8
HCM2kAvg:	3	12	0	4	21	4	8	0	1	0	1	2

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Base Volume Alternative

Intersection #6 US395/N.Sunridge

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	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

****

Intersection #6 US395/N.Sunridge

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.58	0.63	0.08	0.62	0.76	0.14	0.09	0.12	0.06	0.00	0.09
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.2	10.3	0.0	2.1	17.1	3.8	4.7	0.1	0.9	0.1	0.2	1.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.0	1.7	0.0	1.5	4.4	0.6	3.2	0.0	0.3	0.0	0.9	0.5
HCM2KQueue:	3.3	12.1	0.0	3.6	21.5	4.4	8.0	0.1	1.2	0.1	1.0	1.7
70th%Factor:	1.19	1.17	1.20	1.19	1.16	1.19	1.18	1.20	1.20	1.20	1.20	1.20
70th%HCM2kQ:	3.9	14.2	0.1	4.3	24.8	5.2	9.4	0.2	1.4	0.1	1.2	2.0
85th%Factor:	1.57	1.50	1.60	1.57	1.45	1.56	1.53	1.60	1.59	1.60	1.59	1.58
85th%HCM2kQ:	5.1	18.1	0.1	5.6	31.0	6.8	12.2	0.2	1.8	0.2	1.7	2.6
90th%Factor:	1.74	1.62	1.80	1.73	1.54	1.72	1.67	1.80	1.78	1.80	1.78	1.77
90th%HCM2kQ:	5.7	19.5	0.1	6.2	33.0	7.5	13.3	0.3	2.1	0.2	1.8	2.9
95th%Factor:	2.00	1.81	2.10	1.99	1.68	1.97	1.89	2.10	2.06	2.10	2.07	2.05
95th%HCM2kQ:	6.5	21.8	0.1	7.1	36.1	8.6	15.0	0.3	2.4	0.2	2.1	3.4
98th%Factor:	2.48	2.10	2.70	2.46	1.89	2.41	2.24	2.69	2.61	2.69	2.62	2.58
98th%HCM2kQ:	8.1	25.3	0.1	8.8	40.6	10.6	17.9	0.4	3.0	0.3	2.7	4.3

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Base Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 0.0 Worst Case Level Of Service: A[0.0]

Street Name:	Site Access						N.Sunridge					
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 1! 0 0			0 0 1 0 0			0 0 1 0 0		
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	98	0	0	62	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:	0	0	0	0	0	0	0	98	0	0	62	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	0	0	0	0	109	0	0	69	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	0	0	0	0	109	0	0	69	0
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
FollowUpTim:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	*	*	*	*	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:	*			*			*			*		

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #7 N.Sunridge/Access

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:	#76	
Dist(miles):	0.250	
Speed (mph):	30.00	
SignalIndex:	#6	
Cycle Time:	80 secs	
InitVolume:	88	5
Saturation:	1769	1881
ArrivalType:	3	3
G/C:	0.08	0.09
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection		
P:	0.081	0.088
gq1:	3.66	0.19
gq2:	0.19	0.00
gq:	3.85	0.19
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons		
alpha:	0.550	
beta:	0.645	
ta (secs):	30.000	
F:	0.086	
f:	1.000	1.000
vcmax:	517	33
vcg:	426	20
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:	0	0	0	0	0	0	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
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

*** Computation 5: Capactiy for Subject Movement During Unblocked Period

InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Base Volume Alternative)

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Intersection #8 395/Clear Creek

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Cycle (sec): 75 Critical Vol./Cap. (X): 0.830
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 17.9
Optimal Cycle:OPTIMIZED Level Of Service: B

****

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1 0		1 0 3	0 1		2 0 1	0 1		1 0	0 1	0
Volume Module: >> Count Date: 9 Apr 2008 << PM												
Base Vol:	86	1520	163	17	2118	211	218	31	2	211	29	2
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:	86	1520	163	17	2118	211	218	31	2	211	29	2
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	91	1600	172	18	2229	222	229	33	2	222	31	2
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	91	1600	172	18	2229	222	229	33	2	222	31	2
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.:	91	1600	172	18	2229	222	229	33	2	222	31	2
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.99	1.19
Lanes:	2.00	1.83	0.17	1.00	3.00	1.00	2.00	1.00	1.00	1.00	0.95	0.05
Final Sat.:	3432	3183	341	1769	5083	1793	3467	1881	1811	1805	1779	123
Capacity Analysis Module:												
Vol/Sat:	0.03	0.50	0.50	0.01	0.44	0.12	0.07	0.02	0.00	0.12	0.02	0.02
Crit Moves:		****		****				****		****		
Green/Cycle:	0.04	0.61	0.61	0.01	0.58	0.72	0.13	0.02	0.06	0.15	0.03	0.05
Volume/Cap:	0.75	0.83	0.83	0.83	0.75	0.17	0.49	0.83	0.02	0.83	0.49	0.37
Delay/Veh:	59.0	14.6	14.6	154.3	12.8	3.5	30.9	116	33.5	50.2	41.2	37.2
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:	59.0	14.6	14.6	154.3	12.8	3.5	30.9	116	33.5	50.2	41.2	37.2
HCM2kAvg:	3	19	21	2	14	2	3	2	0	8	1	1

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                              BIG GEORGE VENTURES TIA
                           Traffic Impact Analysis Data
                        ROUNDABOUTS & TRAFFIC ENGINEERING
--------------------------------------------------------------------------------
                 Level Of Service Detailed Computation Report
                          2000 HCM Operations Method
                            Base Volume Alternative
********************************************************************************
Intersection #8 395/Clear Creek
********************************************************************************
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  1  0   1  0  3  0  1    2  0  1  0  1    1  0  0  1  0
Lane Group:     L   RT     RT    L    T     R     L    T     R     L   RT     RT
#LnsInGrps:      2    2     2     1    3     1     2    1     1     1    1     1
------------|---------------||---------------||---------------||---------------|
HCM Ops Input Saturation Adj Module:
Lane Width:     12   12    16    12   12    16    12   12    16    12   12    18
CrosswalkWid          8                8                 8                 8
% Hev Veh:            2                2                 1                 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  1.13  1.00 1.00  1.13  1.00 1.00  1.13  1.00 1.00  1.20
Hev Veh Adj:  0.98 0.98  0.98  0.98 0.98  0.98  0.99 0.99  0.99  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 1.00  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  1.00
Bus Stp Adj:  xxxx 1.00  1.00  xxxx xxxx  1.00  xxxx xxxx  1.00  xxxx 1.00  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 0.99  0.99  xxxx xxxx  0.85  xxxx xxxx  0.85  xxxx 0.99  0.99
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:  0.93 0.97  1.09  0.93 0.98  0.94  0.94 0.99  0.95  0.95 0.99  1.19
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 0.95  0.95  1.00 0.91  1.00  0.97 1.00  1.00  1.00 1.00  1.00
Fnl Sat Adj:  0.90 0.92  1.04  0.93 0.89  0.94  0.91 0.99  0.95  0.95 0.99  1.19
------------|---------------||---------------||---------------||---------------|
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
********************************************************************************
```

BIG GEORGE VENTURES TIA
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Base Volume Alternative

Intersection #8 395/Clear Creek

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.61	0.61	0.01	0.58	0.72	0.13	0.02	0.06	0.15	0.03	0.05
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.0	14.5	16.7	0.4	11.5	1.5	2.3	0.7	0.0	4.7	0.7	0.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.7	4.1	4.2	1.3	2.8	0.2	0.9	1.6	0.0	3.2	0.8	0.5
HCM2KQueue:	2.6	18.6	20.9	1.7	14.3	1.7	3.3	2.3	0.1	7.9	1.5	1.4
70th%Factor:	1.19	1.16	1.16	1.20	1.17	1.20	1.19	1.19	1.20	1.18	1.20	1.20
70th%HCM2kQ:	3.1	21.6	24.2	2.0	16.7	2.0	3.9	2.8	0.1	9.4	1.8	1.7
85th%Factor:	1.57	1.46	1.45	1.58	1.49	1.58	1.57	1.58	1.60	1.53	1.59	1.59
85th%HCM2kQ:	4.2	27.2	30.3	2.7	21.3	2.7	5.1	3.7	0.1	12.1	2.3	2.2
90th%Factor:	1.75	1.56	1.54	1.77	1.60	1.77	1.74	1.76	1.80	1.67	1.77	1.77
90th%HCM2kQ:	4.6	28.9	32.2	3.0	22.8	3.0	5.7	4.1	0.1	13.2	2.6	2.5
95th%Factor:	2.02	1.71	1.69	2.05	1.77	2.05	2.00	2.03	2.10	1.89	2.05	2.06
95th%HCM2kQ:	5.3	31.8	35.3	3.5	25.3	3.5	6.5	4.7	0.1	14.9	3.0	2.9
98th%Factor:	2.52	1.94	1.90	2.58	2.03	2.58	2.48	2.54	2.70	2.24	2.59	2.60
98th%HCM2kQ:	6.6	36.0	39.7	4.4	29.1	4.4	8.1	5.9	0.2	17.8	3.8	3.6

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Existing + Proj. AM
Command:	Plus Project
Volume:	AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	AM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	123.00	303.00	123	303	426	100.0
	Zone 1 Subtotal					123	303	426	100.0
TOTAL						123	303	426	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	3	4	5
Zone					
1	45.0	25.0	10.0	10.0	10.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Turning Movement Report
AM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 US395/Topsy													
Base	101	2025	7	4	1369	54	107	1	18	3	0	0	3689
Added	0	34	15	30	14	0	0	7	0	38	18	73	229
Total	101	2059	22	34	1383	54	107	8	18	41	18	73	3918
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	7	0	0	4	0	11
Added	129	0	69	0	0	0	0	0	52	28	0	0	278
Total	129	0	69	0	0	0	0	7	52	28	4	0	289
#3 Topsy/Center													
Base	3	19	0	0	10	1	2	0	5	0	0	0	40
Added	5	8	0	0	3	23	57	0	12	0	0	0	108
Total	8	27	0	0	13	24	59	0	17	0	0	0	148
#4 Snyder/Bigelow													
Base	4	0	8	4	0	2	0	123	3	4	148	0	296
Added	0	0	0	0	0	0	0	30	0	0	12	0	42
Total	4	0	8	4	0	2	0	153	3	4	160	0	338
#5 Snyder/S.Edmonds													
Base	0	0	0	17	0	132	91	15	0	0	1	8	264
Added	0	0	0	0	0	12	30	0	0	0	0	0	42
Total	0	0	0	17	0	144	121	15	0	0	1	8	306
#6 US395/N.Sunridge													
Base	48	1960	4	14	1030	132	340	3	12	2	2	93	3640
Added	0	15	15	14	38	0	0	3	0	38	8	34	165
Total	48	1975	19	28	1068	132	340	6	12	40	10	127	3805
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	21	0	0	97	0	118
Added	0	0	0	26	0	80	32	0	0	0	0	10	148
Total	0	0	0	26	0	80	32	21	0	0	97	10	266
#8 395/Clear Creek													
Base	27	1975	134	9	933	56	104	4	13	96	3	7	3361
Added	5	102	0	14	42	0	0	0	2	0	0	34	199
Total	32	2077	134	23	975	56	104	4	15	96	3	41	3560

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	A	9.4	0.758	B	15.2	0.824	+ 5.730 D/V
# 2 Topsy/Access	A	0.0	0.000	B	10.0	0.000	+10.035 D/V
# 3 Topsy/Center	A	8.5	0.000	A	9.1	0.000	+ 0.668 D/V
# 4 Snyder/Bigelow	B	10.2	0.000	B	10.5	0.000	+ 0.309 D/V
# 5 Snyder/S.Edmonds	A	9.2	0.000	A	9.3	0.000	+ 0.132 D/V
# 6 US395/N.Sunridge	C	20.4	0.851	C	23.1	0.880	+ 2.699 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	A	9.6	0.000	+ 9.630 D/V
# 8 395/Clear Creek	B	12.9	0.799	B	16.1	0.843	+ 3.196 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	No
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	No

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #2 Topsy/Access

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Final Vol.:	143	0	77	0	0	0	0	8	58	31	4	0
ApproachDel:	10.0			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=220]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=321]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #3 Topsy/Center

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 1	0 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Final Vol.:	9	30	0	0	14	27	66	0	19	0	0	0
ApproachDel:	xxxxxx			xxxxxx			9.1			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.2]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=84]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=164]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #4 Snyder/Bigelow

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 0 1 0			0 1 0 0 0		
Final Vol.:	4	0	9	4	0	2	0	170	3	4	178	0
ApproachDel:	9.8			10.5			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=13]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=376]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=7]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=376]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #5 Snyder/S.Edmonds

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	19	0	160	134	17	0	0	1	9
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=179]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=340]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #7 N.Sunridge/Access

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	89	36	23	0	0	108	11
ApproachDel:	xxxxxx			9.6			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=118]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=296]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec):	100	Critical Vol./Cap. (X):	0.824
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	15.2
Optimal Cycle:	OPTIMIZED	Level Of Service:	B

Street Name:	US 395								Topsy Lane								
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:		Ovl				Ovl				Ovl				Ovl			
Min. Green:	0	0	0		0	0	0		0	0	0		0	0	0		
Lanes:	2	0	2	0 1	1	0	3	0 1	2	0	1	0 1	1	0	1	0 1	
Volume Module: >> Count Date: 27 Jun 2006 << AM																	
Base Vol:	101	2025	7	4	1369	54	107	1	18	3	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:	101	2025	7	4	1369	54	107	1	18	3	0	0					
Added Vol:	0	34	15	30	14	0	0	7	0	38	18	73					
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0					
Initial Fut:	101	2059	22	34	1383	54	107	8	18	41	18	73					
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95					
PHF Volume:	106	2167	23	36	1456	57	113	8	19	43	19	77					
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0					
Reduced Vol:	106	2167	23	36	1456	57	113	8	19	43	19	77					
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.:	106	2167	23	36	1456	57	113	8	19	43	19	77					
Saturation Flow Module:																	
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900					
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85					
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00					
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615					
Capacity Analysis Module:																	
Vol/Sat:	0.03	0.61	0.01	0.02	0.29	0.03	0.03	0.00	0.01	0.02	0.01	0.05					
Crit Moves:		****		****			****					****					
Green/Cycle:	0.07	0.74	0.80	0.02	0.69	0.73	0.04	0.01	0.09	0.06	0.03	0.06					
Volume/Cap:	0.41	0.82	0.02	0.82	0.41	0.04	0.82	0.39	0.12	0.39	0.30	0.82					
Delay/Veh:	45.2	10.8	1.9	121.3	6.7	3.7	79.4	60.5	42.5	47.5	49.9	89.0					
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:	45.2	10.8	1.9	121.3	6.7	3.7	79.4	60.5	42.5	47.5	49.9	89.0					
HCM2kAvg:	2	24	0	3	7	0	4	1	1	2	1	4					

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	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:	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

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Intersection #1 US395/Topsy

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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
Green/Cycle:	0.07	0.74	0.80	0.02	0.69	0.73	0.04	0.01	0.09	0.06	0.03	0.06
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.5	20.0	0.1	1.0	5.8	0.4	1.6	0.2	0.5	1.2	0.5	2.1
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.7	4.1	0.0	1.7	0.7	0.0	2.0	0.5	0.1	0.6	0.4	2.2
HCM2KQueue:	2.1	24.1	0.1	2.8	6.5	0.5	3.7	0.7	0.6	1.8	0.9	4.4
70th%Factor:	1.19	1.15	1.20	1.19	1.18	1.20	1.19	1.20	1.20	1.20	1.20	1.19
70th%HCM2kQ:	2.6	27.8	0.2	3.3	7.7	0.6	4.4	0.9	0.7	2.2	1.1	5.2
85th%Factor:	1.58	1.43	1.60	1.57	1.54	1.60	1.57	1.59	1.59	1.58	1.59	1.56
85th%HCM2kQ:	3.4	34.5	0.2	4.4	10.0	0.8	5.8	1.2	1.0	2.9	1.5	6.8
90th%Factor:	1.76	1.52	1.80	1.75	1.69	1.79	1.73	1.79	1.79	1.77	1.78	1.72
90th%HCM2kQ:	3.8	36.6	0.3	4.8	11.0	0.9	6.4	1.3	1.1	3.2	1.6	7.5
95th%Factor:	2.03	1.66	2.10	2.01	1.92	2.08	1.99	2.08	2.08	2.04	2.07	1.97
95th%HCM2kQ:	4.4	39.9	0.3	5.6	12.5	1.0	7.3	1.5	1.3	3.7	1.9	8.6
98th%Factor:	2.55	1.86	2.69	2.51	2.31	2.66	2.45	2.65	2.65	2.57	2.63	2.42
98th%HCM2kQ:	5.5	44.7	0.4	6.9	15.0	1.3	9.0	1.9	1.6	4.7	2.4	10.5

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 7.6 Worst Case Level Of Service: B[10.0]

Street Name:	Site Access						Topsy Lane					
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 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module: AM												
Base Vol:	0	0	0	0	0	0	0	7	0	0	4	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:	0	0	0	0	0	0	0	7	0	0	4	0
Added Vol:	129	0	69	0	0	0	0	0	52	28	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	0	69	0	0	0	0	7	52	28	4	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	143	0	77	0	0	0	0	8	58	31	4	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	143	0	77	0	0	0	0	8	58	31	4	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	103	xxxx	37	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	66	xxxx	xxxxx
Potent Cap.:	900	xxxx	1041	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1549	xxxx	xxxxx
Move Cap.:	886	xxxx	1041	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1549	xxxx	xxxxx
Volume/Cap:	0.16	xxxx	0.07	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	934	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd StpDel:	xxxxx	10.0	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		10.0		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B		*			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 5.1 Worst Case Level Of Service: A[9.1]

Street Name:	Center Drive						Topsy Lane					
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 1	0	0 0	0 0	0	1 0	0 0	1!	0 0	0 0	1!	0 0
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	3	19	0	0	10	1	2	0	5	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	1.00	1.00
Initial Bse:	3	19	0	0	10	1	2	0	5	0	0	0
Added Vol:	5	8	0	0	3	23	57	0	12	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	27	0	0	13	24	59	0	17	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
PHF Adj:	0.90 0.90	0.90	0.90 0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	9	30	0	0	14	27	66	0	19	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	9	30	0	0	14	27	66	0	19	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:	41 xxxx	xxxxx	xxxx	xxxx	xxxxx	76	xxxx	28	xxxx	xxxx	xxxxx	
Potent Cap.:	1581 xxxx	xxxxx	xxxx	xxxx	xxxxx	933	xxxx	1053	xxxx	xxxx	xxxxx	
Move Cap.:	1581 xxxx	xxxxx	xxxx	xxxx	xxxxx	929	xxxx	1053	xxxx	xxxx	xxxxx	
Volume/Cap:	0.01 xxxx	xxxx	xxxx	xxxx	xxxx	0.07	xxxx	0.02	xxxx	xxxx	xxxx	
Level Of Service Module:												
Queue:	0.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
Stopped Del:	7.3 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT - LTR	- RT	LT - LTR	- RT	LT - LTR	- RT	LT - LTR	- RT	LT - LTR	- RT		
Shared Cap.:	xxxx xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	954	xxxxx	xxxx	0	xxxxx	
SharedQueue:	0.0 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.3	xxxxx	xxxxx	xxxx	xxxxx	
Shrd StpDel:	7.3 xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.1	xxxxx	xxxxx	xxxx	xxxxx	
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx		xxxxxx				9.1		xxxxxx			
ApproachLOS:	*		*				A		*			

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 0.6 Worst Case Level Of Service: B[10.5]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1! 0 0			0 0 1! 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	4	0	8	4	0	2	0	123	3	4	148	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:	4	0	8	4	0	2	0	123	3	4	148	0
Added Vol:	0	0	0	0	0	0	0	30	0	0	12	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	0	8	4	0	2	0	153	3	4	160	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	4	0	9	4	0	2	0	170	3	4	178	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	4	0	9	4	0	2	0	170	3	4	178	0
Critical Gap Module:												
Critical Gp:	7.1	xxxx	6.2	7.1	xxxx	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	359	xxxx	172	363	xxxx	178	xxxx	xxxx	xxxxx	173	xxxx	xxxxx
Potent Cap.:	600	xxxx	877	597	xxxx	870	xxxx	xxxx	xxxxx	1416	xxxx	xxxxx
Move Cap.:	597	xxxx	877	589	xxxx	870	xxxx	xxxx	xxxxx	1416	xxxx	xxxxx
Volume/Cap:	0.01	xxxx	0.01	0.01	xxxx	0.00	xxxx	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	758	xxxxx	xxxx	660	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	0.0	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd StpDel:	xxxxx	9.8	xxxxx	xxxxx	10.5	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
Shared LOS:	*	A	*	*	B	*	*	*	*	A	*	*
ApproachDel:		9.8			10.5			xxxxxx			xxxxxx	
ApproachLOS:		A			B			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.8 Worst Case Level Of Service: A[9.3]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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 1!	0 0		0 1 0	0 0		0 0 0	1 0	
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	0	0	0	17	0	132	91	15	0	0	1	8
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	17	0	132	91	15	0	0	1	8
Added Vol:	0	0	0	0	0	12	30	0	0	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	17	0	144	121	15	0	0	1	8
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	19	0	160	134	17	0	0	1	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	19	0	160	134	17	0	0	1	9
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	291	xxxx	6	10	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	704	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	656	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	0.15	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1013	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

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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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 95 Critical Vol./Cap. (X): 0.880
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 23.1
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	48	1960	4	14	1030	132	340	3	12	2	2	93
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:	48	1960	4	14	1030	132	340	3	12	2	2	93
Added Vol:	0	15	15	14	38	0	0	3	0	38	8	34
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	1975	19	28	1068	132	340	6	12	40	10	127
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	51	2079	20	29	1124	139	358	6	13	42	11	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	2079	20	29	1124	139	358	6	13	42	11	134
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.:	51	2079	20	29	1124	139	358	6	13	42	11	134
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.01	0.56	0.01	0.02	0.30	0.08	0.10	0.00	0.01	0.02	0.01	0.07
Crit Moves:		****		****			****					****
Green/Cycle:	0.03	0.63	0.79	0.02	0.62	0.74	0.11	0.02	0.05	0.16	0.06	0.08
Volume/Cap:	0.48	0.88	0.01	0.88	0.48	0.11	0.88	0.15	0.13	0.15	0.09	0.88
Delay/Veh:	48.9	18.5	2.1	153.2	9.8	3.6	60.7	47.2	43.6	34.9	42.1	83.2
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:	48.9	18.5	2.1	153.2	9.8	3.6	60.7	47.2	43.6	34.9	42.1	83.2
HCM2kAvg:	1	28	0	3	9	1	8	0	0	1	0	7

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.63	0.79	0.02	0.62	0.74	0.11	0.02	0.05	0.16	0.06	0.08
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.7	22.7	0.1	0.8	8.0	1.0	4.9	0.2	0.3	1.0	0.3	3.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	5.6	0.0	1.7	0.9	0.1	3.5	0.2	0.2	0.2	0.1	3.1
HCM2KQueue:	1.5	28.3	0.1	2.5	8.9	1.2	8.4	0.3	0.5	1.2	0.4	6.6
70th%Factor:	1.20	1.15	1.20	1.19	1.18	1.20	1.18	1.20	1.20	1.20	1.20	1.18
70th%HCM2kQ:	1.7	32.5	0.2	3.0	10.5	1.4	9.9	0.4	0.6	1.4	0.4	7.8
85th%Factor:	1.59	1.42	1.60	1.58	1.52	1.59	1.53	1.60	1.60	1.59	1.60	1.54
85th%HCM2kQ:	2.3	40.0	0.2	4.0	13.6	1.8	12.8	0.5	0.8	1.9	0.6	10.2
90th%Factor:	1.77	1.50	1.80	1.75	1.66	1.78	1.66	1.79	1.79	1.78	1.79	1.69
90th%HCM2kQ:	2.6	42.3	0.2	4.4	14.8	2.1	14.0	0.6	0.8	2.1	0.6	11.1
95th%Factor:	2.05	1.62	2.10	2.02	1.87	2.06	1.88	2.09	2.08	2.06	2.09	1.92
95th%HCM2kQ:	3.0	45.9	0.3	5.1	16.6	2.4	15.8	0.7	1.0	2.4	0.7	12.6
98th%Factor:	2.59	1.81	2.69	2.52	2.20	2.61	2.22	2.67	2.66	2.61	2.67	2.30
98th%HCM2kQ:	3.8	51.2	0.3	6.4	19.6	3.0	18.7	0.9	1.3	3.1	0.9	15.2

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: A[9.6]

Street Name:	Site Access						N.Sunridge					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: AM												
Base Vol:	0	0	0	0	0	0	0	21	0	0	97	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:	0	0	0	0	0	0	0	21	0	0	97	0
Added Vol:	0	0	0	26	0	80	32	0	0	0	0	10
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	80	32	21	0	0	97	10
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	89	36	23	0	0	108	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	89	36	23	0	0	108	11
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	208	xxxx	113	119	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	785	xxxx	945	1482	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	770	xxxx	945	1482	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.04	xxxx	0.09	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	895	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.6	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.6			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #7 N.Sunridge/Access

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:								#76					
Dist(miles):								0.250					
Speed (mph):								30.00					
SignalIndex:								#6					
Cycle Time:								95 secs					
InitVolume:							14	3					
Saturation:							1769	1881					
ArrivalType:							3	3					
G/C:							0.01	0.10					
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection													
P:							0.010	0.101					
gq1:							0.74	0.14					
gq2:							0.01	0.00					
gq:							0.75	0.14					
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons													
alpha:								0.550					
beta:								0.645					
ta (secs):								30.000					
F:								0.086					
f:							1.000	1.000					
vcmax:							115	23					
vcg:							114	12					
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:	0	0	0	0	0	0	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	
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capactiy for Subject Movement During Unblocked Period													
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec): 120 Critical Vol./Cap. (X): 0.843
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 16.1
Optimal Cycle:OPTIMIZED Level Of Service: B

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1	0	1 0 3	0	1	2 0 1	0	1	1 0 0	1	0
Volume Module: >> Count Date: 9 Apr 2008 << AM												
Base Vol:	27 1975	134		9 933	56		104	4	13	96	3	7
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:	27 1975	134		9 933	56		104	4	13	96	3	7
Added Vol:	5 102	0		14 42	0		0	0	2	0	0	34
In-Process:	0 0	0		0 0	0		0	0	0	0	0	0
Initial Fut:	32 2077	134		23 975	56		104	4	15	96	3	41
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:	0.95 0.95	0.95		0.95 0.95	0.95		0.95 0.95	0.95		0.95 0.95	0.95	
PHF Volume:	34 2186	141		24 1026	59		109	4	16	101	3	43
Reduct Vol:	0 0	0		0 0	0		0	0	0	0	0	0
Reduced Vol:	34 2186	141		24 1026	59		109	4	16	101	3	43
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.:	34 2186	141		24 1026	59		109	4	16	101	3	43
Saturation Flow Module:												
Sat/Lane:	1900 1900	1900		1900 1900	1900		1900 1900	1900		1900 1900	1900	
Adjustment:	0.90 0.92	1.05		0.93 0.89	0.94		0.91 0.99	0.95		0.95 0.86	1.03	
Lanes:	2.00 1.89	0.11		1.00 3.00	1.00		2.00 1.00	1.00		1.00 0.08	0.92	
Final Sat.:	3432 3317	214		1769 5083	1793		3467 1881	1811		1805 132	1803	
Capacity Analysis Module:												
Vol/Sat:	0.01 0.66	0.66		0.01 0.20	0.03		0.03 0.00	0.01		0.06 0.02	0.02	
Crit Moves:	****			****			****			****		
Green/Cycle:	0.04 0.78	0.78		0.02 0.76	0.80		0.04 0.00	0.04		0.07 0.03	0.05	
Volume/Cap:	0.27 0.84	0.84		0.84 0.27	0.04		0.80 0.84	0.22		0.84 0.80	0.52	
Delay/Veh:	57.3 11.0	11.0		161.8 4.3	2.5		85.5 347	57.4		94.4 112	61.4	
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:	57.3 11.0	11.0		161.8 4.3	2.5		85.5 347	57.4		94.4 112	61.4	
HCM2kAvg:	1 29	32		2 4	0		4 1	1		6 3	2	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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 1	0	1 0	3 0	1	2 0	1 0	1	1 0	0 1	0
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.86	0.86
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.86	1.03
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.05	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.86	1.03
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

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Intersection #8 395/Clear Creek

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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
Green/Cycle:	0.04	0.78	0.78	0.02	0.76	0.80	0.04	0.00	0.04	0.07	0.03	0.05
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.6	24.7	27.4	0.8	3.4	0.4	1.9	0.1	0.5	3.5	1.3	1.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.3	4.6	4.7	1.5	0.4	0.0	1.9	0.7	0.3	2.6	1.7	0.9
HCM2KQueue:	0.9	29.3	32.1	2.4	3.8	0.4	3.9	0.8	0.8	6.1	3.0	2.5
70th%Factor:	1.20	1.15	1.14	1.19	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19
70th%HCM2kQ:	1.1	33.7	36.7	2.8	4.5	0.5	4.6	1.0	0.9	7.3	3.6	2.9
85th%Factor:	1.59	1.41	1.40	1.58	1.56	1.60	1.56	1.59	1.59	1.54	1.57	1.58
85th%HCM2kQ:	1.5	41.4	45.0	3.7	5.9	0.7	6.0	1.3	1.2	9.5	4.7	3.9
90th%Factor:	1.78	1.49	1.48	1.76	1.73	1.79	1.73	1.78	1.78	1.69	1.74	1.75
90th%HCM2kQ:	1.6	43.8	47.5	4.1	6.5	0.8	6.7	1.5	1.4	10.4	5.2	4.3
95th%Factor:	2.07	1.62	1.60	2.03	1.99	2.09	1.98	2.07	2.07	1.93	2.01	2.02
95th%HCM2kQ:	1.9	47.4	51.3	4.8	7.5	0.9	7.6	1.7	1.6	11.8	6.0	5.0
98th%Factor:	2.63	1.80	1.78	2.53	2.45	2.67	2.44	2.64	2.64	2.32	2.49	2.53
98th%HCM2kQ:	2.4	52.9	57.2	6.0	9.3	1.2	9.4	2.2	2.1	14.2	7.5	6.2

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Project Trips Report
AM

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: Big George													
1	US395/Topsy	0	34	15	30	14	0	0	7	0	38	18	73
2	Topsy/Access	129	0	69	0	0	0	0	0	52	28	0	0
3	Topsy/Center	5	8	0	0	3	23	57	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	30	0	0	12	0
5	Snyder/S.Edmo	0	0	0	0	0	12	30	0	0	0	0	0
6	US395/N.Sunri	0	15	15	14	38	0	0	3	0	38	8	34
7	N.Sunridge/Ac	0	0	0	26	0	80	32	0	0	0	0	10
8	395/Clear Cre	5	102	0	14	42	0	0	0	2	0	0	34

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Existing + Proj. PM
Command:	Plus 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:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	419.00	311.00	419	311	730	100.0
	Zone 1 Subtotal					419	311	730	100.0
TOTAL						419	311	730	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	3	4	5
Zone					
1	45.0	25.0	10.0	10.0	10.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy													
Base	124	1471	18	8	1937	178	400	9	229	22	9	0	4405
Added	0	35	52	101	47	0	0	25	0	39	19	75	393
Total	124	1506	70	109	1984	178	400	34	229	61	28	75	4798
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	25	0	0	10	0	35
Added	132	0	71	0	0	0	0	0	178	95	0	0	476
Total	132	0	71	0	0	0	0	25	178	95	10	0	511
#3 Topsy/Center													
Base	10	12	0	0	29	19	11	0	14	0	0	0	95
Added	17	8	0	0	10	79	58	0	12	0	0	0	184
Total	27	20	0	0	39	98	69	0	26	0	0	0	279
#4 Snyder/Bigelow													
Base	10	0	4	0	0	0	1	164	16	8	174	1	378
Added	0	0	0	0	0	0	0	31	0	0	42	0	73
Total	10	0	4	0	0	0	1	195	16	8	216	1	451
#5 Snyder/S.Edmonds													
Base	0	0	0	4	0	123	157	19	0	0	14	17	334
Added	0	0	0	0	0	42	31	0	0	0	0	0	73
Total	0	0	0	4	0	165	188	19	0	0	14	17	407
#6 US395/N.Sunridge													
Base	99	1310	5	88	1845	484	395	5	43	3	7	52	4336
Added	0	52	52	47	39	0	0	10	0	39	8	35	282
Total	99	1362	57	135	1884	484	395	15	43	42	15	87	4618
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	98	0	0	62	0	160
Added	0	0	0	26	0	82	110	0	0	0	0	36	254
Total	0	0	0	26	0	82	110	98	0	0	62	36	414
#8 395/Clear Creek													
Base	86	1520	163	17	2118	211	218	31	2	211	29	2	4608
Added	5	105	0	47	141	0	0	0	6	0	0	35	339
Total	91	1625	163	64	2259	211	218	31	8	211	29	37	4947

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	B	16.7	0.717	C	21.4	0.825	+ 4.667 D/V
# 2 Topsy/Access	A	0.0	0.000	B	12.7	0.000	+12.663 D/V
# 3 Topsy/Center	A	8.8	0.000	A	9.9	0.000	+ 1.131 D/V
# 4 Snyder/Bigelow	B	10.6	0.000	B	11.2	0.000	+ 0.568 D/V
# 5 Snyder/S.Edmonds	A	9.1	0.000	A	9.3	0.000	+ 0.217 D/V
# 6 US395/N.Sunridge	B	18.4	0.839	C	20.4	0.858	+ 2.037 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	B	10.2	0.000	+10.176 D/V
# 8 395/Clear Creek	B	18.0	0.805	C	21.3	0.877	+ 3.262 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	No
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	No

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #2 Topsy/Access

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1!	0 0		0 0 0	0 0		0 0 0	1 0		0 1	0 0	0
Final Vol.:	147	0	79	0	0	0	0	28	198	106	11	0
ApproachDel:	12.7			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=226]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=568]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #3 Topsy/Center

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 1	0 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Final Vol.:	30	22	0	0	43	109	77	0	29	0	0	0
ApproachDel:	xxxxxx			xxxxxx			9.9			xxxxxx		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=106]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=310]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

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Intersection #4 Snyder/Bigelow

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Final Vol.:	11	0	4	0	0	0	1	217	18	9	240	1
ApproachDel:	11.2			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.0]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=16]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=501]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #5 Snyder/S.Edmonds

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	4	0	183	209	21	0	0	16	19
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=188]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=452]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #7 N.Sunridge/Access

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	91	122	109	0	0	69	40
ApproachDel:	xxxxxx			10.2			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=120]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=460]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec): 75 Critical Vol./Cap. (X): 0.825
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 21.4
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0	1	1 0 3	0	1	2 0 1	0	1	1 0 1	0	1
Volume Module: >> Count Date: 29 Jun 2006 << PM												
Base Vol:	124	1471	18	8	1937	178	400	9	229	22	9	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:	124	1471	18	8	1937	178	400	9	229	22	9	0
Added Vol:	0	35	52	101	47	0	0	25	0	39	19	75
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	124	1506	70	109	1984	178	400	34	229	61	28	75
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	131	1585	74	115	2088	187	421	36	241	64	29	79
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	1585	74	115	2088	187	421	36	241	64	29	79
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.:	131	1585	74	115	2088	187	421	36	241	64	29	79
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.45	0.04	0.06	0.41	0.10	0.12	0.02	0.13	0.04	0.02	0.05
Crit Moves:		****		****			****				****	
Green/Cycle:	0.05	0.54	0.59	0.08	0.57	0.72	0.15	0.12	0.17	0.05	0.02	0.10
Volume/Cap:	0.72	0.82	0.07	0.82	0.72	0.15	0.82	0.16	0.77	0.79	0.82	0.50
Delay/Veh:	48.3	17.2	6.6	65.4	12.7	3.5	41.6	30.0	40.3	73.5	120	34.6
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:	48.3	17.2	6.6	65.4	12.7	3.5	41.6	30.0	40.3	73.5	120	34.6
HCM2kAvg:	3	18	1	5	13	1	8	1	7	3	2	2

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	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:	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

****

Intersection #1 US395/Topsy

****

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.05	0.54	0.59	0.08	0.57	0.72	0.15	0.12	0.17	0.05	0.02	0.10
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.4	13.7	0.7	2.5	10.6	1.2	4.5	0.7	4.8	1.4	0.6	1.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.7	4.0	0.1	2.6	2.4	0.2	3.1	0.2	2.6	2.0	1.6	0.9
HCM2KQueue:	3.1	17.6	0.7	5.1	13.0	1.4	7.6	0.9	7.3	3.4	2.2	2.5
70th%Factor:	1.19	1.16	1.20	1.19	1.17	1.20	1.18	1.20	1.18	1.19	1.19	1.19
70th%HCM2kQ:	3.7	20.5	0.9	6.0	15.3	1.7	9.0	1.0	8.7	4.0	2.6	3.0
85th%Factor:	1.57	1.47	1.59	1.55	1.49	1.59	1.53	1.59	1.53	1.57	1.58	1.58
85th%HCM2kQ:	4.9	25.8	1.2	7.9	19.5	2.2	11.6	1.4	11.3	5.3	3.4	3.9
90th%Factor:	1.74	1.57	1.79	1.71	1.61	1.77	1.67	1.78	1.68	1.74	1.76	1.75
90th%HCM2kQ:	5.4	27.6	1.3	8.7	20.9	2.5	12.7	1.5	12.3	5.9	3.8	4.3
95th%Factor:	2.00	1.73	2.08	1.95	1.79	2.05	1.89	2.07	1.90	2.00	2.03	2.02
95th%HCM2kQ:	6.3	30.4	1.5	9.9	23.3	2.9	14.3	1.8	14.0	6.7	4.4	5.0
98th%Factor:	2.49	1.96	2.65	2.38	2.07	2.60	2.26	2.64	2.27	2.47	2.55	2.53
98th%HCM2kQ:	7.8	34.5	1.9	12.1	26.9	3.7	17.1	2.3	16.7	8.3	5.5	6.3

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 6.5 Worst Case Level Of Service: B[12.7]

Street Name:	Site Access						Topsy Lane					
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 1!	0	0	0 0 0	0	0	0 0 0	1	0	0	1	0 0 0
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	25	0	0	10	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:	0	0	0	0	0	0	0	25	0	0	10	0
Added Vol:	132	0	71	0	0	0	0	0	178	95	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	0	71	0	0	0	0	25	178	95	10	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	147	0	79	0	0	0	0	28	198	106	11	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	147	0	79	0	0	0	0	28	198	106	11	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	349	xxxx	127	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	226	xxxx	xxxxx
Potent Cap.:	652	xxxx	929	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1355	xxxx	xxxxx
Move Cap.:	611	xxxx	929	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1355	xxxx	xxxxx
Volume/Cap:	0.24	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.08	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	694	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Shrd StpDel:	xxxxx	12.7	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.9	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		12.7			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 4.1 Worst Case Level Of Service: A[9.9]

Street Name:	Center Drive						Topsy Lane					
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 1	0 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	12	0	0	29	19	11	0	14	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:	10	12	0	0	29	19	11	0	14	0	0	0
Added Vol:	17	8	0	0	10	79	58	0	12	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	20	0	0	39	98	69	0	26	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	30	22	0	0	43	109	77	0	29	0	0	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	30	22	0	0	43	109	77	0	29	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:	152	xxxx	xxxxx	xxxx	xxxx	xxxxx	180	xxxx	98	xxxx	xxxx	xxxxx
Potent Cap.:	1441	xxxx	xxxxx	xxxx	xxxx	xxxxx	814	xxxx	964	xxxx	xxxx	xxxxx
Move Cap.:	1441	xxxx	xxxxx	xxxx	xxxx	xxxxx	801	xxxx	964	xxxx	xxxx	xxxxx
Volume/Cap:	0.02	xxxx	xxxx	xxxx	xxxx	xxxx	0.10	xxxx	0.03	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	A	*	*	*	*	*	*	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	840	xxxxx	xxxx	0	xxxxx
SharedQueue:	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.4	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	9.9	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	A	*	*	*	*	*	*	A	*	*	*	*
ApproachDel:	xxxxxx			xxxxxx			9.9			xxxxxx		
ApproachLOS:	*			*			A			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #3 Topsy/Center

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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 0.5 Worst Case Level Of Service: B[11.2]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	0	4	0	0	0	1	164	16	8	174	1
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:	10	0	4	0	0	0	1	164	16	8	174	1
Added Vol:	0	0	0	0	0	0	0	31	0	0	42	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	0	4	0	0	0	1	195	16	8	216	1
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	11	0	4	0	0	0	1	217	18	9	240	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	0	4	0	0	0	1	217	18	9	240	1
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	486	xxxx	226	xxxx	xxxx	xxxxx	241	xxxx	xxxxx	234	xxxx	xxxxx
Potent Cap.:	544	xxxx	819	xxxx	xxxx	xxxxx	1337	xxxx	xxxxx	1345	xxxx	xxxxx
Move Cap.:	541	xxxx	819	xxxx	xxxx	xxxxx	1337	xxxx	xxxxx	1345	xxxx	xxxxx
Volume/Cap:	0.02	xxxx	0.01	xxxx	xxxx	xxxx	0.00	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	599	xxxxx	xxxx	0	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.1	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	11.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	*	*	*
ApproachDel:		11.2			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		B			*			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[9.3]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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 1!	0 0		0 1 0	0 0		0 0 0	1 0	
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	0	0	0	4	0	123	157	19	0	0	14	17
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	4	0	123	157	19	0	0	14	17
Added Vol:	0	0	0	0	0	42	31	0	0	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	4	0	165	188	19	0	0	14	17
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	4	0	183	209	21	0	0	16	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	4	0	183	209	21	0	0	16	19
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	464	xxxx	25	34	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	560	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	496	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	0.17	0.13	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1029	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

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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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec):	80	Critical Vol./Cap. (X):	0.858
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	20.4
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	99	1310	5	88	1845	484	395	5	43	3	7	52
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:	99	1310	5	88	1845	484	395	5	43	3	7	52
Added Vol:	0	52	52	47	39	0	0	10	0	39	8	35
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	1362	57	135	1884	484	395	15	43	42	15	87
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	104	1434	60	142	1983	509	416	16	45	44	16	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1434	60	142	1983	509	416	16	45	44	16	92
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.:	104	1434	60	142	1983	509	416	16	45	44	16	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.03	0.38	0.03	0.08	0.53	0.28	0.12	0.01	0.02	0.02	0.01	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.03	0.54	0.65	0.11	0.62	0.76	0.14	0.04	0.07	0.11	0.01	0.12
Volume/Cap:	0.86	0.71	0.05	0.71	0.86	0.38	0.86	0.23	0.35	0.23	0.86	0.41
Delay/Veh:	80.3	14.9	5.1	45.5	15.8	3.5	48.1	39.1	37.0	33.2	182	33.6
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:	80.3	14.9	5.1	45.5	15.8	3.5	48.1	39.1	37.0	33.2	182	33.6
HCM2kAvg:	3	14	1	5	23	4	8	1	1	1	2	3

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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 2 0 1			1 0 2 0 1			2 0 1 0 1			1 0 1 0 1		
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.54	0.65	0.11	0.62	0.76	0.14	0.04	0.07	0.11	0.01	0.12
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.2	11.9	0.5	3.2	17.9	3.9	4.8	0.3	1.0	0.9	0.4	1.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.1	2.3	0.1	2.0	4.9	0.6	3.4	0.3	0.5	0.3	1.3	0.7
HCM2KQueue:	3.3	14.2	0.5	5.2	22.8	4.5	8.2	0.6	1.5	1.2	1.6	2.5
70th%Factor:	1.19	1.17	1.20	1.19	1.16	1.19	1.18	1.20	1.20	1.20	1.20	1.19
70th%HCM2kQ:	4.0	16.6	0.6	6.1	26.3	5.3	9.7	0.7	1.8	1.5	1.9	3.0
85th%Factor:	1.57	1.49	1.59	1.55	1.44	1.56	1.53	1.59	1.59	1.59	1.58	1.58
85th%HCM2kQ:	5.2	21.1	0.9	8.0	32.8	6.9	12.5	1.0	2.3	2.0	2.5	4.0
90th%Factor:	1.74	1.60	1.79	1.71	1.53	1.72	1.67	1.79	1.77	1.78	1.77	1.75
90th%HCM2kQ:	5.8	22.6	1.0	8.8	34.8	7.7	13.7	1.1	2.6	2.2	2.8	4.5
95th%Factor:	2.00	1.77	2.08	1.95	1.67	1.97	1.88	2.08	2.05	2.06	2.05	2.02
95th%HCM2kQ:	6.6	25.1	1.1	10.1	38.0	8.8	15.4	1.3	3.0	2.5	3.3	5.1
98th%Factor:	2.47	2.04	2.66	2.37	1.87	2.41	2.23	2.65	2.59	2.61	2.58	2.52
98th%HCM2kQ:	8.2	28.9	1.4	12.2	42.7	10.7	18.3	1.6	3.8	3.2	4.1	6.4

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 4.7 Worst Case Level Of Service: B[10.2]

Street Name:	Site Access						N.Sunridge					
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 1!	0 0		0 1 0	0 0		0 0 0	1 0	
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	98	0	0	62	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:	0	0	0	0	0	0	0	98	0	0	62	0
Added Vol:	0	0	0	26	0	82	110	0	0	0	0	36
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	82	110	98	0	0	62	36
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	91	122	109	0	0	69	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	91	122	109	0	0	69	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	442	xxxx	89	109	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	577	xxxx	975	1494	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	538	xxxx	975	1494	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	0.09	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	815	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	10.2	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			10.2			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #7 N.Sunridge/Access

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:							#76					
Dist(miles):							0.250					
Speed (mph):							30.00					
SignalIndex:							#6					
Cycle Time:							80 secs					
InitVolume:							88	5				
Saturation:							1769	1881				
ArrivalType:							3	3				
G/C:							0.08	0.09				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.081	0.088				
gq1:							3.66	0.19				
gq2:							0.19	0.00				
gq:							3.85	0.19				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.550					
beta:							0.645					
ta (secs):							30.000					
F:							0.086					
f:							1.000	1.000				
vcmax:							517	33				
vcg:							426	20				
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:	0	0	0	0	0	0	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
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec): 85 Critical Vol./Cap. (X): 0.877
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 21.3
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1 0		1 0 3	0 1		2 0 1	0 1		1 0	0 1 0	
Volume Module: >> Count Date: 9 Apr 2008 << PM												
Base Vol:	86	1520	163	17	2118	211	218	31	2	211	29	2
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:	86	1520	163	17	2118	211	218	31	2	211	29	2
Added Vol:	5	105	0	47	141	0	0	0	6	0	0	35
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	91	1625	163	64	2259	211	218	31	8	211	29	37
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	96	1711	172	67	2378	222	229	33	8	222	31	39
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	96	1711	172	67	2378	222	229	33	8	222	31	39
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.:	96	1711	172	67	2378	222	229	33	8	222	31	39
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.92	1.10
Lanes:	2.00	1.84	0.16	1.00	3.00	1.00	2.00	1.00	1.00	1.00	0.48	0.52
Final Sat.:	3432	3205	321	1769	5083	1793	3467	1881	1811	1805	844	1076
Capacity Analysis Module:												
Vol/Sat:	0.03	0.53	0.53	0.04	0.47	0.12	0.07	0.02	0.00	0.12	0.04	0.04
Crit Moves:		****		****				****		****		
Green/Cycle:	0.04	0.61	0.61	0.04	0.62	0.72	0.10	0.02	0.06	0.14	0.06	0.10
Volume/Cap:	0.76	0.88	0.88	0.88	0.76	0.17	0.64	0.88	0.08	0.88	0.64	0.36
Delay/Veh:	63.9	18.4	18.4	103.4	13.0	3.9	40.4	141	38.4	63.2	51.4	36.9
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:	63.9	18.4	18.4	103.4	13.0	3.9	40.4	141	38.4	63.2	51.4	36.9
HCM2kAvg:	3	24	27	4	16	2	4	3	0	9	3	2

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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	1 0		1 0 3	0 1		2 0 1	0 1		1 0 0	1 0	
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.92	0.92
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:	0.93	0.97	1.09	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.92	1.10
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.92	1.10
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.61	0.61	0.04	0.62	0.72	0.10	0.02	0.06	0.14	0.06	0.10
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.2	18.4	21.3	1.7	13.5	1.7	2.7	0.8	0.2	5.4	1.5	1.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.7	5.4	5.5	2.4	2.9	0.2	1.5	1.8	0.1	3.7	1.4	0.5
HCM2KQueue:	2.9	23.8	26.8	4.1	16.4	1.9	4.2	2.5	0.3	9.1	2.8	2.2
70th%Factor:	1.19	1.16	1.15	1.19	1.17	1.20	1.19	1.19	1.20	1.18	1.19	1.19
70th%HCM2kQ:	3.4	27.5	30.8	4.9	19.2	2.3	5.1	3.0	0.3	10.8	3.4	2.6
85th%Factor:	1.57	1.44	1.42	1.56	1.47	1.58	1.56	1.58	1.60	1.52	1.57	1.58
85th%HCM2kQ:	4.5	34.2	38.1	6.4	24.2	3.0	6.6	4.0	0.4	13.9	4.5	3.5
90th%Factor:	1.75	1.52	1.50	1.73	1.58	1.76	1.72	1.75	1.79	1.65	1.75	1.76
90th%HCM2kQ:	5.0	36.2	40.3	7.1	25.9	3.3	7.3	4.4	0.5	15.1	4.9	3.9
95th%Factor:	2.01	1.66	1.64	1.98	1.74	2.04	1.97	2.02	2.09	1.86	2.01	2.03
95th%HCM2kQ:	5.8	39.5	43.8	8.1	28.6	3.9	8.4	5.1	0.6	17.0	5.7	4.5
98th%Factor:	2.50	1.86	1.83	2.43	1.98	2.56	2.42	2.52	2.68	2.19	2.50	2.54
98th%HCM2kQ:	7.2	44.3	49.0	9.9	32.6	4.9	10.3	6.4	0.7	20.1	7.1	5.6

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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: Big George													
1	US395/Topsy	0	35	52	101	47	0	0	25	0	39	19	75
2	Topsy/Access	132	0	71	0	0	0	0	0	178	95	0	0
3	Topsy/Center	17	8	0	0	10	79	58	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	31	0	0	42	0
5	Snyder/S.Edmo	0	0	0	0	0	42	31	0	0	0	0	0
6	US395/N.Sunri	0	52	52	47	39	0	0	10	0	39	8	35
7	N.Sunridge/Ac	0	0	0	26	0	82	110	0	0	0	0	36
8	395/Clear Cre	5	105	0	47	141	0	0	0	6	0	0	35

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Extg+Proj.+Shultz AM
Command:	Plus Project
Volume:	AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	AM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	123.00	303.00	123	303	426	52.9
	Zone 1 Subtotal					123	303	426	52.9
4	Schulz Ranch	1.00	Subdivision	95.00	285.00	95	285	380	47.1
	Zone 4 Subtotal					95	285	380	47.1
TOTAL						218	588	806	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	3	4	5
Zone					
1	45.0	25.0	10.0	10.0	10.0
4	40.0	15.0	5.0	40.0	0.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Turning Movement Report
AM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 US395/Topsy													
Base	101	2025	7	4	1369	54	107	1	18	3	0	0	3689
Added	0	34	30	58	14	0	0	9	0	81	22	159	407
Total	101	2059	37	62	1383	54	107	10	18	84	22	159	4096
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	7	0	0	4	0	11
Added	129	0	69	0	0	0	0	44	52	28	133	0	455
Total	129	0	69	0	0	0	0	51	52	28	137	0	466
#3 Topsy/Center													
Base	3	19	0	0	10	1	2	0	5	0	0	0	40
Added	5	8	2	45	3	23	57	44	12	6	133	135	473
Total	8	27	2	45	13	24	59	44	17	6	133	135	513
#4 Snyder/Bigelow													
Base	4	0	8	4	0	2	0	123	3	4	148	0	296
Added	0	11	0	0	4	34	103	30	0	0	12	0	194
Total	4	11	8	4	4	36	103	153	3	4	160	0	490
#5 Snyder/S.Edmonds													
Base	0	0	0	17	0	132	91	15	0	0	1	8	264
Added	0	0	0	0	0	12	30	0	0	0	0	0	42
Total	0	0	0	17	0	144	121	15	0	0	1	8	306
#6 US395/N.Sunridge													
Base	48	1960	4	14	1030	132	340	3	12	2	2	93	3640
Added	0	30	15	14	81	0	0	5	0	38	14	34	231
Total	48	1990	19	28	1111	132	340	8	12	40	16	127	3871
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	21	0	0	97	0	118
Added	0	0	0	26	0	80	32	2	0	0	6	10	156
Total	0	0	0	26	0	80	32	23	0	0	103	10	274
#8 395/Clear Creek													
Base	27	1975	134	9	933	56	104	4	13	96	3	7	3361
Added	5	188	0	23	70	0	0	1	2	0	4	63	356
Total	32	2163	134	32	1003	56	104	5	15	96	7	70	3717

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	A	9.4	0.758	C	21.6	0.891	+12.116 D/V
# 2 Topsy/Access	A	0.0	0.000	B	11.6	0.000	+11.600 D/V
# 3 Topsy/Center	A	8.5	0.000	B	13.4	0.000	+ 4.955 D/V
# 4 Snyder/Bigelow	B	10.2	0.000	B	13.1	0.000	+ 2.855 D/V
# 5 Snyder/S.Edmonds	A	9.2	0.000	A	9.3	0.000	+ 0.132 D/V
# 6 US395/N.Sunridge	C	20.4	0.851	C	23.3	0.885	+ 2.882 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	A	9.7	0.000	+ 9.680 D/V
# 8 395/Clear Creek	B	13.0	0.793	B	19.3	0.890	+ 6.364 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	No
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	No

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #2 Topsy/Access

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Final Vol.:	143	0	77	0	0	0	0	57	58	31	152	0
ApproachDel:	11.6			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.7]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=220]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=518]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #3 Topsy/Center

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	9	30	2	50	14	27	66	49	19	7	148	150
ApproachDel:	xxxxxx			xxxxxx			13.4			11.9		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=133]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=570]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.0]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=304]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=570]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #4 Snyder/Bigelow

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 1 0 0 0		
Final Vol.:	4	12	9	4	4	40	114	170	3	4	178	0
ApproachDel:	13.1			10.5			xxxxx			xxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=26]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=544]
   FAIL - Total volume less than 800 for intersection
          with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=49]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=544]
   FAIL - Total volume less than 800 for intersection
          with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #5 Snyder/S.Edmonds

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	19	0	160	134	17	0	0	1	9
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=179]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=340]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #7 N.Sunridge/Access

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	89	36	26	0	0	114	11
ApproachDel:	xxxxxx			9.7			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=118]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=304]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec):	100	Critical Vol./Cap. (X):	0.891
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	21.6
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	101	2025	7	4	1369	54	107	1	18	3	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:	101	2025	7	4	1369	54	107	1	18	3	0	0
Added Vol:	0	34	30	58	14	0	0	9	0	81	22	159
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	101	2059	37	62	1383	54	107	10	18	84	22	159
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	106	2167	39	65	1456	57	113	11	19	88	23	167
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	106	2167	39	65	1456	57	113	11	19	88	23	167
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.:	106	2167	39	65	1456	57	113	11	19	88	23	167
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.61	0.02	0.04	0.29	0.03	0.03	0.01	0.01	0.05	0.01	0.10
Crit Moves:		****		****			****					****
Green/Cycle:	0.07	0.69	0.79	0.04	0.66	0.69	0.04	0.01	0.08	0.10	0.07	0.12
Volume/Cap:	0.44	0.89	0.03	0.89	0.44	0.05	0.89	0.49	0.13	0.49	0.16	0.89
Delay/Veh:	45.8	17.2	2.3	116.6	8.3	4.9	96.4	65.8	42.9	44.7	43.9	80.5
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:	45.8	17.2	2.3	116.6	8.3	4.9	96.4	65.8	42.9	44.7	43.9	80.5
HCM2kAvg:	2	30	0	4	7	1	4	1	1	3	1	8

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	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:	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.07	0.69	0.79	0.04	0.66	0.69	0.04	0.01	0.08	0.10	0.07	0.12
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.5	24.3	0.2	1.9	6.5	0.5	1.6	0.3	0.5	2.4	0.6	4.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.7	6.0	0.0	2.5	0.8	0.0	2.3	0.7	0.1	0.9	0.2	3.5
HCM2KQueue:	2.2	30.3	0.3	4.4	7.2	0.5	3.9	0.9	0.6	3.3	0.8	8.1
70th%Factor:	1.19	1.15	1.20	1.19	1.18	1.20	1.19	1.20	1.20	1.19	1.20	1.18
70th%HCM2kQ:	2.6	34.7	0.3	5.2	8.6	0.7	4.7	1.1	0.8	4.0	1.0	9.5
85th%Factor:	1.58	1.41	1.60	1.56	1.54	1.59	1.56	1.59	1.59	1.57	1.59	1.53
85th%HCM2kQ:	3.5	42.7	0.4	6.8	11.1	0.9	6.2	1.5	1.0	5.2	1.3	12.3
90th%Factor:	1.76	1.49	1.79	1.72	1.68	1.79	1.73	1.78	1.79	1.74	1.78	1.67
90th%HCM2kQ:	3.9	45.1	0.5	7.5	12.1	1.0	6.8	1.7	1.1	5.8	1.4	13.4
95th%Factor:	2.03	1.61	2.09	1.97	1.90	2.08	1.98	2.07	2.08	2.00	2.07	1.88
95th%HCM2kQ:	4.5	48.8	0.6	8.6	13.7	1.1	7.8	2.0	1.3	6.7	1.6	15.2
98th%Factor:	2.54	1.80	2.68	2.42	2.27	2.66	2.44	2.63	2.65	2.47	2.64	2.24
98th%HCM2kQ:	5.6	54.4	0.7	10.5	16.4	1.5	9.6	2.5	1.7	8.3	2.1	18.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 5.4 Worst Case Level Of Service: B[11.6]

Street Name:	Site Access									Topsy Lane					
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 1!	0	0	0 0	0 0	0	0 0	1 0	0	1	0 0	0		
Volume Module: AM															
Base Vol:	0	0	0	0	0	0	0	7	0	0	4	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:	0	0	0	0	0	0	0	7	0	0	4	0			
Added Vol:	129	0	69	0	0	0	0	44	52	28	133	0			
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	129	0	69	0	0	0	0	51	52	28	137	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
PHF Volume:	143	0	77	0	0	0	0	57	58	31	152	0			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Final Vol.:	143	0	77	0	0	0	0	57	58	31	152	0			
Critical Gap Module:															
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx			
Capacity Module:															
Cnflict Vol:	300	xxxx	86	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	114	xxxx	xxxxx			
Potent Cap.:	696	xxxx	979	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1487	xxxx	xxxxx			
Move Cap.:	684	xxxx	979	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1487	xxxx	xxxxx			
Volume/Cap:	0.21	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx			
Level Of Service Module:															
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	765	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	1.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx			
Shrd StpDel:	xxxxx	11.6	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx			
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*			
ApproachDel:		11.6			xxxxxx			xxxxxx			xxxxxx				
ApproachLOS:		B			*			*			*				

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 10.3 Worst Case Level Of Service: B[13.4]

Street Name:	Center Drive						Topsy Lane					
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 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	3	19	0	0	10	1	2	0	5	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:	3	19	0	0	10	1	2	0	5	0	0	0
Added Vol:	5	8	2	45	3	23	57	44	12	6	133	135
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	8	27	2	45	13	24	59	44	17	6	133	135
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	9	30	2	50	14	27	66	49	19	7	148	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	9	30	2	50	14	27	66	49	19	7	148	150
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
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:	41	xxxx	xxxxx	32	xxxx	xxxxx	326	178	28	211	190	31
Potent Cap.:	1581	xxxx	xxxxx	1593	xxxx	xxxxx	631	719	1053	751	708	1049
Move Cap.:	1581	xxxx	xxxxx	1593	xxxx	xxxxx	438	692	1053	678	682	1049
Volume/Cap:	0.01	xxxx	xxxx	0.03	xxxx	xxxx	0.15	0.07	0.02	0.01	0.22	0.14
Level Of Service Module:												
Queue:	0.0	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.3	xxxx	xxxxx	7.3	xxxx	xxxxx	xxxxx	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	560	xxxxx	xxxx	824	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	0.9	xxxxx	xxxxx	1.7	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	13.4	xxxxx	xxxxx	11.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	B	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			13.4			11.9		
ApproachLOS:	*			*			B			B		

BIG GEORGE VENTURES
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Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 3.3 Worst Case Level Of Service: B[13.1]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1!	0	0	0 0 1!	0	0	0 0 1!	0	0	0 1	0	0 0
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	4	0	8	4	0	2	0	123	3	4	148	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:	4	0	8	4	0	2	0	123	3	4	148	0
Added Vol:	0	11	0	0	4	34	103	30	0	0	12	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	11	8	4	4	36	103	153	3	4	160	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	4	12	9	4	4	40	114	170	3	4	178	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	4	12	9	4	4	40	114	170	3	4	178	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	609	587	172	598	589	178	178	xxxx	xxxxx	173	xxxx	xxxxx
Potent Cap.:	410	424	877	417	423	870	1410	xxxx	xxxxx	1416	xxxx	xxxxx
Move Cap.:	361	386	877	376	386	870	1410	xxxx	xxxxx	1416	xxxx	xxxxx
Volume/Cap:	0.01	0.03	0.01	0.01	0.01	0.05	0.08	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	473	xxxxx	xxxx	705	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.2	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd StpDel:	xxxxx	13.1	xxxxx	xxxxx	10.5	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
Shared LOS:	*	B	*	*	B	*	*	*	*	A	*	*
ApproachDel:		13.1			10.5			xxxxxx			xxxxxx	
ApproachLOS:		B			B			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.8 Worst Case Level Of Service: A[9.3]

Street Name:	S.Edmonds Drive									Snyder Avenue								
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	1!	0	0	0	1	0	0	0	0	0	0	1	0
Volume Module: >> Count Date: 28 Jun 2006 << AM																				
Base Vol:	0	0	0	17	0	132	91	15	0	0	1	8								
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	17	0	132	91	15	0	0	1	8								
Added Vol:	0	0	0	0	0	12	30	0	0	0	0	0								
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0								
Initial Fut:	0	0	0	17	0	144	121	15	0	0	1	8								
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90								
PHF Volume:	0	0	0	19	0	160	134	17	0	0	1	9								
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0								
Final Vol.:	0	0	0	19	0	160	134	17	0	0	1	9								
Critical Gap Module:																				
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	291	xxxx	6	10	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Potent Cap.:	xxxx	xxxx	xxxxx	704	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Move Cap.:	xxxx	xxxx	xxxxx	656	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx								
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	0.15	0.08	xxxx	xxxx	xxxx	xxxx	xxxx								
Level Of Service Module:																				
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*								
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT								
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1013	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx								
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx								
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*								
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx								
ApproachLOS:	*			A			*			*								

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 95 Critical Vol./Cap. (X): 0.885
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 23.3
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0 1		1 0 2	0 1		2 0 1	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	48	1960	4	14	1030	132	340	3	12	2	2	93
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:	48	1960	4	14	1030	132	340	3	12	2	2	93
Added Vol:	0	30	15	14	81	0	0	5	0	38	14	34
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	1990	19	28	1111	132	340	8	12	40	16	127
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	51	2095	20	29	1169	139	358	8	13	42	17	134
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	2095	20	29	1169	139	358	8	13	42	17	134
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.:	51	2095	20	29	1169	139	358	8	13	42	17	134
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.01	0.56	0.01	0.02	0.31	0.08	0.10	0.00	0.01	0.02	0.01	0.07
Crit Moves:		****		****			****					****
Green/Cycle:	0.03	0.64	0.78	0.02	0.63	0.74	0.11	0.03	0.06	0.15	0.06	0.08
Volume/Cap:	0.50	0.88	0.01	0.88	0.50	0.10	0.88	0.16	0.12	0.16	0.14	0.88
Delay/Veh:	49.4	18.8	2.2	155.5	9.9	3.5	61.6	46.4	43.1	35.5	42.5	84.6
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:	49.4	18.8	2.2	155.5	9.9	3.5	61.6	46.4	43.1	35.5	42.5	84.6
HCM2kAvg:	1	29	0	3	9	1	8	0	0	1	1	7

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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 2	0 1		1 0 2	0 1		2 0 1	0 1		1 0 1	0 1	
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.64	0.78	0.02	0.63	0.74	0.11	0.03	0.06	0.15	0.06	0.08
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.7	23.0	0.1	0.8	8.4	1.0	4.9	0.2	0.3	1.0	0.4	3.5
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	5.7	0.0	1.7	1.0	0.1	3.6	0.2	0.1	0.2	0.2	3.1
HCM2KQueue:	1.5	28.7	0.1	2.5	9.4	1.2	8.5	0.4	0.5	1.2	0.6	6.6
70th%Factor:	1.20	1.15	1.20	1.19	1.18	1.20	1.18	1.20	1.20	1.20	1.20	1.18
70th%HCM2kQ:	1.8	33.0	0.2	3.0	11.1	1.4	10.0	0.5	0.5	1.4	0.7	7.9
85th%Factor:	1.59	1.42	1.60	1.58	1.52	1.59	1.53	1.60	1.60	1.59	1.59	1.54
85th%HCM2kQ:	2.4	40.7	0.2	4.0	14.3	1.8	12.9	0.6	0.7	1.9	0.9	10.2
90th%Factor:	1.77	1.50	1.80	1.75	1.65	1.78	1.66	1.79	1.79	1.78	1.79	1.69
90th%HCM2kQ:	2.7	43.0	0.2	4.5	15.5	2.0	14.1	0.7	0.8	2.1	1.0	11.2
95th%Factor:	2.05	1.62	2.10	2.02	1.86	2.06	1.88	2.09	2.09	2.06	2.08	1.92
95th%HCM2kQ:	3.1	46.6	0.3	5.2	17.4	2.4	15.9	0.8	0.9	2.5	1.2	12.7
98th%Factor:	2.59	1.81	2.69	2.52	2.19	2.62	2.22	2.67	2.67	2.61	2.66	2.30
98th%HCM2kQ:	3.9	52.0	0.3	6.4	20.5	3.0	18.8	1.1	1.2	3.1	1.5	15.3

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 4.6 Worst Case Level Of Service: A[9.7]

Street Name:	Site Access						N.Sunridge					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: AM												
Base Vol:	0	0	0	0	0	0	0	21	0	0	97	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:	0	0	0	0	0	0	0	21	0	0	97	0
Added Vol:	0	0	0	26	0	80	32	2	0	0	6	10
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	80	32	23	0	0	103	10
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	89	36	26	0	0	114	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	89	36	26	0	0	114	11
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	217	xxxx	120	126	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	776	xxxx	937	1473	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	761	xxxx	937	1473	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.04	xxxx	0.09	0.02	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	887	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.7	xxxxx	7.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.7			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #7 N.Sunridge/Access

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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

Upstream Signals:																		
Link Index:												#76						
Dist(miles):												0.250						
Speed (mph):												30.00						
SignalIndex:												#6						
Cycle Time:												95 secs						
InitVolume:											14	3						
Saturation:											1769	1881						
ArrivalType:											3	3						
G/C:											0.01	0.10						
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection																		
P:											0.010	0.101						
gq1:											0.74	0.14						
gq2:											0.01	0.00						
gq:											0.75	0.14						
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons																		
alpha:												0.550						
beta:												0.645						
ta (secs):												30.000						
F:												0.086						
f:											1.000	1.000						
vcmax:											115	23						
vcg:											114	12						
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:	0	0	0	0	0	0	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						
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx						
*** Computation 5: Capactiy for Subject Movement During Unblocked Period																		
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx						

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec):	127	Critical Vol./Cap. (X):	0.890
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	19.3
Optimal Cycle:OPTIMIZED		Level Of Service:	B

Street Name:	US 395								Clear Creek								
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					Ovl					Ovl					Ovl				
Min. Green:	0	0	0			0	0	0			0	0	0			0	0	0		
Lanes:	2	0	1	1	0	1	0	3	0	1	2	0	1	0	1	1	0	0	1	0
Volume Module: >> Count Date: 9 Apr 2008 << AM																				
Base Vol:	27	1975	134			9	933	56			104	4	13			96	3	7		
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:	27	1975	134			9	933	56			104	4	13			96	3	7		
Added Vol:	5	188	0			23	70	0			0	1	2			0	4	63		
In-Process:	0	0	0			0	0	0			0	0	0			0	0	0		
Initial Fut:	32	2163	134			32	1003	56			104	5	15			96	7	70		
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:	0.95	0.95	0.95			0.95	0.95	0.95			0.95	0.95	0.95			0.95	0.95	0.95		
PHF Volume:	34	2277	141			34	1056	59			109	5	16			101	7	74		
Reduct Vol:	0	0	0			0	0	0			0	0	0			0	0	0		
Reduced Vol:	34	2277	141			34	1056	59			109	5	16			101	7	74		
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.:	34	2277	141			34	1056	59			109	5	16			101	7	74		
Saturation Flow Module:																				
Sat/Lane:	1900	1900	1900			1900	1900	1900			1900	1900	1900			1900	1900	1900		
Adjustment:	0.90	0.92	1.05			0.93	0.89	0.94			0.91	0.99	0.95			0.95	0.86	1.04		
Lanes:	2.00	1.90	0.10			1.00	3.00	1.00			2.00	1.00	1.00			1.00	0.11	0.89		
Final Sat.:	3432	3324	206			1769	5083	1793			3467	1881	1811			1805	176	1759		
Capacity Analysis Module:																				
Vol/Sat:	0.01	0.68	0.68			0.02	0.21	0.03			0.03	0.00	0.01			0.06	0.04	0.04		
Crit Moves:		****				****					****						****			
Green/Cycle:	0.04	0.77	0.77			0.02	0.76	0.79			0.04	0.00	0.04			0.08	0.05	0.07		
Volume/Cap:	0.27	0.89	0.89			0.89	0.27	0.04			0.89	0.71	0.22			0.71	0.89	0.61		
Delay/Veh:	60.9	14.7	14.7			164.7	4.8	2.9			109.9	216	60.6			72.6	120	65.6		
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:	60.9	14.7	14.7			164.7	4.8	2.9			109.9	216	60.6			72.6	120	65.6		
HCM2kAvg:	1	37	43			3	4	0			4	1	1			6	5	4		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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	1 0		3 0 1			2 0 1	0 1		1 0	0 1 0	
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.86	0.86
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.86	1.04
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.05	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.86	1.04
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

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Intersection #8 395/Clear Creek

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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
Green/Cycle:	0.04	0.77	0.77	0.02	0.76	0.79	0.04	0.00	0.04	0.08	0.05	0.07
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.6	30.9	36.3	1.2	3.8	0.4	2.0	0.2	0.5	3.7	2.4	2.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.4	6.1	6.3	1.8	0.4	0.0	2.3	0.7	0.3	1.8	2.4	1.3
HCM2KQueue:	1.0	36.9	42.6	3.1	4.2	0.5	4.3	0.9	0.8	5.5	4.8	4.2
70th%Factor:	1.20	1.14	1.13	1.19	1.19	1.20	1.19	1.20	1.20	1.19	1.19	1.19
70th%HCM2kQ:	1.2	42.1	48.3	3.7	5.0	0.6	5.1	1.0	1.0	6.5	5.7	4.9
85th%Factor:	1.59	1.39	1.37	1.57	1.56	1.60	1.56	1.59	1.59	1.55	1.56	1.56
85th%HCM2kQ:	1.5	51.2	58.4	4.9	6.6	0.8	6.7	1.4	1.3	8.5	7.4	6.5
90th%Factor:	1.78	1.46	1.45	1.74	1.72	1.79	1.72	1.78	1.78	1.70	1.72	1.73
90th%HCM2kQ:	1.7	54.0	61.6	5.4	7.3	0.9	7.4	1.6	1.4	9.4	8.2	7.2
95th%Factor:	2.07	1.58	1.56	2.01	1.97	2.08	1.97	2.07	2.07	1.94	1.96	1.98
95th%HCM2kQ:	2.0	58.2	66.3	6.2	8.3	1.0	8.5	1.8	1.7	10.7	9.4	8.2
98th%Factor:	2.63	1.76	1.74	2.49	2.42	2.66	2.42	2.63	2.64	2.35	2.39	2.43
98th%HCM2kQ:	2.5	64.9	74.0	7.7	10.2	1.3	10.4	2.3	2.1	13.0	11.4	10.1

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Project Trips Report
AM

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: Big George													
1	US395/Topsy	0	34	15	30	14	0	0	7	0	38	18	73
2	Topsy/Access	129	0	69	0	0	0	0	0	52	28	0	0
3	Topsy/Center	5	8	0	0	3	23	57	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	30	0	0	12	0
5	Snyder/S.Edmo	0	0	0	0	0	12	30	0	0	0	0	0
6	US395/N.Sunri	0	15	15	14	38	0	0	3	0	38	8	34
7	N.Sunridge/Ac	0	0	0	26	0	80	32	0	0	0	0	10
8	395/Clear Cre	5	102	0	14	42	0	0	0	2	0	0	34
Zone #4: Schulz Ranch													
1	US395/Topsy	0	0	14	29	0	0	0	1	0	43	4	86
2	Topsy/Access	0	0	0	0	0	0	0	44	0	0	133	0
3	Topsy/Center	0	0	2	45	0	0	0	44	0	6	133	135
4	Snyder/Bigelo	0	11	0	0	4	34	103	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	14	0	0	43	0	0	2	0	0	6	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	2	0	0	6	0
8	395/Clear Cre	1	86	0	10	29	0	0	1	0	0	4	29

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Extg+Proj.+Shultz PM
Command:	Plus 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:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	419.00	311.00	419	311	730	60.3
	Zone 1 Subtotal					419	311	730	60.3
4	Schulz Ranch	1.00	Subdivision	303.00	178.00	303	178	481	39.7
	Zone 4 Subtotal					303	178	481	39.7
TOTAL						722	489	1211	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	3	4	5
Zone					
1	45.0	25.0	10.0	10.0	10.0
4	40.0	15.0	5.0	40.0	0.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy													
Base	124	1471	18	8	1937	178	400	9	229	22	9	0	4405
Added	0	35	98	192	47	0	0	29	0	66	21	128	616
Total	124	1506	116	200	1984	178	400	38	229	88	30	128	5021
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	25	0	0	10	0	35
Added	132	0	71	0	0	0	0	141	178	95	83	0	700
Total	132	0	71	0	0	0	0	166	178	95	93	0	735
#3 Topsy/Center													
Base	10	12	0	0	29	19	11	0	14	0	0	0	95
Added	17	8	7	143	10	79	58	141	12	4	83	84	646
Total	27	20	7	143	39	98	69	141	26	4	83	84	741
#4 Snyder/Bigelow													
Base	10	0	4	0	0	0	1	164	16	8	174	1	378
Added	0	7	0	0	12	109	64	31	0	0	42	0	265
Total	10	7	4	0	12	109	65	195	16	8	216	1	643
#5 Snyder/S.Edmonds													
Base	0	0	0	4	0	123	157	19	0	0	14	17	334
Added	0	0	0	0	0	42	31	0	0	0	0	0	73
Total	0	0	0	4	0	165	188	19	0	0	14	17	407
#6 US395/N.Sunridge													
Base	99	1310	5	88	1845	484	395	5	43	3	7	52	4336
Added	0	98	52	47	66	0	0	17	0	39	12	35	366
Total	99	1408	57	135	1911	484	395	22	43	42	19	87	4702
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	98	0	0	62	0	160
Added	0	0	0	26	0	82	110	7	0	0	4	36	265
Total	0	0	0	26	0	82	110	105	0	0	66	36	425
#8 395/Clear Creek													
Base	86	1520	163	17	2118	211	218	31	2	211	29	2	4608
Added	5	158	0	77	232	0	0	4	7	0	2	53	538
Total	91	1678	163	94	2350	211	218	35	9	211	31	55	5146

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	B	17.0	0.705	C	25.6	0.890	+ 8.619 D/V
# 2 Topsy/Access	A	0.0	0.000	C	17.5	0.000	+17.480 D/V
# 3 Topsy/Center	A	8.8	0.000	D	32.2	0.000	+23.446 D/V
# 4 Snyder/Bigelow	B	10.6	0.000	C	15.8	0.000	+ 5.194 D/V
# 5 Snyder/S.Edmonds	A	9.1	0.000	A	9.3	0.000	+ 0.217 D/V
# 6 US395/N.Sunridge	B	18.4	0.839	C	21.1	0.871	+ 2.707 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	B	10.2	0.000	+10.235 D/V
# 8 395/Clear Creek	B	18.3	0.791	C	23.9	0.905	+ 5.657 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	No
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	No

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #2 Topsy/Access

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	1! 0	0	0 0	0 0	0	0 0	0 1	0	0 1	0 0	0
Final Vol.:	147	0	79	0	0	0	0	184	198	106	103	0
ApproachDel:	17.5			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=226]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=817]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #3 Topsy/Center

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	30	22	8	159	43	109	77	157	29	4	92	93
ApproachDel:	xxxxxx			xxxxxx			32.2			14.9		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=2.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=262]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=823]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=190]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=823]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #4 Snyder/Bigelow

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	11	8	4	0	13	121	72	217	18	9	240	1
ApproachDel:	15.8			11.1			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
   FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=714]
   FAIL - Total volume less than 800 for intersection
          with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=134]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=714]
   FAIL - Total volume less than 800 for intersection
          with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #5 Snyder/S.Edmonds

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 0	0 0		0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	4	0	183	209	21	0	0	16	19
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=188]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=452]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #7 N.Sunridge/Access

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	91	122	117	0	0	73	40
ApproachDel:	xxxxxx			10.2			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=120]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=472]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec):	80	Critical Vol./Cap. (X):	0.890
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	25.6
Optimal Cycle:OPTIMIZED		Level Of Service:	C

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0	1	1 0 3	0	1	2 0 1	0	1	1 0 1	0	1
Volume Module: >> Count Date: 29 Jun 2006 << PM												
Base Vol:	124	1471	18	8	1937	178	400	9	229	22	9	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:	124	1471	18	8	1937	178	400	9	229	22	9	0
Added Vol:	0	35	98	192	47	0	0	29	0	66	21	128
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	124	1506	116	200	1984	178	400	38	229	88	30	128
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	131	1585	122	211	2088	187	421	40	241	93	32	135
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	131	1585	122	211	2088	187	421	40	241	93	32	135
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.:	131	1585	122	211	2088	187	421	40	241	93	32	135
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.45	0.07	0.12	0.41	0.10	0.12	0.02	0.13	0.05	0.02	0.08
Crit Moves:		****		****					****	****		
Green/Cycle:	0.05	0.50	0.56	0.13	0.58	0.73	0.14	0.11	0.16	0.06	0.02	0.15
Volume/Cap:	0.70	0.89	0.12	0.89	0.70	0.14	0.84	0.20	0.83	0.89	0.84	0.54
Delay/Veh:	48.9	23.9	8.3	65.3	12.6	3.4	45.4	33.2	50.0	92.2	125	33.7
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:	48.9	23.9	8.3	65.3	12.6	3.4	45.4	33.2	50.0	92.2	125	33.7
HCM2kAvg:	3	21	1	9	13	1	8	1	8	5	2	4

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	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:	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.05	0.50	0.56	0.13	0.58	0.73	0.14	0.11	0.16	0.06	0.02	0.15
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.5	15.8	1.3	4.8	10.9	1.3	4.8	0.8	5.2	2.2	0.7	2.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.6	5.6	0.1	3.8	2.2	0.2	3.3	0.2	3.2	2.8	1.6	1.1
HCM2KQueue:	3.1	21.4	1.4	8.7	13.2	1.4	8.0	1.1	8.4	5.0	2.3	3.9
70th%Factor:	1.19	1.16	1.20	1.18	1.17	1.20	1.18	1.20	1.18	1.19	1.19	1.19
70th%HCM2kQ:	3.7	24.8	1.7	10.2	15.5	1.7	9.5	1.3	9.9	5.9	2.8	4.6
85th%Factor:	1.57	1.45	1.59	1.52	1.49	1.59	1.53	1.59	1.53	1.55	1.58	1.56
85th%HCM2kQ:	4.9	31.0	2.2	13.2	19.7	2.3	12.3	1.7	12.8	7.7	3.7	6.1
90th%Factor:	1.74	1.54	1.77	1.66	1.61	1.77	1.67	1.78	1.66	1.71	1.76	1.73
90th%HCM2kQ:	5.5	32.9	2.5	14.4	21.2	2.6	13.4	1.9	13.9	8.5	4.1	6.7
95th%Factor:	2.00	1.68	2.05	1.87	1.79	2.05	1.88	2.07	1.88	1.96	2.03	1.98
95th%HCM2kQ:	6.3	36.0	2.9	16.2	23.6	3.0	15.2	2.2	15.7	9.7	4.8	7.7
98th%Factor:	2.49	1.89	2.60	2.21	2.06	2.60	2.24	2.62	2.23	2.38	2.53	2.44
98th%HCM2kQ:	7.8	40.5	3.7	19.2	27.2	3.7	18.0	2.8	18.6	11.8	5.9	9.5

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 5.9 Worst Case Level Of Service: C[17.5]

Street Name:	Site Access						Topsy Lane					
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 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1	0	0 0
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	25	0	0	10	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:	0	0	0	0	0	0	0	25	0	0	10	0
Added Vol:	132	0	71	0	0	0	0	141	178	95	83	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	0	71	0	0	0	0	166	178	95	93	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	147	0	79	0	0	0	0	184	198	106	103	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	147	0	79	0	0	0	0	184	198	106	103	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	598	xxxx	283	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	382	xxxx	xxxxx
Potent Cap.:	469	xxxx	760	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1187	xxxx	xxxxx
Move Cap.:	435	xxxx	760	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1187	xxxx	xxxxx
Volume/Cap:	0.34	xxxx	0.10	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.09	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	511	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	2.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx
Shrd StpDel:	xxxxx	17.5	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.3	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	*	*	*	*	A	*	*
ApproachDel:		17.5			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		C			*			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #2 Topsy/Access

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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 15.4 Worst Case Level Of Service: D[32.2]

Street Name:	Center Drive						Topsy Lane					
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 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	12	0	0	29	19	11	0	14	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:	10	12	0	0	29	19	11	0	14	0	0	0
Added Vol:	17	8	7	143	10	79	58	141	12	4	83	84
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	27	20	7	143	39	98	69	141	26	4	83	84
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	30	22	8	159	43	109	77	157	29	4	92	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	30	22	8	159	43	109	77	157	29	4	92	93
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
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:	152	xxxx	xxxxx	30	xxxx	xxxxx	594	506	98	594	556	26
Potent Cap.:	1441	xxxx	xxxxx	1596	xxxx	xxxxx	419	472	964	419	442	1055
Move Cap.:	1441	xxxx	xxxxx	1596	xxxx	xxxxx	282	412	964	260	385	1055
Volume/Cap:	0.02	xxxx	xxxx	0.10	xxxx	xxxx	0.27	0.38	0.03	0.02	0.24	0.09
Level Of Service Module:												
Queue:	0.1	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.6	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	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	384	xxxxx	xxxx	551	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	4.9	xxxxx	xxxxx	1.5	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	32.2	xxxxx	xxxxx	14.9	xxxxx
Shared LOS:	*	*	*	*	*	*	*	D	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			32.2			14.9		
ApproachLOS:	*			*			D			B		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 3.5 Worst Case Level Of Service: C[15.8]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1! 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	0	4	0	0	0	1	164	16	8	174	1
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:	10	0	4	0	0	0	1	164	16	8	174	1
Added Vol:	0	7	0	0	12	109	64	31	0	0	42	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	7	4	0	12	109	65	195	16	8	216	1
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	11	8	4	0	13	121	72	217	18	9	240	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	8	4	0	13	121	72	217	18	9	240	1
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	xxxxx	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	696	629	226	xxxx	637	241	241	xxxx	xxxxx	234	xxxx	xxxxx
Potent Cap.:	359	402	819	xxxx	397	803	1337	xxxx	xxxxx	1345	xxxx	xxxxx
Move Cap.:	282	377	819	xxxx	373	803	1337	xxxx	xxxxx	1345	xxxx	xxxxx
Volume/Cap:	0.04	0.02	0.01	xxxx	0.04	0.15	0.05	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.2	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.8	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	357	xxxxx	xxxx	xxxx	721	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	xxxx	0.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	15.8	xxxxx	xxxxx	xxxx	11.1	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	C	*	*	*	B	*	*	*	*	*	*
ApproachDel:	15.8			11.1			xxxxxx			xxxxxx		
ApproachLOS:	C			B			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[9.3]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	0	0	0	4	0	123	157	19	0	0	14	17
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	4	0	123	157	19	0	0	14	17
Added Vol:	0	0	0	0	0	42	31	0	0	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	4	0	165	188	19	0	0	14	17
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	4	0	183	209	21	0	0	16	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	4	0	183	209	21	0	0	16	19
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	464	xxxx	25	34	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	560	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	496	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	0.17	0.13	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1029	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 80 Critical Vol./Cap. (X): 0.871
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 21.1
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	99	1310	5	88	1845	484	395	5	43	3	7	52
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:	99	1310	5	88	1845	484	395	5	43	3	7	52
Added Vol:	0	98	52	47	66	0	0	17	0	39	12	35
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	1408	57	135	1911	484	395	22	43	42	19	87
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	104	1482	60	142	2012	509	416	23	45	44	20	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1482	60	142	2012	509	416	23	45	44	20	92
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.:	104	1482	60	142	2012	509	416	23	45	44	20	92
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.03	0.40	0.03	0.08	0.54	0.28	0.12	0.01	0.02	0.02	0.01	0.05
Crit Moves:	****				****		****				****	
Green/Cycle:	0.03	0.54	0.64	0.11	0.62	0.75	0.13	0.05	0.08	0.10	0.01	0.12
Volume/Cap:	0.87	0.73	0.05	0.73	0.87	0.38	0.87	0.25	0.30	0.25	0.87	0.41
Delay/Veh:	83.7	15.2	5.3	47.7	16.4	3.6	49.8	38.1	35.7	34.2	169	33.7
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:	83.7	15.2	5.3	47.7	16.4	3.6	49.8	38.1	35.7	34.2	169	33.7
HCM2kAvg:	3	15	1	5	24	4	8	1	1	1	2	3

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.54	0.64	0.11	0.62	0.75	0.13	0.05	0.08	0.10	0.01	0.12
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.2	12.5	0.5	3.2	18.4	3.9	4.8	0.5	0.9	1.0	0.4	1.9
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.2	2.5	0.1	2.1	5.3	0.6	3.6	0.3	0.4	0.3	1.4	0.7
HCM2KQueue:	3.4	15.0	0.5	5.3	23.7	4.5	8.3	0.8	1.4	1.3	1.8	2.5
70th%Factor:	1.19	1.17	1.20	1.19	1.16	1.19	1.18	1.20	1.20	1.20	1.20	1.19
70th%HCM2kQ:	4.0	17.5	0.7	6.3	27.4	5.3	9.9	1.0	1.6	1.5	2.2	3.0
85th%Factor:	1.57	1.48	1.59	1.55	1.44	1.56	1.53	1.59	1.59	1.59	1.58	1.58
85th%HCM2kQ:	5.3	22.2	0.9	8.2	34.0	7.0	12.7	1.3	2.2	2.0	2.9	4.0
90th%Factor:	1.74	1.59	1.79	1.71	1.52	1.72	1.66	1.78	1.77	1.78	1.76	1.75
90th%HCM2kQ:	5.9	23.8	1.0	9.1	36.1	7.7	13.9	1.5	2.4	2.3	3.3	4.5
95th%Factor:	2.00	1.76	2.08	1.95	1.66	1.97	1.88	2.07	2.06	2.06	2.04	2.02
95th%HCM2kQ:	6.7	26.4	1.1	10.3	39.4	8.8	15.7	1.7	2.8	2.7	3.8	5.2
98th%Factor:	2.47	2.02	2.66	2.37	1.86	2.41	2.23	2.64	2.60	2.61	2.57	2.52
98th%HCM2kQ:	8.3	30.2	1.5	12.5	44.1	10.8	18.6	2.2	3.6	3.4	4.7	6.4

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 4.6 Worst Case Level Of Service: B[10.2]

Street Name:	Site Access						N.Sunridge					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	98	0	0	62	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:	0	0	0	0	0	0	0	98	0	0	62	0
Added Vol:	0	0	0	26	0	82	110	7	0	0	4	36
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	82	110	105	0	0	66	36
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	91	122	117	0	0	73	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	91	122	117	0	0	73	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	454	xxxx	93	113	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	567	xxxx	969	1489	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	529	xxxx	969	1489	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.05	xxxx	0.09	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	807	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.5	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	10.2	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	B	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			10.2			xxxxxx			xxxxxx		
ApproachLOS:	*			B			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #7 N.Sunridge/Access

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:								#76					
Dist(miles):								0.250					
Speed (mph):								30.00					
SignalIndex:								#6					
Cycle Time:								80 secs					
InitVolume:							88	5					
Saturation:							1769	1881					
ArrivalType:							3	3					
G/C:							0.08	0.09					
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection													
P:							0.081	0.088					
gq1:							3.66	0.19					
gq2:							0.19	0.00					
gq:							3.85	0.19					
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons													
alpha:								0.550					
beta:								0.645					
ta (secs):								30.000					
F:								0.086					
f:							1.000	1.000					
vcmax:							517	33					
vcg:							426	20					
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:	0	0	0	0	0	0	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	
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx	
*** Computation 5: Capactiy for Subject Movement During Unblocked Period													
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec):	92	Critical Vol./Cap. (X):	0.905
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	23.9
Optimal Cycle:	OPTIMIZED	Level Of Service:	C

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1	0	1 0 3	0	1	2 0 1	0	1	1 0 0	1	0
Volume Module: >> Count Date: 9 Apr 2008 << PM												
Base Vol:	86 1520	163		17 2118	211		218	31	2	211	29	2
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:	86 1520	163		17 2118	211		218	31	2	211	29	2
Added Vol:	5 158	0		77 232	0		0	4	7	0	2	53
In-Process:	0 0	0		0 0	0		0	0	0	0	0	0
Initial Fut:	91 1678	163		94 2350	211		218	35	9	211	31	55
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:	0.95 0.95	0.95		0.95 0.95	0.95		0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	96 1766	172		99 2474	222		229	37	9	222	33	58
Reduct Vol:	0 0	0		0 0	0		0	0	0	0	0	0
Reduced Vol:	96 1766	172		99 2474	222		229	37	9	222	33	58
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.:	96 1766	172		99 2474	222		229	37	9	222	33	58
Saturation Flow Module:												
Sat/Lane:	1900 1900	1900		1900 1900	1900		1900	1900	1900	1900	1900	1900
Adjustment:	0.90 0.92	1.04		0.93 0.89	0.94		0.91	0.99	0.95	0.95	0.90	1.08
Lanes:	2.00 1.84	0.16		1.00 3.00	1.00		2.00	1.00	1.00	1.00	0.40	0.60
Final Sat.:	3432 3216	312		1769 5083	1793		3467	1881	1811	1805	693	1230
Capacity Analysis Module:												
Vol/Sat:	0.03 0.55	0.55		0.06 0.49	0.12		0.07	0.02	0.01	0.12	0.05	0.05
Crit Moves:	****			****				****		****		
Green/Cycle:	0.04 0.61	0.61		0.06 0.63	0.72		0.09	0.02	0.06	0.14	0.07	0.13
Volume/Cap:	0.77 0.91	0.91		0.91 0.77	0.17		0.72	0.91	0.09	0.91	0.72	0.37
Delay/Veh:	68.8 21.8	21.8		100.0 13.3	4.1		48.3	149	41.4	72.5	60.3	37.7
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:	68.8 21.8	21.8		100.0 13.3	4.1		48.3	149	41.4	72.5	60.3	37.7
HCM2kAvg:	3 28	30		6 18	2		5	3	0	10	4	3

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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 1 0			1 0 3 0 1			2 0 1 0 1			1 0 0 1 0		
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.90	0.90
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.90	1.08
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.90	1.08
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.61	0.61	0.06	0.63	0.72	0.09	0.02	0.06	0.14	0.07	0.13
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.3	21.4	23.9	2.6	15.1	1.8	3.0	0.9	0.2	5.9	2.0	2.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	1.7	6.3	6.5	3.0	3.0	0.2	1.9	1.9	0.1	4.1	1.8	0.6
HCM2KQueue:	3.0	27.7	30.4	5.6	18.1	2.0	4.9	2.9	0.3	10.0	3.8	2.8
70th%Factor:	1.19	1.15	1.15	1.19	1.16	1.20	1.19	1.19	1.20	1.18	1.19	1.19
70th%HCM2kQ:	3.6	31.9	34.9	6.7	21.1	2.4	5.9	3.4	0.4	11.8	4.5	3.4
85th%Factor:	1.57	1.42	1.41	1.55	1.46	1.58	1.55	1.57	1.60	1.52	1.56	1.57
85th%HCM2kQ:	4.7	39.4	42.9	8.7	26.6	3.1	7.7	4.5	0.5	15.1	6.0	4.5
90th%Factor:	1.74	1.50	1.49	1.70	1.56	1.76	1.71	1.75	1.79	1.64	1.73	1.75
90th%HCM2kQ:	5.3	41.6	45.3	9.6	28.3	3.5	8.4	5.0	0.6	16.4	6.6	4.9
95th%Factor:	2.01	1.63	1.61	1.94	1.72	2.04	1.96	2.01	2.09	1.84	1.99	2.01
95th%HCM2kQ:	6.1	45.2	49.0	10.9	31.2	4.1	9.6	5.7	0.7	18.4	7.6	5.7
98th%Factor:	2.49	1.82	1.80	2.35	1.95	2.56	2.38	2.50	2.68	2.16	2.45	2.50
98th%HCM2kQ:	7.5	50.5	54.7	13.2	35.3	5.1	11.8	7.2	0.9	21.6	9.3	7.1

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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: Big George													
1	US395/Topsy	0	35	52	101	47	0	0	25	0	39	19	75
2	Topsy/Access	132	0	71	0	0	0	0	0	178	95	0	0
3	Topsy/Center	17	8	0	0	10	79	58	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	31	0	0	42	0
5	Snyder/S.Edmo	0	0	0	0	0	42	31	0	0	0	0	0
6	US395/N.Sunri	0	52	52	47	39	0	0	10	0	39	8	35
7	N.Sunridge/Ac	0	0	0	26	0	82	110	0	0	0	0	36
8	395/Clear Cre	5	105	0	47	141	0	0	0	6	0	0	35
Zone #4: Schulz Ranch													
1	US395/Topsy	0	0	45	92	0	0	0	4	0	27	2	54
2	Topsy/Access	0	0	0	0	0	0	0	141	0	0	83	0
3	Topsy/Center	0	0	7	143	0	0	0	141	0	4	83	84
4	Snyder/Bigelo	0	7	0	0	12	109	64	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	45	0	0	27	0	0	7	0	0	4	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	7	0	0	4	0
8	395/Clear Cre	0	53	0	30	91	0	0	4	1	0	2	18

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Ex+Proj.+Shultz+Retail AM
Command:	Plus Project
Volume:	AM
Geometry:	Default Geometry
Impact Fee:	Default Impact Fee
Trip Generation:	AM
Trip Distribution:	Default Trip Distribution
Paths:	Default Paths
Routes:	Default Routes
Configuration:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for AM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	123.00	303.00	123	303	426	18.1
	Zone 1 Subtotal					123	303	426	18.1
2	Retail 4.2	1.00	Mixed	535.00	535.00	535	535	1070	45.5
	Zone 2 Subtotal					535	535	1070	45.5
3	Retail 4.1	1.00	Mixed	239.00	239.00	239	239	478	20.3
	Zone 3 Subtotal					239	239	478	20.3
4	Schulz Ranch	1.00	Subdivision	95.00	285.00	95	285	380	16.1
	Zone 4 Subtotal					95	285	380	16.1
TOTAL						992	1362	2354	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	3	4	5
Zone					
1	45.0	25.0	10.0	10.0	10.0
2	45.0	25.0	10.0	10.0	10.0
3	45.0	25.0	10.0	10.0	10.0
4	40.0	15.0	5.0	40.0	0.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Turning Movement Report
AM

Volume	Northbound			Southbound			Eastbound			Westbound			Total
Type	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Left	Thru	Right	Volume
#1 US395/Topsy													
Base	101	2025	7	4	1369	54	107	1	18	3	0	0	3689
Added	8	223	101	237	202	0	0	23	8	152	28	272	1254
Total	109	2248	108	241	1571	54	107	24	26	155	28	272	4943
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	7	0	0	4	0	11
Added	129	0	69	0	0	0	0	92	52	28	180	0	550
Total	129	0	69	0	0	0	0	99	52	28	184	0	561
#3 Topsy/Center													
Base	3	19	0	0	10	1	2	0	5	0	0	0	40
Added	29	66	2	45	62	47	81	44	36	6	133	135	686
Total	32	85	2	45	72	48	83	44	41	6	133	135	726
#4 Snyder/Bigelow													
Base	4	0	8	4	0	2	0	123	3	4	148	0	296
Added	0	11	0	0	4	112	180	30	0	0	12	0	349
Total	4	11	8	4	4	114	180	153	3	4	160	0	645
#5 Snyder/S.Edmonds													
Base	0	0	0	17	0	132	91	15	0	0	1	8	264
Added	0	0	0	0	0	12	30	0	0	0	0	0	42
Total	0	0	0	17	0	144	121	15	0	0	1	8	306
#6 US395/N.Sunridge													
Base	48	1960	4	14	1030	132	340	3	12	2	2	93	3640
Added	0	89	149	210	140	12	12	24	0	172	33	231	1072
Total	48	2049	153	224	1170	144	352	27	12	174	35	324	4712
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	21	0	0	97	0	118
Added	0	0	0	26	0	80	32	351	0	0	356	10	855
Total	0	0	0	26	0	80	32	372	0	0	453	10	973
#8 395/Clear Creek													
Base	27	1975	134	9	933	56	104	4	13	96	3	7	3361
Added	19	476	0	23	418	0	0	7	21	0	9	63	1036
Total	46	2451	134	32	1351	56	104	11	34	96	12	70	4397

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	B	10.1	0.713	D	47.6	1.025	+37.487 D/V
# 2 Topsy/Access	A	0.0	0.000	B	12.8	0.000	+12.848 D/V
# 3 Topsy/Center	A	8.5	0.000	C	20.8	0.000	+12.370 D/V
# 4 Snyder/Bigelow	B	10.2	0.000	C	16.2	0.000	+ 5.996 D/V
# 5 Snyder/S.Edmonds	A	9.2	0.000	A	9.3	0.000	+ 0.132 D/V
# 6 US395/N.Sunridge	C	22.2	0.807	D	45.8	0.991	+23.641 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	C	18.9	0.000	+18.930 D/V
# 8 395/Clear Creek	B	14.3	0.760	C	26.4	0.950	+12.042 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	No
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	No

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #2 Topsy/Access

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Final Vol.:	143	0	77	0	0	0	0	110	58	31	204	0
ApproachDel:	12.8			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.8]
   FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=220]
   SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=623]
   FAIL - Total volume less than 650 for intersection
          with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #3 Topsy/Center

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	36	94	2	50	80	53	92	49	46	7	148	150
ApproachDel:	xxxxxx			xxxxxx			20.8			15.0		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=187]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=807]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=304]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=807]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #4 Snyder/Bigelow

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1!	0 0		0 0 1!	0 0		0 0 1!	0 0		0 1	0 0	0
Final Vol.:	4	12	9	4	4	127	200	170	3	4	178	0
ApproachDel:	16.2			10.7			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.1]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=26]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=717]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=136]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=717]
FAIL - Total volume less than 800 for intersection
with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #5 Snyder/S.Edmonds

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	19	0	160	134	17	0	0	1	9
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=179]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=340]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #7 N.Sunridge/Access

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	89	36	413	0	0	503	11
ApproachDel:	xxxxxx			18.9			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=118]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1081]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec): 150 Critical Vol./Cap. (X): 1.025
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 47.6
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0 1		1 0 3	0 1		2 0 1	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	101	2025	7	4	1369	54	107	1	18	3	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:	101	2025	7	4	1369	54	107	1	18	3	0	0
Added Vol:	8	223	101	237	202	0	0	23	8	152	28	272
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	109	2248	108	241	1571	54	107	24	26	155	28	272
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	115	2366	114	254	1654	57	113	25	27	163	29	286
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	115	2366	114	254	1654	57	113	25	27	163	29	286
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.:	115	2366	114	254	1654	57	113	25	27	163	29	286
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.03	0.67	0.06	0.14	0.33	0.03	0.03	0.01	0.01	0.09	0.02	0.18
Crit Moves:		****		****				****		****		
Green/Cycle:	0.07	0.65	0.74	0.14	0.72	0.77	0.05	0.01	0.09	0.09	0.05	0.19
Volume/Cap:	0.45	1.03	0.09	1.03	0.45	0.04	0.65	1.03	0.17	1.03	0.30	0.92
Delay/Veh:	67.8	51.6	5.4	128.4	8.9	4.2	78.7	263	64.0	146.6	70.2	91.7
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:	67.8	51.6	5.4	128.4	8.9	4.2	78.7	263	64.0	146.6	70.2	91.7
HCM2kAvg:	3	63	1	17	10	1	4	3	1	12	2	16

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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 2	0 1		1 0 3	0 1		2 0 1	0 1		1 0 1	0 1	
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13		1.00 1.00	1.13		1.00 1.00	1.13		1.00 1.00	1.00	
Hev Veh Adj:	0.98 0.98	0.98		0.98 0.98	0.98		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:	0.93 0.98	0.94		0.93 0.98	0.94		0.95 1.00	0.96		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:	0.97 0.95	1.00		1.00 0.91	1.00		0.97 1.00	1.00		1.00 1.00	1.00	
Fnl Sat Adj:	0.90 0.93	0.94		0.93 0.89	0.94		0.92 1.00	0.96		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	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.07	0.65	0.74	0.14	0.72	0.77	0.05	0.01	0.09	0.09	0.05	0.19
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	2.4	49.3	1.3	11.1	9.6	0.6	2.4	1.1	1.1	7.2	1.2	11.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	14.1	0.1	6.2	0.8	0.0	1.4	1.8	0.2	4.9	0.4	4.7
HCM2KQueue:	3.2	63.4	1.4	17.3	10.4	0.6	3.8	2.9	1.3	12.1	1.6	16.4
70th%Factor:	1.19	1.12	1.20	1.16	1.18	1.20	1.19	1.19	1.20	1.17	1.20	1.17
70th%HCM2kQ:	3.8	71.1	1.7	20.2	12.2	0.7	4.5	3.4	1.5	14.2	1.9	19.2
85th%Factor:	1.57	1.34	1.59	1.47	1.51	1.59	1.56	1.57	1.59	1.50	1.58	1.47
85th%HCM2kQ:	5.0	84.7	2.2	25.4	15.7	1.0	6.0	4.5	2.0	18.1	2.5	24.2
90th%Factor:	1.74	1.42	1.77	1.57	1.64	1.79	1.73	1.75	1.78	1.62	1.77	1.58
90th%HCM2kQ:	5.5	89.9	2.5	27.2	17.0	1.1	6.6	5.0	2.2	19.5	2.8	25.9
95th%Factor:	2.00	1.52	2.05	1.73	1.84	2.08	1.99	2.01	2.06	1.81	2.05	1.74
95th%HCM2kQ:	6.4	96.3	2.9	30.0	19.1	1.3	7.6	5.8	2.6	21.8	3.3	28.6
98th%Factor:	2.48	1.71	2.60	1.96	2.15	2.65	2.45	2.50	2.61	2.10	2.58	1.98
98th%HCM2kQ:	7.9	108	3.7	34.0	22.4	1.6	9.3	7.2	3.3	25.3	4.1	32.6

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 4.9 Worst Case Level Of Service: B[12.8]

Street Name:	Site Access						Topsy Lane					
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 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Volume Module: AM												
Base Vol:	0	0	0	0	0	0	0	7	0	0	4	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:	0	0	0	0	0	0	0	7	0	0	4	0
Added Vol:	129	0	69	0	0	0	0	92	52	28	180	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	129	0	69	0	0	0	0	99	52	28	184	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	143	0	77	0	0	0	0	110	58	31	204	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	143	0	77	0	0	0	0	110	58	31	204	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	406	xxxx	139	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	168	xxxx	xxxxx
Potent Cap.:	605	xxxx	915	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1422	xxxx	xxxxx
Move Cap.:	595	xxxx	915	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	1422	xxxx	xxxxx
Volume/Cap:	0.24	xxxx	0.08	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.02	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	677	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.4	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx
Shrd StpDel:	xxxxx	12.8	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
Shared LOS:	*	B	*	*	*	*	*	*	*	A	*	*
ApproachDel:		12.8		xxxxxx			xxxxxx			xxxxxx		
ApproachLOS:		B		*			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 11.3 Worst Case Level Of Service: C[20.8]

Street Name:	Center Drive						Topsy Lane					
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	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	3	19	0	0	10	1	2	0	5	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:	3	19	0	0	10	1	2	0	5	0	0	0
Added Vol:	29	66	2	45	62	47	81	44	36	6	133	135
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	32	85	2	45	72	48	83	44	41	6	133	135
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	36	94	2	50	80	53	92	49	46	7	148	150
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	36	94	2	50	80	53	92	49	46	7	148	150
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
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:	133	xxxx	xxxxx	97	xxxx	xxxxx	522	374	107	421	400	96
Potent Cap.:	1464	xxxx	xxxxx	1509	xxxx	xxxxx	468	560	953	547	541	966
Move Cap.:	1464	xxxx	xxxxx	1509	xxxx	xxxxx	294	527	953	463	510	966
Volume/Cap:	0.02	xxxx	xxxx	0.03	xxxx	xxxx	0.31	0.09	0.05	0.01	0.29	0.16
Level Of Service Module:												
Queue:	0.1	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	7.5	xxxx	xxxxx	7.5	xxxx	xxxxx	xxxxx	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	411	xxxxx	xxxx	663	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	2.3	xxxxx	xxxxx	2.4	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	20.8	xxxxx	xxxxx	15.0	xxxxx
Shared LOS:	*	*	*	*	*	*	*	C	*	*	B	*
ApproachDel:	xxxxxx			xxxxxx			20.8			15.0		
ApproachLOS:	*			*			C			B		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

****

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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

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Intersection #4 Snyder/Bigelow

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Average Delay (sec/veh): 4.9 Worst Case Level Of Service: C[16.2]

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Street Name:	Bigelow Drive						Snyder Avenue					
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 1!	0	0	0 0 1!	0	0	0 0 1!	0	0	0 1	0	0 0
Volume Module: >> Count Date: 27 Jun 2006 << AM												
Base Vol:	4	0	8	4	0	2	0	123	3	4	148	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:	4	0	8	4	0	2	0	123	3	4	148	0
Added Vol:	0	11	0	0	4	112	180	30	0	0	12	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	4	11	8	4	4	114	180	153	3	4	160	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	4	12	9	4	4	127	200	170	3	4	178	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	4	12	9	4	4	127	200	170	3	4	178	0
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	7.1	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	3.5	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	824	758	172	769	760	178	178	xxxx	xxxxx	173	xxxx	xxxxx
Potent Cap.:	294	339	877	321	338	870	1410	xxxx	xxxxx	1416	xxxx	xxxxx
Move Cap.:	218	284	877	269	283	870	1410	xxxx	xxxxx	1416	xxxx	xxxxx
Volume/Cap:	0.02	0.04	0.01	0.02	0.02	0.15	0.14	xxxx	xxxx	0.00	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.0	xxxx	xxxxx	7.6	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	347	xxxxx	xxxx	763	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	0.2	xxxxx	xxxxx	0.6	xxxxx	xxxxx	xxxx	xxxxx	0.0	xxxx	xxxxx
Shrd StpDel:	xxxxx	16.2	xxxxx	xxxxx	10.7	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx
Shared LOS:	*	C	*	*	B	*	*	*	*	A	*	*
ApproachDel:		16.2			10.7			xxxxxx			xxxxxx	
ApproachLOS:		C			B			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.8 Worst Case Level Of Service: A[9.3]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	0	0	0	17	0	132	91	15	0	0	1	8
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	17	0	132	91	15	0	0	1	8
Added Vol:	0	0	0	0	0	12	30	0	0	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	17	0	144	121	15	0	0	1	8
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	19	0	160	134	17	0	0	1	9
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	19	0	160	134	17	0	0	1	9
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	291	xxxx	6	10	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	704	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	656	xxxx	1083	1623	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.03	xxxx	0.15	0.08	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1013	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.6	xxxxx	0.3	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx	7.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 130 Critical Vol./Cap. (X): 0.991
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 45.8
Optimal Cycle:OPTIMIZED Level Of Service: D

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0 1		1 0 2	0 1		2 0 1	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 28 Jun 2006 << AM												
Base Vol:	48	1960	4	14	1030	132	340	3	12	2	2	93
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:	48	1960	4	14	1030	132	340	3	12	2	2	93
Added Vol:	0	89	149	210	140	12	12	24	0	172	33	231
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	48	2049	153	224	1170	144	352	27	12	174	35	324
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	51	2157	161	236	1232	152	371	28	13	183	37	341
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	51	2157	161	236	1232	152	371	28	13	183	37	341
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.:	51	2157	161	236	1232	152	371	28	13	183	37	341
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.01	0.58	0.09	0.13	0.33	0.08	0.10	0.02	0.01	0.10	0.02	0.19
Crit Moves:		****		****			****					****
Green/Cycle:	0.03	0.58	0.72	0.13	0.69	0.79	0.10	0.02	0.05	0.14	0.05	0.19
Volume/Cap:	0.48	0.99	0.12	0.99	0.48	0.11	0.99	0.74	0.14	0.74	0.36	0.99
Delay/Veh:	65.5	43.9	5.6	111.9	9.5	3.1	102.2	117	59.7	64.8	61.6	98.7
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:	65.5	43.9	5.6	111.9	9.5	3.1	102.2	117	59.7	64.8	61.6	98.7
HCM2kAvg:	2	49	2	14	11	1	12	2	1	9	2	19

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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 2 0 1			1 0 2 0 1			2 0 1 0 1			1 0 1 0 1		
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.58	0.72	0.13	0.69	0.79	0.10	0.02	0.05	0.14	0.05	0.19
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	0.9	38.5	1.8	9.0	10.3	1.2	7.0	1.0	0.4	6.7	1.3	12.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.8	11.0	0.1	5.4	0.9	0.1	4.8	1.4	0.2	2.2	0.5	6.3
HCM2KQueue:	1.7	49.5	1.9	14.4	11.2	1.4	11.9	2.4	0.6	8.9	1.8	18.6
70th%Factor:	1.20	1.13	1.20	1.17	1.18	1.20	1.17	1.19	1.20	1.18	1.20	1.16
70th%HCM2kQ:	2.0	55.9	2.3	16.8	13.2	1.6	13.9	2.8	0.7	10.5	2.2	21.7
85th%Factor:	1.58	1.36	1.58	1.49	1.51	1.59	1.50	1.58	1.59	1.52	1.58	1.46
85th%HCM2kQ:	2.7	67.2	3.0	21.4	16.9	2.1	17.8	3.7	0.9	13.6	2.9	27.2
90th%Factor:	1.77	1.43	1.76	1.59	1.63	1.77	1.62	1.76	1.79	1.66	1.77	1.56
90th%HCM2kQ:	3.0	71.0	3.4	22.9	18.3	2.4	19.2	4.2	1.1	14.8	3.2	29.0
95th%Factor:	2.05	1.54	2.04	1.77	1.82	2.06	1.81	2.03	2.08	1.87	2.04	1.71
95th%HCM2kQ:	3.5	76.1	3.9	25.5	20.5	2.8	21.5	4.8	1.2	16.6	3.7	31.9
98th%Factor:	2.58	1.72	2.56	2.03	2.12	2.60	2.10	2.53	2.66	2.20	2.57	1.94
98th%HCM2kQ:	4.4	85.2	4.9	29.2	23.9	3.5	24.9	6.0	1.6	19.6	4.7	36.1

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 2.3 Worst Case Level Of Service: C[18.9]

Street Name:	Site Access						N.Sunridge					
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	1!	0 0	0 1	0	0 0	0 0	0	1 0
Volume Module: AM												
Base Vol:	0	0	0	0	0	0	0	21	0	0	97	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:	0	0	0	0	0	0	0	21	0	0	97	0
Added Vol:	0	0	0	26	0	80	32	351	0	0	356	10
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	80	32	372	0	0	453	10
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	89	36	413	0	0	503	11
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	89	36	413	0	0	503	11
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	1082	xxxx	554	471	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	223	xxxx	492	1011	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	217	xxxx	492	1011	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.13	xxxx	0.18	0.04	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	375	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	1.3	xxxxx	0.1	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	18.9	xxxxx	8.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	C	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			18.9			xxxxxx			xxxxxx		
ApproachLOS:	*			C			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #7 N.Sunridge/Access

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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			12 feet			12 feet			12 feet	
Time Period: 0.25 hour												
Upstream Signals:												
Link Index:								#76				
Dist(miles):								0.250				
Speed (mph):								30.00				
SignalIndex:								#6				
Cycle Time:								130 secs				
InitVolume:							14	3				
Saturation:							1769	1881				
ArrivalType:							3	3				
G/C:							0.01	0.11				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.010	0.106				
gq1:							1.02	0.19				
gq2:							0.01	0.00				
gq:							1.03	0.19				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:								0.550				
beta:								0.645				
ta (secs):								30.000				
F:								0.086				
f:							1.000	1.000				
vcmax:							156	31				
vcg:							152	11				
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:	0	0	0	0	0	0	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
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec): 180 Critical Vol./Cap. (X): 0.950
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 26.4
Optimal Cycle:OPTIMIZED Level Of Service: C

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1 0		1 0 3	0 1		2 0 1	0 1		1 0	0 1	0
Volume Module: >> Count Date: 9 Apr 2008 << AM												
Base Vol:	27	1975	134	9	933	56	104	4	13	96	3	7
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:	27	1975	134	9	933	56	104	4	13	96	3	7
Added Vol:	19	476	0	23	418	0	0	7	21	0	9	63
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	46	2451	134	32	1351	56	104	11	34	96	12	70
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	48	2580	141	34	1422	59	109	12	36	101	13	74
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	48	2580	141	34	1422	59	109	12	36	101	13	74
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.:	48	2580	141	34	1422	59	109	12	36	101	13	74
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.92	1.05	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.87	1.05
Lanes:	2.00	1.91	0.09	1.00	3.00	1.00	2.00	1.00	1.00	1.00	0.17	0.83
Final Sat.:	3432	3348	183	1769	5083	1793	3467	1881	1811	1805	283	1649
Capacity Analysis Module:												
Vol/Sat:	0.01	0.77	0.77	0.02	0.28	0.03	0.03	0.01	0.02	0.06	0.04	0.04
Crit Moves:		****		****			****				****	
Green/Cycle:	0.04	0.81	0.81	0.02	0.79	0.82	0.03	0.01	0.05	0.07	0.05	0.07
Volume/Cap:	0.35	0.95	0.95	0.95	0.35	0.04	0.95	0.77	0.41	0.77	0.95	0.67
Delay/Veh:	85.7	22.2	22.2	218.8	5.5	2.9	154.9	210	86.4	106.6	163	94.5
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:	85.7	22.2	22.2	218.8	5.5	2.9	154.9	210	86.4	106.6	163	94.5
HCM2kAvg:	2	65	74	4	7	1	5	2	2	7	7	6

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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	1 0		1 0 3	0 1		2 0 1	0 1		1 0	0 1	0
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.87	0.87
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.87	1.05
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.05	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.87	1.05
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

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Intersection #8 395/Clear Creek

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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
Green/Cycle:	0.04	0.81	0.81	0.02	0.79	0.82	0.03	0.01	0.05	0.07	0.05	0.07
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	1.2	55.7	64.6	1.8	6.9	0.5	2.9	0.6	1.7	5.2	3.7	4.3
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	0.5	9.3	9.8	2.0	0.5	0.0	2.5	1.0	0.6	2.2	2.8	1.6
HCM2KQueue:	1.7	65.0	74.4	3.8	7.4	0.6	5.4	1.6	2.4	7.4	6.5	5.9
70th%Factor:	1.20	1.12	1.12	1.19	1.18	1.20	1.19	1.20	1.19	1.18	1.18	1.19
70th%HCM2kQ:	2.1	72.8	83.0	4.5	8.8	0.7	6.4	1.9	2.8	8.8	7.7	7.0
85th%Factor:	1.58	1.33	1.33	1.56	1.53	1.59	1.55	1.58	1.58	1.53	1.54	1.55
85th%HCM2kQ:	2.8	86.8	98.6	5.9	11.4	0.9	8.3	2.5	3.7	11.4	10.1	9.1
90th%Factor:	1.77	1.42	1.41	1.73	1.68	1.79	1.71	1.77	1.76	1.68	1.69	1.70
90th%HCM2kQ:	3.1	92.0	104.9	6.5	12.4	1.0	9.2	2.8	4.2	12.4	11.0	10.0
95th%Factor:	2.04	1.52	1.51	1.99	1.90	2.08	1.95	2.05	2.03	1.90	1.92	1.93
95th%HCM2kQ:	3.6	98.6	112.3	7.5	14.1	1.2	10.5	3.3	4.8	14.1	12.5	11.4
98th%Factor:	2.57	1.71	1.70	2.45	2.26	2.66	2.36	2.58	2.53	2.27	2.31	2.34
98th%HCM2kQ:	4.5	111	126.7	9.2	16.8	1.5	12.7	4.1	6.0	16.8	15.0	13.8

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Project Trips Report
AM

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: Big George													
1	US395/Topsy	0	34	15	30	14	0	0	7	0	38	18	73
2	Topsy/Access	129	0	69	0	0	0	0	0	52	28	0	0
3	Topsy/Center	5	8	0	0	3	23	57	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	30	0	0	12	0
5	Snyder/S.Edmo	0	0	0	0	0	12	30	0	0	0	0	0
6	US395/N.Sunri	0	15	15	14	38	0	0	3	0	38	8	34
7	N.Sunridge/Ac	0	0	0	26	0	80	32	0	0	0	0	10
8	395/Clear Cre	5	102	0	14	42	0	0	0	2	0	0	34
Zone #2: Retail 4.2													
1	US395/Topsy	8	189	0	66	189	0	0	8	8	0	0	0
2	Topsy/Access	0	0	0	0	0	0	0	0	0	0	0	0
3	Topsy/Center	0	59	0	0	59	0	0	0	0	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	54	54	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	0	134	197	0	0	0	19	0	134	19	197
7	N.Sunridge/Ac	0	0	0	0	0	0	0	349	0	0	349	0
8	395/Clear Cre	8	181	0	0	241	0	0	5	13	0	5	0
Zone #3: Retail 4.1													
1	US395/Topsy	0	0	72	114	0	0	0	6	0	72	6	114
2	Topsy/Access	0	0	0	0	0	0	0	48	0	0	48	0
3	Topsy/Center	24	0	0	0	0	24	24	0	24	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	24	24	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	60	0	0	60	12	12	0	0	0	0	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	0	0	0	0	0
8	395/Clear Cre	6	108	0	0	108	0	0	0	6	0	0	0
Zone #4: Schulz Ranch													
1	US395/Topsy	0	0	14	29	0	0	0	1	0	43	4	86
2	Topsy/Access	0	0	0	0	0	0	0	44	0	0	133	0
3	Topsy/Center	0	0	2	45	0	0	0	44	0	6	133	135
4	Snyder/Bigelo	0	11	0	0	4	34	103	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	14	0	0	43	0	0	2	0	0	6	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	2	0	0	6	0
8	395/Clear Cre	1	86	0	10	29	0	0	1	0	0	4	29

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Ex+Proj.+Shultz+Retail PM
Command:	Plus 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:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	419.00	311.00	419	311	730	12.9
	Zone 1 Subtotal					419	311	730	12.9
2	Retail 4.2	1.00	Mixed	1156.00	1155.00	1156	1155	2311	40
	Zone 2 Subtotal					1156	1155	2311	40.9
3	Retail 4.1	1.00	Mixed	1065.00	1065.00	1065	1065	2130	37
	Zone 3 Subtotal					1065	1065	2130	37.7
4	Schulz Ranch	1.00	Subdivision	303.00	178.00	303	178	481	8.5
	Zone 4 Subtotal					303	178	481	8.5
TOTAL						2943	2709	5652	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

	To Gates				
	1	2	3	4	5
Zone					
1	45.0	25.0	10.0	10.0	10.0
2	45.0	25.0	10.0	10.0	10.0
3	45.0	25.0	10.0	10.0	10.0
4	40.0	15.0	5.0	40.0	0.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Turning Movement Report
PM

Volume Type	Northbound Left	Thru	Right	Southbound Left	Thru	Right	Eastbound Left	Thru	Right	Westbound Left	Thru	Right	Total Volume
#1 US395/Topsy													
Base	124	1471	18	8	1937	178	400	9	229	22	9	0	4405
Added	17	442	417	840	455	0	0	73	17	385	48	634	3328
Total	141	1913	435	848	2392	178	400	82	246	407	57	634	7733
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	25	0	0	10	0	35
Added	132	0	71	0	0	0	0	354	178	95	296	0	1126
Total	132	0	71	0	0	0	0	379	178	95	306	0	1161
#3 Topsy/Center													
Base	10	12	0	0	29	19	11	0	14	0	0	0	95
Added	123	135	7	143	138	185	165	141	119	4	83	84	1327
Total	133	147	7	143	167	204	176	141	133	4	83	84	1422
#4 Snyder/Bigelow													
Base	10	0	4	0	0	0	1	164	16	8	174	1	378
Added	0	7	0	0	12	331	286	31	0	0	42	0	709
Total	10	7	4	0	12	331	287	195	16	8	216	1	1087
#5 Snyder/S.Edmonds													
Base	0	0	0	4	0	123	157	19	0	0	14	17	334
Added	0	0	0	0	0	42	31	0	0	0	0	0	73
Total	0	0	0	4	0	165	188	19	0	0	14	17	407
#6 US395/N.Sunridge													
Base	99	1310	5	88	1845	484	395	5	43	3	7	52	4336
Added	0	364	341	472	332	53	53	58	0	328	52	459	2512
Total	99	1674	346	560	2177	537	448	63	43	331	59	511	6848
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	98	0	0	62	0	160
Added	0	0	0	26	0	82	110	761	0	0	758	36	1773
Total	0	0	0	26	0	82	110	859	0	0	820	36	1933
#8 395/Clear Creek													
Base	86	1520	163	17	2118	211	218	31	2	211	29	2	4608
Added	49	1027	0	77	1232	0	0	15	63	0	14	53	2530
Total	135	2547	163	94	3350	211	218	46	65	211	43	55	7138

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	C	24.9	0.625	F	161.5	1.561	+136.587 D/V
# 2 Topsy/Access	A	0.0	0.000	F	52.9	0.000	+52.924 D/V
# 3 Topsy/Center	A	8.8	0.000	F	OVRFL	0.000	+1570.291 D/
# 4 Snyder/Bigelow	B	10.6	0.000	F	60.4	0.000	+49.791 D/V
# 5 Snyder/S.Edmonds	A	9.1	0.000	A	9.3	0.000	+ 0.217 D/V
# 6 US395/N.Sunridge	C	22.7	0.754	E	75.3	1.163	+52.615 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	F	OVRFL	0.000	+1259.892 D/
# 8 395/Clear Creek	C	25.1	0.717	E	61.6	1.111	+36.483 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	Yes
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	Yes

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #2 Topsy/Access

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1!	0	0	0 0	0	0	0 0	0	1 0	0 1	0	0 0
Final Vol.:	147	0	79	0	0	0	0	421	198	106	340	0
ApproachDel:	52.9			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=3.3]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=226]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1290]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #3 Topsy/Center

Future Volume Alternative: Peak Hour Warrant Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	148	163	8	159	186	227	196	157	148	4	92	93
ApproachDel:	xxxxxx			xxxxxx			1579.1			124.6		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=219.3]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=500]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1580]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=6.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=190]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1580]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #4 Snyder/Bigelow

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	11	8	4	0	13	368	319	217	18	9	240	1
ApproachDel:	60.4			16.4			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=23]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1208]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.7]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=381]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1208]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #5 Snyder/S.Edmonds

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	4	0	183	209	21	0	0	16	19
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.5]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=188]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=452]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #7 N.Sunridge/Access

****

Future Volume Alternative: Peak Hour Warrant Met

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		
Lanes:	0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	91	122	954	0	0	911	40
ApproachDel:	xxxxxx			1259.9			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=42.0]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=120]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2148]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec): 165 Critical Vol./Cap. (X): 1.561
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 161.5
Optimal Cycle:OPTIMIZED Level Of Service: F

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 29 Jun 2006 << PM												
Base Vol:	124	1471	18	8	1937	178	400	9	229	22	9	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:	124	1471	18	8	1937	178	400	9	229	22	9	0
Added Vol:	17	442	417	840	455	0	0	73	17	385	48	634
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	1913	435	848	2392	178	400	82	246	407	57	634
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	148	2014	458	893	2518	187	421	86	259	428	60	667
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	148	2014	458	893	2518	187	421	86	259	428	60	667
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.:	148	2014	458	893	2518	187	421	86	259	428	60	667
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.04	0.57	0.26	0.50	0.50	0.10	0.12	0.05	0.14	0.24	0.03	0.41
Crit Moves:		****		****					****	****		
Green/Cycle:	0.06	0.36	0.52	0.32	0.63	0.80	0.17	0.06	0.12	0.15	0.04	0.37
Volume/Cap:	0.78	1.56	0.49	1.56	0.78	0.13	0.71	0.72	1.20	1.56	0.71	1.12
Delay/Veh:	95.8	309	26.3	316.7	23.4	3.6	68.4	95.2	197.4	339.4	101	127.7
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:	95.8	309	26.3	316.7	23.4	3.6	68.4	95.2	197.4	339.4	101	127.7
HCM2kAvg:	6	94	15	88	31	2	12	6	21	43	4	45

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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	2 0	1	1 0	3 0	1	2 0	1 0	1	1 0	1 0	1
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	12
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.00
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.95	1.00	0.96	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:	0.97	0.95	1.00	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.06	0.36	0.52	0.32	0.63	0.80	0.17	0.06	0.12	0.15	0.04	0.37
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	3.5	46.1	13.6	43.1	28.0	1.9	9.6	3.9	11.9	20.7	2.7	30.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.1	47.8	1.0	44.8	3.2	0.1	2.0	1.8	8.9	22.7	1.6	14.8
HCM2KQueue:	5.6	94.0	14.6	87.9	31.2	2.0	11.6	5.7	20.8	43.4	4.3	45.4
70th%Factor:	1.19	1.11	1.17	1.11	1.15	1.20	1.17	1.19	1.16	1.13	1.19	1.13
70th%HCM2kQ:	6.6	104	17.1	97.7	35.8	2.4	13.7	6.8	24.1	49.2	5.1	51.4
85th%Factor:	1.55	1.31	1.48	1.32	1.41	1.58	1.50	1.55	1.45	1.37	1.56	1.37
85th%HCM2kQ:	8.7	123	21.6	115.7	43.9	3.2	17.5	8.8	30.2	59.5	6.7	62.0
90th%Factor:	1.70	1.40	1.59	1.40	1.48	1.76	1.62	1.70	1.54	1.45	1.72	1.44
90th%HCM2kQ:	9.5	132	23.2	123.5	46.4	3.6	18.9	9.7	32.1	62.7	7.4	65.4
95th%Factor:	1.94	1.50	1.77	1.50	1.61	2.04	1.81	1.94	1.69	1.55	1.97	1.55
95th%HCM2kQ:	10.8	141	25.8	132.2	50.2	4.1	21.1	11.0	35.2	67.4	8.5	70.2
98th%Factor:	2.35	1.70	2.03	1.70	1.79	2.55	2.11	2.35	1.90	1.74	2.42	1.73
98th%HCM2kQ:	13.1	160	29.5	149.5	55.9	5.2	24.5	13.3	39.6	75.3	10.4	78.5

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 10.0 Worst Case Level Of Service: F[52.9]

Street Name:	Site Access						Topsy Lane					
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 1!	0	0	0 0 0	0	0	0 0 0	1	0	0 1 0	0	0
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	25	0	0	10	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:	0	0	0	0	0	0	0	25	0	0	10	0
Added Vol:	132	0	71	0	0	0	0	354	178	95	296	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	132	0	71	0	0	0	0	379	178	95	306	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	147	0	79	0	0	0	0	421	198	106	340	0
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	147	0	79	0	0	0	0	421	198	106	340	0
Critical Gap Module:												
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1071	xxxx	520	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	619	xxxx	xxxxx
Potent Cap.:	247	xxxx	560	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	971	xxxx	xxxxx
Move Cap.:	225	xxxx	560	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	971	xxxx	xxxxx
Volume/Cap:	0.65	xxxx	0.14	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.11	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	284	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	6.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx
Shrd StpDel:	xxxxx	52.9	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	*	*	*	*	A	*	*
ApproachDel:		52.9			xxxxxx			xxxxxx			xxxxxx	
ApproachLOS:		F			*			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 516.3 Worst Case Level Of Service: F[1579.1]

Street Name:	Center Drive						Topsy Lane					
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 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	12	0	0	29	19	11	0	14	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:	10	12	0	0	29	19	11	0	14	0	0	0
Added Vol:	123	135	7	143	138	185	165	141	119	4	83	84
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	133	147	7	143	167	204	176	141	133	4	83	84
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	148	163	8	159	186	227	196	157	148	4	92	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	148	163	8	159	186	227	196	157	148	4	92	93
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
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:	412	xxxx	xxxxx	171	xxxx	xxxxx	1172	1083	299	1232	1193	167
Potent Cap.:	1158	xxxx	xxxxx	1418	xxxx	xxxxx	171	219	745	155	189	882
Move Cap.:	1158	xxxx	xxxxx	1418	xxxx	xxxxx	61	165	745	16	142	882
Volume/Cap:	0.13	xxxx	xxxx	0.11	xxxx	xxxx	3.19	0.95	0.20	0.27	0.65	0.11
Level Of Service Module:												
Queue:	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.6	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	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	115	xxxxx	xxxx	186	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	51.7	xxxxx	xxxxx	8.7	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1579	xxxxx	xxxxx	125	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			1579.1			124.6		
ApproachLOS:	*			*			F			F		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #3 Topsy/Center

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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 8.6 Worst Case Level Of Service: F[60.4]

Street Name:	Bigelow Drive						Snyder Avenue					
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 1! 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	0	4	0	0	0	1	164	16	8	174	1
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:	10	0	4	0	0	0	1	164	16	8	174	1
Added Vol:	0	7	0	0	12	331	286	31	0	0	42	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	10	7	4	0	12	331	287	195	16	8	216	1
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	11	8	4	0	13	368	319	217	18	9	240	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	11	8	4	0	13	368	319	217	18	9	240	1
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	xxxxx	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1312	1122	226	xxxx	1131	241	241	xxxx	xxxxx	234	xxxx	xxxxx
Potent Cap.:	137	208	819	xxxx	205	803	1337	xxxx	xxxxx	1345	xxxx	xxxxx
Move Cap.:	53	146	819	xxxx	145	803	1337	xxxx	xxxxx	1345	xxxx	xxxxx
Volume/Cap:	0.21	0.05	0.01	xxxx	0.09	0.46	0.24	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.9	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.5	xxxx	xxxxx	7.7	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	88	xxxxx	xxxx	xxxx	693	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.0	xxxxx	xxxxx	xxxx	3.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	60.4	xxxxx	xxxxx	xxxx	16.4	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	C	*	*	*	*	*	*
ApproachDel:		60.4			16.4			xxxxxx			xxxxxx	
ApproachLOS:		F			C			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[9.3]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	0	0	0	4	0	123	157	19	0	0	14	17
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	4	0	123	157	19	0	0	14	17
Added Vol:	0	0	0	0	0	42	31	0	0	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	4	0	165	188	19	0	0	14	17
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	4	0	183	209	21	0	0	16	19
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	4	0	183	209	21	0	0	16	19
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	464	xxxx	25	34	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	560	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	496	xxxx	1057	1590	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	0.17	0.13	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1029	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.7	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.3	xxxxx	7.6	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.3			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #5 Snyder/S.Edmonds

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 145 Critical Vol./Cap. (X): 1.163
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 75.3
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0 1		1 0 2	0 1		2 0 1	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	99	1310	5	88	1845	484	395	5	43	3	7	52
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:	99	1310	5	88	1845	484	395	5	43	3	7	52
Added Vol:	0	364	341	472	332	53	53	58	0	328	52	459
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	99	1674	346	560	2177	537	448	63	43	331	59	511
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	104	1762	364	589	2292	565	472	66	45	348	62	538
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	104	1762	364	589	2292	565	472	66	45	348	62	538
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.:	104	1762	364	589	2292	565	472	66	45	348	62	538
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.03	0.47	0.20	0.33	0.62	0.32	0.13	0.04	0.02	0.19	0.03	0.29
Crit Moves:		****		****				****		****		
Green/Cycle:	0.03	0.41	0.57	0.29	0.66	0.82	0.16	0.03	0.06	0.17	0.04	0.33
Volume/Cap:	0.93	1.16	0.35	1.16	0.93	0.38	0.84	1.16	0.40	1.16	0.84	0.90
Delay/Veh:	133.1	124	16.8	145.0	28.6	3.6	70.1	241	67.8	164.2	123	63.8
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:	133.1	124	16.8	145.0	28.6	3.6	70.1	241	67.8	164.2	123	63.8
HCM2kAvg:	5	56	8	41	48	7	13	6	2	25	5	26

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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 2	0 1		1 0 2	0 1		2 0 1	0 1		1 0 1	0 1	
Lane Group:	L	T	R	L	T	R	L	T	R	L	T	R
#LnsInGrps:	2	2	1	1	2	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	16
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.13
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.41	0.57	0.29	0.66	0.82	0.16	0.03	0.06	0.17	0.04	0.33
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	2.2	35.5	7.9	25.0	40.6	6.0	9.7	2.7	1.8	14.8	2.5	20.7
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.4	20.7	0.5	15.8	7.7	0.6	3.3	3.5	0.6	10.7	2.1	5.4
HCM2KQueue:	4.6	56.2	8.4	40.8	48.3	6.6	13.0	6.2	2.4	25.5	4.6	26.0
70th%Factor:	1.19	1.12	1.18	1.14	1.13	1.18	1.17	1.19	1.19	1.15	1.19	1.15
70th%HCM2kQ:	5.4	63.2	9.9	46.3	54.6	7.9	15.3	7.3	2.8	29.4	5.5	30.0
85th%Factor:	1.56	1.35	1.53	1.38	1.36	1.54	1.49	1.54	1.58	1.43	1.56	1.43
85th%HCM2kQ:	7.1	75.7	12.8	56.2	65.7	10.2	19.5	9.6	3.8	36.4	7.2	37.1
90th%Factor:	1.72	1.42	1.66	1.45	1.44	1.69	1.61	1.69	1.76	1.51	1.72	1.51
90th%HCM2kQ:	7.9	80.1	14.0	59.2	69.4	11.2	21.0	10.5	4.2	38.5	7.9	39.3
95th%Factor:	1.97	1.53	1.88	1.56	1.54	1.91	1.79	1.93	2.03	1.65	1.96	1.64
95th%HCM2kQ:	9.0	85.8	15.8	63.7	74.5	12.7	23.4	11.9	4.8	41.9	9.1	42.8
98th%Factor:	2.40	1.71	2.22	1.74	1.72	2.30	2.07	2.32	2.53	1.84	2.40	1.83
98th%HCM2kQ:	11.0	96.3	18.7	71.1	83.3	15.3	27.0	14.4	6.0	46.9	11.1	47.8

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 71.2 Worst Case Level Of Service: F[1259.9]

Street Name:	Site Access						N.Sunridge					
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	1! 0	0	0 1	0 0	0	0 0	0 1	0
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	98	0	0	62	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:	0	0	0	0	0	0	0	98	0	0	62	0
Added Vol:	0	0	0	26	0	82	110	761	0	0	758	36
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	82	110	859	0	0	820	36
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	91	122	954	0	0	911	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	91	122	954	0	0	911	40
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	2896	xxxx	1266	934	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	13	xxxx	153	545	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	11	xxxx	153	545	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	2.69	xxxx	0.59	0.22	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	13.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT - LTR - RT			LT - LTR - RT			LT - LTR - RT			LT - LTR - RT		
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	36	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	13.7	xxxxx	0.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	1260	xxxxx	13.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	B	*	*	*	*	*
ApproachDel:	xxxxxx			1259.9			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #7 N.Sunridge/Access

****

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:							#76					
Dist(miles):							0.250					
Speed (mph):							30.00					
SignalIndex:							#6					
Cycle Time:							145 secs					
InitVolume:							88	5				
Saturation:							1769	1881				
ArrivalType:							3	3				
G/C:							0.09	0.10				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.090	0.098				
gq1:							6.56	0.35				
gq2:							0.34	0.00				
gq:							6.90	0.35				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.550					
beta:							0.645					
ta (secs):							30.000					
F:							0.086					
f:							1.000	1.000				
vcmax:							817	58				
vcg:							505	20				
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:	0	0	0	0	0	0	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
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec): 180 Critical Vol./Cap. (X): 1.111
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 61.6
Optimal Cycle:OPTIMIZED Level Of Service: E

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	1	1 0	1 0	3	0 1	2 0	1	0 1	1 0	0	1 0
Volume Module: >> Count Date: 9 Apr 2008 << PM												
Base Vol:	86	1520	163	17	2118	211	218	31	2	211	29	2
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:	86	1520	163	17	2118	211	218	31	2	211	29	2
Added Vol:	49	1027	0	77	1232	0	0	15	63	0	14	53
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	2547	163	94	3350	211	218	46	65	211	43	55
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	142	2681	172	99	3526	222	229	48	68	222	45	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	142	2681	172	99	3526	222	229	48	68	222	45	58
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.:	142	2681	172	99	3526	222	229	48	68	222	45	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.92	1.05	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.92	1.10
Lanes:	2.00	1.89	0.11	1.00	3.00	1.00	2.00	1.00	1.00	1.00	0.48	0.52
Final Sat.:	3432	3319	212	1769	5083	1793	3467	1881	1811	1805	842	1078
Capacity Analysis Module:												
Vol/Sat:	0.04	0.81	0.81	0.06	0.69	0.12	0.07	0.03	0.04	0.12	0.05	0.05
Crit Moves:		****		****				****		****		
Green/Cycle:	0.04	0.73	0.73	0.05	0.73	0.81	0.07	0.02	0.07	0.11	0.06	0.11
Volume/Cap:	0.95	1.11	1.11	1.11	0.95	0.15	0.90	1.11	0.56	1.11	0.90	0.49
Delay/Veh:	143.0	80.9	80.9	214.2	27.0	3.9	113.2	259	87.4	176.8	137	77.0
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:	143.0	80.9	80.9	214.2	27.0	3.9	113.2	259	87.4	176.8	137	77.0
HCM2kAvg:	7	96	105	10	60	3	9	5	4	19	7	6

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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	1 0		1 0 3 0		1	2 0 1 0		1	1 0 0 1		0
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.92	0.92
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.92	1.10
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.05	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.92	1.10
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.73	0.73	0.05	0.73	0.81	0.07	0.02	0.07	0.11	0.06	0.11
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	3.7	70.9	78.0	5.2	51.1	2.4	6.0	2.4	3.3	11.7	4.7	5.2
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.8	24.9	26.8	4.3	8.6	0.2	3.1	2.8	1.1	7.1	2.8	0.9
HCM2KQueue:	6.5	95.8	104.8	9.5	59.8	2.6	9.1	5.2	4.4	18.8	7.5	6.1
70th%Factor:	1.18	1.11	1.11	1.18	1.12	1.19	1.18	1.19	1.19	1.16	1.18	1.19
70th%HCM2kQ:	7.7	106	116.1	11.2	67.1	3.1	10.7	6.2	5.3	21.8	8.9	7.3
85th%Factor:	1.54	1.31	1.31	1.52	1.34	1.57	1.52	1.55	1.56	1.46	1.53	1.54
85th%HCM2kQ:	10.1	126	137.2	14.5	80.1	4.1	13.8	8.1	6.9	27.4	11.5	9.5
90th%Factor:	1.69	1.40	1.40	1.65	1.42	1.75	1.65	1.71	1.72	1.56	1.67	1.69
90th%HCM2kQ:	11.0	134	147.0	15.7	84.9	4.6	15.0	8.9	7.6	29.2	12.6	10.4
95th%Factor:	1.92	1.50	1.50	1.85	1.52	2.02	1.86	1.95	1.97	1.71	1.90	1.93
95th%HCM2kQ:	12.5	144	157.4	17.7	90.9	5.3	16.9	10.1	8.7	32.1	14.2	11.8
98th%Factor:	2.31	1.70	1.70	2.18	1.71	2.52	2.20	2.37	2.41	1.94	2.26	2.32
98th%HCM2kQ:	15.1	163	178.2	20.8	102	6.6	20.0	12.3	10.7	36.3	17.0	14.2

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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: Big George													
1	US395/Topsy	0	35	52	101	47	0	0	25	0	39	19	75
2	Topsy/Access	132	0	71	0	0	0	0	0	178	95	0	0
3	Topsy/Center	17	8	0	0	10	79	58	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	31	0	0	42	0
5	Snyder/S.Edmo	0	0	0	0	0	42	31	0	0	0	0	0
6	US395/N.Sunri	0	52	52	47	39	0	0	10	0	39	8	35
7	N.Sunridge/Ac	0	0	0	26	0	82	110	0	0	0	0	36
8	395/Clear Cre	5	105	0	47	141	0	0	0	6	0	0	35
Zone #2: Retail 4.2													
1	US395/Topsy	17	407	0	142	407	0	0	17	17	0	0	0
2	Topsy/Access	0	0	0	0	0	0	0	0	0	0	0	0
3	Topsy/Center	0	127	0	0	127	0	0	0	0	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	116	116	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	0	289	425	0	0	0	40	0	289	40	424
7	N.Sunridge/Ac	0	0	0	0	0	0	0	754	0	0	754	0
8	395/Clear Cre	17	390	0	0	520	0	0	12	29	0	12	0
Zone #3: Retail 4.1													
1	US395/Topsy	0	0	320	506	0	0	0	27	0	320	27	506
2	Topsy/Access	0	0	0	0	0	0	0	213	0	0	213	0
3	Topsy/Center	107	0	0	0	0	107	107	0	107	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	107	107	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	266	0	0	266	53	53	0	0	0	0	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	0	0	0	0	0
8	395/Clear Cre	27	479	0	0	479	0	0	0	27	0	0	0
Zone #4: Schulz Ranch													
1	US395/Topsy	0	0	45	92	0	0	0	4	0	27	2	54
2	Topsy/Access	0	0	0	0	0	0	0	141	0	0	83	0
3	Topsy/Center	0	0	7	143	0	0	0	141	0	4	83	84
4	Snyder/Bigelo	0	7	0	0	12	109	64	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	45	0	0	27	0	0	7	0	0	4	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	7	0	0	4	0
8	395/Clear Cre	0	53	0	30	91	0	0	4	1	0	2	18

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Scenario Report

Scenario:	Ex+Proj.+Shultz+Retail PM
Command:	Plus 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:	Existing

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Generation Report
ITE Trip Generation
Forecast for PM

Zone #	Subzone	Amount	Units	Rate In	Rate Out	Trips In	Trips Out	Total Trips	% Of Total
1	Big George	1.00	Mixed Use	419.00	311.00	419	311	730	12.9
	Zone 1 Subtotal					419	311	730	12.9
2	Retail 4.2	1.00	Mixed	1156.00	1155.00	1156	1155	2311	40
	Zone 2 Subtotal					1156	1155	2311	40.9
3	Retail 4.1	1.00	Mixed	1065.00	1065.00	1065	1065	2130	37
	Zone 3 Subtotal					1065	1065	2130	37.7
4	Schulz Ranch	1.00	Subdivision	303.00	178.00	303	178	481	8.5
	Zone 4 Subtotal					303	178	481	8.5
TOTAL						2943	2709	5652	100.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Trip Distribution Report
County Trip Distribution
Percent Of Trips Default

Zone	To Gates 1	2	3	4	5
1	45.0	25.0	10.0	10.0	10.0
2	45.0	25.0	10.0	10.0	10.0
3	45.0	25.0	10.0	10.0	10.0
4	40.0	15.0	5.0	40.0	0.0

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy													
Base	145	1721	21	9	2266	208	468	11	268	26	11	0	5154
Added	17	442	417	840	455	0	0	73	17	385	48	634	3328
Total	162	2163	438	849	2721	208	468	84	285	411	59	634	8482
#2 Topsy/Access													
Base	0	0	0	0	0	0	0	29	0	0	12	0	41
Added	132	0	71	0	0	0	0	354	178	95	296	0	1126
Total	132	0	71	0	0	0	0	383	178	95	308	0	1167
#3 Topsy/Center													
Base	12	14	0	0	34	22	13	0	16	0	0	0	111
Added	123	135	7	143	138	185	165	141	119	4	83	84	1327
Total	135	149	7	143	172	207	178	141	135	4	83	84	1438
#4 Snyder/Bigelow													
Base	12	0	5	0	0	0	1	192	19	9	204	1	442
Added	0	7	0	0	12	331	286	31	0	0	42	0	709
Total	12	7	5	0	12	331	287	223	19	9	246	1	1151
#5 Snyder/S.Edmonds													
Base	0	0	0	5	0	144	184	22	0	0	16	20	391
Added	0	0	0	0	0	42	31	0	0	0	0	0	73
Total	0	0	0	5	0	186	215	22	0	0	16	20	464
#6 US395/N.Sunridge													
Base	116	1533	6	103	2159	566	462	6	50	4	8	61	5073
Added	0	364	341	472	332	53	53	58	0	328	52	459	2512
Total	116	1897	347	575	2491	619	515	64	50	332	60	520	7585
#7 N.Sunridge/Access													
Base	0	0	0	0	0	0	0	115	0	0	73	0	187
Added	0	0	0	26	0	82	110	761	0	0	758	36	1773
Total	0	0	0	26	0	82	110	876	0	0	831	36	1960
#8 395/Clear Creek													
Base	101	1778	191	20	2478	247	255	36	2	247	34	2	5391
Added	49	1027	0	77	1232	0	0	15	63	0	14	53	2530
Total	150	2805	191	97	3710	247	255	51	65	247	48	55	7921

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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 US395/Topsy	C	27.9	0.735	F	183.9	1.664	+155.966 D/V
# 2 Topsy/Access	A	0.0	0.000	F	54.2	0.000	+54.235 D/V
# 3 Topsy/Center	A	8.8	0.000	F	OVRFL	0.000	+1679.129 D/
# 4 Snyder/Bigelow	B	11.1	0.000	F	78.3	0.000	+67.203 D/V
# 5 Snyder/S.Edmonds	A	9.2	0.000	A	9.5	0.000	+ 0.237 D/V
# 6 US395/N.Sunridge	C	27.7	0.883	F	99.8	1.245	+72.125 D/V
# 7 N.Sunridge/Access	A	0.0	0.000	F	OVRFL	0.000	+1219.350 D/
# 8 395/Clear Creek	C	29.6	0.839	F	98.7	1.234	+69.087 D/V

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Summary Report

Intersection	Base Met	Future Met
# 2 Topsy/Access	???	No
# 3 Topsy/Center	???	Yes
# 4 Snyder/Bigelow	???	No
# 5 Snyder/S.Edmonds	???	No
# 7 N.Sunridge/Access	???	Yes

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #2 Topsy/Access

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 0 0			0 0 0 1 0			0 1 0 0 0		
Final Vol.:	147	0	79	0	0	0	0	426	198	106	342	0
ApproachDel:	54.2			xxxxxx			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=3.4]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=226]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=1297]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #3 Topsy/Center

Future Volume Alternative: Peak Hour Warrant Met

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		
Lanes:	0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	150	166	8	159	191	230	198	157	150	4	92	93
ApproachDel:	xxxxxx			xxxxxx			1688.0			167.8		

Approach[eastbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=236.7]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=505]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1598]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[westbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=8.9]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=190]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1598]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #4 Snyder/Bigelow

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 1! 0 0			0 0 0 1 0			0 0 1! 0 0			0 0 1! 0 0		
Final Vol.:	13	8	5	0	13	368	319	248	21	10	273	1
ApproachDel:	78.3			17.8			xxxxxx			xxxxxx		

Approach[northbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=26]
FAIL - Approach volume less than 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1279]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=1.9]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=381]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=4][total volume=1279]
SUCCEED - Total volume greater than or equal to 800 for intersection with four or more approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

****

Intersection #5 Snyder/S.Edmonds

****

Future Volume Alternative: Peak Hour Warrant NOT Met

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		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	5	0	207	239	25	0	0	18	22
ApproachDel:	xxxxxx			9.5			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=0.6]
FAIL - Vehicle-hours less than 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=212]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=515]
FAIL - Total volume less than 650 for intersection
with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Signal Warrant Report

Intersection #7 N.Sunridge/Access

Future Volume Alternative: Peak Hour Warrant Met

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		
Lanes:	0 0 0	0 0	0	0 0	1! 0	0	0 1	0 0	0	0 0	0 1	0
Final Vol.:	0	0	0	29	0	91	122	973	0	0	923	40
ApproachDel:	xxxxxx			1219.3			xxxxxx			xxxxxx		

Approach[southbound][lanes=1][control=Stop]
Signal Warrant Rule #1: [vehicle-hours=40.6]
SUCCEED - Vehicle-hours greater than or equal to 4 for one lane approach.
Signal Warrant Rule #2: [approach volume=120]
SUCCEED - Approach volume greater than or equal to 100 for one lane approach.
Signal Warrant Rule #3: [approach count=3][total volume=2178]
SUCCEED - Total volume greater than or equal to 650 for intersection with less than four approaches.

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #1 US395/Topsy

Cycle (sec):	165	Critical Vol./Cap. (X):	1.664
Loss Time (sec):	16 (Y+R = 4 sec)	Average Delay (sec/veh):	183.9
Optimal Cycle:	180	Level Of Service:	F

Street Name:	US 395						Topsy Lane					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 2	0 1		1 0 3	0 1		2 0 1	0 1		1 0 1	0 1	
Volume Module: >> Count Date: 29 Jun 2006 << PM												
Base Vol:	124	1471	18	8	1937	178	400	9	229	22	9	0
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bse:	145	1721	21	9	2266	208	468	11	268	26	11	0
Added Vol:	17	442	417	840	455	0	0	73	17	385	48	634
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	162	2163	438	849	2721	208	468	84	285	411	59	634
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	171	2277	461	894	2865	219	493	88	300	432	62	667
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	171	2277	461	894	2865	219	493	88	300	432	62	667
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.:	171	2277	461	894	2865	219	493	88	300	432	62	667
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.93	0.94	0.93	0.89	0.94	0.92	1.00	0.96	0.95	1.00	0.85
Lanes:	2.00	2.00	1.00	1.00	3.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3432	3538	1793	1769	5083	1793	3502	1900	1830	1805	1900	1615
Capacity Analysis Module:												
Vol/Sat:	0.05	0.64	0.26	0.51	0.56	0.12	0.14	0.05	0.16	0.24	0.03	0.41
Crit Moves:		****		****					****	****		
Green/Cycle:	0.06	0.39	0.53	0.30	0.63	0.81	0.17	0.07	0.12	0.14	0.04	0.34
Volume/Cap:	0.89	1.66	0.48	1.66	0.89	0.15	0.81	0.67	1.32	1.66	0.81	1.20
Delay/Veh:	113.1	353	24.9	364.5	28.7	3.5	74.0	88.1	241.8	385.9	126	161.8
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:	113.1	353	24.9	364.5	28.7	3.5	74.0	88.1	241.8	385.9	126	161.8
HCM2kAvg:	7	111	14	92	42	2	15	6	26	46	5	49

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

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 2	0 1		1	0 3	0 1		2	0 1	0 1		1	0 1	0 1	
Lane Group:	L	T	R		L	T	R		L	T	R		L	T	R	
#LnsInGrps:	2	2	1		1	3	1		2	1	1		1	1	1	
HCM Ops Input Saturation Adj Module:																
Lane Width:	12	12	16		12	12	16		12	12	16		12	12	12	
CrosswalkWid		8				8				8				8		
% Hev Veh:		2				2				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	1.13		1.00	1.00	1.13		1.00	1.00	1.13		1.00	1.00	1.00	
Hev Veh Adj:	0.98	0.98	0.98		0.98	0.98	0.98		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:	0.93	0.98	0.94		0.93	0.98	0.94		0.95	1.00	0.96		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:	0.97	0.95	1.00		1.00	0.91	1.00		0.97	1.00	1.00		1.00	1.00	1.00	
Fnl Sat Adj:	0.90	0.93	0.94		0.93	0.89	0.94		0.92	1.00	0.96		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	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #1 US395/Topsy

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.06	0.39	0.53	0.30	0.63	0.81	0.17	0.07	0.12	0.14	0.04	0.34
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	4.1	52.2	13.4	43.1	36.6	2.2	11.4	3.9	13.7	20.9	2.8	30.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	2.7	59.2	0.9	49.3	5.7	0.2	3.1	1.6	12.1	25.0	2.0	18.6
HCM2KQueue:	6.8	111	14.3	92.5	42.4	2.4	14.5	5.5	25.8	45.8	4.8	49.2
70th%Factor:	1.18	1.11	1.17	1.11	1.13	1.19	1.17	1.19	1.15	1.13	1.19	1.13
70th%HCM2kQ:	8.1	123	16.7	102.6	48.1	2.8	17.0	6.6	29.8	51.9	5.7	55.5
85th%Factor:	1.54	1.31	1.49	1.31	1.37	1.58	1.48	1.55	1.43	1.37	1.56	1.36
85th%HCM2kQ:	10.5	146	21.2	121.5	58.2	3.8	21.6	8.6	36.9	62.6	7.5	66.8
90th%Factor:	1.68	1.40	1.60	1.40	1.45	1.76	1.59	1.70	1.51	1.44	1.71	1.43
90th%HCM2kQ:	11.5	156	22.8	129.8	61.4	4.2	23.2	9.4	39.0	66.0	8.3	70.5
95th%Factor:	1.91	1.50	1.77	1.50	1.56	2.03	1.77	1.94	1.64	1.55	1.96	1.54
95th%HCM2kQ:	13.0	167	25.3	139.0	66.0	4.8	25.7	10.7	42.4	70.9	9.5	75.6
98th%Factor:	2.29	1.70	2.03	1.70	1.74	2.53	2.03	2.35	1.84	1.73	2.39	1.72
98th%HCM2kQ:	15.6	189	29.0	157.3	73.7	6.0	29.5	13.0	47.5	79.3	11.6	84.7

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #2 Topsy/Access

Average Delay (sec/veh): 10.2 Worst Case Level Of Service: F[54.2]

Street Name:	Site Access									Topsy Lane					
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 1! 0	0	0	0 0 0	0	0	0 0	1 0	0	1	0 0	0		
Volume Module: PM															
Base Vol:	0	0	0	0	0	0	0	25	0	0	10	0			
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.17	1.00	1.00	1.17	1.00			
Initial Bse:	0	0	0	0	0	0	0	29	0	0	12	0			
Added Vol:	132	0	71	0	0	0	0	354	178	95	296	0			
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0			
Initial Fut:	132	0	71	0	0	0	0	383	178	95	308	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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90			
PHF Volume:	147	0	79	0	0	0	0	426	198	106	342	0			
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0			
Final Vol.:	147	0	79	0	0	0	0	426	198	106	342	0			
Critical Gap Module:															
Critical Gp:	6.4	xxxx	6.2	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	4.1	xxxx	xxxxx			
FollowUpTim:	3.5	xxxx	3.3	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	2.2	xxxx	xxxxx			
Capacity Module:															
Cnflict Vol:	1078	xxxx	525	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	624	xxxx	xxxxx			
Potent Cap.:	244	xxxx	557	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	967	xxxx	xxxxx			
Move Cap.:	223	xxxx	557	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	967	xxxx	xxxxx			
Volume/Cap:	0.66	xxxx	0.14	xxxx	xxxx	xxxx	xxxx	xxxx	xxxx	0.11	xxxx	xxxx			
Level Of Service Module:															
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx			
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx			
LOS by Move:	*	*	*	*	*	*	*	*	*	A	*	*			
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT			
Shared Cap.:	xxxx	282	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx			
SharedQueue:	xxxxx	6.3	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.4	xxxx	xxxxx			
Shrd StpDel:	xxxxx	54.2	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	9.2	xxxx	xxxxx			
Shared LOS:	*	F	*	*	*	*	*	*	*	A	*	*			
ApproachDel:		54.2			xxxxxx			xxxxxx			xxxxxx				
ApproachLOS:		F			*			*			*				

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #2 Topsy/Access

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #3 Topsy/Center

Average Delay (sec/veh): 554.7 Worst Case Level Of Service: F[1688.0]

Street Name:	Center Drive						Topsy Lane					
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	1! 0	0	0 0	1! 0	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	12	0	0	29	19	11	0	14	0	0	0
Growth Adj:	1.17	1.17	1.00	1.00	1.17	1.17	1.17	1.00	1.17	1.00	1.00	1.00
Initial Bse:	12	14	0	0	34	22	13	0	16	0	0	0
Added Vol:	123	135	7	143	138	185	165	141	119	4	83	84
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	135	149	7	143	172	207	178	141	135	4	83	84
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	150	166	8	159	191	230	198	157	150	4	92	93
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	150	166	8	159	191	230	198	157	150	4	92	93
Critical Gap Module:												
Critical Gp:	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx	7.1	6.5	6.2	7.1	6.5	6.2
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:	421	xxxx	xxxxx	173	xxxx	xxxxx	1186	1097	306	1246	1208	169
Potent Cap.:	1149	xxxx	xxxxx	1416	xxxx	xxxxx	167	215	738	152	185	880
Move Cap.:	1149	xxxx	xxxxx	1416	xxxx	xxxxx	58	162	738	12	139	880
Volume/Cap:	0.13	xxxx	xxxx	0.11	xxxx	xxxx	3.40	0.97	0.20	0.37	0.66	0.11
Level Of Service Module:												
Queue:	0.4	xxxx	xxxxx	0.4	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	8.6	xxxx	xxxxx	7.9	xxxx	xxxxx	xxxxx	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	110	xxxxx	xxxx	167	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	52.9	xxxxx	xxxxx	10.0	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	xxxxx	1688	xxxxx	xxxxx	168	xxxxx
Shared LOS:	*	*	*	*	*	*	*	F	*	*	F	*
ApproachDel:	xxxxxx			xxxxxx			1688.0			167.8		
ApproachLOS:	*			*			F			F		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #3 Topsy/Center

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #4 Snyder/Bigelow

Average Delay (sec/veh): 9.1 Worst Case Level Of Service: F[78.3]

Street Name:	Bigelow Drive						Snyder Avenue					
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	1! 0	0	0 0	0 1	0	0 0	1! 0	0	0 0	1! 0	0
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	10	0	4	0	0	0	1	164	16	8	174	1
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bse:	12	0	5	0	0	0	1	192	19	9	204	1
Added Vol:	0	7	0	0	12	331	286	31	0	0	42	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	12	7	5	0	12	331	287	223	19	9	246	1
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	13	8	5	0	13	368	319	248	21	10	273	1
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	13	8	5	0	13	368	319	248	21	10	273	1
Critical Gap Module:												
Critical Gp:	7.1	6.5	6.2	xxxxx	6.5	6.2	4.1	xxxx	xxxxx	4.1	xxxx	xxxxx
FollowUpTim:	3.5	4.0	3.3	xxxxx	4.0	3.3	2.2	xxxx	xxxxx	2.2	xxxx	xxxxx
Capacity Module:												
Cnflict Vol:	1381	1191	258	xxxx	1201	274	274	xxxx	xxxxx	268	xxxx	xxxxx
Potent Cap.:	123	189	785	xxxx	186	770	1301	xxxx	xxxxx	1307	xxxx	xxxxx
Move Cap.:	45	132	785	xxxx	130	770	1301	xxxx	xxxxx	1307	xxxx	xxxxx
Volume/Cap:	0.29	0.06	0.01	xxxx	0.10	0.48	0.25	xxxx	xxxx	0.01	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	1.0	xxxx	xxxxx	0.0	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	8.7	xxxx	xxxxx	7.8	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	A	*	*
Movement:	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT	LT -	LTR -	RT
Shared Cap.:	xxxx	74	xxxxx	xxxx	xxxx	657	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	1.3	xxxxx	xxxxx	xxxx	3.7	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	78.3	xxxxx	xxxxx	xxxx	17.8	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	F	*	*	*	C	*	*	*	*	*	*
ApproachDel:		78.3			17.8			xxxxxx			xxxxxx	
ApproachLOS:		F			C			*			*	

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

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Intersection #4 Snyder/Bigelow

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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	12 feet	12 feet	12 feet

Time Period: 0.25 hour

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #5 Snyder/S.Edmonds

Average Delay (sec/veh): 7.4 Worst Case Level Of Service: A[9.5]

Street Name:	S.Edmonds Drive						Snyder Avenue					
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 1! 0 0			0 1 0 0 0			0 0 0 1 0		
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	0	0	0	4	0	123	157	19	0	0	14	17
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bse:	0	0	0	5	0	144	184	22	0	0	16	20
Added Vol:	0	0	0	0	0	42	31	0	0	0	0	0
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	5	0	186	215	22	0	0	16	20
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:	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	5	0	207	239	25	0	0	18	22
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	5	0	207	239	25	0	0	18	22
Critical Gap Module:												
Critical Gp:	xxxxx	xxxx	xxxxx	6.4	xxxx	6.2	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	531	xxxx	29	40	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx	xxxx	xxxxx	512	xxxx	1051	1582	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx	xxxx	xxxxx	444	xxxx	1051	1582	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx	xxxx	xxxx	0.01	xxxx	0.20	0.15	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx	xxxx	xxxxx	xxxxx	xxxx	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	A	*	*	*	*	*
Movement:	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT	LT	LTR	RT
Shared Cap.:	xxxx	xxxx	xxxxx	xxxx	1017	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx	xxxx	xxxxx	xxxxx	0.8	xxxxx	0.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx	xxxx	xxxxx	xxxxx	9.5	xxxxx	7.7	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	A	*	A	*	*	*	*	*
ApproachDel:	xxxxxx			9.5			xxxxxx			xxxxxx		
ApproachLOS:	*			A			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

Intersection #5 Snyder/S.Edmonds

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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #6 US395/N.Sunridge

Cycle (sec): 145 Critical Vol./Cap. (X): 1.245
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 99.8
Optimal Cycle: 180 Level Of Service: F

Street Name:	US 395						N.Sunridge					
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:	Ovl			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0	2 0	1	1 0	2 0	1	2 0	1 0	1	1 0	1 0	1
Volume Module: >> Count Date: 28 Jun 2006 << PM												
Base Vol:	99	1310	5	88	1845	484	395	5	43	3	7	52
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bse:	116	1533	6	103	2159	566	462	6	50	4	8	61
Added Vol:	0	364	341	472	332	53	53	58	0	328	52	459
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	116	1897	347	575	2491	619	515	64	50	332	60	520
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	122	1997	365	605	2622	652	542	67	53	349	63	547
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	122	1997	365	605	2622	652	542	67	53	349	63	547
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.:	122	1997	365	605	2622	652	542	67	53	349	63	547
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.93	0.98	0.94	0.93	0.98	0.94	0.94	0.99	0.95	0.95	1.00	0.96
Lanes:	2.00	2.00	1.00	1.00	2.00	1.00	2.00	1.00	1.00	1.00	1.00	1.00
Final Sat.:	3538	3724	1793	1769	3724	1793	3574	1881	1811	1805	1900	1830
Capacity Analysis Module:												
Vol/Sat:	0.03	0.54	0.20	0.34	0.70	0.36	0.15	0.04	0.03	0.19	0.03	0.30
Crit Moves:		****		****				****		****		
Green/Cycle:	0.03	0.43	0.59	0.27	0.67	0.82	0.15	0.03	0.06	0.16	0.03	0.31
Volume/Cap:	1.05	1.24	0.35	1.24	1.05	0.44	1.01	1.24	0.47	1.24	1.01	0.97
Delay/Veh:	166.5	157	15.8	179.1	55.4	3.8	101.7	273	68.9	197.7	185	80.0
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:	166.5	157	15.8	179.1	55.4	3.8	101.7	273	68.9	197.7	185	80.0
HCM2kAvg:	6	69	8	45	70	8	18	7	3	27	5	29

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

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	2	0	1		1	0	2	0	1		2	0	1	0	1		1	0	1	0	1	
Lane Group:	L		T		R		L		T		R		L		T		R		L		T		R	
#LnsInGrps:	2		2		1		1		2		1		2		1		1		1		1		1	
HCM Ops Input Saturation Adj Module:																								
Lane Width:	12		12		16		12		12		16		12		12		16		12		12		16	
CrosswalkWid			8						8						8						8			
% Hev Veh:			2						2						1						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	1.13				1.00	1.00	1.13				1.00	1.00	1.13				1.00	1.00	1.13			
Hev Veh Adj:	0.98	0.98	0.98				0.98	0.98	0.98				0.99	0.99	0.99				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:	0.93	0.98	0.94				0.93	0.98	0.94				0.94	0.99	0.95				0.95	1.00	0.96			
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	1.00	1.00				1.00	1.00	1.00			
Fnl Sat Adj:	0.93	0.98	0.94				0.93	0.98	0.94				0.94	0.99	0.95				0.95	1.00	0.96			
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			

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #6 US395/N.Sunridge

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.03	0.43	0.59	0.27	0.67	0.82	0.15	0.03	0.06	0.16	0.03	0.31
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	2.6	40.2	7.6	25.7	52.8	7.3	11.5	2.7	2.1	14.8	2.6	21.8
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	3.0	28.9	0.5	19.7	17.0	0.8	6.1	3.8	0.8	12.7	2.8	7.3
HCM2KQueue:	5.6	69.1	8.2	45.4	69.8	8.1	17.6	6.5	2.9	27.4	5.4	29.1
70th%Factor:	1.19	1.12	1.18	1.13	1.12	1.18	1.16	1.18	1.19	1.15	1.19	1.15
70th%HCM2kQ:	6.6	77.2	9.7	51.4	77.9	9.5	20.5	7.8	3.4	31.6	6.4	33.4
85th%Factor:	1.55	1.33	1.53	1.37	1.33	1.53	1.47	1.54	1.57	1.42	1.55	1.41
85th%HCM2kQ:	8.7	91.9	12.5	62.0	92.7	12.3	25.8	10.1	4.5	39.0	8.4	41.1
90th%Factor:	1.70	1.41	1.67	1.44	1.41	1.67	1.57	1.69	1.75	1.50	1.71	1.49
90th%HCM2kQ:	9.5	97.6	13.6	65.4	98.5	13.4	27.5	11.1	5.0	41.2	9.2	43.4
95th%Factor:	1.94	1.51	1.88	1.55	1.51	1.88	1.73	1.92	2.01	1.63	1.94	1.62
95th%HCM2kQ:	10.9	104	15.4	70.2	105	15.2	30.3	12.6	5.8	44.8	10.5	47.1
98th%Factor:	2.35	1.70	2.23	1.73	1.70	2.24	1.96	2.30	2.50	1.82	2.36	1.81
98th%HCM2kQ:	13.2	118	18.3	78.5	119	18.0	34.4	15.1	7.2	50.0	12.7	52.5

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Unsignalized Method (Future Volume Alternative)

Intersection #7 N.Sunridge/Access

Average Delay (sec/veh): 67.9 Worst Case Level Of Service: F[1219.3]

Street Name:	Site Access						N.Sunridge					
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	1!	0 0	0 1	0	0 0	0 0	0	1 0
Volume Module: PM												
Base Vol:	0	0	0	0	0	0	0	98	0	0	62	0
Growth Adj:	1.00 1.00	1.00	1.00 1.00	1.00	1.00	1.00	1.17	1.00	1.00	1.17	1.00
Initial Bse:	0	0	0	0	0	0	0	115	0	0	73	0
Added Vol:	0	0	0	26	0	82	110	761	0	0	758	36
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	26	0	82	110	876	0	0	831	36
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
PHF Adj:	0.90 0.90	0.90	0.90 0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90	0.90
PHF Volume:	0	0	0	29	0	91	122	973	0	0	923	40
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Final Vol.:	0	0	0	29	0	91	122	973	0	0	923	40
Critical Gap Module:												
Critical Gp:	xxxxx xxxx	xxxxx		6.4	xxxx	6.2	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		2890	xxxx	1261	950	xxxx	xxxxx	xxxx	xxxx	xxxxx
Potent Cap.:	xxxx xxxx	xxxxx		13	xxxx	157	546	xxxx	xxxxx	xxxx	xxxx	xxxxx
Move Cap.:	xxxx xxxx	xxxxx		11	xxxx	157	546	xxxx	xxxxx	xxxx	xxxx	xxxxx
Volume/Cap:	xxxx xxxx	xxxx		2.63	xxxx	0.58	0.22	xxxx	xxxx	xxxx	xxxx	xxxx
Level Of Service Module:												
Queue:	xxxxx xxxx	xxxxx		xxxxx	xxxx	xxxxx	0.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Stopped Del:	xxxxx xxxx	xxxxx		xxxxx	xxxx	xxxxx	13.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
LOS by Move:	*	*	*	*	*	*	B	*	*	*	*	*
Movement:	LT - LTR	-	RT	LT - LTR	-	RT	LT - LTR	-	RT	LT - LTR	-	RT
Shared Cap.:	xxxx xxxx	xxxxx		xxxx	37	xxxxx	xxxx	xxxx	xxxxx	xxxx	xxxx	xxxxx
SharedQueue:	xxxxx xxxx	xxxxx		xxxxx	13.6	xxxxx	0.9	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shrd StpDel:	xxxxx xxxx	xxxxx		xxxxx	1219	xxxxx	13.5	xxxx	xxxxx	xxxxx	xxxx	xxxxx
Shared LOS:	*	*	*	*	F	*	B	*	*	*	*	*
ApproachDel:	xxxxxx			1219.3			xxxxxx			xxxxxx		
ApproachLOS:	*			F			*			*		

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Unsignalized Method
Base Volume Alternative

****

Intersection #7 N.Sunridge/Access

****

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:							#76					
Dist(miles):							0.250					
Speed (mph):							30.00					
SignalIndex:							#6					
Cycle Time:							145 secs					
InitVolume:							103	6				
Saturation:							1769	1881				
ArrivalType:							3	3				
G/C:							0.09	0.10				
*** Computation 1: Time for Queue to Clear at Each Upstream Intersection												
P:							0.090	0.098				
gq1:							7.68	0.41				
gq2:							0.47	0.00				
gq:							8.15	0.41				
*** Computation 2: Time Intersection Blocked Because of Upstream Platoons												
alpha:							0.550					
beta:							0.645					
ta (secs):							30.000					
F:							0.086					
f:							1.000	1.000				
vcmax:							918	68				
vcg:							625	24				
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:	0	0	0	0	0	0	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
ConflictVol:	0	0	0	0	0	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx
*** Computation 5: Capactiy for Subject Movement During Unblocked Period												
InitPotCap:	0	0	0	0	0	0	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	0	0	xxxxx	xxxxx	0	xxxxx	xxxxx

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Computation Report
2000 HCM Operations Method (Future Volume Alternative)

Intersection #8 395/Clear Creek

Cycle (sec): 180 Critical Vol./Cap. (X): 1.234
Loss Time (sec): 16 (Y+R = 4 sec) Average Delay (sec/veh): 98.7
Optimal Cycle: 180 Level Of Service: F

Street Name:	US 395						Clear Creek					
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			Ovl			Ovl			Ovl		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Lanes:	2 0 1	1 0		3 0 1			2 0 1	0 1		1 0	0 1	0
Volume Module: >> Count Date: 9 Apr 2008 << PM												
Base Vol:	86	1520	163	17	2118	211	218	31	2	211	29	2
Growth Adj:	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17	1.17
Initial Bse:	101	1778	191	20	2478	247	255	36	2	247	34	2
Added Vol:	49	1027	0	77	1232	0	0	15	63	0	14	53
In-Process:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	150	2805	191	97	3710	247	255	51	65	247	48	55
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:	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
PHF Volume:	157	2953	201	102	3905	260	268	54	69	260	50	58
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	157	2953	201	102	3905	260	268	54	69	260	50	58
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.:	157	2953	201	102	3905	260	268	54	69	260	50	58
Saturation Flow Module:												
Sat/Lane:	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Adjustment:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.92	1.10
Lanes:	2.00	1.89	0.11	1.00	3.00	1.00	2.00	1.00	1.00	1.00	0.51	0.49
Final Sat.:	3432	3304	225	1769	5083	1793	3467	1881	1811	1805	891	1029
Capacity Analysis Module:												
Vol/Sat:	0.05	0.89	0.89	0.06	0.77	0.14	0.08	0.03	0.04	0.14	0.06	0.06
Crit Moves:		****		****				****		****		
Green/Cycle:	0.04	0.72	0.72	0.05	0.73	0.81	0.08	0.02	0.07	0.12	0.06	0.11
Volume/Cap:	1.06	1.23	1.23	1.23	1.06	0.18	0.96	1.23	0.57	1.23	0.96	0.54
Delay/Veh:	175.4	134	133.6	260.3	56.8	3.9	124.7	301	87.8	218.7	155	79.1
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:	175.4	134	133.6	260.3	56.8	3.9	124.7	301	87.8	218.7	155	79.1
HCM2kAvg:	8	120	139	11	83	3	11	6	4	24	8	7

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

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	1 0		1 0 3 0 1			2 0 1 0 1			1 0 0 1 0		
Lane Group:	L	RT	RT	L	T	R	L	T	R	L	RT	RT
#LnsInGrps:	2	2	2	1	3	1	2	1	1	1	1	1
HCM Ops Input Saturation Adj Module:												
Lane Width:	12	12	16	12	12	16	12	12	16	12	12	18
CrosswalkWid		8			8			8			8	
% Hev Veh:		2			2			1			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	1.13	1.00	1.00	1.13	1.00	1.00	1.13	1.00	1.00	1.20
Hev Veh Adj:	0.98	0.98	0.98	0.98	0.98	0.98	0.99	0.99	0.99	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	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	1.00
Bus Stp Adj:	xxxx	1.00	1.00	xxxx	xxxx	1.00	xxxx	xxxx	1.00	xxxx	1.00	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	0.99	0.99	xxxx	xxxx	0.85	xxxx	xxxx	0.85	xxxx	0.92	0.92
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:	0.93	0.97	1.10	0.93	0.98	0.94	0.94	0.99	0.95	0.95	0.92	1.10
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	0.95	0.95	1.00	0.91	1.00	0.97	1.00	1.00	1.00	1.00	1.00
Fnl Sat Adj:	0.90	0.92	1.04	0.93	0.89	0.94	0.91	0.99	0.95	0.95	0.92	1.10
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

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

Level Of Service Detailed Computation Report (HCM2000 Queue Method)
2000 HCM Operations Method
Future Volume Alternative

Intersection #8 395/Clear Creek

Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Green/Cycle:	0.04	0.72	0.72	0.05	0.73	0.81	0.08	0.02	0.07	0.12	0.06	0.11
ArrivalType:		3			3			3			3	
ProgFactor:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q1:	4.1	78.1	91.2	5.4	65.1	2.9	7.0	2.7	3.3	13.7	4.9	5.6
UpstreamVC:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
UpstreamAdj:	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
EarlyArrAdj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Q2:	3.5	41.7	48.0	5.1	17.8	0.2	3.8	3.3	1.1	9.9	3.3	1.1
HCM2KQueue:	7.6	120	139.2	10.5	82.8	3.1	10.9	6.0	4.5	23.6	8.2	6.7
70th%Factor:	1.18	1.11	1.10	1.18	1.11	1.19	1.18	1.19	1.19	1.16	1.18	1.18
70th%HCM2kQ:	9.0	132	153.6	12.4	92.2	3.7	12.8	7.1	5.3	27.3	9.7	7.9
85th%Factor:	1.53	1.31	1.30	1.51	1.32	1.57	1.51	1.55	1.56	1.44	1.53	1.54
85th%HCM2kQ:	11.7	156	181.4	15.9	109	4.9	16.4	9.3	7.0	33.9	12.5	10.3
90th%Factor:	1.67	1.40	1.40	1.64	1.41	1.74	1.63	1.70	1.72	1.52	1.67	1.69
90th%HCM2kQ:	12.8	168	195.0	17.2	117	5.4	17.7	10.2	7.7	35.9	13.6	11.3
95th%Factor:	1.89	1.50	1.50	1.83	1.51	2.00	1.83	1.93	1.97	1.66	1.88	1.91
95th%HCM2kQ:	14.5	180	208.9	19.3	125	6.3	19.9	11.6	8.8	39.2	15.4	12.8
98th%Factor:	2.26	1.70	1.70	2.15	1.70	2.49	2.13	2.33	2.41	1.86	2.23	2.30
98th%HCM2kQ:	17.2	204	236.7	22.6	141	7.8	23.2	14.0	10.8	44.0	18.3	15.4

BIG GEORGE VENTURES
Traffic Impact Analysis Data
ROUNDABOUTS & TRAFFIC ENGINEERING

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: Big George													
1	US395/Topsy	0	35	52	101	47	0	0	25	0	39	19	75
2	Topsy/Access	132	0	71	0	0	0	0	0	178	95	0	0
3	Topsy/Center	17	8	0	0	10	79	58	0	12	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	0	0	31	0	0	42	0
5	Snyder/S.Edmo	0	0	0	0	0	42	31	0	0	0	0	0
6	US395/N.Sunri	0	52	52	47	39	0	0	10	0	39	8	35
7	N.Sunridge/Ac	0	0	0	26	0	82	110	0	0	0	0	36
8	395/Clear Cre	5	105	0	47	141	0	0	0	6	0	0	35
Zone #2: Retail 4.2													
1	US395/Topsy	17	407	0	142	407	0	0	17	17	0	0	0
2	Topsy/Access	0	0	0	0	0	0	0	0	0	0	0	0
3	Topsy/Center	0	127	0	0	127	0	0	0	0	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	116	116	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	0	289	425	0	0	0	40	0	289	40	424
7	N.Sunridge/Ac	0	0	0	0	0	0	0	754	0	0	754	0
8	395/Clear Cre	17	390	0	0	520	0	0	12	29	0	12	0
Zone #3: Retail 4.1													
1	US395/Topsy	0	0	320	506	0	0	0	27	0	320	27	506
2	Topsy/Access	0	0	0	0	0	0	0	213	0	0	213	0
3	Topsy/Center	107	0	0	0	0	107	107	0	107	0	0	0
4	Snyder/Bigelo	0	0	0	0	0	107	107	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	266	0	0	266	53	53	0	0	0	0	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	0	0	0	0	0
8	395/Clear Cre	27	479	0	0	479	0	0	0	27	0	0	0
Zone #4: Schulz Ranch													
1	US395/Topsy	0	0	45	92	0	0	0	4	0	27	2	54
2	Topsy/Access	0	0	0	0	0	0	0	141	0	0	83	0
3	Topsy/Center	0	0	7	143	0	0	0	141	0	4	83	84
4	Snyder/Bigelo	0	7	0	0	12	109	64	0	0	0	0	0
5	Snyder/S.Edmo	0	0	0	0	0	0	0	0	0	0	0	0
6	US395/N.Sunri	0	45	0	0	27	0	0	7	0	0	4	0
7	N.Sunridge/Ac	0	0	0	0	0	0	0	7	0	0	4	0
8	395/Clear Cre	0	53	0	30	91	0	0	4	1	0	2	18

Keith E. Ruben

From: confirmation@lorman.com
Sent: Tuesday, April 01, 2008 10:55 AM
To: Keith E. Ruben
Subject: Lorman Education Services - Confirmation
Follow Up Flag: Follow up
Flag Status: Red

Confirmation #2386476

Dear Keith Ruben,

Thank you for choosing Lorman Education Services. Your confirmation number is 2386476.

This is to confirm that you have registered for the "Law of Easements: Legal Issues and Practical Considerations" seminar in Reno on May 29, 2008 from 9:00 AM to 4:30 PM. It will be held at the Harrah's Reno on 219 North Center Street in Reno. The hotel phone number is 775-786-3232. For a map to the location, follow this link: Map.

This seminar may be recorded. Your registration constitutes your consent to such recording.

Below is the information that was provided to us:

Participant:
Keith Ruben
Planning Director
R.O. Anderson Engineering Inc

PO Box 2229
1603 Esmeralda Ave
Minden, NV 89423-2229

Approving Manager:
Not provided
**Please reply with an approving manager and include their e-mail address and title, so that we have complete and accurate records. If this does not apply, please disregard.

If the information is incorrect, or if you have any questions, please reply to this e-mail or call our Customer Service Department at (866) 352-9539.

Please contact the hotel for directions or accommodations only. If you have any other questions regarding the seminar, please call Lorman Education Services at (866) 352-9539.

You will only receive an e-mail for yourself. If you have registered a colleague, they will receive a confirmation as well. Parking is not included in the price of the seminar.

Remember if you have colleagues that would be interested in attending this seminar we can add them and you will both receive $10 off the single attendee price of the seminar. Please mention priority code 18136.

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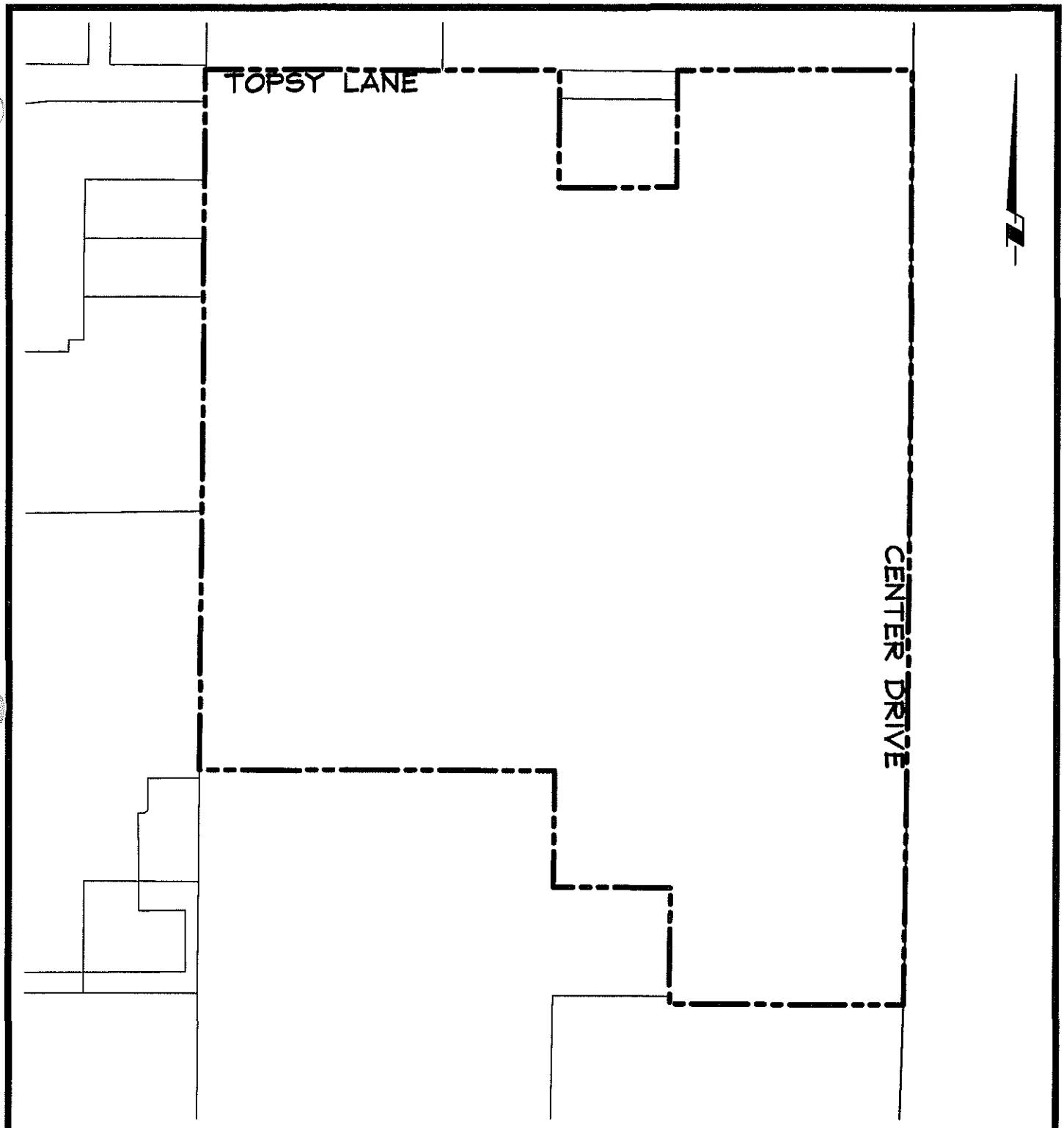


APPENDIX G

DOUGLAS COUNTY
SPECIFIC PLAN
PROJECT BOUNDARY

1293-005 06/30/08

Y:\Client Files\1293\1293-005\CAD\dwg\Planning\Specific Plan Exh\1293-002 APP G 06-30-08.dwg 7/24/2008 1:24:30 PM Marie A. Hulse

1293-002-06
08/23/06

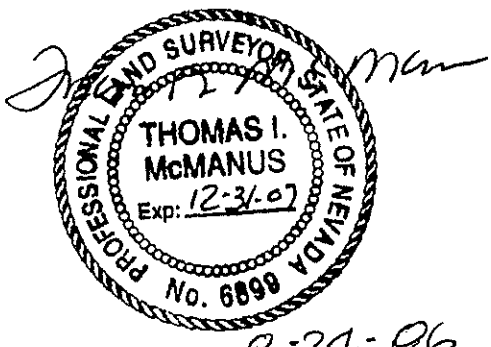
DESCRIPTION
(A.P.N. 1420-05-201-006)

A parcel of land located within a portion of Section 5, Township 14 North, Range 20 East, Mount Diablo Meridian, Douglas County, Nevada, described as follows:

The East one-half of the East one-half (E1/2E1/2) of Lot 1 of the Northwest one-quarter (NW1/4), the Northwest one-quarter of the Northwest one-quarter of the East one-half (NW1/4NW1/4E1/2) of Lot 1 of the Northwest one-quarter (NW1/4), the South one-half of the Northwest one-quarter of the East one-half (S1/2NW1/4E1/2) of Lot 1 of the Northwest one-quarter (NW1/4), the Southwest one-quarter of the East one-half (SW1/4E1/2) of Lot 1 of the Northwest one-quarter (NW1/4), the East one-half of the West one-half (E1/2W1/2) of Lot 1 of the Northwest one-quarter (NW1/4), the East one-half of the Northeast one-quarter of the Southwest one-quarter (E1/2NE1/4SW1/4), the Northwest one-quarter of the Northeast one-quarter of the Southwest one-quarter (NW1/4NE1/4SW1/4), the Northeast one-quarter of the Southwest one-quarter of the Northeast one-quarter of the Southwest one-quarter (NE1/4SW1/4NE1/4SW1/4), and the Northeast one-quarter of the Northwest one-quarter of the Southwest one-quarter (NE1/4NW1/4SW1/4), Section 5, Township 14 North, Range 20 East, Mount Diablo Meridian, containing 101.1 acres, more or less.

Note: Refer this description to your title company before incorporating into any legal document.

Prepared By: R.O. ANDERSON ENGINEERING, INC.
P.O. Box 2229
Minden, Nevada 89423



8-24-06

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